

Towards an ESP Course for Engineering Students in Vocational Schools in Morocco: the Case of the National School of Applied Sciences

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Abstract

In engineering studies, students need specific English language practices to communicate effectively in professional settings. This research project was carried out for two main purposes. First, the aim was to evaluate to what extent the English for general purposes courses offered to engineering students at the National School of Applied Sciences of Fes were successful in fulfilling the job requirements of the prospective engineers. And the second purpose was to devise an ESP (English for specific purposes) course that is rather linked to the field of specialization of the respondents and can attend to their vocational needs. To this end, a “needs analysis questionnaire” was devised to identify these students’ needs in relation to the English language course. The results stressed the significance of English for engineering students. They also identified the students’ lacks, needs and interests regarding English language. The study concluded with some pedagogical implications.

Keywords: English for specific purposes, vocational English, needs analysis, syllabus design

1. Introduction

As a matter of fact, globalization has increased the importance of communicating in English at workplaces. In this respect, Pritchard & Nasr (2004) emphasise that “English is of particular importance for engineering and science students because it is the principal international language of science and is looked upon as an effective means for enabling those students to become familiar with professional texts written in English”. (p.426)

In relation to the present study, the respondents were network and telecommunications engineering students who are required to have a good knowledge of the English language while they are students, since books, papers, handbooks, and journals written in English are included in their reading lists. After graduation one of the most valuable resources of these students will be English in the workplace. However, preliminary discussions with these revealed that they perceive the English courses offered to them up to then in their field of study as deficient to account for their future job requirements. This study, therefore, attempted to investigate the language needs of these respondents at the workplace. And accordingly, it attempted to propose a more efficient model of “syllabus design” based on the respondents’ vocational needs.

2. Review of the literature

2.1 Needs analysis in ESP

From the 1960s, the demand for specialised language programs grew through the ESP (English for Specific Purposes) movement and applied linguists increasingly began to employ needs analysis procedures, particularly in relation to English for specific purposes and vocationally oriented program design (Richards, 2001:51). Richterich (1983:228) defines the concept of needs analysis as a procedure which “consists primarily of compiling information both on the individuals or groups of individuals who are to learn a language and on the use which they are expected to make of it”. In another definition of needs analysis, Nunan (2006:13) focuses on the information-gathering process: “techniques and procedures for collecting information to be used in syllabus design are referred to as needs analysis”.

Brindley (1989:70) differentiates between objective and subjective needs. Objective needs are those “which are derivable from different kinds of factual information about learners, their use of language in real life communicative situations as well as their current language proficiency and language difficulties”. To assess objective needs, a need analyst may include information about students’ background (e.g. country, culture, education, family, profession, age), their proficiency in different language practices, and their needs as far as the language use outside the class is concerned.

Subjective needs, on the other hand, are obtained from the learners themselves. They include “the cognitive and affective needs of the learner in the learning situation, derivable from information about affective and cognitive factors such as personality, confidence, attitudes, learners’ wants and expectations with regard to the learning of English and their individual cognitive style and learning strategies” (Brindley, op.cit:70).

2.2 The importance of needs assessment in ESP

Pons (2001:18) emphasizes that an instructor who is aware of the educational needs of his/her learners is in a better position to devise effective instructional material. Needs analysis may serve three basic purposes: it can be used as a means of getting wider input into the content,

design, and implementation of a language programme; it can be implemented in defining goals, objectives, and content; and its data can be used to review and evaluate a current programme.

Long (2005: 2-18) Refers to growing demands for accountability and relevance in public life to justify the need for performing needs analyses to create syllabi which can meet the needs of the learners as fully as possible. Accordingly, every language course should be viewed as a course for specific purposes which just varies in the precision with which learner needs can be specified. Valdez (1999:8) also suggests that the results of needs analyses can be used to modify and improve existing programs.

Researchers have also realized that focusing on the reasons why learners need to learn a foreign language will enable language teaching professionals to meet their learners' specific needs and save a lot of time and energy. This is mainly because trying to teach the whole of a foreign language requires more time and effort.

3. Research questions

This action research project aimed at answering the following research questions:

- 1) Are the English courses in line with target needs of prospective engineers?
- 2) What are the language practices that engineer trainees perceive as their needs for success in the workplace?
- 3) How can the English course be improved to serve engineering students' needs?

4. Methodology

4.1 Participants

A total of thirty six fourth year students majoring network and telecommunications engineering were involved in this study. This was the number of all the students who were enrolled in the fourth year networking and telecommunications engineering. They were taking English as a compulsory course at the National School of Applied Sciences of Fes in Morocco.

