International Arab Journal of English for Specific Purposes

International Arab Journal of English for Specific Purposes (IAJESP) Vol.4. No.1 2021

Pp. 1-23

ESP Needs Analysis of Agricultural Engineering Students

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Abstract

The present study attempts to examine the English language needs of the engineering students majored in agricultural studies in IAV – Complexe Horticole d'Agadir (CHA) in Morocco. The study was conducted in the third semester in the academic year 2018-2019. The use of a mixed-method research design allowed us to collect data from various stakeholders including 39 students, 30 alumni, 13 specialty-subject teachers and the ESP teacher. Three data collection instruments were used, namely questionnaires, interviews and a placement test. The SPSS software was used to code and analyse the quantitative data of the questionnaires, whereas the qualitative data collected from the interview was described, interpreted and summarized. The findings of the study emphasized the importance of English for agricultural engineering students. Besides, the study determined the students' English language needs and depicted their learning preferences with regard to the ESP course. In the end, a number of implications and recommendations are drawn for the stakeholders.

Keywords: Needs analysis, English for specific purposes (ESP), agricultural engineering students

1. Introduction

In recent years, English has become the dominant language in almost all fields including business, tourism, science and agriculture. Consequently, it is necessary for professionals, mainly engineers, to learn English and use it effectively so as to perform well in the workplace. Following this trend, engineering schools in Morocco have implemented English language courses in their programs. However, it is evident that the engineering students have specific language needs; thus, they need to learn some form of English for specific purposes (ESP) so that they can communicate effectively and comply with the requirements of the job market. Following Robinson (1991) who believes that needs analysis is critical to ESP, we believe that designing an ESP course necessitates conducting a needs analysis in order to examine the learners' language needs. Dudley Evans and St John (1998) describe needs analysis as "the process of establishing the what and how of a course". In consequence, the present study is an attempt to explore the English language needs of the engineering students in one of the Moroccan engineering schools that trains future engineers in agriculture: IAV – Complexe Horticole d'Agadir (CHA).

2. Background

2.1 ESP

Since the emergence of the ESP movement in the 1960s, many researchers have tried come up with a comprehensive and straightforward definition of ESP. Although Strevens (1988) admits that it is not easy to produce a simple and watertight definition of ESP, numerous definitions have been proposed. According to Smoak (2003) "ESP is English instruction based on actual and immediate needs of learners who have to successfully perform real-life tasks unrelated to merely passing an English class or exam. ESP is needs based and task oriented" (p. 27). Likewise, Duan and GU (2004) define ESP as "… a pedagogy in which the syllabus, contents, and methods are determined according to the needs of learner's specialized subjects". It is obvious that all the above-mentioned definitions emphasize the importance of learners' needs in ESP. However, Tomlinson (2011) argues that "ESP courses are designed for people who are learning English so that they will be able to use it in particular situations such as on a holiday, in their job, in their training or on academic courses". However, the most quoted definition of ESP is the one given by Hutchinson and Waters (1987) who stated that ESP is an *approach* rather than a *product* to language teaching. "ESP is not

a particular kind of language or methodology, nor does it consist of a particular type of teaching material. Understood properly, it is an approach to language learning which is based on learner need" (p.19). In other words, ESP should not be seen as an issue of teaching specific varieties of language or a particular subject-related jargon or vocabulary, or even teaching a specific type of material or methodology, but it should actually be seen as an approach to teaching and learning that focuses on the learner's needs and his/her reasons for learning. Although some scholars may think Hutchinson and Waters definition is a bit general, we believe that it is a comprehensive definition which covers all the aspects and features of ESP. In addition, most of the recent definitions in literature were either based on Hutchinson and Waters' or are reactions to it; which makes it a ground-breaking definition in ESP literature.

2. 2 Needs analysis

It is obvious that needs analysis is a prerequisite of ESP. In fact, it is the starting point and the most essential stage of ESP course development. Dudley Evans and St John (1998) argue that "Needs analysis is neither unique to language teaching nor within language training but it is often seen as being the cornerstone of ESP and leads to a much-focused course". Needs analysis is the key element in investigating and developing different areas of language teaching and learning because it serves as a tool for gathering information about learners' needs that will work as a basis for any course design, materials' production, teaching methodology and assessment; which are all components of the ESP curriculum.

Learner needs are described differently depending on the objectives of the analysis. Hutchinson and Waters (1987) distinguish two types of needs: learning needs "what the learner needs to do in order to learn" and target needs "the ability to comprehend and/or produce the linguistic features of the target situation". They also divide the target needs into necessities, lacks and wants. 'Necessities' are what the learners have to know in order to function effectively in the target situations. 'Lacks' are gap between the existing proficiency and the target proficiency of learners. 'Wants' are what learners feel they need and want to learn. However, Brown (1995) identifies two different types of needs, objective and subjective needs. Objective needs are the ones collected from objectively observable data and subjective needs are the ones collected from unobservable data. Graves (2000), on the other hand, argues that in order to make a decision about what to teach, information about "learners' abilities, attitudes, preferences and desired abilities" must be gathered. This information can be collected from various sources such as the learner, people working in the field, ex-students, clients, employers, documents relevant to the field, colleagues and ESP research (Dudley Evans

and St John, 1998). In this study, data was collected from the current students, alumni, specialty-subject teachers and from the ESP teacher.

