Universidad Nacional de Córdoba

Facultad de Lenguas

Maestría en Inglés

Orientación en Lingüística Aplicada

Tesis de Trabajo Final:

A needs analysis case regarding the use of English of Farming Engineering Students of the School of Agronomic Sciences of the National University of Córdoba, Argentina

Tesista: Prof. Andrea Belmonte

Directora: Mgter. Patricia Lauría de Gentile

Córdoba, diciembre 2018.

Abstract

This study presents a needs analysis (NA) carried out at the School of Farming Engineering (FCA) of the National University of Córdoba (UNC) to identify the present and future needs of the students of the FCA in terms of the use of English required during their university years and after graduation in their professional context in order to redesign an ESP course. To obtain this information, questionnaires were administered to 203 students and 90 teachers, among which there were subject matter (SM) teachers and ESP practitioners. Eleven interviews were also conducted with authorities of the FCA, disciplinary subject teachers, ESP practitioners, one graduate as well as with Farming Engineers working in a multinational company of the agribusiness sector and in a research and extension governmental agency. Also, a means analysis was carried out to supplement the information gathered. The results showed that there was an almost unanimous agreement that reading was the most important skill for undergraduates and graduates in this context. However, there were some differences in perception between students and teachers, especially regarding the importance given to the other skills during the programme of studies and in the sub-skills more frequently used by students in academic life. In contrast, teachers and students mostly agreed on the sub-skills that graduates of the FCA must develop to perform well at the workplace. Based on the results of the NA and the means analysis, the redesign of the existing ESP course is recommended together with the creation of an extra-curricular course to further develop reading skills.

Index

Index of tables and figures

Figures

Tables

I. INTRODUCTION

The importance of learning a foreign language cannot be overestimated in undergraduate or graduate programmes of studies at university level. English, the language of science and technology, is today an essential part of many programmes of studies worldwide and in Argentina. The National University of Córdoba (UNC) and the School of Farming Engineering (FCA: for its initials in Spanish "Facultad de Ciencias Agropecuarias") are not the exception.

The present study, which was carried out in in the context of the FCA, intends to shed some light on the language needs regarding the use of English of Farming Engineering students and to provide useful information to improve the current language course taught during the program of studies.

This chapter will describe the reasons that motivated this study, the context where it was designed and carried out and the theoretical framework within which the present research is set. Then, the objective of the study and the research questions that guided it will be presented. Similarly, a brief overview of the methodological design will be described as well as the expected outcomes. The last section will summarise the contents of the remaining chapters.

This research is set within the theoretical framework of the fields of teaching English for Specific Purposes (ESP), English for Academic Purposes (EAP), and more precisely within the area of Needs Analysis (NA). With the worldwide expansion of English as an International Language (EIL) these three areas of knowledge have witnessed a rapid growth in their body of research on very specific teaching and learning contexts. Needs Assessment, in particular, has provided the tools for researchers and practitioners to identify what learners' needs are and what is expected of them in each particular context. It has also guided course designers to make informed decisions oriented to the

development of new courses or the improvement of existing ones. It is in the context of the theoretical framework provided by these disciplines that the present study is set.

The motivations for the present study are to be found in contextual, professional and personal reasons. On the one hand, motivation comes from the ever-increasing demand of the labour market for professionals with not only solid knowledge of their specific field of expertise but also with high qualifications in instrumental disciplines, such as Information Technology and Foreign Languages, especially, English. On the other hand, the inspiration springs from observations and interventions carried out during my six-year experience as a teacher of the subject *Idioma* of the Farming Engineering undergraduate programme the FCA, UNC, Argentina. In this specific context, the subject *Idioma*, hereinafter called English, is aimed at the development of reading comprehension skills of basic level scientific and technical texts in the domain of Agronomic Studies. These two reasons, coupled with my personal interest in the efficacy of NA research to improve the adequacy and quality of language courses in general, and ESP and EAP courses in particular, have driven the present research.

The aim of this work is to identify the present and future needs of the Farming Engineering undergraduates of the FCA in terms of the use of English required in both the academic context they are immersed in as students and the professional contexts where they will be involved in as future graduates. This study is guided by five research questions:

1. Which are the present and future language needs regarding English of the Farming Engineering students of the FCA as perceived by the different agents of the academic and professional community of the institution?

2. According to the different sources, which macro-skills (reading, writing, listening and speaking) are deemed to be a priority in the context previously described?

3. Which sub-skills are more frequently used by students and graduates in academic and professional life?

4. Which genres and text types are students more likely to be faced with in this context?

5. How can the needs expressed by the different stakeholders in the context of the Farming Engineering programme of studies at the FCA be prioritised?

In order to obtain this information, different sources were used, namely, students and teachers of the program, authorities and graduates working in companies of the agribusiness sector and in research and extension agencies with which the FCA has collaboration agreements. Also, different instruments of data collection, namely, questionnaires and interviews were implemented. The data obtained was analysed both quantitatively and qualitatively.

It is expected that this work should provide updated information about the needs of Farming Engineering students of the FCA regarding the use of the foreign language in their current academic and future professional lives. Consequently, the findings of this study are expected to result in the implementation of adjustments to the curricular design of the subject English.

As a further step, and based on the findings of this study, informed pedagogical guidelines for curriculum design for the subject English will be recommended. The results of the present study may also provide useful information for other NA researchers carrying out similar studies in similar academic contexts.

The remaining part of this study has been divided in four chapters. Chapter 2, Theoretical Framework, will lay down the theoretical foundation for this research and will present the literature review. Chapter 3, that is, Methodology, will describe the instruments used, the participants involved, the criteria used for population sampling, and the quantitative and qualitative treatment of data.

Chapter 4 will deal with Results. This section will present the information obtained from the questionnaires and the interviews as well as the results of the *means analysis*, that is, the analysis of contextual factors. Chapter 5, Discussion, will be devoted to the interpretation and discussion of the findings, the criteria used for the prioritisation of the needs found and the pedagogical implications of the study. The suggested guidelines for the curriculum design will also be presented in this chapter.

The Conclusions of the study will be found in Chapter 6 where key aspects of the theoretical framework, the objective and the general findings of the study will be summarised. Similarly, this section will present the final conclusions and reflections regarding the methodological design used and the prioritisation of needs in the context being studied. Some final thoughts about the advantages of the use of NA as the basis for curriculum design of ESP courses and the potential impact of the present research will be presented.

II. THEORETICAL FRAMEWORK

2.1. Introduction

This chapter will introduce the theoretical framework that supports the present study and it will place this research within the fields of the teaching of English for Specific Purposes (ESP), more specifically of English for Academic Purposes (EAP). Both fields will be defined and characterised and a brief account of their evolution will be provided in order to throw some light on the changes that they have undergone since their inception.

Section 2.2 will discuss different perspectives regarding what ESP is and its characteristics while section 2.3 will refer to the history of the field and the issues and discussions that are shaping its future. The classification of ESP courses will be described in section 2.4 together with the controversies regarding this taxonomy, which arise from the fluid nature of ESP courses and the range of contexts where they are taught.

Section 2.5 will define EAP as an independent discipline in the field of teaching of Languages for Specific Purposes (LSP) and will introduce a brief account of its birth, growth and rapid expansion worldwide. This section will also refer to how research and a better understanding of the academic contexts in which EAP courses take place have changed the theoretical and pedagogical approaches favoured since the beginnings of EAP. The contributions made to the field by genre analysis and corpora studies, the issues that are currently being debated, as well as those topics that appear to be shaping the future of EAP, will be presented in section 2.6 together with different views on what lays ahead.

The concept of Needs Analysis (NA) and the evolution of this area of knowledge, the impact of ethnography on methodological issues, and the influence of critical views on

ESP and EAP will be discussed in sections 2.7, 2.8 and 2.9 respectively. A brief reflection on how these factors affect needs analysts' decisions in the prioritisation of needs will be presented at the end of the section.

Finally, the literature review in section 2.10 will introduce a group of paradigmatic NA studies to illustrate the on-going nature of the NA process, the relevance of methodological triangulation and the importance of learners' views about their own language and learning needs. Similarly, a group of studies carried out in higher education contexts and with certain characteristics in common with the present research study – in terms of research questions, methodology, context and subjects involved – will be discussed highlighting their most important findings and their relevance for this study.

2. 2. ESP: Definition and characteristics

The concept of ESP has become common knowledge within the domains of Teaching English as a Foreign Language (TEFL) and of Teaching English as Second Language (TESL). According to Bueno Velazco and Hernández Más (2002), it can be described as a field of specialty of the area of TEFL. Definitions of ESP have been drawn by different authors attending to the particular characteristics of the field. For the purpose of this study, the terms approach, discipline and field would be used interchangeably to refer to ESP.

Hutchinson and Waters (1987) recommend that ESP should not be considered as a type of language, a methodology or a product in itself, but rather as an approach to the teaching of a foreign language whose foundations lie on learners' conscious needs for learning the language. According to these authors, the learners' needs to study a language are shaped by the reasons why they pursue the task of studying it, which are, in turn, determined by their academic or professional purposes. The notion of students' needs as a key aspect of ESP is a defining feature of the field as all later characterisations of the approach have considered it crucial.

One of these conceptualisations of ESP is the one provided by Strevens (1988), who defines the field by certain absolute and variable characteristics. According to this author, ESP courses are designed to meet students' needs, they are related in content to particular disciplines and activities, and they are centred on language – in terms of syntax, lexis, semantics, etc. –that is appropriate to the disciplines the courses serve.

Robinson (1991) also puts the emphasis on learners' needs as a cornerstone of ESP. Her definition of the field is based on two main criteria and a number of other characteristics that tend to hold true for ESP. The first criterion makes reference to the fact that ESP is usually goal directed and that it arises from a needs analysis whose aim is to identify "as closely as possible what exactly it is that students have to do through the medium of English" (p. 3). The characteristics she proposes are that ESP courses are bound to a certain limit of time, and that they are taught to adult students with a homogenous degree of experience or knowledge in their field of expertise.

Although Dudley-Evans and St. John (1998) acknowledge the validity of the definitions and characterisations portrayed above, the authors claim that they have their weaknesses. As an example, the authors point out the notion that ESP courses are always related in content to the discipline they serve could be misleading. As an example of this, they discuss the case of English for Academic Purposes (EAP) that may be taught simultaneously to people coming from different disciplines in university contexts. In EAP whether the content is directly related to the different disciplines students study or not is not as important as the fact that the courses should draw upon the basic problem-solving skills that are required in the academic world (Widdowson, 1983 as cited in Dudley- Evans & St. John, 1998).

Working along the lines of the definition provided by Strevens (1988), Dudley-Evans and St. John (1998) place ESP within a more general movement of teaching Language for Specific Purposes (LSP). They characterise ESP as having a number of absolute and variable characteristics. The absolute characteristics include the fact that ESP is aimed at meeting students' needs and that it makes use of the methodology and activities of the discipline or disciplines it serves. By methodology, the authors refer to the type of interaction that is established between teachers and students, which, according to the level of specificity of the course, will vary from that of General English (GE) courses.

The more specific the course is, the more the teacher becomes a language consultant who enjoys "equal status with the learners who have their own expertise in the subject matter" (Dudley-Evans & St. John, 1998, p. 4). The authors' idea of how specificity affects the nature and classification of an ESP courses leads to the introduction of the concept of the ESP-GE continuum that solves the constraints that classification trees impose. This notion will be discussed later, when describing course classification. Another absolute characteristic is the fact that ESP centres on the language, the skills, the discourse and genres which are appropriate to the target fields. Among the variable characteristics, these authors mention the fact that ESP may be related to or be designed to cater for different disciplinary fields, that it may use a different methodology from that of GE courses and that it tends to be aimed at the teaching of adult learners or secondary school learners. One last characteristic is the fact that ESP is generally designed for intermediate or advanced students although they acknowledge that it can be used with beginners.

Paltridge and Starfield (2013) define ESP as the teaching and learning of English as a second or foreign language where the aim of the learners is to use the language in a particular domain. Working along the lines of previous definitions of ESP, especially Dudley Evans and St. John's (1998), they also identify certain features that characterise the approach. One recurrent key feature is the fact that ESP courses are oriented by the students' needs in terms of the language, skills, and genres which are appropriate of the activities and tasks they need to carry out in English. The authors also identify other features that tend to be present in ESP courses such as the fact that ESP students are typically, but no always, adult learners, who are usually organised in homogenous classes in terms of goals but not always in terms of language proficiency.

The following section will present the historical, economic and social factors that paved the way for the birth and growth of ESP and what the future may bring for the discipline.

2. 3. ESP: Evolution and future directions

The history of LSP, and more specifically of ESP, can be traced back to the post World War II period when, as a consequence of the end of the war, the world witnessed drastic social and economic changes (Upton, 2012). The need of the countries involved directly in the conflict to rebuild what was left lead to an exponential development of the multinational business and international trade, which, coupled with the efforts of the United Nations for peaceful internationalization, created the perfect conditions for the birth of the discipline (Hutchinson & Waters, 1987). These two authors identify the beginning of the rapid expansion of English as an International Language (EIL), and consequently of ESP, as being directly related to the oil crisis in the 1970s during which a large amount of money and knowledge was flowing primarily from Great Britain and the USA to oil-rich countries. The idea that ESP grew inevitably and naturally out of economic and political circumstances is not shared by all ESP historians.

From a critical stance, the dominance of ESP in the field of LSP worldwide is explained by a process of conscious planning on the part of governments, industry, foundations and academic institutions to shore up markets in developing countries (Benesch, 2001 as cited in Upton, 2012). This political and cultural perspective given to the origins of ESP is in line with the growth of critical approaches within LSP that will be discussed later. Nowadays, controversy and debate in ESP are centred on, among other issues, the level of specificity of language courses and power relations in learning environments (Upton, 2012).

The future of ESP presents exciting challenges for researchers and practitioners, especially in areas such as critical perspectives on LSP and the increasingly multimodal nature of language interactions in both written and oral discourse, the issues of power and accommodation between native and non-native speakers where English is used as a lingua franca, among others (Upton, 2012). Belcher (2013) is optimistic about the future of ESP and claims that the growing body of research in the field appears to be helping the discipline in the construction of "a knowledge base facilitative of pedagogical praxis", which, rather than simply focusing on pragmatically helping students of

English meet someone else's expectations, helps them to feel ownership of the language that increases their access to the world (p. 546).

2. 4. Classification of ESP courses

One important aspect of ESP as a field is the classification of courses according to the purposes they serve and the contexts they are designed for. The main division is that of English for Academic Purposes and English for Occupational Purposes (EOP). EAP is defined by Hamp-Lyons and Hyland (2002) as the field of language research and instruction that has its focus on the specific communicative needs and practices of particular groups in academic contexts. On the other hand, EOP refers to the research and instruction that is not for academic purposes and is oriented to professional practice and vocational purposes for non-professionals in work or pre-work situations (Dudley Evans & St. John, 1998). As an example of this distinction, the authors refer to the differences between an EAP course for medical students and an EOP course for practicing doctors in a hospital setting. Robinson (1991) presented the distinction between EAP and EOP as a tree diagram where the places where the courses take place are discriminated. See figure 1.
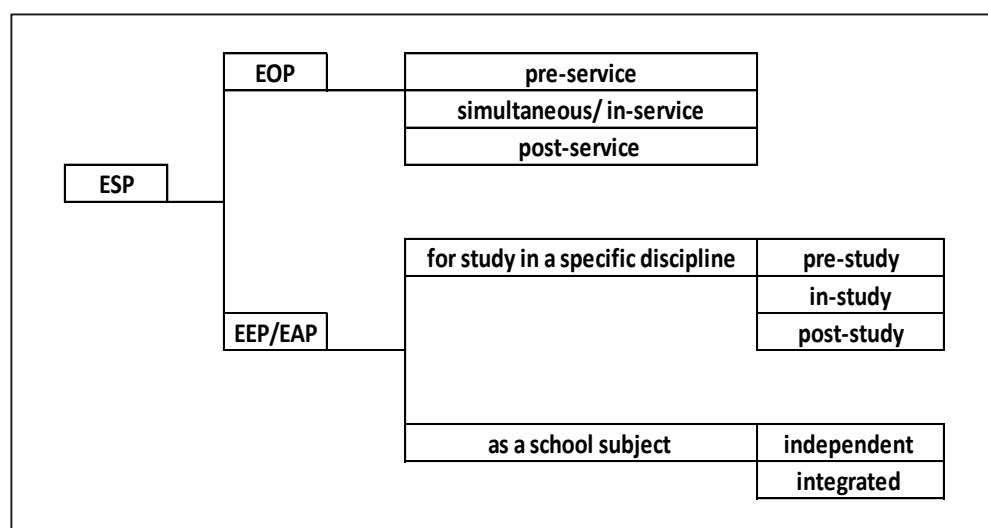
Figure 1. ESP tree. Robinson (1991, pp. 3-4).

The physical setting where the course will take place is crucial as it affects the degree of specificity a course will have. For example, a pre-experience EOP course will leave aside very specific work-related tasks as students may not be familiar with them, while in-service courses are more likely to deal with these specific tasks in an integrated way (Dudley-Evans & St. John, 1998).

According to Dudley-Evans and St. John (1998) the use of classification trees like the one proposed by Robinson (1991) creates several problems when trying to describe the fluidity of ESP courses and the overlaps that take place between some of these courses and others more oriented towards GE. To overcome this limitation the authors suggest the use of a continuum that runs from General English courses to very specific ESP ones. At one end of the continuum, they place traditional General English courses for beginners and at the other end, highly specific and tailored courses provided in academic or workplace settings.

The present study can be framed within the realms of EAP, whose characteristics, evolution, current issues and future directions will be discussed in the following section. Similarly, the impact of the contributions made to the discipline by genre studies, corpus linguistics and critical views on the theoretical background and pedagogical practices of the field will be highlighted.

2. 5. EAP: Definition and evolution

EAP is defined as the discipline concerned with researching and teaching the English needed by those individuals who use the language to perform in academic settings (Charles, 2013). The author argues that although most EAP research has been carried out in university contexts and with non-native speakers of the language (NNSE), the term is broad as it encompasses the needs of secondary school students who must read textbooks and write essays, as well as those of academics who must give lectures and write research articles in English. In the author's own words, "EAP has thus become a

major research field in its own right, responding to the demands of a widening circle of users" (p. 137).

The origins of EAP can be traced back to the early 50s and 60s when the British Council started funding programmes for international students to study in the UK and when a growing number of foreign students started to enrol in American universities (Hamp-Lyons, 2011). The insertion of non-native speakers of English in these contexts called for the implementation of support language courses to help students succeed in their studies. These language courses marked the beginnings of EAP as a discipline in its own right.

