

Reassessing the ESP Courses Offered to Engineering Students in Iran (A Case Study)

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Abstract

The aim of the present paper was twofold: first, to study the language skills and components of ESP textbooks offered to students at universities in Iran. Second, to investigate to what extent these ESP courses have been successful in fulfilling the job requirements of the prospective engineers. For the first purpose, the ESP textbook for “engineering students” being taught to university students in Iran was studied and its linguistic components and skills were identified. For the second purpose, a “needs analysis questionnaire” was sent to the engineers working in “production line” section of Mobarakeh Steel Complex. The results of the needs analysis revealed that ESP courses proposed at universities can make the grounds for the subjects’ future job purposes but they are not sufficient to account for the specific job requirements of individual engineers. In other words, in-service ESP courses based on on-going analysis of the employees’ needs should be administered in order to account for their specific job requirements. At last, based on the results of the “needs analysis” undertaken in this study (through using a questionnaire), a proposed model of a “skill-based syllabus” for an in-service ESP course for the present subjects (engineers working in “production line” section of Mobarakeh Steel Complex) has been suggested.

Key words: English for Specific Purposes, ESP courses, engineers, in-service English courses

1. Introduction

On-going changes and increasing globalization have increased the importance of communicating in English at workplaces both within and across boundaries (Purpura and King 2003). Professional schools may need to re-asses the degree to which their students' career needs are being met by the existing language programs, so that policy and resources can be adjusted accordingly. In other words, the concern is that whether the courses adequately equip students to communicate effectively in contexts that graduates are likely to encounter in their careers. This requires consideration of language needs expressed by graduates in their career contexts and reflection of those needs in language programs so that language instruction can better match learners' target situation needs. Given the diversity and evolving nature of workplace requirements, this study attempts to investigate the occupational needs of a group of engineers in order to see whether the ESP instructional materials offered to them at their B. S. studies have been in line with their workplace needs and have equipped them to communicate effectively in their careers.

1. 1. Aims of the study

Although recently ESP courses favor a great deal of attention and emphasis among the EFL practitioners, there is a common belief among both learners and practitioners that ESP courses in Iran are not helpful. In other words, they believe university ESP courses offered to students of different fields of study suffer from a kind of inefficiency because they fail to account for the learners' future job requirements. When the learners graduate and start their job, they observe that their English knowledge is insufficient to fulfill their job purposes. This study, therefore, attempts to examine the objectives of the ESP courses specific to engineering students, and then investigate the target situation needs of a group of engineers in order to see whether the objectives of the ESP courses are in line with the subjects' target needs; if not, where the discrepancies lie. Finally, it hopes to propose a more efficient model of "syllabus design" based on the subjects' target situation needs mentioned by them in order to signify those linguistic components and skills which need to be emphasized in ESP courses.

1. 2. Statement of the problem

To serve these purposes, this study tries to examine the ESP textbook for engineering students and the job-related needs of a group of engineers working in Mobarakeh Steel Complex. The research questions to be considered are as follows:

- 1) At first place, what language skills and components are mostly focused on in ESP textbooks for engineering students?
- 2) What are the language skills and components that the engineers mention as their needs?
- 3) Are language skills and components of ESP textbooks in line with target needs of prospective engineers?

2. Review of the literature

2. 1. English for Specific Purposes (ESP)

In the past 35 years, ESP has attracted the attention and favor of so many practitioners in the field of TEFL. ESP is viewed as a cover term for teaching and learning English for multiple specific purposes: EAP (English for Academic Purposes), EOP (English for Occupational Purposes) and others. The main rationale behind ESP courses is the diversity and specificity of learners' objectives and needs for learning English. Considering the diversity and specificity of learners' needs, it seems crucial to conduct an in-depth needs assessment before planning and implementing ESP courses.