2.3 Research on ESP in Moroccan context

Like in many parts of the world, published research on ESP in Morocco is very scarce. Since there have been only few studies on ESP courses in the Moroccan context, we may claim that research in ESP is still in its infancy in Morocco. However, according to Johns (2013), the scarcity of ESP research in many countries might be attributable to the existence of a considerable number of localized research studies which are unpublished and also to the problem of the distinction between research and practice.

A recent study by Hattani (2019) investigates ESP needs analysis in the department of Renewable Energy Engineering at the Higher School of Technology of Fes in Morocco, with a focus on students' needs analysis in the foreign language. The data was collected from 30 undergraduate renewable energy engineering students using a quantitative survey. The findings revealed that students have favourable attitudes and high degrees of motivation to learn English, which is believed to be necessary in their future vocational career. The results also showed that these students had difficulties with some learning skills, mainly productive ones in terms of speaking and writing. The study suggests to reform curricular and to focus on the integration of innovative approaches and methods that aim at promoting students' language acquisition and competency.

Mifdal and Lewis (2017) conducted a study which was aimed to design an EAP course for PhD students in the faculty of science in Chouaib Doukalli University in Morocco. These PhD students needed a course in English in order to attend conferences and publish in the international science journals. The study investigates all processes from the initial needs analysis to the development of a textbook, through the daily modification of the lesson planning, and finally to plans for the post-course production of a materials for future similar courses. Taking the results into account, a course booklet was designed, and support materials were either collected or designed. However, the course for which the materials were prepared was the writing component of a three-month long program at the same institution.

One of the most relevant studies in ESP in the Moroccan context is the one conducted by Dahbi (2016). The study aimed to evaluate the extent to which the English for general purposes courses offered to engineering students at the National School of Applied Sciences of Fes were successful in fulfilling the job requirements of the prospective engineers. And the second purpose was to devise an ESP course that responds to these

engineering students' vocational needs. The results of the study stressed the significance of English for engineering students and also identified the students' lacks, needs and interests regarding English language. The ESP course evaluation conducted showed that the ESP course designed based on the students' needs and interests was positively perceived by the majority of the respondents.

Despite of the shortage of studies on ESP research in the Moroccan context, it is evident that ESP research has a promising future in this country as result of the increasing demands of the Moroccan students and researchers for English as language of scientific research in all domains.

3. Research questions

The present study aims to answer the following research questions:

1. What is the current English proficiency level of the engineering students in IAV-CHA?
2. How important is English for agricultural engineering students?
3. What are the English language needs of agricultural engineering students?
4. What are the learning preferences of agricultural engineering students?

4. Methodology

4.1 Research design

This study employs a mixed-method research design in order to explore the English language needs of the engineering students in IAV – the Horticultural Complex of Agadir (CHA), one of the Moroccan engineering schools that train future engineers in the field of agriculture. 'Mixed methods research is a procedure for collecting, analysing, and "mixing" quantitative and qualitative data at some stage of the research process within a single study in order to understand a research problem more completely' (Ivankova and Creswell, 2009, p. 156).

4.2 Context of the study

This needs analysis study was conducted in the Horticultural Complex of Agadir (CHA) which is a subsidiary of the Agronomic and Veterinary Institute Hassan II (IAV). The Horticultural Complex (CHA) trains future engineers in the fields of horticulture, landscape and plant protection. However, students are admitted to the CHA upon completion of a two-year preparatory cycle in IAV Rabat. The cycle of the

training course in CHA consists of six semesters over three years. The course of English is taken only in the first four semesters. The time allocated for the course is two hours a week over 15 weeks.

4.3 Participants

Multiple sources of data were employed in this study. Long (2005) argues that 'Multiple sources should always be employed, both because they add breadth and depth to an analysis, and because triangulation of sources offers an important means of validating findings' (p.63). The population includes four groups:

1. Current Students: a total of 39 students in the third semester S3 of Engineering Cycle in the academic year 2018-2019.

2. Alumni: a number of 30 graduates who are all working as engineers in different sectors participated in this study by completing an online questionnaire. They all took the English course when they were studying in the institute.

3. Specialty-subject teachers: a total of 13 specialty-subject teachers participated in this study by answering a semi-structured questionnaire. They are all teaching currently in IAV-CHA. Ruiz-Garrido & Gómez (2009) state that subject teachers of the discipline need to be consulted in needs analysis.