Among the reasons for the growth of the discipline are the expansion of English as the language of teaching and learning and the process of internationalisation and globalisation of higher education. These factors have reshaped the demographics of the student population in need of EAP courses making it more diverse in its ethnic, cultural and linguistic backgrounds, which has, in turn, posed new major challenges for university academic staff (Hyland, 2006a). The existence of these challenges also hold true for students who are increasingly expected to write papers in English to graduate and publish (Hyland, 2018).

The development of EAP has been anything but uncontroversial as the discipline has been the arena of opposing ideas about students' needs in EAP, materials development and the importance of study skills in EAP, among others. These discussions are to be seen as positive signs as they speak of the complexity and the promise of this area of applied linguistics (Upton, 2012).

From its early days, EAP has largely been shaped by two main practical areas: Needs Analysis (NA) and Materials Development, and with the passing of time, both fields have reached new levels of complexity. On the one hand, Needs Assessment in EAP has become more focused, it has incorporated a wider repertoire of data collection instruments and analytic methods and it has expanded its areas of interest to more geographically diverse contexts of education (Hamp-Lyons, 2011). Similarly, EAP materials have also become increasingly sophisticated and, according to the author, one sign of this is "the predominance of in-house development targeting EAP materials to

the language levels, cultural backgrounds, etc. of the student groups being received into the particular institution" (p. 92).

The early days of EAP were also marked by the importance given to study skills by EAP practitioners. These skills can be defined as the abilities, techniques and strategies which are used when reading, writing and listening for study purposes (Richards, Platt and Platt, 1992 as cited in Jordan, 1997). The main idea of the study skills approach is that there are common reasoning and interpreting processes underlying communication, which help learners to understand different kinds of discourse (Hyland, 2006a).

Although the validity of the claim of the facilitating role played by strategies in language learning remains unaltered even today, the study skills approach started to face challenges in the light of new knowledge and a better understanding of the heterogeneity of contexts where EAP courses took place.

These challenges sprang mainly from the complexity, diversity and specificity of the tasks and genres that students encountered in their academic lives. In Hyland's words (2018), teachers then "drew the conclusion that the best way to prepare students for their learning was to provide them with an understanding of the assignments they would encounter in their academic classes" (p. 19). This realisation lead to the development of a more context-sensitive approach in the field of EAP mostly focused on the target genres favoured in particular disciplinary contexts.

This new approach, which was later called disciplinary socialisation approach, implied a drastic shift in perspective in EAP in which the focus of the field moved from strategy instruction towards the study of the target discourse communities, the genres that circulate in them and the communicative situations their members are usually involved in. Hyland (2006a) points out that this approach, which entails an integrated view of learners, language and context, has generated a positive re-appraisal of the importance of EAP in academic contexts and has placed it "at the heart of university teaching and learning" (p. 20). The notion that for students to succeed in a discipline they must learn its discourses has also challenged the idea that academic literacy is a single, overarching set of value-free rules and technical skills (Hyland, 2018).

From a more critical stance, a paramount contribution to EAP has been made by *academic literacies,* a term first introduced by Lea and Street to refer to the study of the social contexts surrounding EAP in terms of power balance, identity and meaning making (Lea and Street, 2006 as cited in Charles, 2013). In Hyland's words (2006a) the academic literacies approach is concerned with "the ways language used in particular circumstances is influenced by the social structures, the institutional and disciplinary ideologies and the social expectations which surround those immediate circumstances" (p. 23). The author claims that although academic literacies share with the disciplinary socialization approach the concern for the influence of the context on literacy practices, this new approach puts the emphasis on how disciplinary and cultural contexts shape learners' experience in the academy. This critical view on EAP, which extends to other areas of LSP, proves to be of vital importance as a theoretical framework to account for the diversity of academic experiences of the ever expanding student population in EAP courses, especially in geographically peripheral contexts.

2. 6. EAP: Contributions, current issues and future directions

Other significant contributions have been made to the field of EAP by such areas as genre studies and corpus linguistics studies. The knowledge bestowed to the field by different genre perspectives, namely, the New Rhetoric School, the ESP tradition and the perspective based on the tenets of Systemic Functional Linguistics, proved to be extremely valuable and productive in the pedagogy and analysis of EAP (Charles, 2013).

At the pedagogical level, on the one hand, genre instruction has allowed EAP teachers to model and teach the linguistic and rhetorical features that are desirable in academic discourse in particular disciplines. Using genre exemplar texts to show learners the repertoire of choices and constraints they can face when writing is both facilitating and reassuring for students (Hyland, 2018). On the other, genre studies have also opened interesting issues regarding the dichotomy between convention and innovation in the

teaching of writing. While acknowledging that genre pedagogies may be subjected to criticism for being uncritical reproductions of the set values of the disciplines, the author claims that knowledge of genres is an essential pre-requisite for an informed understanding of what is considered prestigious discourse within a community. Regarding this issue, and form a more critical stance, Christie argues that learning about the genres of one's culture is also part of developing the necessary ability to change it (Christie, 1987 as cited in Hyland, 2018).

Closely linked to the contributions made by genre analysis, are those brought to the field by corpora studies. Over the last 20 years, corpora have been used as sources of data in EAP research and pedagogy and the application of corpora driven approaches have guided research on areas such as generic structure, text pattern recognition and move signalling, among others (Charles, 2013). The richness of the data provided by oral and written corpora can help EAP practitioners to better understand the texts they teach and students to become more aware of the linguistic options available to them when communicating in the target disciplines (Hyland, 2018).

Charles (2013) points out that the merging and blending of the contributions made by critical stands in EAP, corpora studies, and genre analysis are very positive developments that may be expected to continue to grow in the future, which will lead to a gradual widening and deepening of our knowledge in EAP. Similarly, Hamp-Lyons (2011) also shares this positive outlook on the future of EAP. The author suggests that EAP as a discipline, as a research activity and as an orientation to daily problem-solving in teaching, materials development and curriculum design is proving to be a highly robust, adaptable, and expansive field, which is able to make a "tremendous contribution to understanding of the varied ways language is used in academic communities" (p. 101).

To conclude, the rapid emergence of new technologies and the creation of new means of communication and social media promise new challenges for EAP research and pedagogy as well as new tools for EAP researchers to study these challenges. Also, the now widely accepted notions that EAP is a context-bound discipline and that it entails the need for a deeper understanding of the specificity of the different academic settings

and their conventions continues to open doors to research attempting to describe the experiences of more diverse groups of learners in highly specific contexts.

In the light of these trends in EAP, several areas of research in the discipline are witnessing significant growth and expansion, one of them being NA. The following section will define and characterise NA according to different perspectives and will describe its evolution in the field.

2. 7. Needs Analysis: Definition, characteristics and evolution

One key concept within ESP is that of Needs Analysis or Needs Assessment (NA) which could be defined as a the use of systematic means to acquire information about the specific skills, texts, linguistic forms and communicative practices needed by a particular group of students (Hyland, 2006b). The significance of NA cannot be overstated as it directly influences decisions concerning curriculum development, materials design and course evaluation, among others. There is today a consensus on the on-going and cyclical nature of NA, the centrality of learners' needs in course development and the importance of the contextual factors in which the courses will take place.

Needs Analysis (NA), together with course and syllabus design, teaching, learning and evaluation are all key stages of an ESP course (Dudley-Evans & St John, 1998). These stages are all interconnected and they involve on-going processes. While NA is defined as the process of establishing the what and the how of a course, evaluation is the process of establishing its effectiveness. This idea is shared, among others, by Basturkmen as she regards NA and specialised discourse investigation as the basis for ESP curriculum development (Basturkmen, 2010 as cited in Flowerdew, 2013).

Hyland (2006a) expands on the views of NA to encompass "the techniques for collecting and assessing information relevant to course design" (p. 73). Another valuable contribution to the theoretical development of NA is his conceptualisation of

need as an umbrella term which includes several aspects that range from students' goals, backgrounds and language proficiency, to their motivations for taking a course, teaching and learning preferences, and the situations in which they will communicate. This procedural and comprehensive view of needs was not always favoured in the field as it is the result of the many years of evolution of ESP research and practice.

As different approaches to teaching and learning evolved during the decades following the inception of ESP as a field of applied linguistics in the 1960s, so did the notion of needs and NA. It was not until the 1970s that the idea of NA entered the field as a concept (Flowerdew, 2013). Before that time, need analyses were mainly based on teachers' intuitions and sometimes informal analyses of what students expressed they needed (West, 1994 as cited in Flowerdew, 2013). During that decade the Council of Europe proposed a model for describing the language proficiency needed by professionals working in different countries of what at the time was the European Economic Community (EEC). It was then that Munby (1978) published his influential book on communicative syllabus design which addressed the needs of professionals in the EEC in terms of what they had to do with the language and the skills to be developed. The author also refers to NA and he addresses both, the target situation analysis (TSA), that is, what students will be required to do with the foreign language in the target situation, and the present situation analysis (PSA).

In the 1980s, a significant contribution to the field of ESP, and NA, was made by Hutchinson and Waters (1987). The authors distinguished language needs from learning needs, a distinction which had not been considered before. Learning needs are those related to what learners need to do in order to learn. Target needs were classified as *necessities,* that is, the skills learners need in order to perform effectively in the target situation, *lacks* or the gap between what they know and they need to know, and *wants,* that is, the desires learners have regarding their learning. According to the authors, learners' perceived needs may coincide or not with those of other stakeholders in the decision-making process.

Another key concept introduced is that of means analysis as supplementary to NA (Holliday and Cooke, 1982 as cited in Dudley- Evans & St. John, 1998). Means analysis is a process that pays attention to "the classroom culture and the management of

infrastructure and culture" (Holliday and Cooke, 1982 as cited in Dudley-Evans & St. John, 1998, p. 124). In means analysis, contextual factors are not just "viewed as negative constraints but as relevant features" of the environment that must be considered to make the best decisions for particular learners in particular contexts (Dudley-Evans & St John, 1988, p. 124). These authors note that means analysis is the acknowledgement that what may work perfectly for one context may not do so in another. This contextual perspective, in turn, calls the researcher to reflect on how to prioritise needs.

Dudley-Evans and St. John's work (1988) has been quite influential for ESP researchers and practitioners. Their comprehensive NA model encompasses information about students' background that may affect their learning, such as language learning experience, cultural experience, etc. and their wants and needs together with crucial information about TSA. In their model, while the target situation is described as the tasks and activities learners are required to use the language for, the present situation is depicted in terms of students' current skills in language use and the gaps to be filled (lacks), as well as their learning needs. Their NA model also includes language information about the target situation based on linguistic, discourse and genre analysis. The authors also suggest the use of means analysis to tap into contextual information which is of importance in ESP course design. In Dudley-Evans and St. John's view, and in accordance with Hutchinson and Waters' (1987), the emphasis that once was put on the target situation has, since then, been put on the learner as the centre of NA and language teaching and learning.

Another significant introduction to the field of NA has been the use of tasks as the unit of analysis, as proposed by Long (2005). The author considers that using job descriptions, performance standards and tasks required to be fulfilled in a target situation can lead the researcher to obtain reliable information from participants who are not language experts. This notion is in line with the ideas brought by ethnography to EAP and with the importance given to methodological triangulation and field data collection in NA studies.

The following section will address these issues and will present different arguments for the use of ethnographic methods in context-specific studies.

2. 8. Current trends in NA

The growing impact of ethnography in the field of ESP and EAP has proved to be of great importance in NA. The adoption of ethnographic techniques allows the researcher to obtain information directly from the physical settings where a particular discourse community develops and from participants in the target community by the use of observation protocols or interviews, among other instruments.

This influence of ethnography in the field goes hand in hand with the widespread acceptance among needs analysts of the importance of the triangulation of methods and sources in NA processes. The use of different sources, such as published and unpublished documents, learners, teachers, domain experts, ESP specialists, etc. can give the researcher a clear picture of the context under scrutiny. Similarly, researchers can use a wide range of tools for data collection, such as surveys and questionnaires, structured and unstructured interviews together with participant and non-participant observation, among others (Long, 2005).

In line with this view, Hyland (2006a) also makes a strong case for the adoption of ethnographic techniques of data collection in the field of EAP research. The author especially suggests using questionnaires and interviews together based on what he considers to be their complementarity. He argues that while questionnaires can be applied to large groups of people to collect large amounts of easily analysable data, interviews, on the other hand, offer more flexibility and "greater potential for elaboration and detail" (p. 262). The information obtained from the application of ethnographic methods coupled with the analysis of the texts of a particular community can give the researcher a clear and comprehensive view of the situation explored (Hyland, 2006b).

Although there are other ethnographic methods that can be used in NA, such as the analysis of students' journals and diaries and focus group discussions, according to Flowerdew (2013) these methods have their shortcomings. The author claims that the main criticism towards the use of these methods is that the results obtained may not be

generalisable to other learning contexts. However, one may argue that, in the light of the view of NA as a highly context specific area of research, generalisability, even if desirable, is not necessary. The information gathered by the use of these methods may, however, be useful to other researchers in similar settings. Similarly, the methodological designed used in one study may serve as a reference for other researchers to devise their own in order to approach other academic contexts.

The next section will refer to how critical perspectives on EAP are affecting researchers and practitioners' views on NA and how these perspectives problematise decision-making in NA studies.

2. 9. Critical perspectives in NA

The move towards a more ethnographic perspective on NA has introduced drastic changes in the discipline in terms of how learners and their contexts are seen in NA processes. These changes have raised questions regarding the role of power relations and learners' rights within discourse communities. This perspective was largely influenced, among others, by the work of Benesch on critical EAP (Benesch, 2001 as cited in Flowerdew, 2013). The author problematised the notion of NA and extended it to include, what he termed *rights analysis*, which is a notion that takes into consideration the role of the learners not only as participants of discourse communities but as possible agents of change and resistance in the classroom and beyond the educational context (Benesch, 2001 as cited in Starfield, 2013). In this light, the concern is that NA should not marginalise learners and their views on their learning to privilege only those of the institutions in which NA is undertaken (Upton, 2018).

Critical perspectives on NA also pose interesting questions regarding contextual factors and force the researcher to take a stance regarding not only the methods and techniques to use in NA, but also whose voices to consider and, most importantly, whose views to favour when prioritising needs. Although these decisions are both in the hands of the researcher and of stakeholders, and sometimes it is difficult to reconcile different views,

there are choices to be made by the researcher within the continuum ranging from total pragmatism to a more critical stand.

In the light of the theoretical framework presented so far, the next section will describe a group of paradigmatic NA studies in which the recursive and on-going nature of NA processes, the significance of the representation of learners' views on their own needs and the importance of the triangulation of methods and sources are highlighted. Also, a selection of NA studies in higher education contexts that share certain characteristics with the present study -in terms of participants, methodology and/or guiding research questions- will be presented. As it was expressed earlier, the specific contextual nature of any NA research does not leave room for extensive generalisability of results to other, even if similar, academic contexts; however, the studies here presented illustrate the current theoretical tenets of NA, raise questions for NA research and provide useful information that can serve as reference for this and other NA studies.

2. 10. Literature Review

This section of the literature review will present some influential studies in the field of NA, namely Jasso-Aguilar's (1999) on the language needs of Waikiki hotel maids, Bosher and Smalkovski's (2002) on the NA and subsequent curriculum design of a language course for immigrant students in the healthcare field, Basturkmen's work (1998) on the NA carried out at Kuwait University and Cowling's study (2007) about intensive courses based on NA in a top Japanese heavy industry company.

Over the past twenty five years, numerous studies have been carried out in the field of NA, both in academic and professional contexts. Among the most paradigmatic of these studies is Jasso-Aguilar's (1999) on the language needs of Waikiki hotel maids. Her research exposed the benefits of the use of ethnographic techniques in NA and the importance of triangulation. Results showed the difference in views regarding housekeepers' linguistic needs as perceived by the maids themselves and by other members of the hotel staff and managers. In the study, the researcher used, together

with questionnaires and unstructured interviews, participant observation, as she was trained as a maid and joined in their tasks while they were performing their daily chores.

The observations together with the data gathered by the other collection instruments showed that while the actual language maids had to use at the tasks they performed was very limited, the hotel management deemed necessary to provide more English training as part of a strategic plan to focus more on customer service and satisfaction. Jasso-Aguilar (1999) claims that the use of ethnographic techniques and data triangulation allows for the learners' voices to be represented in the final stage of NA, prior to course design. The findings of this paradigmatic NA case study evidenced the obvious clash between insiders' needs and institutional mandates and pose questions regarding the importance of the representation of learners' opinions in NA.

Another study that confirms the importance of triangulation is Bosher and Smalkovski's (2002) on the NA and curriculum design of a language course for immigrant students in the healthcare field. In the study, as in Jasso-Aguilar's (1999), a variety of instruments such as interviews, questionnaires, and observations were used to determine the linguistic needs of a group of ESL students pursuing a degree in Nursing at the College of St. Catherine in Minnesota, USA. The interviews with faculty members and the observations carried out in labs and clinical practices showed that ESL students exhibited, among other language related difficulties, lack of confidence when interacting with patients, colleagues and supervisors, understanding step-by-step directions for medical procedures and communicating effectively by means of the correct use of paralinguistic features, such as stress, volume of speech and intonation.

Based on the findings of this NA, a very specific course was designed to respond to students' greatest difficulty, namely, communicating effectively with patients and colleagues within healthcare settings. The course, with a total of 28 hours of instruction time, was first piloted in the spring of 1998. Students who enrolled in the course were given two questionnaires to find out about their learning needs and their subjective needs and wants regarding the course. That information, together with students' English proficiency, which was determined by means of placement tests, was later used to tailor the course content and methodology to the needs of the learners.

At the end of the semester, the course was evaluated by students by means of a survey with questions enquiring about how much they thought they had learnt and how useful the course was. The results of that survey showed that students believed the course had met their needs. In the implications of the study, the importance of being flexible as regards materials and methodology once the course has started is highlighted. Also, the need for on-going needs analysis and formative evaluation is stressed; the possibility to identify new or previously undetected needs allows for improvements in the content and the methodology of the future implementations of an ESP course.

One good example of the importance of the periodical re-assessment of needs and of triangulation of sources and methods is Basturkmen's work (1998) on the NA carried out at the College of Petroleum and Engineering at Kuwait University. The English Language Unit (ELU) was the university department in charge of the first NA, which had been carried out in the mid-1970s. The results of that first NA led the ELU to implement General Engineering courses to cater for the needs observed. Although the course had been modified to adapt it to changing needs, the author reports that no formal re-assessment of students' needs had been done ever since. At the time of the new NA, the English courses were based on some notional and functional language areas and the development of writing skills of certain text types such as description of tools, devices and processes, reports, etc.

