ESP course evaluation and amelioration on the basis of Needs Analysis

The case of Master 1 at the Institute of Nutrition, Food and Agri-food technologies, University of Constantine 1, Algeria

Abstract

This work purports to analyze the needs of Master 1 students at the institute of Nutrition, Food and Agro-food technologies (INATAA). It aims to evaluate and ameliorate the current ESP course on the basis of needs analysis results. A questionnaire was administered to a sample of 48 Master1 students at the Institute of INATAA. The questionnaire aimed to investigate the students' needs for the studied ESP course, measure their attitudes, and assess their proficiency level. The findings reveal that the proficiency of the majority of Master 1 students ranges from average to good in receptive skills; yet it proves weak in productive skills. Similarly, most of the subjects show a positive attitude towards the course; however, they still have many weaknesses, notably in productive skills, which are considered problems when engaged in scientific research. These findings have brought a number of insightful recommendations for the amelioration of the course.

Keywords: ESP ; needs analysis ; course evaluation; course amelioration ; attitudes

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Résumé

Ce travail a pour but d'analyser les besoins des étudiants de l'Institut de l'INATAA. Il vise à évaluer et à améliorer le cours d'anglais pour des objectifs spécifiques sur la base des résultats de l'analyse des besoins de ces étudiants. Un questionnaire a été administré à un échantillon de 48 étudiants en Master 1. Ce dernier vise à enquêter sur leurs besoins du cours, à mesurer leurs attitudes et à évaluer leur niveau de compétence. Les résultats révèlent que la maîtrise de la majorité varie de moyenne à bonne en compétences réceptives ; néanmoins, elle était faible en compétences productives. De même, la plupart des étudiants ont une attitude positive envers le cours ; cependant, ils montrent de nombreuses faiblesses, notamment dans les compétences productives, qui sont considérées comme des problèmes lorsqu'ils sont engagés dans la recherche scientifique. Ces résultats ont apporté des recommandations pour l'amélioration du cours.

Mots clés: anglais pour des objectifs spécifiques; analyse des besoins ; évaluation du cours ; amélioration du cours ; attitudes

ملخص

تهدف هذه الدراسة إلى تحليل احتياجات طلبة الماستر1 في معهد التغذية والتغذي والتكنولوجيات الفلاحية الغذائية، وكما تهدف الى تقييم وتحسين الدورة الحالية للغة الإنجليزية لأغراض معينة وذلك من خلال الاعتماد على نتائج تحليل احتياجات الطلبة، وتم اجراء استبان على عينة مكونة من 48 طالبا من المعهد، ويهدف هذا الأخير الى استكشاف احتياجات الطلبة لهذه الدورة ودراسة ميولتاهم بالاضافة الى تقييم مستوى كفاءاتهم. وأظهرت النتائج أن كفاءة غالبية طلبة الماستر 1 تتراوح من المتوسط الى الجيد في استقبال المعلومات في حين انها تشهد ضعفا في الإنتاج اللغوي، كما أظهرت أن معظم الموضوعات تظهر موقفًا إيجابيًا تجاه الدورة ومع ذلك لا يزال الطلبة يعانون من نقاط الضعف، لا سيما في المهارات الإنتاجية، والتي تعتبر المشكل الرئيسي عند الانخراط في البحث العلمي، وجلبت هذه النتائج عددًا من التوصيات لتحسين دورة اللغة الإنجليزية لأغراض معينة.

الكلمات المفتاحية: الإنجليزية لأغراض معينة؛ تحليل الاحتياجات؛ تقييم الدورة؛ تحسين الدورة؛ ميولات.

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I- Introduction :

After the Second World War (WWII), the radical development in the world, basically in science, economy and technology called upon the creation of a reciprocal language for communication worldwide. Since then, English has become the lingua franca of these disciplines [1]. Similarly, the digital globalization and the creation of scientific databases that rely heavily on the use of English for international publication has also created a crucial demand for the teaching of English in higher education. ESP research has flourished ever since [2].

In the Algerian context, English has been taught as a foreign language since the late sixties[3]. The status of this language dramatically increased in 2020 after the project of promoting the use of English in Algerian universities, launched by the ex-minister of Higher Education and Scientific Research in 2019, to be exclusively employed in two Algerian universities in 2021 (the High School of Mathematics and the High School of Artificial Intelligence). The application of English in these schools is a promising step for its spread all over the Algerian universities.

I.1. Problem of the study

Despite the dramatic increase in the status and function of English in a tertiary education, students face many challenges with this language. The use of English in scientific disciplines, in INATAA in our case, is very limited as the course relies heavily on the use of French that is the students' second language. English is taught as a separate subject called ESP just once in the Licence and once or twice in Master (depending on the students' specialty) during the academic training, with a very limited time allocation, i.e., 21-45 hours in the whole semester.