4. ESP teacher: The teacher of the current ESP course is a 35 years-old male who has been teaching the course for 6 years. The teacher was interviewed using a semi-structured interview.

4.4 Instrumentation

This needs analysis study used information gathered from multiple stakeholders. That is, various research instruments were designed for collecting data. First, questionnaires were employed to collect data from both the current and former students and also from the specialty-subject teachers. These questionnaires had questions of different types such as closed-ended, open-ended, multiple-choice and Likert scale items. Second, an interview was conducted with the ESP teacher. Third, the Outcome Placement Test (2010) was used to identify the proficiency level of students. A pilot study was conducted to increase the reliability and validity of the instruments.

4.5 Data analysis

The present study is at first glance qualitative, but it has recourse to quantitative data in order to consolidate the remarks and illustrate more statistically the results. The qualitative data gathered through open-ended items in the questionnaires and the interviews were analysed and summarized according to the perceptions and suggestions of the participants. The quantitative data from the questionnaire items were manually

computerized and coded into the Statistical Package for the Social Sciences (SPSS), which is frequently used in applied linguistics and education research (Dornyei, 2007, p. 198).

5. Findings of the study

This study tries to answer four research questions. The first looks into students' proficiency level and the second investigates the importance of English for agricultural engineering students. The third question explores these students' language needs. The last question examines the agricultural engineering students' learning preferences. The findings of the four research questions are summarized and described separately.

- ***Research question 1:*** What is the English proficiency level of agricultural engineering students in IAV-CHA?

In order to answers this research question, several instruments were employed, namely: questionnaires, an interview and a placement test. A sample that consisted of students, ESP teacher and specialty subject teachers was surveyed.

1. Students' perceived proficiency level

Firstly, the findings revealed that the students perceived themselves to have a good proficiency level of English that is intermediate or above. Secondly, concerning the students' level in language skills, they perceived themselves to have a good or average level. Finally, the findings also showed that students have difficulties with the productive skills mainly speaking and writing.

- *What do you think your level of proficiency in English is?*

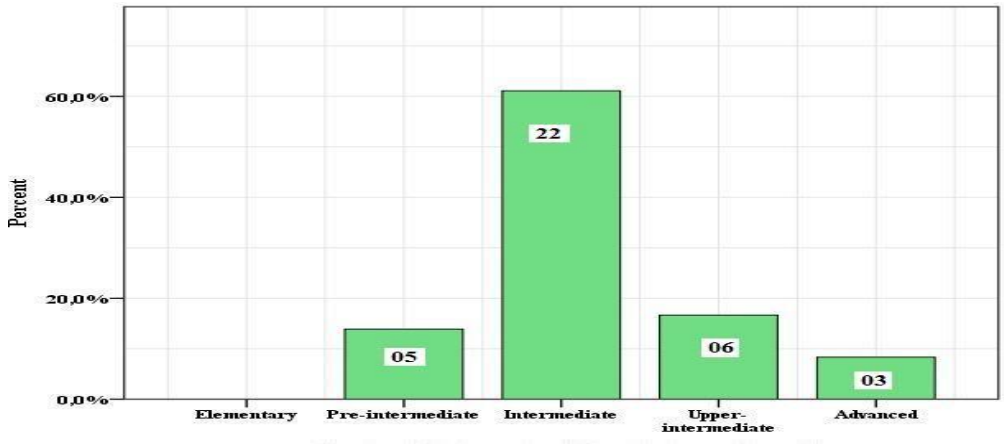


Figure 1: Students' Perceived Proficiency Level

Figure 1 above presents the students' self-assessment of their English language proficiency. The analysis of the results shows that the high majority of students (61.1%) perceive themselves to have an intermediate level of English. About 16 % of students think they are upper-intermediate, while 13.4% think they are pre-intermediate, and only 8.3% stated that they are advanced.

- *What level of proficiency do you think you have in the following language skills and components?*

This question elicited students' responses about their perceived level of proficiency in different English language skills and components. Table 1 below reports agricultural engineering students' perceived level of proficiency in reading, listening, speaking, writing, vocabulary and grammar.