The data collection, which included the use of questionnaires, interviews and observation, involved 200 students, 10 graduates and 65 faculty and teaching assistants. The results of the process proved to be game changing for the institution because it evidenced differences of perception between students and faculty as regards the importance of skills to be developed and language problem areas. When consulted about the most important skills, while faculty deemed listening and reading as equally important, students perceived listening as far more important. This finding indicated the need to emphasise the development of listening and reading during the courses and to reconsider the importance previously given to writing. Similarly, when consulted about students' language problem areas, teachers and students' answers also differed greatly. On the one hand, only few students reported having poorly developed skill areas other

than speaking. On the other hand, 60% of the teaching staff thought that students' greatest weakness was writing.

The results indicated that teachers' expectations about students' proficiency were not met and that students seemed to be unaware of those expectations. This, according to the author, called for the need for further research regarding what faculty considered good quality writing and bad quality writing. The results also provided a list of tasks that were considered by all the participants as important for study in the College. Among these tasks were reading textbooks, writing lab reports and assignments and understanding lectures. In conclusion, the results of the NA evidenced the need of revisiting the syllabuses of the English courses and of introducing some changes to meet students' needs.

Cowling's study (2007) about the development of intensive courses based on NA for a top Japanese heavy industry company (MHI) also reveals ESP researchers' need to triangulate sources and instruments and the need for flexibility throughout the NA process. Based on the company's desire to implement a three-year course of a total of 96 hours of instruction for junior employees, a NA was carried out in three weeks. The ESP researcher chose the following sources: the sales director of the training company that hired him, the staff of MHI's training section, the English language instructors of MHI and the prospective students. Several data collection techniques were used: informal meetings, semi-structured interviews, and questionnaires.

One particular challenge of the study was the fact that junior employees in MHI are not assigned to a particular department until their fourth year in the company, which means that at the moment of the survey, many of them did not seem to know what their linguistic needs would be in the future. This was reflected in the results of the interviews, which yielded little information. In the light of these results, an open-ended questionnaire was designed for students to answer with senior employees who provided valuable information about the tasks they undertook at work. The results of the study showed the need for the design of a highly specific course with emphasis on area specific content, communicative strategies for business situations, and cultural issues and their influence on the business world. The course evaluation reflected students'

need for a TOEIC component, so revisions were made and changes were introduced in the course syllabus.

Among the studies in higher education settings with certain characteristics in common with the present study –in terms of context, research questions, participants or methodology – we can mention Reza-Atai and Shoja's (2011) about the needs of Iranian System-Engineering college students, Rajabi and Azarpour's (2011) on the needs of Business Administration students in Iran, and Alsamadani's (2017) on the language needs of Engineering students in Saudi Arabia.

Reza-Atai and Shoja (2011) carried out a NA in the context of English for Academic Purposes in three Iranian universities to assess the present situation and target needs of students of Computing Engineering. Participants of the study included 231 undergraduate students, 30 graduate students, 20 subject matter (SM) teachers and 15 ESP instructors of the three major universities in Iran. The instruments used for data collection were questionnaires, semi-structured interviews, a general proficiency test implemented by ESP practitioners and observation. The NA also included a self-evaluation scale based on CEFR levels for students to assess their GE proficiency.

According to undergraduate students, reading subject specific texts came first on the list of needed sub-skills to succeed in academic life (64.50%), together with understanding subject matter slides in English, writing research articles, using the Internet to do research and writing e-mails. The same perceptions were shared by teachers who added to the list participating in international scientific events (60%), using dictionaries and translating texts from Persian.

Some differences of perception were also observed between the ESP practitioners and students when asked about the content and focus of the English courses. While students favoured the development of all four skills with emphasis on vocabulary building and translation, teachers gave priority to reading, listening, grammar and vocabulary. There was, however, a general consensus among students, SM teachers and ESP instructors that the courses should favour an ESP approach rather than a GE one and the time allotted to the study of English was insufficient during the programme of studies.

The support given by SM teachers and ESP practitioners to an ESP approach clashed with the results obtained from classroom observations in which General English Proficiency activities were emphasised at the expense of the development of specific sub-skills required for the reading of disciplinary related genres. The gap between what students actually needed and the content and orientation of the English courses was attributed by the authors to the lack of NA prior to the design and implementation of the courses. The authors suggested the need to make stakeholders and curriculum developers aware of the importance of NA as a way to create coherence and consistency in the curriculum.

Rajabi and Azarpour's NA study (2011) about the linguistic needs of a group of 38 senior students pursuing a Business Administration degree in Iran was carried out at Malayer Islamic Azad University, where the 38 students were taking a compulsory ESP course at the time of the survey. Two ESP instructors participated in the NA. The aim of the study was to identify, among other aspects, the skills and the sub-skills considered the most important ones for students during their studies and for success in their professional lives, students' perceptions about their own language problems and their preferred approach to learning English.

The results of the study showed that reading was considered by students as the most important skill during their academic lives (57%), followed by writing, speaking and listening. However, when consulted about the most important skills for professionals, speaking was ranked first (53%), followed by reading, writing and listening. Similar results were obtained from teachers who expressed that oral communication skills are essential for graduates working in factories or companies that may require employees to communicate with foreign companies. They also expressed that reading is the most important ability for students' during their engineering studies at university. When students were enquired about the most important sub-skills to develop, they mentioned, among others, reading specialised books (63%), reading articles on the Internet (61%), reading specialised articles (51%), participating in conferences (47%), and writing reports (32%).

There were some contradictory results regarding students' most problematic areas in the ESP classes. Students reported that specialised vocabulary was the most problematic

area and that general English vocabulary was their least problematic one. In contrast, teachers believed that students' lack of general English proficiency, for example, general vocabulary and grammar was their biggest weakness. These contradictory results led the researchers to call for further studies on this topic but with a larger population. The NA experts also suggested a revision of the materials used in ESP classes, which are mainly oriented to the development of reading, so as to adapt them to students' actual need for more communicative activities.

Alsamadani's work (2017) is a clear example of the benefits of triangulation and the engagement of different members of an institution to reflect the different voices in the NA. The sources employed in this NA were 200 Saudi Arabian Engineering university students majoring in Civil and Industrial Engineering and 25 teachers, among which there were ESP practitioners and discipline specific ones. For triangulation purposes, three different tools were used: a classroom observation protocol for the ESP classes, a structured questionnaire and a semi-structured interview. The structured questionnaire included 26 questions and was divided in three sections. While the first section included questions about the students' personal details, sections 2 and 3 elicited information about learners' perceived level of English proficiency in the different macro-skills and their present and target situation needs respectively. In both sections Likert-scale questions were used. The third instrument, that is, the semi-structured interview protocol included seven open-ended questions and two closed ones to elicit teachers' views on students' linguistic needs.

As regards the findings of the study, it was observed that during the ESP classes, the time allotted to the development of receptive skills was more than the time allotted to productive ones. Regarding students' self-assessment of their proficiency in each skill, it was found that according to learners they performed better at reading than at listening and that they were weaker at speaking and writing. When rating the skills in order of importance in the workplace, they reported that writing was the most important one followed by reading, speaking and listening. In terms of learners' writing needs, students expressed the need to develop the skill for both, their academic lives and their future professional lives. Teachers, on the other hand, valued receptive skills over the

productive ones, which contradicted students' perceptions, thus providing a possible explanation for the time devoted in class to reading and listening.

From the teachers' interviews, it could be observed that there were complaints, from both groups of teachers, that is, ESP and subject matter (SM) ones, about the lack of coordination between them regarding the ESP classes. For instance, ESP practitioners suggested that ESP and SM teachers should have worked together in the design and development of the ESP course, while SM teachers thought that ESP practitioners needed more specialised training. However, teachers as a whole agreed that more time should be allocated to GE and ESP instruction. The results obtained also showed a strong institutional need to get the staff members to work cooperatively to meet students' linguistic, learning and field specific needs.

The literature here reviewed evidences the importance of triangulation of methods and participants in NA, the potential discrepancies in perception between different agents involved in a study and the recursive nature of NA processes. This last characteristic of NA is what allows researchers and practitioners to, among other factors, detect previously untapped needs and modify syllabuses and materials to improve the quality and relevance of the courses within the particular contexts were they are taught.

Another implication, it can be argued, is that the openness of the NA cycle can result in the overall improvement of the NA process itself by the introduction of changes based on informed decisions in areas that may range from the adaptation of the methodological design and the creation of new feedback channels to the inclusion of new participants in the process.

2. 11. Conclusion

As it has been described in this chapter, ESP has undergone drastic changes over the last 50 years or so that have redefined the discipline to make it what it is today. In the light of a more in-depth understanding of the specificity and diversity of the context

where the courses take place, the one-size-fits-all approach of early EAP courses gave way to a more comprehensive context-bound view of the field. Consequently, the emphasis that was once put on study skills moved to the study of the tasks and genres that circulate in target academic communities and that are essential for novices to succeed in these communities.

This new-found complexity paired with the rapid worldwide expansion of ESP and EAP has created a very heterogeneous population of learners in very diverse contexts, which, in turn, has called for more specific research to determine learners' needs in these settings. In this scenario, NA and means analysis have provided the tools not only to learn about the characteristics of the most commonly used tasks and genres of each academic community, but also to better understand who the learners are and what they have to say about their own needs.

Similarly, the influence of critical perspectives in the field of EAP has presented NA researchers and ESP practitioners with new challenges regarding the representation of learners within the universe of voices in NA, the prioritisation of needs in each particular context and their own role as active agents in the construction of the discipline.

The studies presented in the literature review evidence the need for bringing together different actors and voices within NA to be able to gather as much information as possible about the situation at hand as well as about the usefulness of different data collection instruments in the frame of triangulated studies. Similarly, taken together, these studies evidence researchers and practitioners' need to understand NA as an on-going process that requires a great deal of flexibility from them. This flexibility, in turn, allows NA researchers to adapt, change and refine the target courses to suit them better to learners' needs.

III. METHODOLOGY

3. 1. Introduction

As stated in the Introduction, the present study is based on a triangulated methodological design that includes the participation of different actors as sources of information and the use of different data collection instruments. This chapter is concerned with the description of the methodology used and it is divided in six sections.

The chapter will deal with the description of the sample population, the questionnaires, the interview protocol and the data analysis procedure. One section will explore the issue of researcher subjectivity in order to contribute to the rich description that every qualitative study requires to ensure reliability. Finally, the last section will provide an overview of the methodological design and the expected outcomes of its implementation. A more detailed description of each section is provided below.

While section 3.2 and 3.3 will describe the population sampling, the participants and the implementation of the survey, section 3.4 will be devoted to the description of data collection instruments, namely, the students and teachers' questionnaires. This section will also characterise the instruments that were used as the basis for the design of the questionnaires, the criteria used for the selection of these models, and the data analysis procedure.

The protocol interviews used for this study will be described in section 3.5. It will also explain how the data collected obtained from the interviews was coded and analysed. A brief reference to the implementation of the interview will also be presented.

3. 2. Population Sampling

Dörnyei's (2003) claims that there is no hard rule in setting in the optimal sample size in L2 studies. However, the author states that a sample of respondents ranging from 1% to 10% of population is adequate and that a minimum of 100 respondents is needed to reach statistical significance.

According to the *Anuario Estadístico 2015* of the UNC, the FCA had in that academic year 2249 students registered from the 2nd to the 5th year of studies (UNC, 2015). The total number of students in the sample is 203, thus representing 9% of the target population.

In the case of teachers, there were 358 in the institution in 2015, and 277 taught subjects corresponding to the target courses of studies, that is, 2nd to 5th. Out of 277 professors, 90 answered the survey, the return rate being of 32%. This percentage seems to fall near the range of those expected for volunteer participation, which tends to be between 20% and 30% (Dörnyei, 2003).

3. 3. Subjects and implementation: Students and teachers

The questionnaire was administered to 203 students of the $2^{nd,}$ 3rd, 4th and 5th year of the undergraduate programme, during the last week of November 2015. The decision not to include first year students in the sample was based on the assumption that these students may not be yet fully aware at that point of the importance of learning the foreign language for their academic or professional lives. Another reason was the fact that about 15% of these students are expected to abandon the programme before the beginning of the second year of studies.

The *Anuario Estadístico 2015* (UNC, 2015) indicates that, in Farming Engineering, out of 268 new students registered in 2014, a total number of 228 were still in the

programme by the beginning of 2015, being the retention rate 85.10% during that period.

The questionnaires were administered during the last weeks of 2015 in five classes corresponding to subjects of the target years of studies of the undergraduate programme. The classes were randomly selected. Students of the target four years of studies are equitably represented with percentages ranging from 22.70% to 27.10%. The number of subjects in each course of the programme is shown in Figure 2.
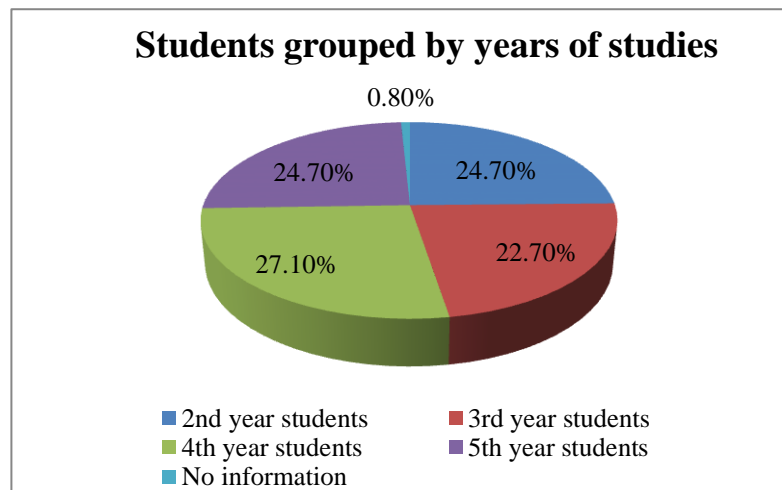
Figure 2. Students grouped by years of studies.

The sex distribution of the participants of the sample matches fairly that of the population of the FCA according to the *Anuario Estadístico 2015* (UNC, 2015) as shown in Table 1. According to the same source, the age distribution of the students in the sample is in line that of the total student population of the FCA in which most of the students are between 18 and 29 years old. While in the FCA more than 80% of the students are in that age range, this percentage increases to 93.60% in the sample.

Table 1. Students' sex distribution in the sample compared to that of the population of the FCA

Students' sex distribution in the FCA			Sex distribution of the sample		
Men	Women	Total	Men	Women	Total
70.10%	29.90%	100%	70.94%	29.60%	100%

Source: *Anuario Estadístico 2015,* UNC.

The questionnaires for teachers were administered both, in paper and electronic form, to teachers of subjects corresponding to the 2nd, 3rd, 4th and 5th year of the undergraduate programme. The decision not to include teachers who teach only in the first year of the programme was based on the assumption that these teachers may or may not be familiar with the actual requirements regarding the knowledge of English during the rest of the programme, especially in field specific subjects. A similar criterion based on a similar assumption was used for population of students. As stated above, out of 277 teachers in the target group, 90 answered the questionnaire.

One teacher of a first year subject -Organic and Inorganic Chemistry- volunteered to respond to the questionnaire and her responses were taken into consideration for the results of the present study. The teacher, who is also an authority of the Secretary of Academic Affairs of the FCA, has an informed and comprehensive view of the programme and of students' linguistic needs. Based on her expertise in the context studied, her opinions were deemed useful for this research project.

The sex distribution of the teachers who participated of the study is also quite consistent with that of the total population of teachers of the FCA as shown in Table 2.

Table 2. Teachers' sex distribution in the sample compared to that of the FCA.

Teachers' sex distribution in the FCA			Sex distribution of the sample		
Men	Women	Total	Men	Women	Total
5 1.1 %	48.70%	100%	48.90%	51.1	100%

Source: *Anuario Estadístico 2015,* UNC.

Instruments were distributed during the months of November and December in 2016 and in February and March in 2017. During the first data collection phase, teachers were asked to answer the questionnaire in paper at that moment or to return it to the researcher within a week. For the second data collection phase, in 2017, with the authorization of the authorities, two e-mails were sent to the teachers asking them to respond to the questionnaire and to send it back electronically as an attachment or by using an online document.

3. 4. Questionnaires

Section 3.4, and subsections 3.4.1 and 3.4.2, will describe the students and the teachers' questionnaires, the data collection instruments that served as models for both, and the criteria used for the design. A brief description of the data analysis procedure will also be presented.

As expressed above, the study introduces two questionnaires, one for students and one for teachers (see Appendices A and B respectively). The questionnaires were mostly inspired by the one used by García-Romeu and Jiménez Tenés (2004) for their NA for a group of students of Spanish as a Foreign Language. Their questionnaire is divided in different units and aims at gathering information about students' biographical characteristics, language needs and learning needs and styles. Their instrument was chosen as model for sections I, III and IV for the two surveys developed for this project.

Section II of the students' survey of this study is inspired by a section of the instrument used by García-Romeu (2007) in his Master's Thesis. In his project, whose main objective was to adapt the syllabus of a B2 level Spanish course to a particular group of students of the Instituto Cervantes in London, the author introduces, among other data collection instruments, a self-evaluation scale for students to assess their language proficiency after the course. That scale served as an inspiration for the self-evaluation section of the students' survey of this study. The adaptations made for section II are further explained in the section dedicated to the students' questionnaire.

The instruments devised by García-Romeu and Jiménez Tenés (2004) and García-Romeu (2007) were chosen as models for three main reasons. First of all, they are comprehensive and reflect the basic tenets of the NA framework developed by Dudley-Evans and St. John (1998) as they enquire into the PSA, the TSA and the learning situation analysis (LSA). Secondly, both instruments purposefully avoid the use of technical terms regarding language teaching and learning which may, otherwise, be unclear to students. Lastly and more importantly, they were chosen because of their adaptability to different educational contexts and subjects.

The data obtained from students and teachers' questionnaires was analysed using an electronic spreadsheet programme to calculate the absolute and relative frequencies obtained by each option. Additionally, the software InfoStat was used to determine the P values for difference in proportions (Di Rienzo, et. al., 2015).

3. 4. 1. Students' questionnaire

The instrument is written in Spanish. Sections I and II aimed at gathering personal information –name, age, sex, ID number, and email address. In spite of the fact that students, and teachers, could choose to remain anonymous, personal information is required with a two-fold purpose. On the one hand, this information is useful to determine if the sample reflects accurately the demographic characteristics of the target student population, that is, the student population of the FCA. On the other hand, the e-mail address and the ID number can allow this researcher to contact subjects in case additional clarification is needed.

Other information required is students' academic status within the degree programme. This can help stratify students according to their year of studies to make sure that the four courses being studied are fairly represented. This was successfully achieved as it is reflected in Figure 2 in the previous section.

