IN THE NAME OF GOD

Tarbiat Moallem University

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Analysis of Target and Present Academic English Needs of Iranian Undergraduate Students of Computer Engineering

Thesis Submitted in Partial Fulfillment of the Requirements for MA Degree in Teaching English as a Foreign Language (TEFL)

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We certify that the thesis entitled **“analysis of target and present academic English needs of Iranian undergraduate students of Computer Engineering"** by Leila Shoja is accepted as partial fulfillment of MA degree in Teaching English as a Foreign Language (TEFL).

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Dedicated to
My Parents

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Abstract

English for Specific Academic Purposes (ESAP) program constitutes a significant part of university curricula in Iran. To aid learners succeed in their academic studies, ESAP courses should be based on the learners' academic language needs. Therefore, the studies analyzing language needs of students majoring in different disciplines may contribute to the knowledge of curriculum developers, syllabus designers, and ESAP practitioners. Consequently, the present study is an attempt to identify the present and target academic language needs of undergraduate students of computer engineering. To this end, a needs analysis questionnaire and an academic module of IELTS test were distributed to 231 undergraduates from three universities in Tehran including University of Tehran, Technology University of Amirkabir, and Iran University of Science and Technology. Moreover, 20 content teachers and 15 ESAP instructors from the same universities filled out the questionnaire and participated in semi-structured interviews. Also, eleven ESAP classes were observed. After data collection, content analysis, descriptive statistics, and some statistical tests including Chi-square, Mann Whitney, and Kruskal Wallis were used to analyze the data. The results showed that 'written skills' and 'language components' are important for academic success of undergraduate learners of computer engineering, and they have difficulties with 'some subskills of reading', 'writing', 'speaking', 'listening', 'using general bilingual dictionaries', 'translating subject-specific texts from Persian to English'. Moreover, the results of general proficiency test showed that the majority of students have a rather low level of GEP. The students' self-assessment matched the results of GEP test while the evaluation by both groups of teachers indicated that they underestimated undergraduates' GEP level. Regarding the content of ESAP courses, some discrepancies were found between the ideas of B.E students and teachers. However, with regard to the best educational year to enroll in ESAP courses, the number of credits devoted to these courses, the general focus of them, and the teacher of ESAP courses, the majority of undergraduates, ESAP practitioners and content teachers reached a consensus. Finally, several major problems with teaching and learning ESP were found in the study. These findings have several implications for curriculum developers, syllabus designers, materials developers, and ESAP practitioners in Iran.

Key terms: ESAP, needs analysis, computer engineering, academic needs, target situation needs, present situation needs

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1. 1. Introduction

English for Specific Purposes (ESP), part of a more general movement of teaching Languages for Specific Purposes (LSP) (Dudley-Evans & St. John, 1998), involves three major realms of knowledge including language, pedagogy, and students' specialist areas of interest (Robinson, 1991). As an approach to language teaching, ESP attempts to meet the needs of particular learners (Hutchinson & Waters, 1987). In fact, the idea that language is used to accomplish a purpose underlies ESP (Hyland, 2002). English for Academic Purposes (EAP) emerged from ESP. It aims to help ESL students to develop the kind of English proficiency needed to succeed in their academic studies. Further, English for Specific Academic Purposes (ESAP) as a subdivision of EAP is concerned with subject-specific English instruction. ESAP programs are part of the curriculum of many universities around the world (Jordan, 1997). ESAP program is a part of curriculum for academic fields at universities in Iran, too (Atai, 2000). Such programs should be based on students' language needs in order to help them in their academic studies (Zhu & Flaitz, 2005). In other words, needs assessment, the way of determining the how and what of a course (Hyland, 2006), is critical to ESP. It should be done both before and during any course or series of courses (Robinson, 1991) In fact, course design should be an ongoing process to meet students' interests and needs (Sifakis, 2003). However, curriculum developers in Iran have omitted needs analysis altogether and have designed EAP programs based on their intuitions (Atai, 2002).

There have been few studies on needs analysis to identify the academic language needs of learners majoring in different disciplines in Iran (e.g. Atai, 2000; Isfahani, 2005; Khanjani, 2005; Mohammadzadeh, 2006; Rasekhi, 2006). But, to the knowledge of the researcher, there has been no needs analysis of ESAP programs for the students of computer engineering. Therefore, the study on academic needs of those students will contribute to the knowledge of curriculum developers and syllabus designers.