Table 1: Students' perceived proficiency level in the language skills

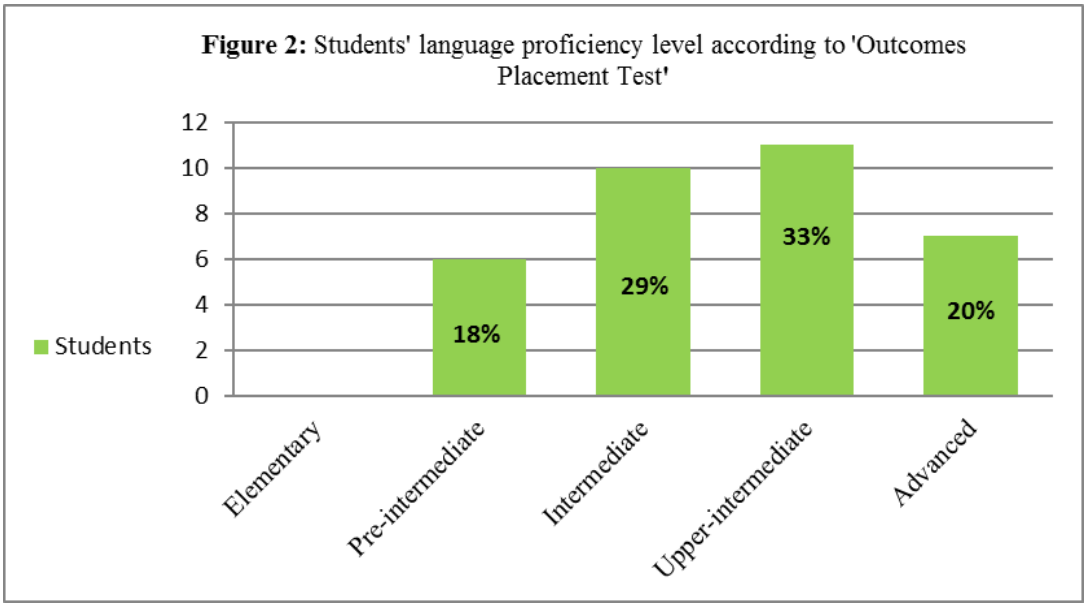
		Very Good	Good	Average	Poor
Reading	Count	13	21	2	0
	Row N %	36,1%	58,3%	5,6%	0,0%
Listening	Count	8	18	9	1
	Row N %	22,2%	50,0%	25,0%	2,8%
Speaking	Count	0	14	20	2
	Row N %	0,0%	38,9%	55,6%	5,6%
Writing	Count	0	18	17	1
	Row N %	0,0%	50,0%	47,2%	2,8%
Vocabulary	Count	1	14	19	2
	Row N %	2,8%	38,9%	52,8%	5,6%
Grammar	Count	3	16	15	2
	Row N %	8,3%	44,4%	41,7%	5,6%

The table shows that the majority of students reported that they are either good or average in almost all the language skills and components. In reading, 94.4% rated their level as 'very/good', and none graded themselves as 'poor' in reading. For listening, 72.2% reported that they have a good level. It is worth mentioning that none of the participants reported that they are very good in speaking and writing. More than a third (38.9%) believed they are good and 55.6% stated they are average, and only 5.6% are poor when it comes to speaking. For writing, 50% reported they are good, and 47.2% are average. In vocabulary, 52.8% think they are average and 40.7% are good. For grammar, 52.7% of students reported they are good and 41.7% rated their grammar as average.

- ***ESP teacher interview***
- When asked about the students' level of proficiency, the ESP teacher reported that his students are of mixed abilities, and their levels vary from beginner to advance; therefore, not all of them are proficient enough to take an ESP course that requires a certain level of proficiency. However, the ESP teacher stated that the mixed ability class is a real challenge because he has to adapt the teaching materials to suit all the levels in one class and design or adapt activities that encourage all the students to engage and participate in learning.

2. Students' real proficiency level

For the purpose of assessing the students' language ability, we used the Placement Outcome test. The graph below displays students' language proficiency level.



In figure 2 above, the results of the test revealed that students have different levels of proficiency which vary from pre-intermediate to advanced level. The proficiency level of all students goes beyond the elementary level. The results of the placement test shown in figure 2 above can be assumed to be the real proficiency level of the students participating in this study.

- ***Research question 2:*** How important is English for agricultural engineering students?

The findings of this research question showed that all the respondents in this study stressed the importance of English for both agricultural engineering students' academic studies and their future career. In addition,

the respondents declared that English is a favourable factor for agricultural engineering students in the job market.

- *How important is English for students to carry out their studies and succeed in their future career?*

Table 2: Students' perceived importance of English for their academic studies and future job

		Frequency	Percent%
Valid	Very important	33	91,7
	Important	1	2,8
	Fairly important	2	5,6
	Slightly important	0	0,0
	Not important	0	0,0
	Total	36	100,0

Table 2 below indicates that all engineering students believe English is important for their academic studies and future career. The majority of respondents (91.7%) think it is very important.

Table 3: Alumni's perceived importance of English for students' academic studies and future career

	Importance of English for students' future studies		Importance of English for students to succeed in their future career	
	Count	Row N %	Count	Row N %
Very important	27	90,0%	18	60,0%
Important	3	10,0%	11	36,7%
Not very important	0	0,0%	1	3,3%
Not important at all	0	0,0%	0	0,0%

Table 3 above shows that all participants agree that English is important for students to continue their academic studies. Around 90% of them claim it is very important. Similarly, the high majority of the participants believe that English is very important for students to succeed in their future job.