Finally, students are asked about their previous language learning experiences. In that respect, students are asked if they have studied English before, where and for how long, independently of their experience at secondary school, and if they have ever sat for an international language examination. If the answer is yes, they have to name the examination. This information serves the purpose of describing who the learners are and their educational background. The complete questionnaire can be found in Appendix A.

Within section II, and for the purpose of assessing students' present language skills, they are asked to select what they consider to be their language proficiency level regarding each language macro-skill, that is, reading, speaking, listening and

writing, at the moment of the survey. In García-Romeu's 2007 study, the author presents 18 language descriptors corresponding to the B2 level of the Common European Framework of Reference for Languages (CEFR) for students to assess how well they can perform those tasks by using nominal categories, such as, *very well, well, poorly,* etc.

For the questionnaire designed for this study, a similar section was developed, but in this case, with statements of what language learners can do regarding each skill, as expressed as sub-skills. The statements were taken, and some of them slightly adapted, from the self-evaluation descriptors proposed by the CEFR.

In the instructions provided, students are asked to choose the sentence that expresses more accurately what they can do in English and put a tick next to it, for instance, when reading in the foreign language. Four descriptors are provided –a, b, c, and d– for each skill, each of them representing the levels A1, A2, B1 and B2 of the CEFR respectively. For example, in the section about reading, statement A: *I recognise very commonly used basic words and expressions to talk about myself, my family and my environment when people speak slowly and clearly* reflects the achievements of learners within the A1 level of the CEFR while statement B: *I understand phrases and commonly used vocabulary about topics of my personal interest (basic personal information and about one's family, shopping, place of residence, jobs, etc.)* does the same for level A2.

Some adaptations were made for the sake of conciseness of expression and clarity, among others, in the descriptors regarding the skill of speaking. In these, the aspects of oral expression -the language resources that students use for speaking-, and oral interaction **-**what they can achieve in actual conversation- were merged into one. The aim was to make the statements clearer to students and to prevent them from thinking that these two aspects refer to two different skills.

In section III, students are asked to rank the four macro-skills -with 1 being the most important and 4 the least important-, according to how essential they gauge them to be in relation to the use of English during the programme. The macro-skills are expressed as actions: for instance, speaking is described as *expressing yourself in English* while

listening was worded as *understanding oral texts in English*. The same statement was also presented in section IV, where students evaluated the role of English and the importance of each skill in the life of graduate professionals of the Agronomic Sciences.

It is important to mention at this point that, although the instruction had been cross-checked for clarity, a significant number of students seemed to have had interpreted it differently. For instance, if students considered that both speaking and reading were highly and equally important, they assigned both of them a number 1. This unexpected outcome presented a challenge when analysing the data. The decisions made during data analysis regarding this limitation will be described in detail in the Chapter 4, that is, the Results section.

In both sections III and section IV, where present linguistic needs and future linguistic needs are addressed respectively, students are asked to identify the frequency with which they have to perform certain tasks -as expressed in sub-skills- involving the foreign language during their course of studies and as future Farming Engineers. The Council of Europe (2002) in the CEFR proposes the use of the statements of tasks to describe what learners do or can do with English.

In the present study, the tasks are expressed as sub-skills, which involve particular linguistic situations and genres. This choice is expected to make the comprehension of the rubrics clearer to participants. One example taken from the questionnaire used for this project is in the section regarding speaking. There, students have to specify how often, for example, they have to *speak with classmates or colleagues about topics of general interest in English*, or *they have to ask and answer questions in scientific events about their area of expertise*, among others.

Although both sections III and IV are fairly similar in terms of the sub-skills and situations described for each macro-skill, some minor changes were made in order to adjust them to the particular contexts beings studied, that is, students' academic lives and their future professional lives. One example of this is the adaptation made in the list of sub-skills regarding writing. While in section III subjects are asked about how often *students have to write a report for a subject in the course of studies*, in section IV this was changed by the *writing of reports for the company, or clients* they will work

for. Based on the same criterion, there are sub-skills that are present in one section and not in the other, such as the *taking of notes in a lecture at university*, which is a task that is expected to be present in only one of the two contexts, namely, the academic one.

In the last part of the questionnaire, that is, Section V, students are asked to reflect on their learning strategies and specific elements of their educational context, such as preferred number of classes a week and the modality to be used: face-to face learning, distance learning or a blended-learning. This last aspect is addressed in the first two questions of the section. The next two questions aim at determining students' opinion about how many levels of instruction they think the subject English must have and how many of those should be compulsory.

The last question of the survey was designed to learn about students' learning styles and preferences. The categorisation was taken from Willing's work on learning styles (1988 as cited in García-Romeu, 2007). This author divides learning styles into 2 main groups: field dependent and independent and within these two, he proposes 2 further categories. In the field independent style he distinguishes between analytic and the communicative styles, while in the field dependent style, he does between the concrete and the authority oriented styles. In the present questionnaire, the four categories presented above are referred as options 1, 2, 3 and 4 respectively. Students are asked to choose the option that best reflects how they like learning a language. Being the aim of this project to learn about students' perceptions about their language needs in general, rather than their learning styles in particular, no further distinctions are made regarding possible combinations between these styles.

The next section, that is, 3.4.2, will describe the questionnaire administered to teachers, the criteria used for its design and the differences between this instrument and the students' questionnaire.

3. 4. 2. Teachers' questionnaires

A similar instrument to the one described above was the questionnaire designed and administered to teachers in order to tap into their perceptions regarding the present situation, target situation and learning needs of their students. The complete questionnaire can be found in Appendix B.

The survey was adapted according to information that the teachers were able to provide. For instance, the section where students are asked to self-evaluate their present language proficiency in English is obviously not included. Another example of adaptation is the section devoted to personal information.

Teachers, as students, are required to provide personal information such as name, ID number, sex and e-mail address. As it was stated in the description of the students' questionnaire, this information can be useful to contact the participants if further clarification of the answers provided is required. The contact details proved to be highly useful due to the fact that two SM teachers had to be reached for them to expand on their opinions regarding the importance of writing skills during the programme of studies. Similarly, the personal information provided can be used to match the demographic characteristics of the sample, for example in terms of its sex distribution, with those of the teacher population of the FCA to determine if the sample represents it fairly.

Additionally, the teacher survey includes, apart from questions regarding identification and contact details, a request to identify the subjects they teach and where these subjects are placed in the curriculum. This information was used to make sure that the participants taught subjects from the spectrum of courses being studied, that is, the 2nd, 3rd, 4th, and 5th. As mentioned earlier, only one teacher of a subject of the first year of studies was accepted as a participant based on her willingness to participate and her experience in the Secretary of Academic Affairs of the FCA.

Sections III and IV of the teachers' survey, that is, those aimed at gathering information about students' language needs during the course of studies and as graduates, were the same as those of the students' questionnaire.

The next section will describe the protocol used for the interviews carried out for the present study.

3. 5. Interview protocol

One interview protocol with five open questions was designed to be implemented with different actors of the FCA. The interviews aim at eliciting information in order to triangulate it with that obtained from the teachers and students' questionnaires. A slightly modified version of the protocol was administered to the two current ESP teachers of the subject English at the FCA. See Appendices C1 and C2.

The protocol includes questions regarding the importance the interviewees assign to ESP classes within the program, how they rank the different macro-skills in order of importance, the professional situations in which they thought English is useful for graduates and if they deem the FCA graduates as capable of performing well in the target situations given their current English instruction.

One question in particular enquires about their opinion regarding what skills should be a priority in the ESP syllabus, considering the limited time the subject has in the curriculum. Participants are also encouraged to make suggestions or to add comments about the best way to improve students and graduates' level of English.

One additional question was added to the interviews implemented with the two ESP practitioners in charge of the ESP course at the FCA, as observed in Appendix C2. This question aimed at finding what they thought their students' reading proficiency was according to the levels of proficiency proposed in the CEFR. The questions had the two-fold purpose of identifying these experienced teachers' perceptions on the matter and, at

the same time, obtaining information that could be compared to the results of students' self-evaluation of their proficiency in the four macro-skills.

All the interviews were held between November 2017 and April 2018. The interviews were implemented with 11 participants: 4 ESP practitioners and researchers, 2 SM lectures, two high authorities of the FCA, the Research Operator Lead of a multinational company which operates in Córdoba, an Extension Service agent and researcher of a governmental technology agency and one graduate.

A personal communication was held with the Secretary of Academic Affairs of the FCA in which this authority discussed some of the topics of interest of this study. Salient aspects of this communication will be reported with the results of the study in Chapter 4.

The answers provided by the interviewees were transcribed and coded using descriptive labels to identify the content of each answer. As a result of the coding, themes were recognised and categories were created to group together similar opinions. Finally, the data was transcribed into a descriptive matrix to organise the information and to facilitate the identification of patterns.

3. 6. Researcher's subjectivity

A researcher is, as any other human being, prone to be influenced during their work by their experiential background, pre-conceived notions and interests. The choice of a topic to study and even the methodology designed for a study may reflect, directly or indirectly, the subjects' epistemological, social and political stance.

The present study is certainly not an exception to that rule. This researcher's 10-year teaching experience in the field of ESP courses in the domain of Agronomic and Veterinary Sciences may have had a bearing in the topic chosen for this project and in other decisions taken throughout the NA. Also, the fact that I am currently working at

the English Department of the FCA and my involvement in its community should be considered as factors that are inextricably linked to the aim and purpose of this study.

This researcher agrees with Montes de Oca Barrera (2016) when the author states that these personal factors, however, provide the motivation needed and render the first mental map that guides the researcher in the situation being explored.

3. 7. Conclusion

It is expected that the use of the data-collection instruments described, the participation of different actors, and the combination of quantitative and qualitative data for the analysis should provide valuable information to answer the research questions of this study and help describe the situation at hand. As it was explained earlier, the information obtained from students and teachers' questionnaires and that from the interviews is to be contrasted in order to find common grounds, and disagreements, if any, regarding learners' needs during the programme and after graduation.

However, and taking into account that as learners' needs cannot be studied in a vacuum, contextual information will also employed in the triangulation process. The means analysis will describe the physical, academic and institutional factors that may affect positively or negatively the implementation of the courses.

The results of the analysis of the information obtained from all these sources are presented in Chapter 4.

IV. RESULTS

4.1 Introduction

This chapter will present the results of the analysis of the data provided by the questionnaires, the interviews and of the means analysis. Additionally the outcomes of an informal communication with the Secretary of Academic Affairs of the FCA will be summarised here.

The results obtained from the questionnaires about students' previous knowledge of English and their perception about their own level of proficiency will be presented in sections 4.2 and 4.3 respectively. Section 4.4 will report how students and teachers ranked the macro-skills in order of importance for students and for graduates of the FCA. This information will be expanded with the outcomes of informal conversations with SM lecturers regarding their choices.

The findings concerning students and teachers' opinions about the most frequently used sub-skills during the program and after graduation will be presented in section 4.5. A brief description of the criterion used to reorganise data in more comprehensive categories is also provided in this section. Section 4.6 will describe what students expressed their learning needs were regarding their English language instruction.

The outcomes of the interviews carried out with teachers, authorities and other actors involved in the life of the FCA, and those of the means analysis will be presented in sections 4.7 and 4.8 respectively.

4. 2. Students' background knowledge of English

As to the Present Situation Analysis, only 31.50% of the students in the sample reported having some previous knowledge of English other than that received at secondary school, while the 68.50% did not have any extra instruction as shown in Table 3. More than 60% of those who had received extra language instruction studied English between 1-5 years.

Table 3. Students with and without previous knowledge of English.

Students without previous instruction	Students with previous instruction	Total
68.50%	31.50%	100%

Out of that 31.50%, only 8 students (12.50%) had sat for an international language test. Out of these 8 students, 4 sat for KET (Cambridge Key English Test), 3 for PET (Cambridge Preliminary English Test) and only 2 for FCE (Cambridge First Certificate of English). To sum up, it can be said that almost 70% of the students had never received any extra English instruction other than that offered in secondary schools. Out of a sample of 203 students only 8 had sat for an international exam.

4. 3. Students' self-evaluation of their English proficiency

This section will present the results of students' self-evaluation regarding their own language proficiency in the four macro-skills, namely, reading, listening, speaking and writing. These results will be expressed by using the levels proposed by the CEFR.

The results of the self-evaluation section showed that almost 70% of the students deemed their linguistic level regarding listening comprehension to be basic, either A1 or

A2 according to the CEFR framework. Only 23.15% of students considered they had a B1 level and the remaining 7.88%, a B2 one. See Figure 3.

Listening comprehension
Self-evaluation according to CEFR levels

7.88%

33.50%

23.15%

35.47%

A1 A2 B1 B2
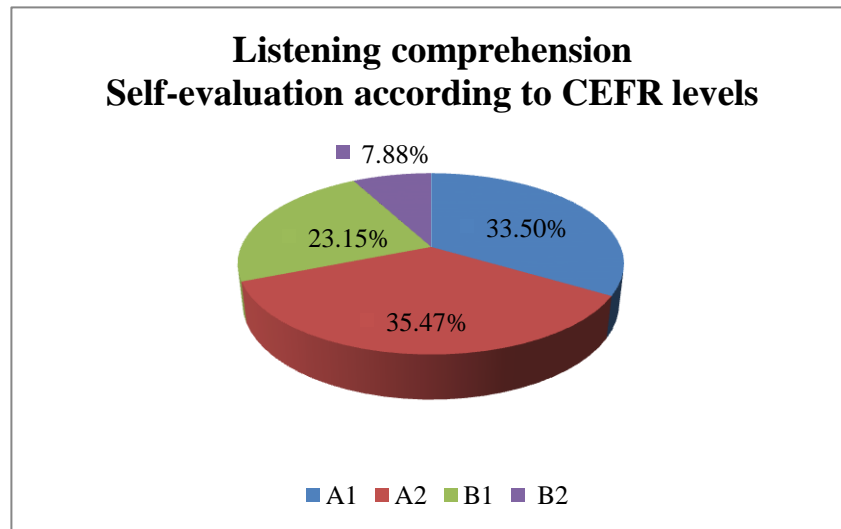
Figure 3. Self-assessment of listening comprehension.

As regards reading comprehension, the findings were similar to those of listening comprehension as more than 60% of the subject claimed to have a basic level, that is, A1 or A2 in this macro-skill. The percentages within the B1 and the B2 ranges were slightly higher than those of listening as they reached 28.57% and 8.87% respectively. See Figure 4.

Reading Comprehension
Self-evaluation according to CEFR levels

8.87%

26.11%

28.57%

36.45%

A1 A2 B1 B2
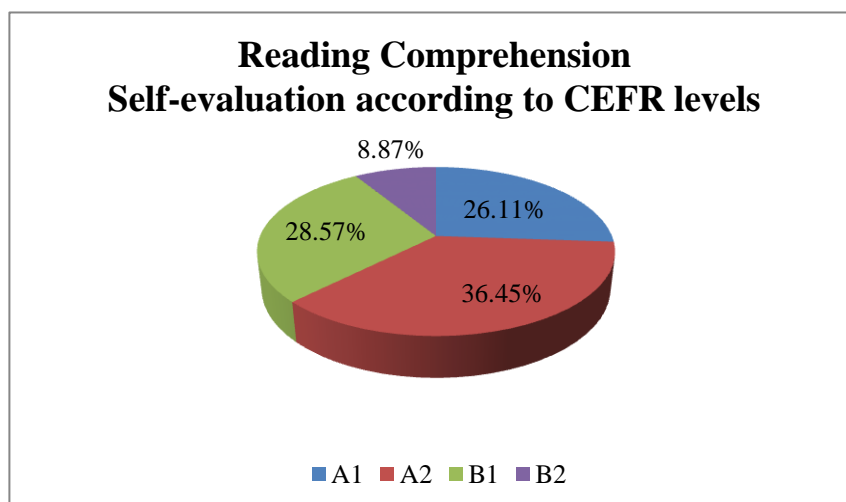
Figure 4. Self-evaluation of reading comprehension.

For both receptive skills, students' self-evaluation indicated that almost 66% of subjects gauged their level to be basic while the remaining 34% considered their proficiency to be that of independent users and chose the B1 and B2 bands. The findings were slightly different when it came to oral expression. The results indicated that more than the 93% of the students evaluated their proficiency in the macro-skill as being basic. See Figure 5.

Oral expression
Self-evaluation according to CEFR levels

4.93% 1.97%
37.93%
55.17%

■ A1 ■ A2 ■ B1 ■ B2
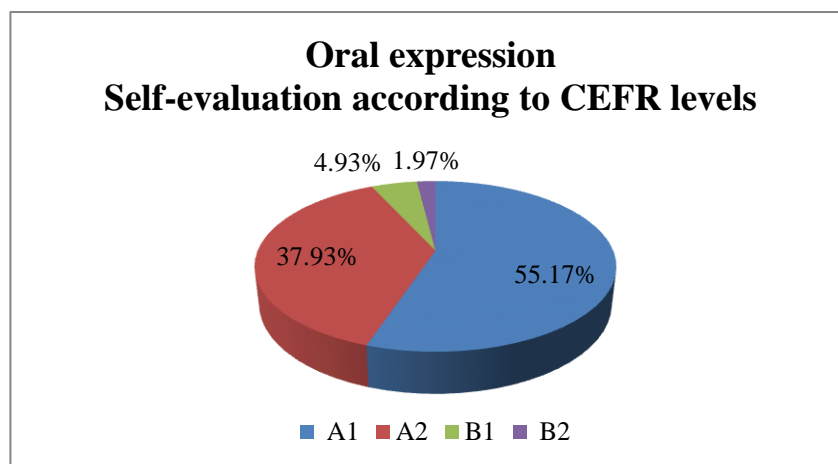
Figure 5. Self-evaluation of oral expression.

Similarly when assessing writing more than the 80% of the students considered their proficiency to be basic, that is either in band A1 or A2. Considering these results, it can be said that students seemed to be slightly more confident in their ability to write than in their ability to speak (Figure 6).

Writing
Self-evaluation according to CEFR levels

2.46%
16.75%
29.06%
51.72%

■ A1 ■ A2 ■ B1 ■ B2
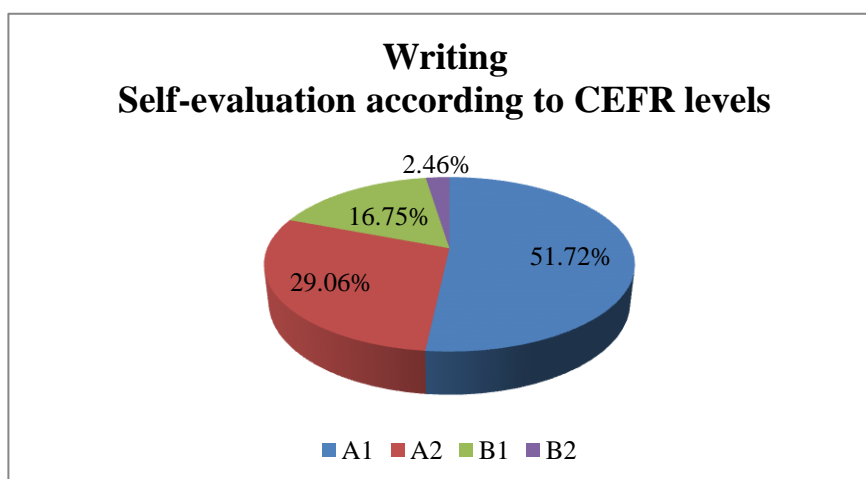
Figure 6. Self-evaluation of writing skills.