1.2 Statement of the Problem and Significance of the Study

ESP is an important area of specialization within the overall field of English language teaching. There is a continuing demand for ESP programs around the world (Flowerdew,

1990). Iran is not an exception. In fact, due to the rapid expansion of ESP in Iran, EAP courses constitute an important part of curricula for academic fields at universities (Atai, 2000). All students majoring in non-foreign language disciplines have to pass one to three obligatory EAP courses (Atai & Tahririan, 2003).

In ESP/EAP, almost all aspects of curriculum development should be guided by needs assessment. The goals of curriculum and specific course objectives should be formulated based on students' present situation and target needs. In spite of the bulk of EAP instruction in Iran, the curriculum developers have neglected needs analysis totally and have trusted in their intuitions (Atai, 2002).

There have been some studies on academic language needs of students of different disciplines in Iran (e.g. Atai, 2000; Isfahani, 2005; Khanjani, 2005; Mohammadzade, 2006; Rasekhi, 2006). However, as far as the researcher knows, there has been no study on the academic needs of computer engineering students while "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" (Pritchard & Nasr, 2004, p. 426). Hence, the researcher aims to analyze the present and target academic needs of the undergraduate students majoring in computer engineering at three universities in Tehran including Amirkabir University of Technology, University of Tehran, and University of Science and Technology. In the study, the academic language requirements of those learners will be analyzed using data gathered from different parties in the field through different methods of data collection.

It is hoped that findings of the study will provide a more accurate understanding of the language needs of computer engineering students, and in turn help curriculum developers, syllabus designers, and ESAP practitioners to base the ESAP program on the students' needs.

1.3. Research Questions and Hypotheses

Regarding the above-mentioned justification, the following research questions are set forth:

1. What are the present and target academic English needs of Iranian undergraduate students of Computer Engineering?
2. Is there any significant difference among Iranian undergraduate students, graduate students, content teachers and ESAP teachers regarding their perceptions of undergraduates' target academic English needs?
3. Is there any significant difference among Iranian undergraduate students at various educational levels regarding their perceptions of target academic needs?
4. Is there any significant difference among Iranian undergraduate students, ESAP teachers and content teachers regarding their perceptions of learners' level of General English Proficiency?
5. Is there any significant difference between Iranian undergraduate students and ESAP teachers regarding their perceptions of undergraduates' present academic English needs?

For all above hypotheses except the first one, four null hypotheses are formed as follows:

H0: There is no significant difference among Iranian undergraduate students, graduate students, content teachers and ESAP teachers regarding their perceptions of undergraduates' target academic English needs.

H0: There is no significant difference among Iranian undergraduate students at various educational levels regarding their perceptions of target academic English needs.

H0: There is no significant difference among Iranian undergraduate students, ESAP teachers and content teachers regarding their perceptions of learners' level of General English Proficiency.

H0: There is no significant difference between Iranian undergraduate students and ESAP teachers regarding their perceptions of undergraduates' present academic English needs.

1.4. Limitations of the Study

The research is limited in the following ways:

1. The participants of the study were from three universities in Tehran. For practicality reasons, it was not possible for the researcher to have access to other universities around the country.
2. Moreover, the sample size of ESAP teachers (n=15) as one of the sources of study was not large.

1.5. Definitions of Key Terms

ESP: Hutchinson and Waters (1987) define English for Specific Purposes broadly as "an approach to language teaching, which is based on learner need" (p. 19). A more comprehensive definition of ESP is offered by Dudley-Evans and St. John (1998) by defining some absolute and variable characteristics as follows:

Absolute characteristics:

- *ESP is designed to meet specific needs of the learner;*
- *ESP makes use of the underlying methodology and activities of the discipline it serves;*
- *ESP is centered on the language (grammar, lexis, and register), skills, discourse and genres appropriate to these activities*

Variable characteristics:

- *ESP may be related to or designed for specific disciplines;*
- *ESP may use, in specific teaching situations, a different methodology from that of general English;*
- *ESP is likely to be designed for adult learners, either at a tertiary level instruction or in a professional work situation. It could, however, be used for learners at secondary school level;*
- *ESP is generally designed for intermediate or advanced students. Most ESP courses assume basic knowledge of the language system, but it can be used with beginners (pp. 4-5).*

EAP: English for Academic Purpose (EAP) is defined as teaching English with the aim of helping learners to study or to research in that language (Flowerdew & Peacock, 2001). It has emerged from ESP and attempts to ground instruction in an understanding of the cognitive, social and linguistic requirements of specific academic fields (Hyland & Hamp-Lyons, 2002).