Table 4: Subject teachers' perceived importance of English for students' studies and future career

		Frequency	Percent %
Valid	Yes	13	100,0
	No	0	0.0
	Not sure	0	0.0
	Total	13	100,0

Table 4 indicates that the respondents believe English is important for agricultural engineering students to carry out their studies and succeed in their future career. In addition, all the specialty subject teachers confirmed that they assign materials in English in their classes.

- *Do you think English is a favourable factor for students to have access to job market?*

Table 5: English as a favourable factor to find a job (according to alumni)

		Frequency	Percent %
Valid	Yes	24	80,0
	No	5	16,7
	Not sure	1	3,3
	Total	30	100,0

Table 5 above shows that 80% of the participants believe that English is a favourable factor for agricultural engineering students to have access to the job market, while 16% of them claim that English is not, and only 3% were not sure.

Table 6: English as a favourable factor to find a job (Specialty subject teachers)

		Frequency	Percent %
Valid	Yes	11	84,6
	No	2	15,4
	Not sure	0	0,0
	Total	13	100,0

It is apparent from table 6 above that a strong majority of specialty subject teachers believe that English is a favourable factor for agricultural engineering students to have access to the job market. More than 84% agreed while only 15.4% disagreed.

It is worth mentioning that although a strong majority of specialty subject teachers believe that English is a favourable factor for agricultural engineering students to access job market, only few of them provided reasons. The main reasons given are:

- English enables the student to have access to the international job market because it is a global language.
- The majority of companies working in the agricultural field are multinational and use English as their working language.
- The majority of agricultural companies have international partnerships; they import and export products, which compels the staff to speak English.

➢ *Did English help you find your current job?*

Table 7: English as a favourable factor for alumni to find a job

		Frequency	Percent %
Valid	Yes	12	40,0
	No	18	60,0
	Total	30	100,0

As shown in the table 7 above, 40% of the agricultural engineers (alumni) participating in this study stated that English has helped them obtain their current job.

➢ *How often do you use English in your current job?*

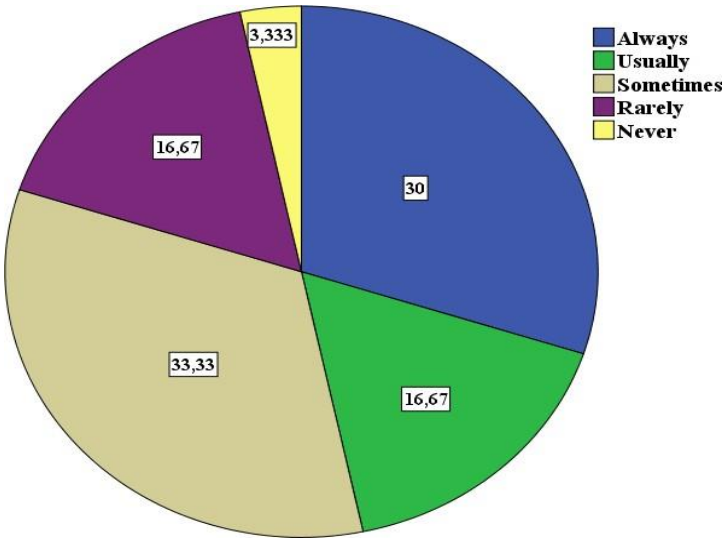


Figure 3: Alumni's use of English in their jobs

Figure 3 above shows that the majority of participants use English in their current jobs. About 30% use it every day, and around 17% use it frequently, while 34% use it from time to time. About 17% rarely use English in their work, and only 3.4% never use it at all.

➢ ***Research question 3:*** What are the English language needs of agricultural engineering students?

The findings of this research question revealed that students are willing to improve all the areas of language without exception with more focus on general vocabulary and speaking/pronunciation. What is more, the results emphasized the need to study field-related terminology.

➢ *What language skills and components would you like to improve?*

Table 8: Students' perception of their language needs

I want to improve my:		Strongly Agree	Agree	Not sure	Disagree	Strongly disagree
▪ **Listening**	Count	15	15	6	0	0
	Row Valid N %	41,7%	41,7%	16,7%	0,0%	0,0%
▪ **Reading**	Count	16	15	4	1	0
	Row Valid N %	44,4%	41,7%	11,1%	2,8%	0,0%
▪ **Writing**	Count	22	10	4	0	0
	Row Valid N %	61,1%	27,8%	11,1%	0,0%	0,0%
▪ **Speaking / Pronunciation**	Count	23	8	5	0	0
	Row Valid N %	63,9%	22,2%	13,9%	0,0%	0,0%
▪ **General Vocabulary**	Count	26	9	1	0	0
	Row Valid N %	72,2%	25,0%	2,8%	0,0%	0,0%
▪ **Agriculture Vocabulary**	Count	22	12	2	0	0
	Row Valid N %	61,1%	33,3%	5,6%	0,0%	0,0%
▪ **Have a good grade in Exams**	Count	9	13	8	4	2
	Row Valid N %	25,0%	36,1%	22,2%	11,1%	5,6%

Table 8 above shows that the majority of students strongly agree that they want to improve all the areas of language but with various degrees of importance. It is apparent that improving general vocabulary and speaking and pronunciation seem to be perceived as most important. Improving writing and agricultural vocabulary comes second with 61.1 % of participants who strongly agree. Listening and reading ranked at the third place of the language areas that students need to improve. Finally only 25% of the students strongly agreed that their goal is to have a good grade in exams, and 22.2% were not sure while 16.7% totally disagreed.