To sum up, students expressed to be the most confident regarding their reading comprehension skills, followed by their listening ones. Regarding students' ability to produce language, the results indicated that the subjects deemed their abilities to be weaker, especially in relation to oral expression.

4. 4. Ranking of skills according to their importance

4. 4. 1. Methodological matters

The ranking of the macro-skills according to their importance for students and for graduates turned up to be a challenge for the analysis. As mentioned earlier, in spite of the perceived clarity of the instructions, some students and teachers interpreted them differently. As an example of this, when subjects considered that both speaking and reading were highly and equally important, they assigned both of them a number 1. In some cases all four skills were given a 1 as they all were gauged to be highly important. Some other subjects did not rank the macro-skills at all.

This unexpected problem was solved considering the absolute frequencies, that is, the number of times each of the skills was selected in the first, the second, the third and the fourth positions.

While all the sections of the 203 students' questionnaires could be used for the analysis, this was not so for those of teachers. Out of the 90 questionnaires answered, and in one particular section, 2 of them could not be used. When asked to rank the macro-skills in order of importance during the programme of studies, two teachers failed to complete the task and moved on to the next section of the instrument. Consequently, in spite of the fact that 90 questionnaires were administered, only 88 were taken into consideration for that particular section. In the remaining sections the total number of answers was 90.

4. 4. 2. Ranking of skills according to their importance during the programme of studies and after graduation

Students' results indicated that, during the programme of studies, reading was considered the most important skill (129/203), followed by listening comprehension (93/203), speaking (67/203) and writing (114/203). However, the importance of the macro-skills was judged differently by teachers. When considering their importance during the programme, reading (77/88) and writing (42/88) were chosen as the first and the second, while listening comprehension (37/88) and speaking (20/88) were chosen as the third and the fourth as shown in Table 4.

Table 4. Teachers and students' ranking of skills in order of importance during the programme of studies.

	Ranking	Macro-skills	Students	Ranking	Macro-skills	Teachers
During the program	1st	Reading	129/203	1st	Reading	77/88
	2nd	Listening comprehension	93/203	2nd	Written Expression	42/88
	3rd	Oral expression	67/203	3rd	Listening Comprehension	37/88
	4th	Written expression	114/203	4th	Oral Expression	20/88

The fact that teachers chose reading and writing as the most important and the second most important skills, which clearly differs from students' results, called for further clarification. Consequently, two informal conversations were held with 2 SM lecturers who had answered the questionnaires and had chosen these two skills as working in tandem. One subject lecturer justified his choice on the basis of the connections underlying both skills. He considered that writing is the best way to fully understand what has been read and to process knowledge. He also stated that the problems students present in their written production, in L1 particularly but not exclusively, can be sorted out by asking students to write more and more frequently.

On the other hand, another SM teacher argued that the choice was made on the grounds that it is important for students and graduates interested in research to be able to

socialise their work, either in scientific events or in journals, for which authors are asked to submit a summary or an abstract in English. Besides, and as most of the times abstracts are shown for free in search engines, writing a good abstract in English can attract potential readers interested in the author's work.

When students were asked to rank the skills considering their importance for graduates of the FCA, they chose reading as the most important (121/203), followed by listening comprehension (91/203), speaking (63/203) and writing (113/203) a shown in Table 5. These results are consistent with students' results for skills during the program in which they had also expressed that receptive skills were more necessary than productive ones. Teachers, on the other hand, seemed to value skills differently after graduation. They considered, as they had before, that reading was the most frequently used skill by graduates (82/90) but unlike their previous opinions, this time followed by speaking (39/90), listening comprehension (20/90) and writing (14/90).

Table 5. Teachers and students' ranking of macro-skills in order of importance after graduation.

	Ranking	Macro-skills	Students	Ranking	Macro-skills	Teachers
After graduation	1st	Reading	121/203	1st	Reading	82/90
	2nd	Listening comprehension	91/203	2nd	Oral expression	39/90
	3rd	Oral expression	63/203	3rd	Listening comprehension	20/90
	4th	Written expression	113/203	4th	Written expression	14/90

When comparing the results of students and teachers, it can be observed that reading was undoubtedly considered the most important skill for students during the programme and for graduates by both groups of participants. Students appeared to agree on the fact that for both academic and professional lives the receptive skills were more important to develop than the productive ones. The results obtained from teachers, as it was explained earlier, were different. Teachers considered reading and writing working in tandem as the most important skills during students' academic lives, while reading and speaking were reported to be the most important ones after graduation.

Although the answers of the questionnaire completed by a high authority of the Secretary of Academic Affairs were reported together with those of the other teachers who participated in this survey, this participant's views regarding the importance of macro-skills for students and graduates will be presented here because of their relevance. The results obtained from her questionnaire evidenced that her opinions are more in consonance with those of students than with those of her fellow teachers.

As regards the importance of skills during the programme, this participant ranked reading and listening as the most important skills for students during the course of studies and gauged them to be equally important. Oral expression and writing were placed after those and were also considered to be of similar importance. These results are in line with students' opinions that receptive skills are more important than productive ones during academic life.

Regarding the importance of macro-skills after graduation, this participant's answers were in line with those of students as well. Reading was ranked as the most important skill followed by listening, while oral expression and writing were both deemed secondary to those. A possible explanation for the agreement between this participant's views and students' opinions will be presented in the Discussion.

4. 5. Most frequently used sub-skills during the programme of studies and after graduation

The next two sections will present teachers and students' opinions about the most needed sub-skills for undergraduates and for professionals.

In order to simplify the reading of the results of this section, the absolute frequencies obtained by sub-skills that were reportedly used *always, usually and sometimes* were added and grouped together in a category that hereinafter will be called *frequently used*, while those obtained by sub-skills reportedly used *hardly ever* or *never* were grouped in a category hereinafter denominated *not frequently used.* As the main objective of the

study is to identify which sub-skills were most needed, the results will present those that were reported as being frequently used by both, students and teachers.

4. 5. 1. During the programme

Almost 60% to 70% of students report that reading operator's manuals, research articles, advertising brochures for chemical products and machinery, and semi-popularization articles from Extension Departments' pages or professional magazines were the sub-skills they frequently need during their studies. Teachers also believed the same sub-skills were frequently needed by students during the course of studies and reported undergraduates also had to read textbooks in English during their university years (75.56%).

The coloured cells in the table indicate that a particular sub-skill was chosen as frequently used. These results are shown in Table 6.

Table 6. Students and teachers' list of frequently used reading sub-skills during the programme of studies.

Frequently used reading sub-skills	Students' absolute frequency/203	Teachers' absolute frequency/90	P value for difference in proportions	
reading advertising brochures for chemical products or machinery	131	66	< 0.177	
reading articles in Extension resources or professional magazines	133	73	< 0.001	*
reading discipline specific webpages	142	85	< 0.001	*
reading operator's manuals of agricultural machinery	120	60	< 0.243	
reading research articles	127	81	< 0.001	*
reading textbooks in English	76	68	< 0.001	*

As regards the most frequently used sub-listening skills during students' academic lives, almost 60% to 85% of teachers considered all the possibilities listed in the survey as being used during the programme of studies while students reported only using one sub-

skill, namely, understanding discipline related videos on the Internet (58.62%). See Table 7.

Table 7. Students and teachers' list of frequently used listening sub-skills during the programme of studies.

Frequently used listening sub-skills	Students' absolute frequency/203	Teachers' absolute frequency/90	P value for difference in proportions	
understanding conversations in English about topics of general interest	93	52	< 0.076	
understanding discipline related videos on Internet	119	77	< 0.898	
understanding English speaking teachers and students	84	60	< 0.001	*
understanding lectures/ presentations in scientific events	61	67	< 0.001	*

Regarding oral skills, approximately between 56% and 62% of the teachers expressed that communicating with English speaking teachers and students, talking to other Engineers and farmers about the discipline, presenting orally research work in scientific events and asking and answering questions in these events, are all sub-skills students frequently needed during their academic lives. In contrast, students reported that all these abilities are barely used or not used at all. See Table 8.

Table 8. Students and teachers' list of frequently used oral sub-skills during the program of studies.

Frequently used oral communication sub-skills	Students' absolute frequency/203	Teachers' absolute frequency/90	P value for difference in proportions	
asking and answering questions at scientific events	47	51	< 0.001	*
communicating with teachers/students/foreign visitors	65	51	< 0.001	*
presenting research work in scientific events	45	51	< 0.001	*
talking to professionals/farmers about the discipline	59	56	< 0.001	*

Similar results to those obtained for written communication sub-skills were observed for written communication micro-skills. Between 50% and 80% of the teachers thought that writing a CV, writing a letter of application for a scholarship or an internship, writing abstracts and writing e-mails were frequently needed sub-skills by students during their

academic lives. However, students reported that none of these abilities were frequently used. See Table 9.

Table 9. Students and teachers' list of frequently used writing sub-skills during the programme of studies.

Frequently used writing sub-skills	Students' absolute frequency/203	Teachers' absolute frequency/90	P value for difference in proportions	
writing a CV in English	60	45	< 0.001	*
writing a letter of application for a scholarship/internship	52	71	< 0.001	*
writing a research article in English	26	49	< 0.001	*
writing an abstracts of a research article	46	71	< 0.001	*
writing e-mails to communicate with teachers/students	56	70	< 0.001	*

4. 5. 2. After graduation

All the reading sub-skills listed in the questionnaire, except for reading hand-outs written by FCA teachers containing articles in English, were considered by students as frequently used by Farming Engineers in their professional lives.

Approximately between 85% and 95% of the students believed that the sub-skills professionals used the most were reading discipline specific webpages, reading semi-popularization articles from universities' Extension Departments or professional magazines, reading operator's manuals of agricultural machinery and research articles.

Other abilities, such as reading advertising brochures, reading research and business reports, reading textbooks, e-mails and memos were reported as being frequently used by graduates. Also, almost all teachers also deemed the same sub-skills as frequently used by professionals. See Table 10.

Table 10. Students and teachers' list of frequently used reading sub-skills after graduation.

Frequently used reading sub-skills	Students' absolute frequency/203	Teachers' absolute frequency/90	P value for difference in proportions	
reading advertising brochures for chemical products or machinery	172	84	< 0.055	
reading articles in Extension resources or professional magazines	182	85	< 0264	
reading discipline specific webpages	191	88	< 0.239	
reading e-mails and memos	145	86	< 0.001	*
reading operator's manuals of agricultural machinery	180	85	< 0.136	
reading research articles	177	89	< 0.001	*
reading research reports or business reports	160	83	< 0.006	
reading textbooks in English	136	85	< 0.001	*

Similarly, there seemed to be a consensus between teachers and students about how frequently used listening sub-skills are after graduation. Between 80% and 95% of students considered that being able to understand presentations in scientific events, discipline related videos and conversations about topics of general interest were frequently used skills by professionals. Likewise, more than 90% of teachers deemed these sub-skills as frequently used by graduates. See Table 11.

Table 11. Students and teachers' list of frequently used listening sub-skills after graduation.

Frequently used listening sub-skills	Students' absolute frequency/203	Teachers' absolute frequency/90	P value for difference in proportions	
understanding discipline related videos on Internet	188	84	< 1.000	
understanding conversations in English about topics of general interest	179	81	< 0.694	
understanding presentations in scientific events	174	84	< 0.078	
understanding English speaking teachers/students	167	85	< 0.005	*

Regarding the oral communication sub-skills listed in the questionnaire, both groups seemed to agree that they are part of graduates' professional lives. Between 65% and 85% of students expressed that the sub-skills proposed in the questionnaire were frequently used and so did more than 85% of the teachers. Interacting with work-team

members and fellow researchers using video calls was considered by both groups of participants as being frequently used by professionals as well. See Table 12.

Table 12. Students and teachers' list of frequently used oral sub-skills after graduation.

Frequently used oral communication sub-skills	Students' absolute frequency/203	Teachers' absolute frequency/90	P value for difference in proportions	
interacting in job interviews/work meetings	137	78	< 0.001	*
asking and answering questions in presentations in scientific events	144	81	< 0.001	*
communicating with foreign colleagues or visitors	168	81	< 0.115	
presenting research work in scientific events	142	84	< 0.001	*
talking to professionals/ farmers about discipline related topics	163	80	< 0.091	
talking to work team/research team members in video calls	142	77	<0.005	*

Finally, when asked about the most frequently used writing sub-skills after graduation, both groups of participants expressed that all the possibilities listed in the survey were needed. However, differences were observed between the perceptions of both groups as regards how often they were put into practice. On the one hand, more than 85% of teachers believed that professionals needed these sub-skills frequently in their professional lives while only between 55% and 80% of students did so. See Table 13.

Table 13. Students and teachers' list of frequently used writing sub-skills after graduation.

Frequently used writing sub-skills	Students' absolute frequency/203	Teachers' absolute frequency/90	P value for difference in proportions	
taking notes in presentation in scientific events	144	76	< 0.018	
writing Abstracts of research articles in English	132	82	< 0.001	*
writing CVs in English	156	76	< 0.161	
writing e-mails in English to students/teachers/professionals	165	84	< 0.007	
writing reports for a company/client	160	77	< 0.199	
writing research articles	111	77	< 0.001	*

4. 6. Students' learning preferences

Almost 60% of the students expressed their preference for the English course to be face-to-face, while nearly 35% of them favoured blended learning. When asked about how many classes a week there should be, about 60% of the participants claimed that they wanted to have one class week, while the remaining 40% favoured having two. Only 6.40% said they preferred a distance learning mode.

More than half of the students expressed that the subject English should consist of two levels or courses (51.78%), and nearly a quarter of them said that it should consist of three (24.14%). Almost 50% of the students reported the need for authority oriented classes.

4. 7. Interviews

This section will present the results obtained from the interviews implemented with different actors of the FCA. Additionally, and in order to supplement these results, the some opinions provided by the main authority of the Secretary of Academic Affairs in a personal communication, as already mentioned, will be summarised.

As to the results obtained from the interviews, all the interviewees (11) agreed that learning English is a very important and invaluable resource for students pursuing a Farming Engineering Degree. They justified their opinions by arguing that English is still a *lingua franca* that allows students and graduates to have access to updated bibliography about the discipline (1/11) as well as to participate actively in scientific and professional events (3/11).

Other arguments provided for the importance assigned to the foreign language were the fact that it is an invaluable tool for graduates to find career opportunities in a globalised

job market (2/11) as well as for students to take advantage of the exchange programmes and short visits to foreign universities organised by the FCA (1/11). The rest of the interviewees reflected about the benefits of having an ESP course at the FCA which allows them to have first-hand contact with field specific texts and vocabulary (1/11) and about English being a vehicle to create and develop new knowledge and to share it (3/11).

There was an almost general consensus on the fact that reading is the most important skill and that it should be prioritised in an ESP course (10/11). In line with this finding, the Secretary of the Academic Affairs of the FCA agreed with this opinion and added that reading was essential for students of the FCA in order to have access to updated information (Dr. P. Campitelli, personal communication, February 20, 2018). Only one interviewee consulted did not share the idea that reading was the most important skill and argued that learning to speak was far more important than reading and justified his choice on his personal preference for GE courses over ESP courses.

When asked about the importance assigned to the other skills, some of the interviewees ranked them and others discussed the benefits of mastering them. Listening comprehension was chosen as the second most important skill by 5/11 interviewees. Oral communication was chosen as the third most important skill and writing as the fourth one.

Interestingly, the SM teachers and the Extension Service agent consulted agreed that writing was the second most important skill to develop in an English course and based their choice on the relevance of communicating one's knowledge to other researchers, professionals, and to farmers as a means to develop the discipline. This finding is in line with the results of the teachers' questionnaires, in which almost 50% of the teachers also ranked writing as the second most important skill.

During the interviews, one of the subject matter teachers expanded on this issue and added that writing well was extremely important in both, L1 and L2. In accordance with this opinion, the Secretary of Academic Affairs expressed that writing is of paramount importance especially for students interested in research and graduates who pursue

academic or scientific careers (Dr. P. Campitelli, personal communication, February 20, 2018).

As expressed in Chapter 3 in the description of the interview protocols, the two ESP practitioners in charge of the English course at the FCA were asked to define students' reading proficiency according to the CEFR levels. Regarding this matter, there was not complete agreement between the two instructors: while one of them thought that the reading proficiency of students was mainly at the A2 level with a small percentage of students in the B1 band, the other claimed all of them could be placed at the B1 level. In spite of the fact that these questions simply tap into the ESP practitioners' perceptions as to students' reading proficiency, there seems to be agreement as to that level being in the post elementary to pre-intermediate range.

Regarding the different situations or tasks in which graduates need to use the foreign language, eight of the interviewees agreed that reading updated materials, either scientific or technical was of paramount importance for graduates, and almost half of the subjects claimed that writing e-mails was a challenging task for most professionals. Other participants added to the list the oral presentation of products (3/11) and of technical or scientific information (4/11) as situations that also require the use of English. Job interviews were also mentioned, especially for those graduates interested in working for multinational companies (1/11).

When asked whether graduates of the FCA were able to perform successfully in the linguistic situations discussed above, four interviewees answered that graduates could only perform well when it came to reading comprehension. Five interviewees, on the other hand, expressed that graduates were not fully prepared to face these linguistic challenges. Within this group, in which there were ESP practitioners as well as SM teachers, four participants explained that the main reason for this poor performance was probably the limited time allotted to the teaching of English in the programme of studies. Two interviewees excused themselves from answering the question based on their lack of knowledge on the matter.

Two suggestions made by the participants to improve the English proficiency of students and graduates seemed to point in the same direction, namely, the design and

implementation of extra-curricular courses (4/11) that students could take as elective subjects and the allotment of more time to the teaching of the subject English in the curriculum course of studies (3/11). As regards this last idea, one authority of the FCA who was interviewed explained that she favoured the extra-curricular courses, based on the fact that modifying the curriculum is not something that the institution would consider as an option for the time being and added that the curriculum of the programme is flexible enough to allow for new academic proposals as part of the *Programa de Formación Integral.* This idea was also shared by Dr. P. Campitelli (informal communication, February 20, 2018) who expressed the interest of the institution to widen the range of the courses offered to students within the frame of this programme. The *Programa de Formación Integral* of the FCA aims at the integral education of students during academic years. It gives students academic credits for participating in different types of extra-curricular activities that range from sports, to academic courses and artistic experiences.