ESAP: ESAP and EGAP are regarded as two branches of EAP (Jordan, 1997; Dudley-Evans & St. John, 1998). Further, ESAP is said to be concerned with the real tasks that learners should carry out (ibid). It focuses on subject-specific English instruction (Jordan, ibid).

Needs analysis: According to Hyland (2006), needs analysis "refers to the techniques for collecting and assessing information relevant to course design: it is the means of establishing the how and what of a course" (p. 73). It is a method of obtaining a description of a learner's or group of learners' needs. It includes the special purposes for which the learners will use the language, the starting level, and the target level which is to be reached (Ellis, 1994).

Target situation analysis: target-situation analysis (TSA), as an approach to needs analysis, provides information about the target situation, what learners should do in English, and the skills and language that they need (Chambers, 1980). Target-situation analysis focuses on the learners' future roles in their disciplines, and is concerned with mainly objective and product-oriented data (Hyland, 2006).

Present situation analysis: Present-situation analysis (PSA) initially coined by Richterich and Chancerel (1980) determines what the learners are like at the beginning of their language courses. In other words, it investigates their strengths and weaknesses (Robinson, 1991).

2.1. Overview

In this chapter, the literature related to ESP is presented. It includes some concepts about ESP, EAP, and NA. Moreover, some empirical studies done on needs assessment are reviewed.

2.2. English for Specific Purposes: Definitions

Throughout its life since the 1960s, English for Specific Purposes (ESP) has been defined by some prominent scholars in more or less similar ways. According to Hutchinson and Waters (1987), ESP is a branch of EFL/ESL that they in turn are branches of English language teaching. More specifically, it is "an approach to language teaching, which is based on learner need" (p. 19). To clarify the nature of ESP and to emphasize that it is an approach not a product, Hutchinson and Waters (ibid) also say what ESP is not: "ESP is not a particular kind of language methodology, nor does it consist of a particular type of teaching material" (p.19).

Strevens' (1988) definition of ESP includes four absolute and two variable characteristics. The absolute are that ESP consists of English language teaching which is:

- *designed to meet specified needs of the learner;*
- *related in content (i.e. in its themes and topics) to particular disciplines, occupations and activities;*
- *centered on language appropriate to those activities in syntax, lexis, discourse, semantics and so on, and analysis of this discourse;*
- *in contrast with General English*.

The variable characteristics are that ESP may be, but not necessarily:

- *restricted as to the language skills to be learned (e.g. reading only);*
- *not taught according to any pre-ordained methodology (pp.1-2).*

Robinson (1991), who suggests the impossibility of producing a universally applicable definition of ESP states that ESP is a worldwide enterprise that is concerned with three major areas of knowledge: language, pedagogy, and the learners' specialist areas of interest. Her definition consists of two key criteria and three characteristics. Two

key criteria are that ESP is normally goal-oriented, and that ESP courses are based on needs analysis. Three characteristics are that ESP courses generally, but not necessarily, run in limited time periods for adults in homogenous classes with regard to the work or specialist studies.