In addition, the students come to a language class with different needs. For example, some need English only to pass their examination; some others feel the need to develop this language for using it in scientific research; others may need it to help them understand the subject matter; and still others require it for occupational purposes. Similarly, the large size of classes does not only involve different needs but also different ability and motivational levels. Grouping all the students in large classes for an English course neither allows for the satisfaction of these needs, nor for the practice of authentic language. As a consequence, this decreases the students' motivation and make them lose interest and, thereupon, form a negative attitude towards learning this language despite its importance in their academic and, probably, their professional career. The consideration of the students' needs is one step to ensuring success in learning the foreign language [2].

Other problems are related to the teacher training. Teachers teaching ESP are, most of the time, teachers of English and might not be trained in ESP as Bojovic[4] states "ESP teachers are not specialists in the field, but in teaching English, their subject is English for the profession but not the profession in English" (p. 493). These teachers may not know how to underline clear objectives, content and methodology; they may rely only on assumption, which might be far from achieving the students' needs.

I.2. Aim of the study

Although English has been taught at the Institute of Nutrition, Food and Agri-food Technologies (INATAA) for about 30 years, there has been no research conducted to examine the efficiency of ESP courses taught or to analyze the students' needs in learning this language as well as their future expectations. To this end, the present

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study purports to identify Master1 students' needs at INATAA, investigate their proficiency level, and reveal their preferences as well as attitudes towards their ESP course. The target is to ameliorate the current ESP course, increase the students' motivation and ensure success in ESP instruction, as well as raise ESP teachers' awareness of all scientific disciplines of the students' current and target needs.

I.3. Research question:

This research aims to answer the following questions:

1. What are the students' needs in an ESP instruction?
2. What is their language proficiency level?
3. What are their attitudes towards the current ESP course?
4. What are the problems encountered when dealing with English?
5. How can the course be ameliorated from the perspective of Master 1 students?

I.4. Theoretical overview
I.4.1. Definition of ESP

A starting definition of the concept of ESP was provided by Munby[5] indicating that "ESP syllabus and materials are designed by the prior communication needs analysis of the learners" (p. 2). ESP, in the 1960s, was related to only one type of learning that is related to academic contexts.

Recent definitions of ESP associate it with learners needs of language use in authentic specific situations like situations related to study or work. Hutchinson and Waters [6] provide an additional notion through stating that ESP is "an approach to language teaching which all decisions as to content and method are based on the learner's reason for learning" (p. 16). They distinguished between three categories of ESP: English for science and technology, English for business and economics, and English for social science. They further introduced two subcategories under each category: English for occupational purposes (EOP) and English for academic purposes (EAP).

Cummins [7] came with a more comprehensive distinction between Hutchinson and Waters' EOP and EAP, stating that the aim of former is achieving academic proficiency and the latter is developing interpersonal skills (i.e., communication with people). Duddley – Evans & ST John [2] give a similar definition of ESP and provide a distinction between absolute characteristics (specific needs, underlying methodology, and appropriate language) and variable characteristics (in relation with specific disciplines, specific English in relation to the situations). They argue that ESP has become a vital and innovative movement within the Teaching of English as a Foreign and language. They add that ESP is more related to adult learners as it is applied in tertiary education.

The course we intend to develop at the Institute of INATAA should reflect the different scholars' definitions of ESP; that is, the type of English to be taught is related to Hutchinson and Waters'[6] English for science and technology, and the target to achieve is academic purposes, as we aim to make our learners read and write documents in scientific English. The students' needs with regard to content, skills and language items will be investigated further in this paper for the sake of ameliorating the current course.

I.4.2. EST as a branch of ESP

English for Science and Technology (EST) emerged within the field of ESP after the increasing demand of scientists and technologists who felt the need to learn English

in relation to their discipline. For the importance of EST, Kennedy and Bolitho (in Jonė & Audron) [8] states that "It is natural, therefore, that English for Science and Technology (EST) should be an important aspect of ESP programmes". EST enables students of science and technology to use English effectively and accurately in the target context by developing some competences.

I.4.3. Evolution of ESP

Traditional linguistics was mainly concerned with describing language through internalizing general rules that govern its production. In the late 1960s and beginning of 1970s, attention shifted towards the use of language in real world communication, and interest was put on the teaching of English in specific contexts. ESP has become an important area in teaching English as a foreign language (TEFL). The initial concern was English for science and technology. Different ways of language acquisition were raised, and learners were observed to come to the language class with different skills, strategies, needs as well as different levels of motivation. The idea of designing specific language course that matches the learners' individual needs appeared, and learner centered approach deemed important. Since then, the use of needs analysis has become paramount in ESP.