Concerning the profile of the participants, 69.44% of them were the female students majoring in networking and telecommunication engineering at the National School of Applied Sciences of Fes and 30.55% of them were males. 100% of the participants were aged between 21 and 23 years old. Regarding their previous experiences in learning English, all of them had studied English just as a part of their school requirements, and no one had the opportunity to live in an English-speaking country.

4.2 Instrumentation

To achieve the purposes of this research project, a needs analysis questionnaire was administered at the beginning of the study (see appendix I). It is made up of three sections. The first section drew some demographic data about the respondents. Then, the second section aimed at collecting data on the respondents' evaluation of the English courses that they had taken during the previous three years. And the last section addressed the respondents' English learning needs. Some of the questions were open-ended and some others just needed the respondents to checkmark (✓) their choices. Based on the results of this needs analysis questionnaire a plan of action was implemented. It consisted of designing an ESP course that targeted both the communicative and professional needs of the respondents.

At the end of the study an ESP course evaluation questionnaire was administered to investigate the results of the plan of action (see appendix II). This questionnaire, which consisted

of three open-ended questions, was devised to assess the success of the ESP course and to what extent it could meet the respondents' needs.

5. Results

One of the aims of this research project was to find out whether the English courses that networking and telecommunications engineering students had taken before this study could meet their future job requirements. To this end a needs analysis questionnaire was administered to the respondents at the beginning of the study (see appendix I).

The first section elicited some demographic information. It was designed in order to ensure the homogeneity of the subjects as far as their previous experiences and backgrounds in English learning were concerned. It consisted of five items.

In order to answer the first research question (are the English courses in line with the target needs of prospective engineers?) the participants' responses to item six of the questionnaire were analysed.

Regarding the question of whether the previous English courses had been helpful in fulfilling the subjects' future job requirements or not, the majority of the participants responded negatively to this question as the results in table 1 demonstrate.

Table 1: Students' results regarding the usefulness of the English language course

Questionnaire Item	Choices	n	%
How useful is the English language course with regard to your English language needs?	Very useful	3	8.33
	Useful	5	13.88
	Of some use	7	19.44
	Of little use	21	58.33
	Not useful	0	0

The results in table 1 reveal that the English language courses offered to engineering students are removed from their language needs. In other words, the highest percentages of the respondents voiced negative views to the usefulness of these English courses: 58.33% and 19.44% of them believed that the courses are "of little use" and "of some use" respectively. Some of those who believed these courses had not been helpful mentioned that those courses only focused on general contents; not exactly related to their field of study. Others believed that those courses mostly focused on general reading comprehension, and some essay writings not related to their career needs. And still others believed those courses had been helpful to some extent but they need English courses specifically tailored to their occupational needs.

5.1. What are the language practices that engineer trainees perceive as their needs for success in the workplace?

In relation to language practices, the results of a comparison between the language components that made up the English courses for engineering students and the vocational needs mentioned by the respondents revealed that these courses did not serve those needs. The findings

revealed that there were many English language sub-practices that the students had to know in order to function effectively in the workplace. This was evident from the results derived from items seven and eight in the needs analysis (see Appendix D). Hence, the English sub- practices that the students had acquired from the previous English courses attended to their needs for general English. These mainly include: writing assignments, reading course handouts, following lectures, reading study notes, listening to instructions for assignments, and writing test/exam answers. Interestingly enough, all these language sub-practices have been perceived by the respondents as useless in the workplace because their future occupation requires such skills like: reading technical catalogues, writing professional emails, giving spoken presentations, watching and listening to video conferences.

5. 2 How can the English course be improved to serve engineering students' needs?

This research also identified the engineering students' English language needs and their perceptions of the English language course they preferred to take. Therefore, based on the results of the "needs analysis" undertaken in this study, an ESP (English for specific purposes) syllabus was devised for the target group. This vocational, discipline specific English course constituted the plan of action in this research project. A detailed description of the ESP course is presented in table 2.

Table 2: An ESP course description

Language practices	Sub- practices	Strategies
Speaking	Participating in conferences	Presentation strategies (presenting on a business project, presenting on a product information)
	Making phone calls	Getting through, taking and leaving messages.
	Talking with foreign visitors	Using functional language effectively.
	Job meetings	Asking/answering questions in a meeting and using negotiation strategies.
	Making a successful job interview	Answering common job interview questions.
Reading	Reading texts/books about computer engineering	Skimming, scanning, and summarising.
	Reading computer catalogues/ instructions	
	Reading technical documents (e.g. company documents, business documents)	
	Writing standard letters	Learning about writing conventions,

Writing	Writing professional e-mails	and different parts of a letter, email, CV, and report.
	Writing professional reports (e.g. project reports, reports of meetings/seminars)	
	Writing a CV.	
	Writing a cover letter/email.	
Listening	Listening to spoken, computer science - related presentations	Listening for gist, listening for details, and listening to take notes.
	Listening to lectures of native speakers on computer engineering	
	Watching and listening to video conferences	

To elicit information regarding the students' evaluation of the ESP course, a questionnaire was administered to the respondents at the end of the study; that is to say after the students had taken the devised ESP course. The questions targeted the subjects' perceptions of the usefulness of the course in meeting their occupational needs, and the time allocated to the English classes (see appendix II).