Drawing upon and modifying Strevens' (1988) definition, Dudley-Evans and St. John (1998) offered their definition that includes both absolute and variable characteristics as follows:

Absolute characteristics:

- *ESP is designed to meet specific needs of the learner;*
- *ESP makes use of the underlying methodology and activities of the discipline it serves;*
- *ESP is centered on the language (grammar, lexis, and register), skills, discourse and genres appropriate to these activities*

Variable characteristics:

- *ESP may be related to or designed for specific disciplines;*
- *ESP may use, in specific teaching situations, a different methodology from that of general English;*
- *ESP is likely to be designed for adult learners, either at a tertiary level instruction or in a professional work situation. It could, however, be used for learners at secondary school level;*
- *ESP is generally designed for intermediate or advanced students. Most ESP courses assume basic knowledge of the language system, but it can be used with beginners (pp. 4-5).*

Anthony (1997) believed that ESP community does not have a clear idea of ESP despite its maturity over a long time period, and people interpret it in different ways. However, when Dudley-Evans and St. John offered their definition at a 1997 Japan Conference on ESP, he stated that this definition is very helpful in determining what is

and is not ESP. He argues that we can conclude from their definition that ESP is not necessarily related to a specific discipline, a certain age group or ability range. Simply, it can be regarded as an approach to teaching.

2.2.1. Types and Classifications of ESP

ESP is divided into various categories with many acronyms. Robinson (1991) mentions English for Occupational Purposes (EOP) and English for Academic Purposes (EAP) as two main branches of ESP in the ESP family tree. Her division becomes more specific as she considers the time that course takes place. This factor affects the degree of specificity of ESP courses. Hence, there are, for example, in-service EOP courses and post-experience ones.

In a rather detailed classification, Dudley-Evans and St. John (1998) divide ESP into EAP and EOP. Then, these two terms are categorized according to discipline or professional area. EAP, therefore, has got four main types including English for Science and Technology (EST), English for Medical Purposes (EMP), English for Legal Purposes (ELP), and English for Management, Finance and Economics. EOP is classified into English for Professional Purposes and English for Vocational Purposes. English for Medical Purposes (EMP) and English for Business Purposes (EBP) are placed under English for Professional Purposes while Vocational English and Pre-vocational English are to branches of English for Vocational Purposes.

Hutchinson and Waters (1987) classify ESP in a rather different way. In their 'Tree of ELT', ESP is broken down into three subject areas called English for Science and Technology (EST), English for Business and Economics (EBE), and English for Special Studies (ESS). Each of these subject areas is in turn divided into EAP and EOP. Although Hutchinson and Waters (ibid) separate EAP from EOP, they acknowledge that there is not a clear-cut distinction between them.

The above ESP classifications have similarities, for example, in terms of the abbreviations. However, Carter (1983) identifies three different types of ESP, that are, English as a restricted language, English for Academic and Occupational purposes, and English with specific topics. He considers the language used by air traffic controllers or

waiters as examples of English as a restricted language. This type of language is strictly limited and can be determined situationally (Mackay & Mounford, 1978). The second type is similar to the above-mentioned classifications (Gatehouse, 2001). Finally, By English with specific topic, Carter (1983) refers to situations where emphasis shifts from purpose to topic. A good example may be English for attending conferences (Gatehouse, ibid). This classification has some shortcomings as English with specific topics may be an integral part of ESP courses focusing on situational language rather than a separate type of ESP (ibid).

2.2.2. English for Academic Purposes

Dudley-Evans and St. John (1998) state that ESP has two main strands: EAP and EOP. Then, referring to Blue (1988), they make a further distinction between English for General Academic Purposes (EGAP) and English for Specific Academic Purposes (ESAP).

English for Academic Purposes (EAP) is defined as teaching English with the aim of helping learners to study or to research in that language (Flowerdew & Peacock, 2001). EAP deals with communication skills in English which are needed for studying in formal education system (ETIC, 1975 cited in Jordan, 1997). By 1980s, EAP was established as one of the two main branches of ESP. Since then, EAP has grown due to the expansion of English in global market (Hyland, 2006). According to Hamp-Lyons (2001, cited in Carter & Nunan), EAP is not only a teaching approach but also a branch of applied linguistics that consists of a significant body of research on teaching, assessment, academic needs analysis, discourse analysis of academic texts, and analysis of the textual practices of academics.

Looking at EAP in more detail and borrowing the idea from Blue (1988), Jordan (1997) divides it into EGAP and ESAP, or common core English and subject specific English respectively. Each one is elaborated in turn.

A large proportion of the common core English is mostly ‘study skills’. Study skills have got two interpretations: narrow and broad interpretations. In the narrow view, study skills refer to the mechanical aspects of study such as bibliography, reference skills, etc.