After Hutchinson and Waters's [6] distinction between the two sub-branches of ESP: English for occupational (EOP), and English for academic purposes (EAP), the concept of ESP expended to encompass English for Secretary, English for Economics, English for Technicians, and English for Medical Studies, to address, subsequently, the needs of different learners.

I.4.4. ESP and general English

Dudley-Evans and St. John [2] clarified the difference between English for general academic purposes (GE) and English for specific business purposes (ESP) through arguing that the former is related to learners with no working experience and the latter is related to those who have a previous business skill before coming to the language classroom.

Basturkmen [9] illustrated the difference between GE and ESP as the difference between general writing course and very specific courses like English for hotel reception. In addition to developing English in relation to specific contexts, ESP enhances language skills as well as study skills that are helpful for the students' discipline.

I.4.5. Definition of NA

A huge amount of literature has explained what needs analysis is and how it has been worked out. Richards and Rogers (1986) define it as the process of identifying general and specific language needs that might be unveiled during learning for the development of a language syllabus. Hutchinson and Waters [6] view the concept from the level of necessities, lacks, and wants. They claim that a course is considered inadequate if the objectives do not tackle the constraints and lacks. They introduced the concept of "learning needs" and highlighted its usefulness in the field of teaching. According to Nunan [11], NA is "a family of procedures for gathering information about learners and about communication tasks" (p. 75).

Brown [12] adds that NA is as a data-gathering tool used by curriculum designers to collect subjective and objective information for the development of a course that satisfies the requirements of students within the context of particular institutions that influence the learning and teaching situation.

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Dudley-Evans and St. John [2] define NA as "the process of establishing the what and how of a course" (p. 121). They consider it as the first critical step in ESP syllabus design. This cornerstone of ESP is followed by other activities on the basis of the information collected at this stage, such as: curriculum design, material selection, methodology, assessment, and evaluation.

Richards and Schmidt [13] add that NA is: "the process of determining the needs for which a learner … requires a language and arranging the needs according to priorities" (pp. 353-4). In other words, it is the procedure of collecting data about the learners' thoughts of how English is best taught according to their current and/or future needs.

I.4.6. Needs analysis in ESP course development and course evaluation

Needs analysis has been considered as the cornerstone of ESP course development since the mid-1970s [2]. Traditionally, it has been conducted as the first step before the beginning of a course [6]. Analyzing the needs of learners serves as an important starting point of a course design as it determines the essence and the underlying reasons of the course. Additionally, it aids in selecting and prioritizing what students need in the learning environment.

However, NA has been recently connected with the different phases of a course development. Dudley-Evans and St. John [2] consider it as a more cyclical process; that is, once these needs are established, one can make decisions in adapting the course objectives, materials, the teaching and learning approach, and, later on, evaluation. An on-going needs analysis may lead to a successful revision of an ESP program as it leads to its amelioration by revising the objectives and modifying the teaching materials as well as the evaluation [2]. Henceforth, needs analysis and material evaluation should go hand in hand; where needs analysis determines the needs for learners, evaluation helps the teacher determine to what extent the used materials, tests or the overall program meet these needs.

In addition to a course development, NA is also associated with a course evaluation. According to Dudley-Evans and St. John [2], the two concepts share some similarities in data collection, data analysis, and in the implementation of the results. However, their objectives and perspectives vary. The purpose of NA is to set the course objectives and to plan how the course will be taught. Basturkmen [9] identified a variety of aspects that should be taken into consideration when conducting NA: the language in the target situation, the learners' competency and difficulty, the learning styles and learning strategies, as well as environmental factors. A course evaluation aims to find out the effectiveness of a course to ensure its continuous improvement [6; 11]. NA measures the effectiveness of the course by assessing the objectives set by NA. Tsou and Chen [14] state that once NA establishes the course objectives, a course evaluation can be processed. They highlight three areas in the course evaluation: the fulfilment of the learners' needs; the authenticity of materials, tasks and assessments; and the learner's autonomy and responsibility of what they learn.

I.4.7. Needs analysis approaches and models

Needs analysis approaches and models have been tackled by several ESP scholars. The article will spotlight some of the well-known models. The first model of needs analysis is referred to "target situation analysis" [5; 6]. Target situation analysis investigates the learners' needs and goals in the target situation. Munby's Communication Needs Processor model was the first model of needs analysis that provides a sociolinguistic explanation by centering the factors affecting learners' communicative needs. Munby [5] identifies nine components for discovering the target situation of learners or a group of learners: **Participants** (i.e. an investigation of the

learners' preferable languages, mother tongue, target language as well as their identity e.g. sex, age, and nationality); **Purpose** (i.e. the motive towards learning the foreign language: occupational or academic purposes); **Setting** (i.e. situational and psychological environments, i.e. when and where learners prefer to learn the foreign language); **Interaction** (i.e. what should be involved in the target language use, e.g. work-related interaction); **Instrumentality** (i.e. communication in general and particularly the medium whether spoken or written or both; the channel, whether face to face or by telephone, and the mode, whether by dialogue or monologue); **Dialect** (i.e. learners preferred dialects of the target language, e.g. American English, British English) **Target competence level** (i.e. the productive or receptive skills that learners are intended to do); and **Communicative key** (i.e. how communication needs are to be undertaken, e.g. formal or informal).