2. 2. Assessing foreign language needs

“Needs assessment” consists of the procedures designed to gather and analyse information about the target language needs of a specific group of learners in an existing or proposed setting so that inferences about curriculum can be drawn and informed decisions can be made (Purpura and King 2003). Focusing on the situation in which the learners are supposed to work after graduation reveals the target needs. Literature on needs analysis reveals that the concept of “need” has been considered through different perspectives. Berwick (1989) defines need as the ‘discrepancy between a current state of affairs and a desired future one’. The related research offers other dichotomies on “need”, for instance, target vs. present situation needs, felt vs. perceived needs, subjective vs. objective needs, etc. Hutchinson and Waters (1987) define target needs as those required by the learners' in the context of use. They identify target needs as necessities and distinguish them from wants (what the learners

believe they need). Although wants are more subjective, both necessities and wants should be considered in the process of “needs analysis”. A present situation analysis according to Robinson (1991) seeks to establish what the students are like at the start of their language course, investigating their strengths and weaknesses. Richterich (1983) suggests 3 sources of information for present situation analysis: the students themselves, the language teaching establishment and the user institution, for example the students’ place of work. Berwick (1989) defines perceived needs as those that the educators make judgements about in other peoples’ experience, while felt needs are defined as the ones that the learners have. Elsewhere, Brookfield (1988) defines felt needs as wants, desires, and wishes of the learner. Robinson (1991) states that all factual information about the learner e. g. language proficiency, L1 background, age, etc. form objective needs while cognitive and affective needs of the learner in language learning e. g. motivation, expectation, attitude, etc. form subjective needs.

2. 3. Significance of implementing a needs analysis

Regarding the diversity of needs and their unique & situation-based nature, needs analysis has been considered as a prerequisite to the process of course design. It enables the curriculum planners to see to what extent the existing programs are in line with the learners’ real language needs. In other words, it shows whether the language programs are responsive to the learners’ needs. This kind of evaluation not only helps administrators plan language courses which are more satisfying to the learners in terms of fulfilling their needs but also may improve the existing language programs in terms of objectives, topics, and materials. On the other hand, according to Kuter (2000), asking learners about their needs can motivate them and maximize the likelihood of their participation. However, it has been frequently mentioned in the literature (Richterich 1983, Hutchinson and Waters 1987, Robinson 1991) that needs analysis should be an on-going process carried out during the life of each course since the learners’ needs are changing too. This can help both the administrators and the teachers to take the changes into account in a way that promotes learners’ success and fulfillment.

2. 4. An overview of ESP courses for engineering students in Iran

After passing the EGP course, engineering students are supposed to pass two ESP courses. The first one is sub-technical, common to all engineers across all fields of study. The second course, however, is completely specialized for specific groups of

engineers. The aim of the first course is to develop the learners' reading comprehension through using general engineering texts and comprehension exercises and to enhance the learners' sub-technical vocabulary (the terminology common to different fields of engineering). This course prepares the learners for reading texts specific to their own field of study. In the second ESP course, the learners are supposed to comprehend highly specialized texts and learn technical vocabulary.

2. 5. A brief overview of ESP textbooks for engineering students in Iran

First ESP course

The ESP textbook for engineering (covered in the first ESP course) consists of 3 main parts:

I. Pre-reading

- A. Pronunciation practice
- B. Word study: Definitions
- C. Definitions and exemplification
- D. Grammatical points

In the pre- reading section, first the pronunciations and stresses of new words of the reading passage are provided. Then, their definitions and exemplification in the context of the new passage is presented. Finally, a grammar point is deductively introduced: the rule is explicitly stated and then is exemplified in the context of engineering. The difference between EGP & ESP grammar points seems to be that in EGP the grammar points are graded on some criterion (level of difficulty, usefulness, etc.) and are exemplified through general sentences. However, in ESP, there is no grading at work; the grammatical points typical for engineering discourse (most frequently occurred in engineering texts) are presented and illustrated in sentences specific to engineering texts.

II. Reading for comprehension

- A. T/F questions
- B. Multiple-choice comprehension questions
- C. Oral questions.

The passages are about general engineering topics and their typical feature is that all of them are accompanied by pictures and all the pictures have subscriptions.

III. Homework

Section 1: Vocabulary

- A. Vocabulary exercises (Parts of speech)

B. Fill in the blanks with the appropriate words from the list

C. Matching exercises

The entire vocabulary is taken from the passage or similar contexts.

Section 2: Grammatical exercises

In this section, there are lots of mechanical drills based on the grammar point presented in pre-reading part.

Section 3: Reading comprehension exercises

A passage with similar context along with multiple-choice comprehension questions has been given in this section.