Two interviewees suggested focusing on reading skills in potential new extra-curricular courses and others recommended including written materials in English in the hand-outs of disciplinary subjects (3/11). This would, as it was argued by the graduate, may make students aware of the importance of taking up the ESP course as soon as possible during the course of studies.

Other suggestions were to develop other skills in the ESP course such as listening and speaking (3/11), to include new texts and more diverse genres in the ESP coursebook (1/11) and to improve the facilities of the classrooms to adapt them to the requirements of the teaching of a language, for instance, by buying better sound equipment (1/11). One participant suggested that the UNC and the FCA should promote more international exchanges for students.

Finally, the Secretary of Academic Affairs revealed the importance she attributes to this study and its potential impacts on the subject English and on the general academic offer of the FCA. She expressed that an update in the syllabus would make the subject more meaningful for present and future students.

4. 8. Means analysis

This section will present the results of an analysis of the context where the existing course takes place. This will contemplate institutional, academic and physical factors that may affect the present course and potential future ones at the FCA.

The subject English belongs to the fifth year of the programme of Farming Engineering but it can be taken up by students who have successfully passed core second-year subjects. Currently, English is a 35-hour ESP reading comprehension course. Classes are taught once a week, in the morning and in the afternoon.

As regards the requirements of the subject, apart from getting passing marks in term tests, students must complete a series of online activities in the virtual classroom and participate in the creation of a collaborative glossary also available online. Each student's participation is regularly followed by teachers during the semester,

The physical facilities available for the teaching of the subject include several large classrooms in the main buildings with installed equipment for audio-visual activities. Additionally, the virtual learning platform offers a wide range of tools for the creation of pedagogical activities, some of which are already exploited by the ESP teachers. To collaborate with the members of the teaching staff working with virtual classrooms, the FCA offers the assistance of a technical support team.

Although the syllabus of the programme of studies of Farming Engineering assigns only 35 hours to the teaching of the foreign language, the flexibility of the *Programa de Formación Integral*, which has been previously described in Chapter 4, makes room for the implementation of a wide range of extra-curricular courses for which students can get extra credits.

The Chair of English is made up by three full-time teachers who are in charge of teaching the previously described ESP course together with the subjects English I and II of the Technical Degree Program in Gardening and Floriculture offered by the FCA.

Apart from teaching, the ESP teachers participate actively in Extension programmes and in UNC and FCA-funded research projects.

4. 9. Conclusion

The results of the interviews evidenced the importance given by the participants to the teaching of English in the programme of studies as an important tool for students and graduates to advance in the academic and professional worlds. The central role attached to the foreign language is shared by the authorities of the FCA consulted, who expressed their interest in improving the academic offer of the institution regarding English instruction through the implementation of extra-curricular courses.

Almost complete consensus was also found in terms of the most important skill for students and graduates of Agronomic Studies. Taken together, the results of the questionnaires, the interviews and the personal communications here presented, showed the importance attached by participants to the macro-skill of reading as a key factor in academic and professional success.

The findings, however, showed less agreement between students and teachers on the importance of the other three macro-skills. For example, while students favoured receptive skills over productive ones as the most important during academic life and after graduation, teachers interpreted the relevance of macro-skills differently. Similarly, there are also differences between teachers and students regarding the most-frequently used sub-skills, particularly regarding speaking and writing sub-skills, in academic life.

The means analysis evidenced that the Chair of English counts with experienced teaching staff who are actively engaged in the community of the FCA and that the institution has at its disposal adequate physical facilities and technological resources.

The results of interviews carried out with the authorities of the FCA, and the informal communication with the Secretary of Academic Affairs showed the openness of the authorities of the institution to modify the programme of the present English course to tailor it to students' actual needs. This consensus opens the door to the re-design of the existing course and the presentation of other recommendations if deemed necessary.

V. DISCUSSION

5. 1. Introduction

This section will discuss the main findings of this Needs Assessment case. It will explore and present the results of the Present Situation Analysis, as well as the ranking of the macro-skills and the sub-skills reported as needed, in terms of the perceptions of the main sources of this study, namely, the undergraduate students and graduates of the FCA, the teachers and other stakeholders.

This chapter will also suggest possible explanations for the differences between teachers and students' perceptions that were presented in Chapter 4. Similarly, the outcomes of the means analysis, the interviews and the personal communication with the Secretary of Academic Affairs will be discussed. This section will also present the criterion used for the prioritisation of needs and the pedagogical proposal.

5. 2. Discussion of results

The results of students' self-evaluation indicated that the subjects believed their receptive skills were better than the productive ones and that their highest level of confidence was placed on their reading ability, which more than 60% of the participants considered to be basic. Both ESP teachers agreed on this matter and expressed that students' reading proficiency level was between post-elementary and pre-intermediate.

The general agreement between students and teachers' opinions in the questionnaires on the fact that reading is the most important ability in students' academic lives and in graduates' professional lives was also reflected in the results of the interviews. Almost

all the interviewees (10/11) shared that view and considered that reading should be given priority in ESP courses. The importance assigned to this reading was justified by, among other reasons, because of its role as a tool for accessing new knowledge and socializing it. This almost general consensus could be explained by the centrality of the practice of reading for students and professionals of the Agronomic Sciences and the frequency with which this skill is actually needed in academic and professional contexts.

Students ranked reading first and placed listening as the second most important skill during the programme of studies, followed by speaking and writing. The interviews yielded similar results since those participants who did rank the abilities, did it in the same order. These findings are consistent with those obtained in Rajabi and Azarpour's study (2011) on the needs of Business Administration students in Iran, in which more than 55% of the students ranked reading as the most important skill for academic life and the teachers agreed that this skill was key in determining students' success at university.

As presented in Chapter 4, the answers of the questionnaire completed by a high authority of Secretary of Academic Affairs revealed the same results. The agreement between the views of this participant and those of students could be explained by her daily contact with them and their experiences in the academic setting being studied and her inside knowledge of what students are actually required to do with the foreign language during the academic years and beyond.

In the present study, almost 90% of the teachers placed reading in the first position during academic life, but this time, followed by writing, listening and speaking. The inclusion of writing in the second position is in line with the opinions expressed in the interviews by the two SM teachers of the FCA and the Extension agent, who also ranked writing as the second most important skill for students during their university studies. The subject matter lecturers argued that writing, in L1 as well as in L2, is the best way to process new ideas and create new ones based on what has been read and a tool to share new knowledge.

The important role assigned to writing may also be explained by the demands of the career path teachers have chosen and their need to publish regularly in national and international journals. The unexpected result seems to indicate the concern of teachers regarding the writing abilities of students in the specific context of the FCA.

Regarding the most important skills after graduation, students ranked them in the same way they had done it for academic life, namely, reading, listening, speaking and writing. Teachers, however, changed their ranking and valued the importance of skills differently after graduation. They continued regarding reading as the most important ability but this time followed by speaking, listening and writing. Teachers placing speaking as being the second most important skill for graduates may arise from their acquaintance, as professionals of the Agronomic Sciences, with the requirements of many companies of the agribusiness sector regarding the foreign language.

Teachers and students agreed almost completely on their perceptions about the most frequently used reading sub-skills during the programme of studies. Among those they placed: reading operator's manuals, advertising brochures for chemical products and machinery, semi-popularization articles written by University Extension experts or found in professional magazines, discipline specific webpages and research articles. Similar results were found by Reza-Atai and Shoja (2011), who reported that more than 60% of the undergraduate students considered that reading subject specific texts was a helpful skill to succeed in academic life, and by Rajabi and Azarpour (2011), who reported that students considered reading articles on the Internet (61%) and reading specialised articles (51%) as important sub-skills for academic life.

The variety of resources that readers can access in webpages calls for further research regarding the type of materials students consult online. As webpages may have several functions, they allow the inclusion of a variety of texts with different purposes in one document (Santini, 2006). One of the possibilities to introduce students to webpages would be the analysis of homepages, which can be regarded as gateways to the contents of a website and which serve the purposes of creating or establishing the identity of the sender, presenting news, and subtly organising the information in the website through the use of links, among others (Askehave & Nielsen, 2005).

In spite of the fact that reading textbooks in English was not chosen by students as a frequently used sub-skill, teachers thought it was needed for undergraduates. One possible explanation for this finding is that, while teachers expect their students to read and study from textbooks, students seem to favour other sources. The sharp difference in perceptions between teachers and students on this matter is reflected in a statistically significant difference of < 1%.

The existence of these statistically significant differences may or may not have practical implications in real life. For instance, 65.52% of the students reported that reading semi-popularization articles was a frequently used sub-skill, while 81.11% of the teachers agreed on that. This resulted in a statistically significant difference of < 1%. However, for pedagogical and practical purposes, the difference is not relevant for this study, as both groups of subjects thought that this sub-skill was frequently used and necessary. It could be argued, though, that teachers appear to highly value certain bibliographical sources, such as semi-popularization articles and research papers, and also to believe that their students resort to them for study purposes more often than students report doing it.

All the listening sub-skills listed in the questionnaire were considered by teachers as frequently used during academic life, namely, understanding conversations about topics of general interest, understanding English speaking teachers and students, understanding lectures and presentations in scientific or technical events and understanding discipline related videos. However, students only considered this last sub-skill as being frequently used (58.62%). The results seem to indicate that teachers overestimate the number of situations in which students are in contact with spoken English or their willingness to participate in them.

The fact that students placed listening as the second most important skill in the ranking and that they only reported listening to videos in their academic lives, appear to be contradictory results. However, this may not hold true since students' ranking was based on the perceived importance of the different abilities, while the selection of the most frequently used sub-skills was based on their perception of the actual occurrence of certain linguistic practices.

Teachers also considered that most of the speaking sub-skills proposed in the questionnaires were frequently used by students in their academic lives; however, students claimed that none of them were needed during their university studies. Among the sub-skills that teachers mentioned were: asking and answering questions in scientific events, presenting one's work in these events and communicating with foreign visitors at the FCA. Reza-Atai and Shoja (2011) had also reported that 60% of the teachers in their sample considered that participating actively in scientific events was helpful for students during their university years.

As in the case of listening sub-skills, one possible explanation for the differences in the results is that teachers' answers might be based on their assumptions rather than on their knowledge of undergraduates' linguistic practices, or on their opinions about what is best for students to learn to succeed in their studies. Differences in perception were also observed when it came to writing sub-skills since none of the abilities considered as frequently used by teachers, namely, writing a CV, writing abstracts and research articles and writing e-mails and letters of application were reported as needed by students.

The results discussed show that there are important differences in the perceptions of the two groups of subjects, especially regarding oral and written communication during the course of studies. These differences, as expressed above, appear to reflect teachers' expectations about what students should do or their assumptions about students' actual needs.

These discrepancies have major implications for the prioritisation of needs as they call for informed decisions on whose voice to give priority to regarding these matters in a future course design. It is this researchers' opinion that it would be safe to assume that students as insiders are describing what they perceive to be their actual linguistic practices, thus being reliable sources of information.

More agreement can be observed in the results obtained regarding the most frequently used sub-skills by professionals in the workplace. To the most frequently used reading sub-skills reportedly used during academic life, teachers and students added some to the list, namely, reading research and business reports, as well as textbooks in English.

These results are in line with the opinions gathered in the interviews, where 8 out of 11 participants claimed that reading updated discipline related material was of paramount importance for professionals.

All the listening sub-skills listed in the questionnaires as potentially needed by Farming Engineers in the workplace, that is, understanding conversations about topics of general interest, understanding English speaking teachers and students as well as lectures and presentations delivered in English were considered as frequently used by both groups of participants. The highest consensus, with about 93% in both groups, was reached on the importance of understanding discipline related videos. This finding seems to indicate that this is a highly valued sub-skill for both, academic and professional life.

Similarly, a high level of agreement was observed in the sub-skills involving oral communication. Asking and answering questions in scientific events, making oral presentations in these events and talking to other Farming Engineers and farmers were regarded as frequently used. These results are comparable to those obtained from the interviews where the oral presentation of products (3/11) and that of technical and scientific information (4/11) were considered situations graduates face regularly.

One interesting statistically significant difference of $< 1\%$ can be observed when it comes to interacting in job interviews. In this particular case, teachers appear to be more aware, due to personal experience or that of their colleagues, of the hiring practices of some companies of the agribusiness sector, especially of multinational companies, and the importance assigned by these companies to spoken English proficiency. This argument could be supported by the results of the interview in which the strategic role of English as a tool to access job opportunities was highlighted.

Teachers and students also agreed on the writing sub-skills professionals use more often. Both groups of subjects reported that writing CVs, e-mails, business and/or research reports and taking notes in scientific events were among these frequently used sub-skills. Almost half of the interviewees (5/11) also mentioned that writing e-mails was a challenging task for professionals.

Writing abstracts and writing research articles were also considered as needed sub-skills but in both cases statistically significant differences of < 1% were observed. While 91.11% of teachers believed that writing abstract was a something graduates regularly do, only 65.02% of students agreed. Similarly, while more than 85% of the teachers thought that writing research articles is a sub-skill graduates usually need, only about 55% of students did so. These differences could be interpreted as the intention of many students to pursue career paths in which publishing is not a job requirement.

The results of the means analysis showed the limited amount of time allotted to the subject English in the curriculum of the programme, which also appeared as a concern of some interviewees. Although changing the curriculum is not feasible in the short term, as it was explained by a high authority of the institution, the current administration has reported being open to implementing new extra-curricular courses.

Taking into consideration the data gathered in the present study and contrasting it with the information of the means analysis, which highlights the limitations, for instance, in the curricular time devoted to English in the programme, it can be concluded that these limitations call for a prioritisation of needs in order to make any academic proposal feasible.

Being reading considered the most important skill by most of the participants, the recommendations should be oriented to the design of a course or courses aimed primarily at the development of this ability. The contents of the English course or courses should focus on the sub-skills and the genres identified as being the most frequently used during the programme and after graduation. The pedagogical proposal should also take into consideration students' opinions about their learning needs. Regarding these needs, 60% of them expressed that they favoured the idea of classes being taught once a week.

The next section will be devoted to the description of the pedagogical proposal recommended.

5. 3. Pedagogical implications

Based on the findings described, a re-design of the current ESP course will be suggested as well as the implementation of a second extra-curricular reading course. The existing course will continue to be guided by the principles of ESP and will be oriented towards the development of the reading sub-skills that teachers and students deemed most necessary.

The content of the curricular course will be determined by the sub-skills, and the linguistic situations and genres reported as needed. Due to time constraints, this first course will focus on the following genres: advertising brochures for chemical products and machinery, operator's manuals for machinery, semi-popularization articles from Extension Departments or found in professionals magazines, textbooks and discipline specific homepages.

Apart from reading comprehension activities and training on specific reading strategies, tasks oriented towards the development of genre awareness will be included in the virtual classroom. In addition, and based on the concerns of the English Department about students' difficulties in writing in L1 and on the SM teachers' perceptions of the importance on writing during the course of studies, activities oriented towards the use of metacognitive strategies in summary writing -from a L2 text to a L1 text- will continue to be part of the syllabus of the course. Regarding this matter, it is worth mentioning that the three ESP teachers of the FCA, some disciplinary teachers and advanced students are currently working in an FCA-funded research project about the role of metacognition as a means to improving the writing of summaries in the discipline.

A new 35-hour extra-curricular course to further develop reading skills will also be proposed to the authorities of the FCA. The course will focus on the reading comprehension of abstracts, research articles and research and business reports. Some additional activities regarding the reading of institutional and corporate e-mails will also be available in the virtual classroom that will be designed as a support for the face-to-face 35 hour course.

Both courses will consist of a 2-hour weekly class and a virtual classroom designed to provide additional support through extra reading practice, strategy application and metacognitive reflection activities. Materials for both courses will be especially designed by the members of the English Department.

5. 4. Conclusion

As stated earlier, the pedagogical proposal was based on the results of the survey, the means analysis and the subsequent prioritisation of needs. In this NA study the voices of all the participants involved were accounted for and, when describing the academic context, students' opinions were valued as the voices of insiders who know their needs and the existing practices in academic life.

The consensus regarding the centrality of reading and the constraints evidenced by the means analysis, led this researcher to focus the proposal on the development of reading skills and on the genres deemed more necessary in academic and professional life.

It is expected that the implementation of the two courses should improve the adequacy of the existing English course as well as to make the academic offer more suitable to students' actual language needs. This expectation is based on three main reasons. First, the courses will be centred on reading, which is the most important skill as perceived by almost all the participants of this survey. Second, the courses will be focused on the teaching of genres that teachers and students reported as the most frequently used during academic life and professional life. Third, the two courses will render an informed and unified academic offer that would make them more appealing and relevant to students.

VI. CONCLUSION

6. 1. Introduction

This chapter will present the conclusions that can be drawn from the present study. It will do so by referring to its objective the research questions that guided it. The most relevant aspects of the theoretical framework, the results and the pedagogical proposal will also be highlighted. Some final thoughts about NA as a process and the contributions of the present research to Needs Assessment will be highlighted.

6.2 Conclusions of the study

The main goal of the current study was to determine the language needs regarding the use of English of Farming Engineering students and to provide useful information to improve the current language course taught during the programme of studies. In order to achieve this purpose, the study tapped into what the different actors of the FCA thought about the macro-skills that should be a priority for students and graduates of the FCA, the most frequently used micro-skills in academic and professional life and the genres that are most likely to be encountered in these contexts.

The theoretical underpinnings for this research work were found in the fields of LSP and ESP. The theoretical framework presented showed how these areas of study have rapidly grown over the past 50 years and that they have been drastically reshaped, among other factors, by the outcomes of research in the fields and the worldwide expansion of English as the language of technology, trade and education. This expansion has simultaneously created a wide range of highly specific learning contexts and an increasingly diverse student population.

The paradigmatic changes in EAP have focused the attention of researchers and practitioners on the understanding of the contexts where the courses are immersed, the communicative practices and genres of the communities being explored, and most importantly, of the participants of such communities. Critical perspectives have contributed to further problematise this scenario by reflecting on the dynamics of power relations and the role assigned to students in EAP.

The transformations that EAP has undergone since its inception have had direct impact on Needs Assessment as the area of knowledge that provides the tools to tap into the specific needs of more diverse and complex contexts. Some core concepts have gained strength as guiding forces in the discipline, namely, the significant role assigned to learners and their opinions in the NA process, the cyclical nature of NA and the importance of the triangulation of methods and sources.