Munby's model has thoroughly contributed to the field of ESP as the selection of the teaching materials depend on a systematic analysis of learners needs like their reasons of learning, time, place, activities involved, etc. However, it has been subject to much criticism. Hutchinson and Waters [6] consider that the process of writing a profile for each student is time consuming. They add that it focuses on the experimenter's viewpoint and neglects that of the learners.

Hutchinson and Waters [6] adapted a learner-and-learning approach within target situation analysis by expanding Munby's definition and adding the learners' learning needs. Their model of NA involves two factors: target situation analysis and learning needs analysis. They distinguished between the two concepts by linking the former concept with what learners are required to do in the target situation and the latter with what they need to do in order to learn. Hutchinson and Walters' model can be derived from necessities, lacks, and wants. While necessities refer to what learners have to know in order to function effectively in the target situation or their demands for an ESP course; lacks are considered as the gap between necessity and what the learner already knows; and wants mean what the learners actually want to learn or what they feel they need. Hutchinson and Waters [6] model provided a learner-centered approach that involves many factors (internal and external) and is mainly concerned with deficiency analysis. However, it was also criticized in that it focuses on many skills and topics to be learned that learners may not want to learn [9].

While Hutchinson and Waters [6] were more concerned with deficiency analysis, Dudley-Evans and St. John [2] added other factors that might contribute to the learners' needs. They suggested another framework referred to as "pedagogic needs analysis" that encompasses three major areas: deficiency, strategy, and means analysis. While deficiency analysis is concerned with the distinction between the learners' current level (i.e. what they already know) and their target level (i.e. what they are supposed to know); Strategy analysis mean the route or the process of learning (e.g. different learners have different ways of learning); and Means analysis refers to the environmental factors in which the course will be run (e.g. the teacher, teaching method, students, and facilities). Therefore, what works well in one situation may not work well in another[2].

I.4.8. Types of needs

For an effective ESP course design, different levels of needs should be considered. Many ESP experts [6; 15; 16] have generated two types of needs: target needs and learning needs.

a. **Target needs** are related to the target situation and are themselves divided into three types: necessities, lacks, and wants. Necessities represent the requirements of the target situation, i.e. the learners' required proficiency level to achieve academic or occupational purposes (i.e. objective needs [15; 16]). Lacks refer to the learners'

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current abilities when designing the content of a language course, for example, a lesson of general English could be considered appropriate if the learners are found with weaknesses in tenses. Wants are concerned with the learners' feelings towards their most important needs, so the course should consider their suggestions when deciding on the content. According to Richterich [17], learners may represent an important source of NA as they may have a clear idea of the necessities and requirements of the target situation; similarly, they may best know their lacks. The cognitive and affective needs of the learners such as feelings, expectations, and reasons for attending the course) are referred to as subjective [2].

b. Learning needs investigate the learning situation. It seeks information on the aim of the course, the type of the course, the type of learners, their learning styles, available materials and resources, the setting, and the time required.

I.4.9. Methods of needs analysis

There is no single method for conducting needs analysis [18]. Robinson (1991) [15] offered a variety of methods for needs assessment, such as questionnaires, interviews, tests, case studies, and authentic data collection. Adopting one of the methods depends mainly on the researcher's intentions and circumstances. The current work is based on the questionnaire method in the analysis of the students' needs. The advantage of this method is that it can collect huge data in a short time; requires less effort in comparison to tests or interviews. [18].

Despite the huge amount of the literature devoted to the explanation of the concept of needs analysis from many perspectives, e.g. definition, assessment, approaches and models, research using needs analysis to develop ESP courses in the sector of food science and technology is rarely found in international as well as national contexts. Similarly, it has never been done on the university being studied. Therefore, this study may fill in some of the gaps in research in the area of NA through an investigation of the students' needs at the institute of INATAA, as well as their attitudes and preferences of the current ESP instruction.

II– Methods and Materials :

II.1. Participants

Forty-eight students (47 females and 1 male) engaged in the Food Quality Management (GESQUAL) specialty at the Institute of INATAA were involved in this study.