Regarding the question on how useful the ESP course in serving the respondents' future vocational needs, the results are presented in table 3.

Table 3: Students' results regarding the usefulness of the ESP course

Questionnaire Item	Choices	n	%
How useful is the ESP course with regard to your English language needs?	Very useful	21	58.33
	Useful	12	33.33
	Of some use	03	08.33
	Of little use	0	0
	Not useful	0	0

In comparison with the results in table 1 on the students' evaluation of the usefulness of the English courses they had had in the previous years, the results in table 3 above reveal that the majority of the students responded rather positively this time to the usefulness of the English course in terms of meeting their English language needs as future engineers. 58.33% and 33.33% of them judged the course as "very useful" and "useful" respectively.

The reasons the respondent gave to account for their choices were related to the benefits of simulating real to professional life situations, and developing specific professional language skills.

In the second question the respondents' were required to choose between a general purpose English (GE) or English for specific purposes (ESP) as the core of the most relevant English course they prefer to take. The results are presented in table 4.

Table 4: Students' English language course preferences

Questionnaire Item	Choices	n	%
Which type of English language course would you like to attend?	General purpose English (GE)	3	8.33
	English for specific purposes (ESP)	33	91.66

As shown in the above table, the majority (91.66%) of the respondents preferred to take an English for specific purposes (ESP) course.

Brindley (op.cit:70) points out that "theories of adult learning indicated that adults learn better when programme content is geared to their immediate concerns, language teaching tended to concentrate on the end-product: the actual language which learners had to use". This seems the reason why some of the respondents noted that they felt much more motivated to study ESP because it helps them acquire the necessary technical linguistic input, and communicative skills they need in their future job. The literature also stresses the relationship between exposing learners to real to life tasks and higher motivation and better performance. Real to life tasks as defined by Nunan (op.cit:40) are those which "require learners to approximate, in class, the sorts of behaviours required of them in the world beyond the classroom". With respect to the present ESP course, real to life tasks are those speaking activities that simulate real professional situations such as making phone calls, giving a presentation, simulating a professional meeting.

The last question in the questionnaire on students' evaluation of the ESP course was about the time allocated to the English course. The students' feedback is summarised in table 5.

Table 5: Students' satisfaction of the time allocated to the ESP course

Questionnaire item	Yes		No	
	n	%	n	%
Do you think that the time allocated to the English course is enough?	5	13.88	30	83.33

It can be obviously deduced from the results above that the vast majority of the respondents (83.33%) believed that the time allocated to the English language course was not enough. They felt that with two hours per week it was difficult to cover all the components of the course

extensively. Moreover, most of the speaking activities are in the form of role playing and usually such type of tasks need much time.

6. Implications

It can be inferred from the abovementioned results that there is a correlation between attending to learner's needs and their motivation. This entails that vocational schools like the National School of Applied Sciences may need to reconsider the degree to which their students' occupational needs are being met by the existing language programs. In this respect, Dudley-Evans and St. John (1998) stress the need for an ESP teacher as a researcher to be in constant touch with the students. The ESP teacher should try to diagnose the needs of the learners and evaluate the effectiveness of the language program accordingly. In other words, implementing a needs analysis can suggest a reconsideration and redesign of the curricula to enhance effective instruction.

7. Conclusion

To sum up, this study was conducted to examine the ESP needs of the fourth year network and telecommunications engineering students at the National School of Applied Sciences of Fes in Morocco. The results revealed that these English courses were not discipline specific, and hence, they did not prepare students for English communication at the workplace. The ESP course that was devised as the plan of action in this action research project rather attended to the respondents' vocational needs. The results of the ESP course evaluation questionnaire administered at the end of this study are indicative of the fact that the ESP course designed based on the students' needs and interests was positively perceived by the majority of the respondents.

This study has pedagogical implications for re-assessing the present English courses for engineering students

About the Author

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Clarify, please

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2. Which type of English language course would you like to attend?

- a. General purpose English (GE)
- b. English for Specific (occupational) purposes (ESP)

Justify your choice, please

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3. Is the time allocated to the English course enough to use the language effectively?

- a. Yes
- b. No

Justify your choice, please

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