➢ *What language skills and components do you think engineering students need in English?*

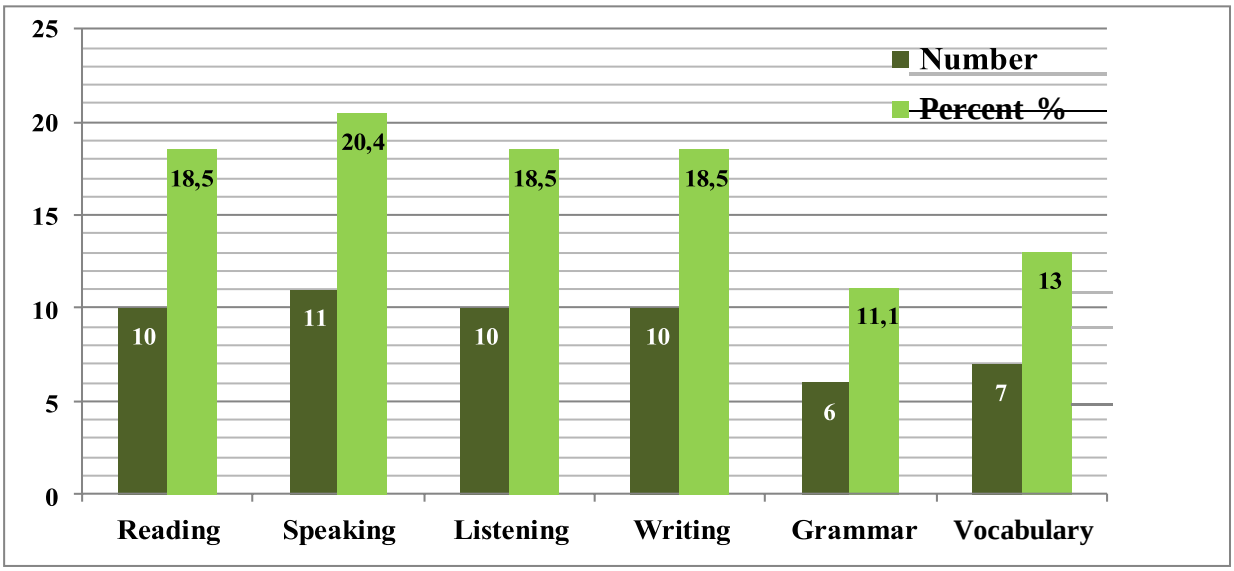


Figure 4: Specialty subject teachers' perceptions on the language skills and components students need

Figure 4 above reveals that specialty subject teachers believe speaking is the most important language skill that agricultural engineering students need, with a percentage of 20.4% followed by reading, listening and writing with the same percentage of 18.5%. Vocabulary comes in the third place with a percentage of 13% while grammar is perceived the least important skill with 11.1%.

➢ *Do you think agricultural engineering students need to study field-related terminology?*

Table 9: Alumni's perceptions of students' language needs

		Frequency	Percent %
Valid	Yes	29	96,7
	No	0	0.0
	Not sure	1	3,3
	Total	30	100,0

As revealed in the table 9 overhead, almost all participants stated that agricultural engineering students need to study field-related terminology. More than 96 % answered 'yes' and only 3.3% were not sure, but none of the participants responded 'no'.

Table 10: Specialty subject teachers' perceptions of students' language needs

		Frequency	Percent %
Valid	Yes	12	92,3
	No	1	7,7
	Not sure	0	0.0
	Total	13	100,0

Table 10 reveals that the strong majority of the participants stated that agricultural engineering students need to study field-related terminology. As for the ESP teacher, the agricultural engineering students, on one hand, need to work on language awareness in terms of grammar, vocabulary, pronunciation, and the four skills (reading, listening, speaking and writing). On the other hand, they need to focus on areas of language which they will need in their future career such as writing CV, cover letter and agriculture-related terminology which is very essential in the workplace.

- ***Research question 4:*** What are the learning preferences of agricultural engineering students?

The findings of this research question revealed that students prefer task-based and project-based approaches to learning English. The most preferred teaching techniques were discussions, presentations, projects, group work and using visual aids; whereas the least preferred techniques were lecturing and question/answer. Additionally, the results also revealed that topics that are related to the field of agriculture are the most suitable for agricultural engineering students. Consequently, the study found that students are willing to take an ESP course that focuses on English for agriculture.