II.2. Materials and Methods

As the study aims at analyzing the students' needs and, accordingly, ameliorate the current ESP course, the research used the descriptive qualitative method of data collection. A questionnaire was administered to Master 1 students whose ESP course is designed to.

The design of the questionnaires was made through the consideration of the aforementioned models of needs analysis: Munby's target situation analysis [5], taking into consideration the students' reasons for learning, time and place and activities involved; Hutchinson and Walters' present situation analysis [6], through the consideration of the subjects' necessities, lacks, and wants; and Dudley-Evans and St. John's pedagogical needs analysis [2] via centering focus on the learners' current and target level, strategies used and the teaching environment, i.e. the activities involved.

As a procedure, the students' questionnaire was administered at the end of ESP instruction (in January, 2022) after the students have had ESP course for approximately five months (starting from September, 2021) so to make them capable to answer the required questions. The students' questionnaire involved five sections encompassing 29 items to gather data on the students' language learning needs, their proficiency and their attitudes towards the current ESP course. The first section involved nine items that seek general information on the students: their gender; whether they have been assigned a previous ESP course during their instruction; in which level they were assigned it; and the time allocated for the previous course (s) [6]; whether they use English inside or outside the university; and whether English has been used by their subject teachers.

The second section involved six items that investigated the students' experience with the current ESP course: whether or not they attend the course; their degree of satisfaction of the course in general and in developing the different language skills in particular; to what extent the course satisfies their future needs; their attitudes towards English in general and the current ESP course in particular; and their attitudes towards the time allocation for the course.

The third section involved one question that measured the students' perceptions of their proficiency in English. Different skills were examined (speaking, writing, speaking, listening, vocabulary, and grammar).

The fourth section is the core of the analysis. It contained ten items that investigated the students' needs and course evaluation: the first item questions about the importance of the four skills and language items, viz. reading, writing, listening, and speaking, vocabulary and grammar, as well as the various sub-skills in the current ESP course; the students' needs in developing them; the type of interaction preferred; the students' preferences of the content of the course and the type of documents to deal with.

The fifth section included two questions that explored the students past experience with scientific research written in English: whether they have read articles written in English; and the problems encountered when they practiced reading in English. The sixth section was the last section devoted to the students' suggestions for the course improvement.

III- Results and discussion :

III.1. Findings of the students' questionnaire

Item 1: "Have you had an English course at the university?"

The results of this question astonishingly reveal that nearly half of the students (45.8%) did not receive a preceding ESP instruction in the Licence degree. The reasons might be attributed to a variety of factors: either English is not given a priority for program designers whose major concern is the modules of specialty, or to the lack of teachers of English at the institute, since the majority of teachers of English are not motivated to practice teaching outside their department. These factors might contribute to the decrease of the students' motivation and interest to learn this foreign language and, accordingly, lowers their proficiency.

Concerning the time allocation of ESP course for the Licence degree, most of the students who answered positively in the previous question identify a time of three hours per week (29.16% of the answers). This time goes with the program of INATAA for the third year, which indicates that English is not taught in the Licence until the

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third year. These results confirm the limited time allocation of English which is another factor that deceases the students' motivation in learning the language as well as their proficiency.

The next item investigates whether the students practice English outside the university. The majority of the answers (58.3%) were positive (c.f. figure 1), which confirms the students' awareness of the importance of this language in the future. The ways of practicing the language vary for the variety of the students, most of the students have highlighted more than one strategy: the majority practice the language in social networking and mobile applications (50%), a few by watching movies (15%), few others by reading books and articles (20%), others through training courses (20%), and the lowest percentage goes with speaking with friends (5%). The aforementioned strategies reveal the students' motivation to learn English despite the very limited time devoted for ESP instruction. Similarly, the different strategies may increase the students' motivation to learn this foreign language and, therefore, develop their proficiency.

The next item investigates whether the students' subject teachers recommend reading in English. The highest percentage answered positively (79.2%). The students have given many reasons; for example, to train themselves and develop their proficiency; to enhance understanding when reading materials in English; English is the most popular research language, etc.. One would deduce that the students aim primarily to develop one type of English that is referred to by Hutchinson and Waters' English for Academic Purposes (EAP) (1987).

The results of the second section indicate that the majority of the participants do attend the current ESP course. These results may reflect the students' awareness of the importance of this language in their future career, their internal or external motivation (e.g. succeeding in exams) for learning English. So the consideration of the different students' needs is an essential step for an effective ESP instruction as claimed by Dudley-Evans and St. John [2].