Section 4: Translation practice and terminology

In this section, first the students are required to translate parts of the reading text and similar passages into Persian. Then, they are supposed to write the Persian equivalents of some technical/sub-technical terms.

Second ESP course

The book covered in this course consists of 3 main parts too:

I. Reading comprehension

A. Comprehension exercises

B. Language practice

a. Vocabulary

b. Word study (parts of speech)

c. Making a paragraph by using some scrambled sentences

II. Further reading

III. Translation activities

As it is observed, the focus of this book is on reading comprehension, terminology, and translation too. Other language skills and components have, however, been neglected.

2. 6. Outlook of the ESP textbooks

The aim of this overview was not evaluating the ESP books for engineering; its purpose was only to have an outlook of the content, linguistic components, and language skills of those textbooks in order to see to what extent they are in line with the engineers' occupational needs mentioned by them in the questionnaire. However, regarding the main purpose of this research that is observing the extent to which engineering ESP textbooks can fulfill learners' future job requirements, one point

seems necessary to be mentioned here. It seems that the primary focus of the book is on reading comprehension, terminology, and translation: there are long reading passages accompanied by lengthy comprehension exercises and also there are lots of mechanical drills for one grammar point. There is no trace of writing and listening. Speaking is also too pale only observed in oral questions not seriously taken by either teachers or learners.

3. Procedure

3. 1. Subjects

One of the aims of this research was to find out whether the ESP courses that university students are supposed to pass are in fact helpful for their future job requirements or not. For this purpose, a group of employees with almost similar or the same field of study and almost similar or the same job requirements was needed. It was supposed that a workplace like “Mobarakeh Steel Complex” is suitable for this purpose. However, although there are lots of workers and technicians there, most of them mechanically operate on some systems and their job does not demand any knowledge of English. Therefore, a brief survey was undertaken among the staff of the complex to find the group of employees who use English for their job purposes. The results of the survey revealed that the engineers working in “production line” section need some knowledge of English for their daily job requirements. So, they were selected as the target group. Then, the questionnaire was prepared and sent to them. However, only 30 persons sent the questionnaires back. All of them were male and received their B. S. in engineering in Iran. The details of the questionnaire are briefly mentioned in the next section.

3. 2. Instrumentation

The method of collecting data adopted in this research was a subjects’ “needs analysis questionnaire”. This questionnaire had the intention of collecting data on subjects’ exact jobs, the extent to which they use English for their daily job purposes, the language components and skills that they mostly deal with, the probable pre-service or in-service English courses that they had passed, the language skills and components that those courses focused on, and finally their felt needs for learning English. Some of the questions were open-ended and some others just needed the subjects’ selections: the subjects were supposed to checkmark (✓) the questions on the sub-skills (e.g. speaking in the international conferences, talking to foreign engineers

who come to visit the production line, writing e-mail, etc.). An example of the questionnaire is presented in the Appendix.

4. Results

The frequency analyses of different sub-skills mentioned by the subjects are presented in the following tables. Firstly, the components of “speaking” skill are presented:

Table 1. Frequency of the sub-skills of “Speaking”

<i>Speaking sub-skills</i>	<i>f</i>
International conferences	12
Visiting foreign companies/factories	22
Making phone calls	15
Talking with foreign visitors	23

Another speaking sub-skill mentioned by the subjects was “giving reports of their visits” while they are visiting foreign factories/companies.

The frequency of different components of “writing” skill is reported in Table 2.

Table 2. Frequency of the sub-skills of “Writing”

<i>Writing sub-skills</i>	<i>f</i>
Standard letter	17
E-mail	30
Writing reports	15

Table 3. presents the components of “reading” skill mentioned in the questionnaire:

Table 3. Frequency of the sub-skills of “Reading”

<i>Reading sub-skills</i>	<i>f</i>
Reading professional articles	30

Other reading sub-skills mentioned by the subjects are reading catalogs, books, the Internet, formal letters, foreign visitors’ reports, technical documents, and finally reading journalism e. g. newspapers.

Regarding the question of whether the English courses the subjects passed in their B. S. studies have been helpful in fulfilling their present job requirements or not, some of them answered “no”, a few answered “yes”, and others answered “to some extent”. Those who believed university courses have not been helpful mentioned that those courses only focused on reading professional texts (not other language skills) and the texts were usually of general contents (not exactly related to their field of study).