- *Which of these techniques do you prefer to learn English through?*

Table 11: Students' preferred techniques to learn English

	Responses	
	N	Percent %
Lecturing	10	9,9%
Questions/Answers	4	4,0%
Visual Aids	12	11,9%
Group discussions	25	24,8%
Presentations and projects	20	19,8%
Individual work	11	10,9%
Group work	13	12,9%
Other learning methods	6	5,9%
Total	101	100,0%

Table 11 above displays the techniques through which students prefer to learn English. It is apparent that group discussions is the most preferred technique for most of the students (24.8%) followed by presentations and projects (19.8%). Group work is ranked third with a portion of 12.9% followed by visual aids (11.9%). Lecturing and questions/answers are the least preferred techniques for learning English (9.9% and 4% respectively).

- *Are you interested in taking a course that focuses on English for agriculture?*

Table 12: Students' interest to take ESP course that focuses on English for agriculture

		Frequency	Percent %
Valid	Yes, very much	29	80,6
	Not sure	6	16,7
	Not interested at all	1	2,8
	Total	36	100,0

The results, in table 12 above, indicate that the majority of agricultural engineering students have shown a strong desire to take an ESP course that focuses on English for agriculture with a portion of 80.6%. However, 16.7% of the participants were not sure and only 2.8% were not interested at all.

6. Discussion

6.1 Students' level of proficiency

a. Perceived proficiency level

Students' level of proficiency in English is an important element in ESP needs analysis. Li (2014) argues that language proficiency should be considered when doing present situation analysis. The findings related to the students' level of proficiency in this study showed that most students rated their level of English as intermediate or higher. Likewise, the ESP teacher stated that the proficiency level of the students varies from beginner to advanced, and that those with low proficiency level find it difficult to cope with the ESP course that requires a certain level of proficiency, that is above intermediate. However, students were also asked about their perceived proficiency level in the language skills; and thus, almost all of them reported that their level is either good or average in nearly all the language skills and components (Table 1). To identify students' lacks, it is worth mentioning that none of them stated they were very good at speaking or writing. This corroborates the findings of Mharaj's (2017) needs analysis study conducted to investigate computer engineering students at EST Berrechid, Morocco, which revealed that most of students have difficulties with speaking and writing skills. These two productive skills require more attention from the ESP teacher's part when designing and teaching the ESP course by focusing more on classroom presentations, writing reports, participating in workshops and public speaking events etc. (ibid).

b. Real proficiency level

The results of the placement test can be assumed to reflect the real proficiency level of the students participating in this needs analysis study. If we compare this students' real proficiency level to the students' perceived proficiency level (see figure 1, figure 2), we might notice that there is not a considerable difference between the real and perceived proficiency level of the students. About 77.8% of the students had perceived their proficiency level to be intermediate or upper-intermediate while the placement test revealed that 62% actually have intermediate or upper-intermediate level. However, only 8.3% of students perceived their level to be advanced, but the test showed that more than 20% of them have the advanced level. The inconsistency in the students' level of proficiency result in a mixed-ability class which affects the quality of the ESP course and makes it hard for the ESP teacher to design a course that respond to the needs of individual students.

6.2 Importance of English for students' academic studies and future career

The findings indicate that the whole sample of the students believes that English is important for both their academic studies and their future career. This confirms Ait Hattani's (2019) claim that engineering students have shown a great awareness about the importance of English as a dominant language in various fields and that "they are in dire need of this foreign language in order to succeed in their academic life as scientific researchers and in their future professional career as successful employees" (ibid). Similarly, all the alumni participants agree that English is important for students to continue their academic studies and perform well in their future jobs (Table 3). In addition, English can also be a favourable factor for agricultural engineering students to have access to the job market. In this regard, 40% of the alumni stated that English has helped them get their actual job and that the majority of them frequently use it in their actual jobs (Figure 3). This draws attention to the rising importance of English in the job market in Morocco in all fields, including agriculture. On the same token, the entire sample of specialty subject teachers reported that English is important for agricultural engineering students to carry out their studies and succeed in their future career and that it is also a favourable factor for them to have access to the job both in Morocco and abroad. Furthermore, the entire sample of specialty subject teachers claimed that they often assign materials and document in English for their students. This may be attributed to the fact that most of scientific and agriculture-related articles are written in English. Finally, the ESP teacher confirmed the other respondents' claims when he emphasized the importance of English for agricultural engineering students in many ways. First, it is important for those willing to continue their studies to read scientific documents in English. Second, it is essential for those willing to apply for scholarships to pursue MA or PhD studies abroad. Besides, mastery of English enables the engineering students to have more chances to get a job in Morocco and abroad. Third, the universality of English makes it indispensable for future agricultural engineers to cope with the changes of the job market. Accordingly, these findings confirm those of Hattani's (2019) in which students considered English as a requirement for their future professional career and as a necessity in their present academic life in order to understand new concepts and be able to conduct scientific research in their field.