When asked about the degree of ESP course in satisfying the students' needs, most of the answers were positive ranging from satisfying completely (27.1%) to partly (64.6%), while a few others (8.3%) claim that ESP does not satisfy their needs (c.f. figure 2). These results may indicate that the current ESP course is carefully designed to satisfy a variety of students' needs. For example, lessons like making a CV, writing a formal email, or analyzing scientific articles match the students' interest as they take into consideration their future needs.

The item **"The teaching method used by your teacher help you to acquire the necessary level of: reading, writing, listening or speaking"** is related to the previous one, yet it is more particular as it asks the students which skill (s) is/are more trained in the current ESP course. The students' answers confirmed that the course helps in developing the four skills: listening (70.8%), speaking (68.8%), reading (72.9%), and writing (64.6%). These findings confirm that the current course considers the teaching of the four skills equally.

Item 13 investigates whether or not the current ESP course satisfies the students' needs. This question is the core for the evaluation of the current ESP course. Similar to the previous findings, the majority of the answers (68.8%) were positive, while a few (31.3%) think that the course does not really satisfy the students' needs. One would deduce that the activities in the current ESP course do satisfy most of the students' needs. As for those who do not think it satisfies their needs, the next items will allow them to choose the activities that best go with their needs.

A consideration of the findings of this section leads us to deduce that the current course does satisfy the students' needs. In satisfying these needs, one should refer to

Hutchinson and Waters' necessities, lacks and wants[6]. In other words, the course would be considered as satisfactory for the students' necessities as it underlines clear objectives that go with the students' requirements in the target situation, e.g. engaging in scientific research; necessities, as the content covers their areas of weaknesses in the target situation; and wants as the activities chosen in the course as well as the methodology go with the students' interest and, hence, increase their motivation and involvement in the classroom.

As for the time allocation for the course, most of the respondents (66.7%) confirm that it is not sufficient. These results agree with those of the second item in that the time dedicated for the English instruction is not sufficient (21-45 hours for the whole year) in satisfying their needs. This calls upon a reconsideration of the time allocated and devote at least 4 hours per week instead of (1 hour and a half) for a better instruction.

Item 14 incorporates 15 statements that measure the students' attitudes towards English in general and ESP course in particular. Starting from English, most of the respondents' answers show positive attitudes towards this language in their studies (e.g. 85.41%; 97.91%; 83.33%; and 95.83%) as well as for their future career (e.g. 77.08%; 93.95%). As far as ESP course is concerned, most of the subjects show a positive attitude towards this course in enhancing different skills (e.g. listening to scientific talks (91.66%); reading and understanding scientific documents (93.75%); writing scientific productions (89.58%); enhancing their self-confidence while speaking (89.58% & 87.5%); and enhancing their intellectual activity in general (72.91%, 93.75%). Similarly, most of the participants confirm that the previous ESP course was beneficial to them and satisfies their needs (75%). Having positive attitudes towards the current ESP course may encourage the students to be more involved in the course as it increases their motivation and interest inside the classroom.

The next section measures the students' proficiency in English. The latter concept has long been measured in NA and has been referred to as pedagogical needs analysis (Dudley-Evans and St. John's, 1998). The findings show that most of the answers indicate an average proficiency in listening (47.91%), speaking (47.91%), and writing (43.75%). The participants' reading proficiency ranges from average (39.58%) to high (41.66%). Concerning vocabulary and grammar, the students' proficiency ranges from low to average: while the majority of the subjects show an average proficiency in vocabulary (43.75%), their grammatical proficiency proves low (35.41%) (c.f. figure 3). These results recommend a careful choice of the content and the activities which go with the students' proficiency level in order to enhance the four skills as well as strengthen their vocabulary baggage and grammatical competence.

For the sake of ameliorating the current ESP course, the students' needs for the different skills as well as the sub-skills were examined. In the first item of the fourth section, the subjects were asked to rank the four skills (reading, writing, listening and speaking) according to their importance. All the answers stress the importance of the four skills with varying degrees: (answers range from "somehow important" to "important" and "most important"). While listening and speaking were perceived by the subjects to be the most important (50%, 52.8%, respectively), reading and writing were viewed important (50%, 43.75%). These results might be attributed to the students' future needs like participating in international seminars, e.g. through listening to researchers and participating in debate, as well as through reading and writing scientific documents.

Taking the different sub-skills of each skill separately, we start with reading subskills. The students were asked about the target in developing their reading skill. Different objectives were proposed. The findings show that the most common objective was reading laboratory reports (64.6%); the second target was reading genuine

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authentic text; manuals (56.3%); and instructions (56.3%); the third objective was reading academic journals and publications (54.2%), scientific articles (45.8%); short passages from texts (47.9%). These findings indicate that the current ESP course should incorporate a variety of reading materials to tackle all the students' needs, increase their motivation and, hence, foster learning.