Jasso-Aguilar's study (1999) clearly exemplifies the importance of representing learners' opinions about their own needs in NA and the differences in perception that insiders and outsiders may have on the same situation. Similarly, the study stresses the significance of acknowledging learners as a reliable source of information to better understand the situation being explored. In line with this, a similar approach was used in the present study. When exploring undergraduates' needs in the academic context of the FCA, students' views were prioritised as they were considered to be the reflection of learners' inside knowledge of the language practices required in this specific context.

In spite of the fact that some differences in perceptions between students and teachers found in this research work seem to suggest the possible unreliability of outsiders as sources of information in particular contexts, this does not invalidate teachers' opinions as informants, which in this study have been interpreted as expressions of what they believe will be useful and desirable for undergraduates to learn.

Another widely accepted idea in NA today is the relevance of understanding NA as part of a larger and cyclical process that involves other stages, such as course and syllabus design, teaching, learning and evaluation (Dudley-Evans & St John, 1998). The present research work can be said to illustrate how NA and syllabus design are intrinsically

interconnected and form part of a dynamic cycle where the information provided by the former fuels the latter.

Due to the limitations imposed by the scope of the present study, it was not possible to explore how the other stages interact and, in turn, feedback on the cycle. However, the outcomes of this study open the door to possible lines of research which could look into, among other areas, the best data-collection techniques to be used during the implementation stage and the different methods and parameters of evaluation of the teaching and learning processes.

Finally, NA researchers have also come to acknowledge the importance of methodological triangulation, which can be accomplished by, among other factors, the use of different sources of information and data-collection instruments. In line with this, the present study used a triangulated design that consisted of the implementation of questionnaires and interviews and the participation of various actors of the FCA. This methodological design enabled the inclusion of different voices in this process and the triangulation of quantitative and qualitative data.

Additionally, the means analysis carried out shed some light on the limitations and potentialities of the context. While, the presence of an experienced ESP teaching staff and the adequate physical facilities of the institution are identified as positive variables affecting the existing course and potential new ones, the limited time allotted to English in the programme of studies constitutes a clear constraint. However, this limitation can be counterbalanced by the flexibility of the *Programa de Formación Integral*. As it was described in Chapter 4, this programme makes room for the implementation of extra-curricular courses within the frame of the Farming Engineering programme.

Regarding the research questions that guided this study, it can be said that this study has satisfactorily answered them. To begin with, the study has evidenced the importance given to reading as the most important macro-skill to succeed in academic and professional life by the different actors of the FCA. The key role assigned to reading was attributed to, among other factors, its instrumental value to access new knowledge, to improve graduates' chances in the work market and to socialise the findings of research.

The almost absolute agreement on the central role of reading was not found in the ranking of importance of the three remaining macro-skills. Students clearly favoured receptive skills over productive ones during academic life and in the workplace, which could be understood as a reflection of undergraduates' perception that they are likely to have, in the present and in the future, more opportunities to incorporate knowledge through English than to engage in situations that require oral and written interactions in the foreign language.

Teachers, as previously expressed, ranked macro-skills differently from students. During academic life, they placed reading and writing as working together in the first and second position. This result was explained as a possible reflection of teachers' deep concern about students' ability to adequately express their ideas in written form in L1 and L2 and of their understanding of the underlying connections between these two skills.

After graduation, teachers continued to place reading as the most important ability but this time immediately followed by speaking. The importance given to speaking seems to reveal teachers' knowledge about some linguistic practices involving the use of English that graduates are likely to encounter. The recruiting practices of companies that need workers who can speak the foreign language, and teachers' own linguistic needs as members of the scientific community could be mentioned among those practices.

This study has also successfully identified the sub-skills and the genres that participants reported as being most needed by undergraduate students and professionals of the Agronomic Sciences. As regards reading, teachers and students agreed almost completely on the most frequently used reading sub-skills during the programme of studies. Among these skills they include reading operator's manuals, advertising brochures for chemical products and machinery, semi-popularization articles written by University Extension experts or found in professional magazines, discipline specific webpages and research articles.

Similarly, results showed that teachers and students agreed almost entirely on their views on the most needed reading sub-skills after graduation. The sub-skills of reading

research and business reports, e-mails and memos and textbooks in English were added to the ones reportedly being needed by undergraduates.

The selection of genres chosen as the most frequently needed introduces potential lines of research and raises inspiring questions. Firstly, the widespread availability of discipline related resources on Internet and teachers and students' shared perception that understanding these resources is something that undergraduates and professionals frequently need to do, pose interesting questions about electronic genres in the field of Agronomic Studies and their ever-evolving nature. Secondly, the specificity of some of the genres seems to indicate the need for further inquiry into their functional, rhetorical and formal characteristics and the best pedagogical strategies to teach them in the context studied.

A comprehensive analysis of the results of the survey and of the contextual constraints that were identified in the means analysis called for a prioritisation of needs to be able to design a course or courses that would meet the needs of the insiders in this ESP situation in order to empower them as members of a discourse community and to prepare them to function effectively within such community.

Due to the importance given by participants to reading, the time assigned to English in the programme of studies and the unfeasibility to change such programme in the foreseeable future, the decision, as explained in Chapter 5, has been to build the pedagogical proposal around the skill of reading. The proposal, which includes the re-design of the current ESP course and the implementation of an extra-curricular reading course, aims at meeting students and graduates' needs to access discipline specific materials and at teaching the sub-skills and genres that were reported as most needed.

It is expected that the pedagogical proposal presented should improve the adequacy of the existing language course to adapt the academic offer to students' actual language needs and to make the courses more relevant and more appealing to the student population.

6. 3. Final reflections

This study can contribute to the understanding of the relevance of contextual factors in NA and their impact on syllabus and materials design. As each context is unique, the NA researcher must find the best way to approach a NA to adapt it to the characteristics of the situation explored. The context-bound nature of this process, however, does not rule out the potential usefulness of the information here presented for other researchers working in similar settings.

It can also be concluded that even though, in general, not all the perceived needs of the different stakeholders can possibly be addressed due to contextual constraints, as it was the case in this study, a NA process that uses different instruments and sources and applies triangulation still stands as a sound and democratic approach to course design as compared to those which are mostly based on experts' intuitions.

It is also worth reflecting on the changing nature of the demands of academia and of the globalised market, which calls for the need to regard Needs Assessment as an open on-going process that can provide the tools to identify new or untapped needs. This requires not only the periodical re-assessment of the present situation, the target needs and the context, but also the collaboration among the different stakeholders in the process in order to continue meeting learners' needs along the passing of time.

This could be achieved by the periodical use of digital resources, such as online questionnaires and surveys, to engage students of future cohorts in the process of Needs Assessment. These digital instruments should also be available to other actors of the FCA, included those who have already participated in this NA, so as provide them with the opportunity to regularly report on what they consider to be new or previously undetected needs, and to express their opinions about the courses and their implementation.

From a personal standpoint, it is this researcher's humble expectation that the findings of this study and the recommended pedagogical proposal should be beneficial to the FCA and its students, and that they should contribute to the understanding of the richness and complexity of Needs Assessment as a process that can help us, ESP practitioners, to meet our students' linguistic and learning needs by means of our teaching practices in the contexts where were are immersed.

VII. REFERENCES

Alsamadani, H. A. (2017). Needs analysis in ESP context: Saudi Engineering students as a case study. *Advances in Language and Literary Studies, 8* (6), 58-68. Retrieved from https://journals.aiac.org.au/index.php/alls/article/viewFile/4006/3190

Askehave, I. & Nielsen, A. E. (2005). Digital genres: a challenge to traditional genre theory. I*nformation Technology & People, 18*, (2), 120-141. Retrieved from https://www.researchgate.net/profile/Anne_Ellerup_Nielsen/publication/40234533_Web-Mediated_Genres_-_A_Challenge_to_Traditional_Genre_Theory/links/0deec51c5b01908bcd000000.pdf

Atai, M. R. & Shoja, L. (2011). A triangulated study of academic language needs of Iranian students of computer engineering: Are the courses on track? *RELC Journal, 42* (3), 305-323.

Basturkmen, H. (1998). Refining procedures: A needs analysis project at Kuwait University. *Forum, 36,* (4), 2-9.

Belcher, D. (2013). The future of ESP research: Resources for access and choice. In B. Paltridge. & S. Starfield (Eds.), *The handbook of English for Specific Purposes* (pp. 535-551). Malden, MA: Blackwell.

Bosher, S. & Smalkovski, K. (2002). From needs analysis to curriculum development: Designing a course in health-care communication for immigrant students in the USA. *English for Specific Purposes, 21,* 59-79.

Bueno Velazco, C. & Hernández Más, M. (2002). Inglés con fines específicos: entonces y ahora. *Rev Hum Med, 2* (1). Retrieved from http://bvs.sld.cu/revistas/revistahm/numeros/2002/n4/body/hmc030102.htm

Charles, M. (2013). English for Academic Purposes. In B. Paltridge. & S. Starfield (Eds.), *The handbook of English for Specific Purposes* (pp. 137-153). Malden, MA: Blackwell.

Consejo de Europa para la publicación en inglés y francés (2002). Marco común europeo de referencia para las lenguas: aprendizaje, enseñanza, evaluación. Madrid: Ministerio de Educación, Cultura y Deporte. Subdirección General de Cooperación Internacional. Retrieved from https://cvc.cervantes.es/ensenanza/biblioteca_ele/marco/cvc_mer.pdf

Cowling, J. D. (2007). Needs analysis: Planning a syllabus for a series of intensive workplace courses at a leading Japanese company. *English for Specific Purposes, 26,* 426–442.

Di Rienzo, J. A., Casanoves, F., Balzarini, M. G., Gonzalez, L., Tablada, M., Robledo, C.W. (2015). InfoStat versión 2015. Grupo InfoStat FCA. Argentina: Universidad Nacional de Córdoba.

Dörnyei, Z. (2003). *Questionnaires in second language research: Construction, administration, and processing*. London: Routledge.

Dudley-Evans, T. & St. John, M. J. (1998). *Developments in English for Specific Purposes: A multi-disciplinary approach*. Cambridge: Cambridge University Press.

Flowerdew, L. (2013). Needs Analysis and Curriculum Development in ESP. In B. Paltridge & S. Starfield (Eds.), *The handbook of English for Specific Purposes* (pp. 325-346). Malden, MA: Blackwell.

García-Romeu, J. & Jiménez Tenés, M. (2004). Análisis de necesidades (I), una propuesta para conocernos. Retrieved from https://cvc.cervantes.es/aula/didactired/anteriores/agosto_04/16082004.htm

García-Romeu, J. (2007). *Análisis de necesidades, negociación de objetivos, autoevaluación: una aplicación didáctica para evaluar y adaptar programaciones de cursos de nivel avanzado*. (Master's thesis). Madrid: Universidad Antonio de Nebrija. Retrieved from http://www.educacionyfp.gob.es/educacion/mc/redele/biblioteca-virtual/numerosanteriores/2007/memoriamaster/2-trimestre/garcia-romeu.html

Hamp-Lyons, L. & Hyland, K. (2002). EAP: issues and directions. *Journal of English for Academic Purposes, 1* (1), 1-12. Retrieved from http://www2.caes.hku.hk/kenhyland/files/2012/08/EAP_issues-and-directions.pdf

Hamp-Lyons, L. (2011). What Is EAP? In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning*, 2 (pp. 89-105). London: Routledge/Taylor & Francis.

Hyland, K. (2006a). *English for Specific Purposes: An advanced resource book*. London: Routledge.

Hyland, K. (2006b). English for Specific Purposes: some influences and impacts. In A. Cummins & C. Davison (Eds.), *The International handbook of English language education, 1* (pp. 379-390). Norwell: Springer.

Hyland, K. (2018). Sympathy for the devil? A defence of EAP. *Language Teaching, 51* (3), 383-399. Retrieved from https://www.researchgate.net/publication/325629858_Sympathy_for_the_devil_A_defence_of_EAP

Hutchinson, T. & Waters, A. (1987). *English for Specific Purposes.* Cambridge: Cambridge University Press.

Jasso-Aguilar, R. (1999). Source, methods and triangulation in Needs Analysis: A critical perspective in a case study of Waikiki hotel maids. *English for Specific Purposes, 18* (1), 27-46.

Jordan, R. (1997). *English for Academic Purposes: A guide and resource book for teachers.* Cambridge: Cambridge University Press.

Long, M. (Ed.), (2005). *Second language Needs Analysis*. Cambridge: Cambridge University Press.

Montes de Oca Barrera, L. B. (2016). Una ventana epistémica a la (inter) subjetividad. Las potencialidades del método etnográfico. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *17* (1) Art. 8. Retrieved from http://www.qualitative-research.net/index.php/fqs/article/view/2227/3928

Munby, J. (1978). *Communicative syllabus design.* Cambridge University Press: Cambridge.

Paltridge, B. & Starfield, S. (Eds.), (2013). *The handbook of English for Specific Purposes*. Malden, MA: Blackwell.

Rajabi, P., & Azarpour, N. (2011). Academic needs of Iranian business administration students in ESP classes. *Contemporary Online Language Education Journal, 1*, 20-32.

Robinson, P. (1991). *ESP today: a Practitioner's guide.* Hemel Hempstead: Prentice Hall International.

Santini, M. (2006). Identifying genres of web pages. *Proceeding of TALN 2006 (Traitement automatique des langues naturelles)* (pp. 307-316). Retrieved from https://www.researchgate.net/publication/228741493_Identifying_genres_of_Web_pages

Starfield, S. (2013). Critical perspectives on ESP. In B. Paltridge. & S. Starfield (Eds.), *The handbook of English for Specific Purposes* (pp. 325-346). Malden, MA: Blackwell.

Strevens, P. (1988). ESP after twenty years: a re-appraisal. In M. Tickoo, (Ed.), *ESP: state of the art.* Singapore: SEAMEO Regional Language Centre.

UNC. (2015). *Anuario Estadístico 2015.* Retrieved from
    http://unc2.unc.edu.ar/academicas/areas-y-
    programas/estadisticas/anuarios/anuario-2015/anuario-2015

Upton, T. A., (2012). LSP at 50: Looking back, looking forward. *Ibérica*, 23, 9-27.
    Retrieved from https://www.redalyc.org/articulo.oa?id=287024475002

VIII. APPENDICES

8. 1. Appendix A. Students' questionnaire

Encuesta

Sres. Estudiantes:

Esta encuesta forma parte de una investigación acerca de las necesidades lingüísticas con respecto al inglés de los alumnos de la Facultad de Ciencias Agropecuarias de la Universidad Nacional de Córdoba. Tómese el tiempo que necesita para completarla. Agradezco desde ya su colaboración.

I. Datos personales

Nombre:..
Edad: ....
Sexo: Femenino/Masculino
E-mail: ....

II. Otros conocimientos de inglés

1. Curso principalmente materias del:

   2º año   3º año   4º año   5º año

2. Aparte de la instrucción recibida en el secundario, ¿tiene usted otros conocimientos de inglés?

   SI   NO

a. Si la respuesta es SI, indique cuántos años estudió y dónde.

....

3. ¿Ha rendido usted algún examen internacional o expedido por una universidad nacional en los últimos 4 años?

   SI   NO

a. Si la respuesta es SI, indique cuál ha rendido.

....

4. Debajo encontrará oraciones que describen distintos niveles de conocimiento de inglés desglosados por habilidades. Es decir, la comprensión auditiva, la comprensión lectora, la expresión oral y la expresión escrita. Por favor, lea los descriptores con atención y coloque en la línea de puntos una tilde ✓ en el que usted cree mejor refleja su nivel actual en cada una de las cuatro habilidades.

1) Comprensión auditiva

a............. Reconozco palabras y expresiones muy básicas que se usan habitualmente, relativas a mí mismo, a mi familia y a mi entorno inmediato cuando se habla despacio y con claridad.

b.............Comprendo frases y el vocabulario más habitual sobre temas de interés personal (información personal y familiar muy básica, compras, lugar de residencia, empleo).

c............. Comprendo las ideas principales cuando el discurso es claro y normal y se tratan asuntos cotidianos que tienen lugar en el trabajo, en la escuela, durante el tiempo de ocio, etc. Comprendo la idea principal de muchos programas de radio o televisión que tratan temas actuales o asuntos de interés personal o profesional.

d.............Comprendo discursos y conferencias extensos e incluso sigo líneas argumentales complejas siempre que el tema sea relativamente conocido. Comprendo casi todas las noticias de la televisión y los programas sobre temas actuales. Comprendo la mayoría de las películas en las que se habla en un nivel de lengua estándar.

2) Lectura comprensiva

a.............. Comprendo palabras y nombres conocidos y frases muy sencillas, por ejemplo en letreros, carteles y catálogos.

b.............Soy capaz de captar la idea principal de avisos y mensajes breves, claros y sencillos. Soy capaz de leer textos muy breves y sencillos. Sé encontrar información específica en escritos sencillos y cotidianos como anuncios publicitarios, prospectos, etc. y comprendo cartas personales breves y sencillas.

c.............. Comprendo textos redactados en una lengua de uso habitual y cotidiano o relacionada con el trabajo. Comprendo la descripción de acontecimientos, sentimientos y deseos en cartas personales.

d.............Soy capaz de leer artículos e informes relativos a problemas contemporáneos en los que los autores adoptan posturas o puntos de vista concretos. Comprendo la prosa literaria contemporánea

85

3) Expresión oral

a............ Puedo participar en una conversación de forma sencilla. Planteo y contesto preguntas sencillas sobre temas de necesidad inmediata o asuntos muy habituales. Utilizo expresiones y frases sencillas para describir el lugar donde vivo y las personas que conozco.

b.........Puedo comunicarme en tareas sencillas y habituales que requieren un intercambio simple y directo de información sobre actividades y asuntos cotidianos. Soy capaz de realizar intercambios sociales muy breves. Utilizo una serie de expresiones y frases para describir con términos sencillos a mi familia y otras personas, mi trabajo actual y el último que tuve.

c...........Sé desenvolverme en casi todas las situaciones que se me presentan cuando viajo donde se habla esa lengua. Puedo participar espontáneamente en una conversación que trate temas. Puedo describir experiencias y hechos, mis sueños, esperanzas y ambiciones. Puedo explicar y justificar brevemente mis opiniones y proyectos. Sé narrar una historia o relato, la trama de un libro o película.

d..............Puedo participar en una conversación con cierta fluidez y espontaneidad. Puedo tomar parte activa en debates desarrollados en situaciones cotidianas explicando y defendiendo mis puntos de vista. Puede realizar descripciones claras y detalladas de una amplia serie de temas relacionados con mi especialidad. Sé explicar un punto de vista sobre un tema exponiendo ventajas y desventajas.