6.3 English language needs of agricultural engineering students

Concerning the English language needs of agricultural engineering students, different perceptions were

identified by the four groups of respondents. The findings showed that the majority of students want to improve all the areas of language but with different degrees of importance. However, the majority of students consider general vocabulary, speaking and pronunciation the most important areas that they want to improve, followed by writing and agricultural vocabulary in the second place, and then listening and reading in the third place. This contradicts Aliakbari and Boghayeri's (2014) findings which ranked reading first, followed by writing, speaking, and listening as the important skills. On the contrary, specialty subject teachers rated speaking as the most important skill followed by reading, listening and writing with the same degree of importance. This goes hand in hand with the findings of Chan's (2001) investigation of the English language needs of students at the Hong Kong Polytechnic University which revealed the importance of speaking, reading and listening respectively. In the same way, Javid (2013) ranked speaking and reading as the most important language skills for the medical undergraduates in the KSA to carry out their studies effectively. However, specialty subject teachers perceived grammar to be the least important skill agricultural engineering students need. This claim contradicts again the perceptions of the ESP teacher who stated that agricultural engineering students, first, need to work on language awareness in terms of grammar, vocabulary, pronunciation, and the four skills. Next, they need to work on areas of language which they will need in their future career such as writing CV, cover letter and agriculture-related terminology which is very essential in the workplace. However, this last point is supported by a strong majority of both the alumni and specialty subject teachers who stressed the need to study field-related terminology for agricultural engineering students so that they can be ready to function effectively in the workplace (Tables 9 and 10).

6.4 Learning preferences of agricultural engineering students

When it comes to the learning preferences of agricultural engineering students, the findings revealed that the most preferred technique for the students to learn English is group discussions followed by presentations and projects, and then comes group work followed by visual aids. This can be justified by the fact that students want to improve their areas of weaknesses, namely speaking and writing skills as shown in the findings of the present study; that is, discussions and presentations target oral communication skills while reports target writing skills. However, lecturing and questions/answers were perceived as the least preferred techniques for learning English (Table 8). Interestingly, students seem to prefer task- and project-based approaches to teaching and learning English. Those are considered among the major communicative approaches that enhance the learner autonomy and language competence of the students. Reimer (2002)

argues that 'group projects and presentations encourage and enhance the interpersonal skills of students and should be emphasised early in the education curricula'. However, concerning the topics of the ESP course, the high majority of students prefer to study the topics that are related to English for agriculture in their ESP course. These findings are supported by the alumni and specialty subject teachers who emphasized the importance of agriculture-related content in the ESP course. Equally, a strong majority of these engineering students expressed their strong desire to take an ESP course that focuses on English for agriculture (Table 12). Hence, these findings ratify those of Dahbi's (2016) study which aimed to evaluate the extent to which General English (EGP) courses offered to engineering students satisfy the job requirements of the prospective engineers. The researcher found that the students voiced negative views about the usefulness of these English courses mainly because they focused only on general contents which are not related to the students' field of study; and they mostly focused on general reading comprehension, and essay writing.

7. Conclusion

This needs analysis study produced very significant findings with regard the language needs of agricultural engineering students. These findings can have some pedagogical implications for the ESP programmes in the Moroccan engineering schools in general and agricultural engineering schools in particular.

One of the major implications of this study is that stakeholders especially officials and policy makers in the ministry of national education should be aware of the critical role of English as a language of science and technology and obviously its importance for the future engineers of all fields, including agriculture. Hence, the English courses currently offered in the Moroccan engineering institutions should be redesigned to suit the twenty-first century education and to comply with the requirements of the job market. Moreover, when designing the ESP courses, the teachers should focus more on the content that is related to the students' field of study. That is, the texts, topics and tasks should be authentic and related to the students' field of study. The teaching methodology also needs to be reconsidered to match the students' needs and interests. More communicative tasks such as debates, group discussions, role-plays and project-based activities should be used to promote learner autonomy.

Although this study generated many significant findings, it actually has some limitations. To begin with, this study is in the first place a case study, which might raise the issue of the representativeness and generalizability of the conclusions. Yin (1984) criticised case studies for providing very little basis for scientific generalisation since they use a small number of subjects (p. 21). Eventually, the number of

participants in this study did not exceed 83 participants. In contrast, case study methods are recognised as tools in many social science studies, and their role in research becomes more prominent in education (Gulsecen & Kubat, 2006).

Finally, as a recommendation for future research, the findings of this study could be used to develop an adequate course syllabus or to design a textbook for agricultural engineering students in Morocco. Moreover, the findings can also inspire future researchers to conduct a comprehensive evaluation of the English courses offered in the Moroccan engineering schools for the aim of designing a unified curriculum or syllabus.

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