Regarding the speaking sub-skill, the students' answers highlighted a variety of objectives as well. The most chosen target was to speak clearly (77.1%); accurately (68.8%); and fluently (66.7%). We would, hence, deduce that the speaking skills most needed are pronunciation and grammar. When it comes to choosing appropriate activities, a variety of tasks were favored by the students like: making an oral presentation (58.3%), asking and answering questions (56.3%), participating in conversations and debates through asking and answering questions (54.2%), speaking to foreigners (50%), giving opinions about different topics (45.8%), talking over the phone (43.8%), making requests for further information or clarifications (41.7%), and talking to a variety of audience (33.3%). These responses would give insights on choosing these speaking activities to satisfy the students' different needs.

Concerning developing writing sub-skill, a variety of objectives were proposed and all of them were chosen in varying degrees: writing one's CV (72.9%), emails (70.8%) , research papers (68.8%), laboratory reports and assignments (66.7%), reports, articles and reviews (66.7%), making a poster (62.5%), integrating scientific terms in writing (60.4%), writing job applications (60.4%), paraphrasing short texts (56.3%), writing request letters to a laboratory or university (56.3%), summarizing long texts (54.2%), using linkers correctly (52.1%), describing tables and diagrams (50%), writing product descriptions (47.9%), and describing cause and effect relationships (45.8%). The students' selection of all the aforementioned objectives would offer suggestions for their integration as different writing activities in the current ESP course to satisfy the different needs.

For listening sub-skills, the participants have also revealed various objectives. The most common ones are listening to presentations and discussions in international seminars (22.9%), understanding speech instantly (22.9%), listening to the teacher (18.8%), understanding conversation and debate (10.4%), and listening to classmates (6.3%). These objectives would also be transferred into activities to be added in the current ESP course for achieving maximum involvement.

Concerning developing vocabulary, the findings reveal that the students aim to develop both general and technical vocabulary. However, their needs in achieving general vocabulary proficiency (72.9%) is more than developing technical vocabulary (27.1%). This can simply be achieved from the previous activities proposed for the development of the four skills.

Similarly, although the participants concern in grammar is developing grammatical competence in relation to scientific discourse, their answers reflect that they are more interested in developing general grammatical competence (56.3%). Proficiency of the former necessarily leads to proficiency of the latter. The activities that would satisfy the students' general and specific needs are: tenses, modality, aspect, the passive, the conditional, etc. These lessons can be extracted from the previous activities in relation to the four skills (e.g. writing reports and assignments, summarizing, etc.).

Figure 4 investigates the skills most needed in the future. The students identified all the skills with varying needs. The majority of the subjects considered listening (47.91%), speaking (64.58%) and writing (37.5%) as the most important skills; reading is chosen in the second position (important: 41.66%). These findings confirm those of the previous section in that the students need English for the participation in future

research; for example, listening and speaking in international seminars, and writing scientific papers.

When asked about the types of activities that create interest, most of the students favored two types: group work (66.7%), and pair work (54.2%). Other types of activities have also been selected by some students: individual work (27.1%), and out of class work (29.2%), as well as whole-class work (12.5%) (c.f. figure 5). These findings would offer the teacher diversifying the types of activities to engage the students more towards the course.

When asked about the topics, the students were more interested to tackle in their ESP course, different topics were chosen: nutrition (87.5%), nutritious food (79.2%), food manufacture (62.5%), vitamins (58.3%), biotechnological innovation in food production (54.2%), diseases (52.1%). The chosen topics cover different students' interests and might, hence, be selected for the amelioration of the course.

Section five investigates the students past experience in reading English papers in the field. Almost all the subjects (85.4%) answered positively (c.f. figure 6). These findings reveal that it has become a necessity to read in English. When asked about the kind of problems encountered while reading, various problems were unveiled. The most common problems are: lack of comprehension that is the result of the students' lack of vocabulary and grammar proficiency. These answers are confirmed with the previous question which shows that the students do face difficulties in grammar and vocabulary.

The last question was an open-ended question which investigates the students' suggestions for improving the current ESP course. Among the propositions: adding more time for the teaching of ESP; making intensive courses in English at the level of the institute; integrating group work; introducing songs and videos; and making dialogues among the students. These suggestions will be considered in the coming ESP instruction for better learning outcomes.

IV- Conclusion:

In conclusion, NA and ESP curriculum development for students of scientific and technical disciplines is still in its infancy in Algeria with very limited research works published on the area. As a result of the rapid shift to English in Algerian universities these recent years, the present research work has come to fill in some of the gaps in relation to NA and ESP course design through an investigation of Master 1 students needs of science food and technology at the Institute of INATAA, university of Frères Mentouri Constantine 1. The current NA results have guided us in the evaluation of the current ESP course, and accordingly, its amelioration. some insightful recommendations would be offered:
- Extending the time for ESP instruction to allow for more practice of the different language skills.
- Making group presentations based on reading and analyzing scientific papers in the field as well as raising debate. This will allow for the acquisition of much technical vocabulary, practice all the language skills in meaningful tasks and bring interest to the classroom.
- Center the teaching of pronunciation, through listening to authentic videos in the field and teachers' interference to correct the students spelling while reading or while making presentations.