Concerning the question of whether they had passed pre-service or in-service English courses, all of them answered there have not been any pre-service or in-service English courses and just 4 of them had passed general English courses in private language institutes. Those courses mostly focused on general vocabulary, reading comprehension, and some cliché dialogs not related to their career needs. They believed those courses have been helpful to some extent but they need English courses which are specifically tailored to their present occupational needs.

Considering the question of whether their present knowledge of English is sufficient for fulfilling their job requirements, just 5 persons answered “yes”. Other subjects answered quite personally. In other words, the needs mentioned by each person was different from those mentioned by others in terms of language sub-skills. Table 4. presents the needed language skills and components mentioned by the subjects along with their frequencies:

Table 4. Frequency of the needed skills & components mentioned by the subjects

<i>Language skills and components</i>	<i>f</i>
Conversation	18
Writing	30
Vocabulary	4
Writing and conversation	22
Listening	4

5. Discussion and conclusion

As the analysis of “English for engineering” (the ESP book passed by the subjects in their B. S. studies) reveals, the focus of ESP courses in Iran is mostly on reading comprehension and sub-technical/technical terminology. However, as the data confirms none of the subjects mentioned “reading skill” as their felt needs and only 4

persons expressed their need to learn vocabulary. Therefore, it can be concluded that the usefulness of ESP university courses cannot be denied since they have been successful in establishing background knowledge at least on terminology and reading proficiency of that specific field in the prospective engineers' minds.

On the other hand, when the subjects were asked about their present needs for learning English, they answered quite “*individually*” according to their exact job requirements. Therefore, it can be concluded that ESP courses for university students cannot be so vast that can account for the idiosyncratic needs of individual people with individual prospective job requirements. However, they can establish the background knowledge of that specific field of study/job in terms of terminology, discourse, and culture of the related discourse community. In fact, although they were absent in this case, in-service ESP courses seem more effective and more efficient. If based on a pervasive and comprehensive “needs analysis”, in-service ESP courses can accommodate for ESP needs of individual employees. However, it should be emphasized that “needs analysis” is not a process administered once and for all at the beginning of the course; rather, it should be an on-going process repeated during the life of a language program.

6. Implications of the study

The results of this study revealed the skills and components of ESP textbooks for engineering students as well as the occupational needs mentioned by a group of engineers as the alumni who had passed the same courses. This study has pedagogical implications for re-assessing the present ESP courses for engineering students in Iran. In other words, it implies that learners' on-going needs for English, which are in line with technological advances in communication, should be taken into consideration. For instance, “writing e-mail”, the felt need mentioned by all the subjects, can be added to the list of instructional points of ESP textbooks. Finally, based on the results of the “needs analysis” undertaken in this study (through using a questionnaire), a proposed model of “syllabus design” for an in-service ESP course for the present target group (engineers working in “production line” section of Mobarakeh Steel Complex) is suggested in the following part.

7. A proposed skill-based syllabus for an ESP course for engineers

Based on the “needs analysis” undertaken in this study, the following skill-based syllabus is designed for either in-service or pre-service ESP courses offered to engineers or would-be engineers working in Mobarakeh Steel Complex or similar workplaces. This syllabus offers a combination of communication and language skills and is ideal for those who need to use English in an international work environment.

EAP components:

Skills	Sub-skills	Strategies
Reading	Reading professional texts/books	Skimming, Scanning, etc.
	Reading catalogs/instructions	
	Reading technical documents	
Writing	Writing Standard letter	Learning about writing conventions, and different parts of a letter/report: introduction, body, & conclusion
	Writing e-mail	
	Writing effective reports	
Speaking	International conferences	Presentation strategies: opening, giving reports, etc.
	Making phone calls	Getting through, taking and leaving messages, etc.
	Talking with foreign visitors	Welcoming foreign visitors, asking their opinions, etc.

Non-EAP components:

Skills	Sub-skills	Strategies
Non-EAP components	Working with the Internet	Connection to the server, checking the speed of transmission of data, etc.
	Sending and receiving e-mails	Making an account, checking capacity of the account, familiarity with the software, etc.

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