4) Expresión escrita

a............. Soy capaz de escribir postales cortas y sencillas. Sé rellenar formularios con datos personales, por ejemplo mi nombre, mi nacionalidad y mi dirección en el formulario del registro de un hotel.

b............ Soy capaz de escribir notas y mensajes breves y sencillos relativos a mis necesidades inmediatas. Puedo escribir cartas personales muy sencillas.

c.............Soy capaz de escribir textos sencillos y bien enlazados sobre temas que me son conocidos o de interés personal. Puedo escribir cartas personales que describen experiencias e impresiones.

d.........Soy capaz de escribir textos claros y detallados sobre una amplia serie de temas relacionados con mis intereses. Puedo escribir redacciones o informes transmitiendo información o proponiendo motivos que apoyen o refuten un punto de vista concreto. Sé escribir cartas que destacan la importancia que le doy a determinados hechos y experiencias.

III. Necesidades actuales con respecto al idioma inglés como estudiante de la carrera de ingeniería agronómica de la FCA UNC.

1. Reflexione: ¿Cuál es el nivel de importancia en su vida como alumno de cada una de las siguientes habilidades en inglés?. Considerando que 1 es el nivel más alto y 4 el más bajo, coloque sobre la línea de puntos la importancia que Ud. d/asigna a cada una.

a. Leer textos en inglés (lecto-comprensión) ....

b. Entender textos orales en inglés (audio-comprensión) ....

c. Expresarse oralmente en inglés ....

d. Escribir textos en inglés ....

2. Ponga una tilde ✓ en la opción que usted considere más apropiada.

Con respecto a la lecto-comprensión, y como estudiante de esta carrera necesito leer y comprender...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. manuales de Cátedra escritos en inglés					
b. páginas web relacionadas con mi especialidad escritas en inglés					
c. artículos científicos completos escritos en inglés					
d. artículos de semi-divulgación de Extensión o en revistas profesionales (por ejemplo, el ABC Rural)					
e. folletos o propagandas de productos o maquinarias					
f. libros de texto escritos en inglés					
g. manuales de uso de maquinarias escritos en inglés					
g. otros. Especificar: 1. .... 2. .... 3.					

Con respecto a la audio-comprensión, necesito...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. entender conversaciones en inglés sobre temas de interés general					
b. entender clases teóricas o presentaciones en congresos dadas en inglés					
d. entender videos de mi especialidad en inglés (en Internet)					
e. entender a otros estudiantes, docentes o colegas que hablen en inglés					
f. otros. Especificar. 1. .... 2. .... 3.					

Con respecto a la expresión oral, necesito...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. hablar y comunicarme en inglés con otros estudiantes, docentes o visitantes extranjeros					
b. hablar en inglés con profesionales/productores acerca de temas relacionados con mi especialidad					
c. realizar preguntas en ponencias dictadas en inglés en congresos y jornadas					
d. responder preguntas en inglés en congresos y jornadas					
e. presentar trabajos propios de investigación o extensión en inglés en congresos y jornadas					
f. formular preguntas y responderlas en inglés en clase					
g. hablar en inglés (por Skype) con miembros de un equipo de trabajo o investigación					
h. otros. Especificar 1. .... 2. .... 3.					

Con respecto a la escritura:	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. tomar notas en clases teóricas dictadas en inglés en la Facultad					
b. tomar notas en charlas dictadas en inglés en congresos y jornadas					
c. escribir resúmenes de trabajos de investigación para ser publicados en Actas de Congresos o revistas científicas (por ejemplo, AgriScientia)					
d. escribir informes redactados en inglés para las asignaturas de la carrera					
e. escribir un Curriculum Vitae en inglés					
f. escribir un artículo científico completo en inglés					
g. redactar una carta de presentación como candidato a una beca, o pasantía en inglés					
h. escribir e-mails en inglés para comunicarme con estudiantes, docentes, profesionales, etc.					
i. otros. Especificar. 1. .... 2. .... 3.					

IV. Necesidades futuras con respecto al idioma inglés como profesional egresado de la carrera de ingeniería agronómica de la FCA UNC.

Ahora usted deberá reflexionar sobre las necesidades que cree encontrará a futuro y como profesional egresado de la FCA (UNC)

1. Reflexione: ¿Cuál es el nivel de importancia en la vida profesional de cada una de las siguientes habilidades en inglés? Considerando que 1 es el nivel más alto y 4 el más bajo, coloque sobre la línea de puntos la importancia que Ud. d/asigna a cada una.

a. Leer textos en inglés (lecto-comprensión) ....

b. Entender textos orales en inglés (audio-comprensión) ....

c. Expresarse oralmente en inglés ....

d. Escribir textos en inglés ....

2. Ponga una tilde ✓ en la opción que usted considere más apropiada.

Con respecto a la lecto-comprensión, un profesional de las Ciencias Agropecuarias necesita leer y comprender...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. manuales de uso de maquinaria escritos en inglés					
b. páginas web relacionadas con mi especialidad escritas en inglés					
c. artículos científicos completos escritos en inglés					
d. artículos de semi-divulgación de Extensión o en revistas profesionales (por ejemplo, *ABC Rural*)					
e. folletos o propagandas de productos o maquinarias					
f. libros de texto escritos en inglés					
g. e-mails o memos de tipo empresarial escritos en inglés					
h. informes de avance de investigación o informes empresariales en inglés					
i. otros. Especificar. 1. .... 2. .... 3.					

Con respecto a la audio-comprensión, un profesional necesita...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. entender conversaciones en inglés sobre temas de interés general					
b. entender presentaciones en congresos dadas en inglés					
d. entender videos de mi especialidad en inglés (en Internet)					
e. entender profesores/alumnos que hablen en inglés					
f. otros. Especificar. 1. .... 2. .... 3.					

Con respecto a la expresión oral, un profesional necesita ...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. hablar y comunicarme en inglés con profesores / estudiantes extranjeros sobre temas de interés general					
b. hablar en inglés con otros profesionales / productores acerca de temas relacionados con mi especialidad					
c. realizar y responder en inglés preguntas en ponencias dictadas en congresos y jornadas					
d. presentar trabajos propios de investigación o extensión en inglés en congresos y jornadas					
e. formular preguntas y responderlas en entrevistas de trabajo y reuniones de trabajo					
f. hablar en inglés (por Skype) con miembros de un equipo de trabajo o investigación					
g. otros. Especificar 1. .... 2. .... 3.					

Con respecto a la escritura, un profesional necesita...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. tomar notas en charlas dictadas en inglés en congresos y jornadas					
b. escribir resúmenes de trabajos de investigación para ser publicados en Actas de Congresos o revistas científicas (por ejemplo, AgriScientia)					
c. escribir e-mails en inglés para comunicarse con estudiantes, docentes, profesionales, etc.					
d. escribir informes redactados para la empresa, cliente u organización para la cual trabaja.					
e. escribir un Curriculum Vitae en inglés					
f. escribir un artículo científico completo en inglés					
h. otro. Especificar. 1...................... 2...................... 3......................					

V. Necesidades de aprendizaje

1. Ahora reflexione sobre cómo le gustaría aprender inglés y ponga un tilde ✓ al lado de la opción que mejor refleje su preferencia.

a. Prefiero que la materia se dicte en modalidad

i. presencial ....   ii. semi-presencial (presencialidad y actividades virtuales)........   iii Virtual (a través de la plataforma educativa)........

Si su respuesta fue i. ó ii. , conteste por favor.

b. Prefiero tener clases
i. una vez por semana ....   ii- Dos veces por semana ....

c. La materia inglés debería tener la siguiente cantidad de niveles.

i. uno (como ahora)   ii. dos   iii. tres   iv. cuatro

d. Los niveles obligatorios deberían ser:

i. uno (como ahora)   ii. dos   iii. tres   iv. cuatro

d. Si tuviera que definir su estilo de aprendizaje tomando en cuenta estas opciones (a, b ,c, d), ¿Cuál elegiría? Ponga una tilde ✓ sobre la línea de puntos al lado de la que considere la mejor opción. Puede elegir más de una si así lo desea.

a. Opción 1   ....

Me gusta estudiar gramática

Me gusta aprender estudiando con libros en inglés

Me gusta estudiar inglés solo

Me gusta que el profesor corrija mis errores

Me gusta que el profesor nos plantee problemas para trabajar

En casa, me gusta leer el diario, o páginas web en inglés

b. Opción 2   ....

Me gusta estudiar inglés mirando y escuchando a la gente

Me gusta aprender viendo la tele en inglés

Me gusta aprender inglés en negocios y trenes cuando estoy de viaje,

Me gusta aprender vocabulario escuchándolo

Me gusta aprender conversando

c. Opción 3   ....

Me gusta aprender con juegos

Me gusta aprender con películas y videos

Me gusta aprender inglés trabajando en pares

Me gusta aprender en casa y en clase trabajando con videos

Me gusta hablar inglés fuera de la clase

d. Opción 4   ....

Me gusta que el profesor nos explique todo

Me gusta escribir en mi cuaderno en inglés (computadora)

Me gusta tener mi propio manual (apunte, libro) de inglés

En clase, me gusta aprender leyendo

Me gusta estudiar gramática

Me gusta aprender vocabulario viéndolo

¡GRACIAS!

93

8. 2. Appendix B. Teachers' questionnaire

Encuesta

Sres. Docentes:

Esta encuesta forma parte de una investigación acerca de las necesidades lingüísticas con respecto al inglés de los alumnos de la Facultad de Ciencias Agropecuarias de la Universidad Nacional de Córdoba. Tómese el tiempo que necesita para completarla. Agradezco desde ya su colaboración.

I. Datos personales

Nombre:...
DNI:...
Sexo: Femenino/Masculino
E-mail:...

II. Docencia en la FCA

1. Dicto en la actualidad materias pertenecientes al:

2º año	3º año	4º año	5º año			
Nombre	de	las	materias	que	dicto:
....			....	....	....

III. Necesidades actuales con respecto al idioma inglés de los estudiantes de la carrera de ingeniería agronómica de la FCA UNC.

1. Reflexione: ¿Cuál es el nivel de importancia de cada una de las siguientes habilidades en inglés para los alumnos de la carrera de Ingeniería Agronómica? Considerando que 1 es el nivel más alto y 4 el más bajo, coloque sobre la línea de puntos la importancia que Ud. d/asigna a a cada una. Si usted considera que dos o más habilidades tienen la misma importancia, colóqueles el mismo número de orden.

a. Leer textos en inglés (lecto-comprensión)   ....

b. Entender textos orales en inglés (audio-comprensión)   ....

c. Expresarse oralmente en inglés   ....

d. Escribir textos en inglés   ....

94

2. Ponga una tilde ✓ en la opción que usted considere más apropiada.

Con respecto a la lectura en inglés, los estudiantes de la carrera de Agronomía necesitan leer y comprender …	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. manuales de Cátedra escritos en inglés					
b. páginas web relacionadas con la especialidad escritas en inglés					
c. artículos científicos completos escritos en inglés					
d. artículos de semi- divulgación de Extensión o en revistas profesionales (por ejemplo, el ABC Rural)					
e. folletos o propagandas de productos o maquinarias					
f. libros de texto escritos en inglés					
g. manuales de uso de maquinarias escritos en inglés					
h. otros. Especificar: 1 .... 2 .... 3					

Con respecto a la audio-comprensión en inglés, necesitan…	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. entender conversaciones sobre temas de interés general					
b. entender clases teóricas o presentaciones en congresos dadas en inglés					
c. entender videos de la especialidad en inglés (en televisión o en Internet)					
d. entender a otros estudiantes, docentes o colegas que hablen en inglés					
e. otros. Especificar: 1 .... 2 .... 3					

Con respecto a la expresión oral, los alumnos necesitan...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. hablar y comunicarse en inglés con otros estudiantes, docentes o visitantes extranjeros					
b. hablar en inglés con profesionales/productores acerca de temas relacionados con mi especialidad					
c. realizar preguntas en ponencias dictadas en inglés en congresos y jornadas					
d. responder preguntas en inglés en congresos y jornadas					
e. presentar trabajos propios de investigación o extensión en inglés en congresos y jornadas					
f. formular preguntas y responderlas en inglés en clase					
g. hablar en inglés (por Skype) con miembros de un equipo de trabajo o investigación					
h. otros, Especificar 1.............. 2.............. 3..............					

Con respecto a la escritura, los alumnos necesitan...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. tomar notas en clases teóricas dictadas en inglés en la Facultad					
b. tomar notas en charlas dictadas en inglés en congresos y jornadas					
c. escribir resúmenes de trabajos de investigación para ser publicados en Actas de Congresos o revistas científicas (por ejemplo, AgriScientia)					
d. escribir informes redactados en inglés para las asignaturas de la carrera					
e. escribir un Curriculum Vitae en inglés					

f. escribir un artículo científico completo en inglés			
g. redactar una carta de presentación como candidato a una beca, o pasantía en inglés			
h. escribir e-mails en inglés para comunicarse con estudiantes, docentes, profesionales, etc.			
i. otros. Especificar. 1. .... 2. .... 3.			

IV. Necesidades futuras con respecto al idioma inglés de los profesionales egresados de la carrera de Ingeniería Agronómica de la FCA UNC.

Ahora usted deberá reflexionar sobre las necesidades que cree que los alumnos encontrarán a futuro y como profesionales egresados de la FCA (UNC)

1. Reflexione: ¿Cuál es el nivel de importancia en la vida como profesional egresado de cada una de las siguientes habilidades en inglés? Considerando que 1 es el nivel más alto y 4 el más bajo, coloque sobre la línea de puntos la importancia que Ud. d/asigna a cada una.

a. Leer textos en inglés (lecto-comprensión)   ....
b. Entender textos orales en inglés (audio-comprensión)   ....
c. Expresarse oralmente en inglés   ....
d. Escribir textos en inglés   ....

2. Ponga una tilde ✓ en la opción que usted considere más apropiada.

Con respecto a la lectura en inglés, un profesional de las Cs. Agropecuarias necesita leer y comprender...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. manuales de uso de maquinaria escritos en inglés					
b. páginas web relacionadas con la especialidad escritas en inglés					
c. artículos científicos completos escritos en inglés					
d. artículos de semi-divulgación científica de Extensión o en revistas profesionales (por ejemplo, *ABC Rural*)					

e. folletos o propagandas de productos o maquinarias				
f. libros de texto escritos en inglés				
g. e-mails o memos de tipo empresarial escritos en inglés				
h. informes de avance de investigación o informes empresariales en inglés				
i. otros. Especificar. 1. .... 2. .... 3.				

Con respecto a la audio-comprensión, un profesional necesita...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. entender conversaciones sobre temas de inglés general					
b. entender presentaciones en congresos dadas en inglés					
d. entender vídeos de la especialidad en inglés (en televisión o en Internet)					
e. entender a colegas que hablen en inglés					
f. otros. Especificar. 1. .... 2. .... 3.					

Con respecto a la expresión oral, un profesional necesita ...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. hablar y comunicarse en inglés con colegas o visitantes extranjeros sobre temas de interés general					
b. hablar en inglés con otros profesionales acerca de temas relacionados con mi especialidad					
c. realizar y responder en inglés preguntas en ponencias dictadas en congresos y jornadas					

	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
d. presentar trabajos propios de investigación o extensión en inglés en congresos y jornadas					
e. formular preguntas y responderlas en entrevistas de trabajo y reuniones de trabajo					
f. hablar en inglés (por Skype) con miembros de un equipo de trabajo o investigación					
g .otros. Especificar 1. .... 2. .... 3.					

Con respecto a la escritura, un profesional necesita...	Siempre	Muy a menudo	A veces	Casi nunca	Nunca
a. tomar notas en charlas dictadas en inglés en congresos y jornadas					
b. escribir resúmenes de trabajos de investigación para ser publicados e Actas de Congresos o revistas científicas (por ejemplo, AgriScientia)					
c. escribir e-mails en inglés para comunicarse con, docentes, profesionales, etc.					
d. escribir informes redactados para la empresa, cliente u organización para la cual trabaja.					
e. escribir un Curriculum Vitae en inglés					
f. escribir un artículo científico completo en inglés					
h. otro. Especificar. 1. .... 2. .... 3.					

¡Muchas gracias por su colaboración!

8. 3. Appendix C 1. Interview protocol

*This interview protocol was used with all the interviewees except the two ESP practitioners of the FCA.

Entrevista

Fecha:…………………………………………………………………

Preguntas:

1) ¿Qué importancia tiene para usted la enseñanza del inglés dentro de la carrera de Ingeniería hoy? ¿Por qué?

………
………
………
………
……

a. ¿Qué importancia le asigna a cada habilidad (lectura, comprensión auditiva, expresión oral y producción escrita)?

………
………
………
………
……

b. ¿En cuál de ellas haría hincapié tomando en cuenta que por el momento la materia inglés se trata de una materia cuatrimestral?

………
………
………
………
……

---

2) ¿Qué **necesidades lingüísticas** cree usted que los egresados tienen con respecto al inglés dentro del campo laboral? Por ejemplo, entrevistas de trabajo, lectura de materiales escritos en inglés, redacción de mails, etc.

………
………
………
………
………
………

3) ¿Cree usted que los egresados de la carrera de ingeniería son capaces de realizar estas tareas con lo aprendido en la materia inglés? ¿Por qué?

………
………
………
………
………
………

4) ¿Tiene usted alguna sugerencia para mejorar el desempeño de los alumnos y/o egresados con respecto al uso del inglés?

………
………
………
………
………

¡Gracias!

8. 3. Appendix C 2. Interview protocol

* This protocol was used with two ESP practitioners of the FCA

Entrevista

Fecha…………………………………………………………

Preguntas:

1) ¿Qué importancia tiene para usted la enseñanza del inglés dentro de la carrera de Ingeniería hoy? ¿Por qué?

………
………
………
………
………

a. ¿Qué importancia le asigna a cada habilidad (lectura, comprensión auditiva, expresión oral y producción escrita)?

………
………
………
………
……

b. ¿En cuál de ellas haría hincapié tomando en cuenta que por el momento la materia inglés se trata de una materia cuatrimestral?

………
………
………
………
……

2) ¿Qué **necesidades lingüísticas** cree usted que los egresados tienen con respecto al inglés dentro del campo laboral? Por ejemplo, entrevistas de trabajo, lectura de materiales escritos en inglés, redacción de mails, etc.

....
....
....
....
....
....

3) ¿Cree usted que los egresados de la carrera de ingeniería son capaces de realizar estas tareas con lo aprendido en la materia inglés? ¿Por qué?

....
....
....
....
....

4) **¿Tiene usted como profesional del IFE alguna sugerencia concreta para reforzar los conocimientos lingüísticos en la carrera/ mejorar el desempeño de los egresados?**

....
....
....
....
....

5) **¿Puede usted describir el nivel de proficiencia en lectura comprensiva en inglés de sus alumnos guiándose por los niveles del CEFR?**

....
....
....
....
....

¡Gracias!