Finally, the current ESP course would be regarded as effective in enhancing the proficiency of students of food science and technology, in getting over their weaknesses in the target situation, and in preparing them for making scientific productions in the future as indicated by Dudley-Evans and St. John [2].

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- Appendices :

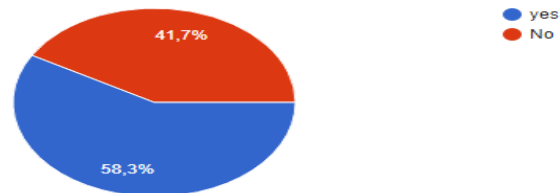Do you practice English outside the university?
48 réponses

Figure 1. Practicing English outside the university

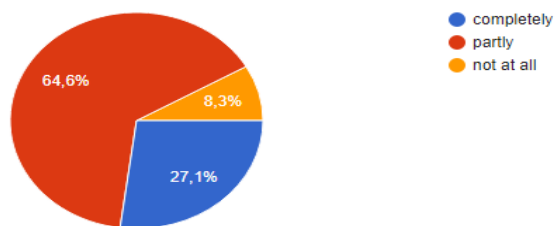To what extent does the English courses satisfy your needs in your field of study:
48 réponses

Figure2. Needs satisfaction of ESP course

Describe your language proficiency from very weak proficiency (1) to very proficient (5)
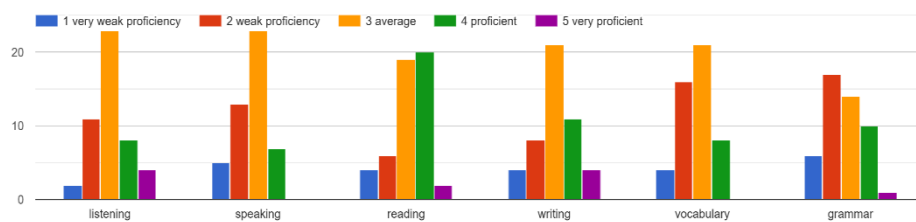

Figure 3. Students' proficiency in English

Rank the language skills you need the most in the future (from 1: very important to 5 not important)
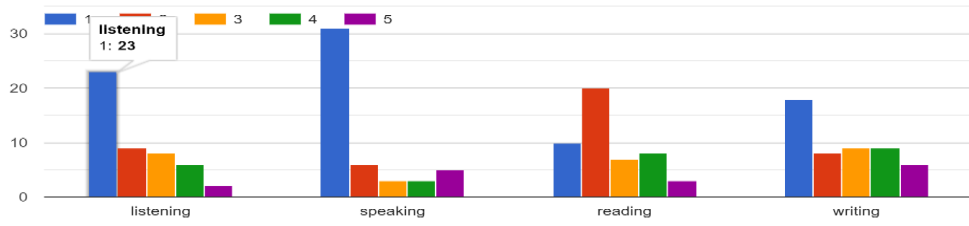
Figure 4. Students' language needs for the future ESP course

23. Which of the following do you prefer to work in ESP class(you can choose more than one answer)
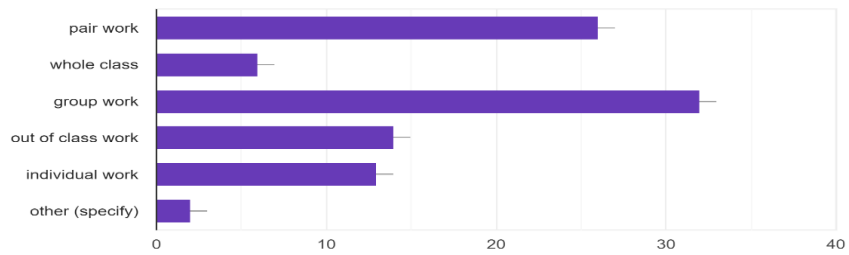48 réponses

Figure 5. Students' preferences towards learning activities

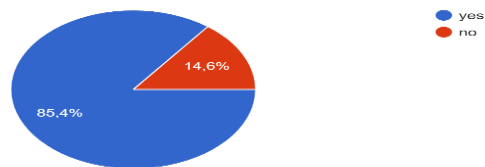Have you read any paper in English before?
48 réponses

Figure 6. Students' past experience in reading English papers

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