Needs Analysis in EAP of Computer and Mechanical Engineering English Courses
The Case of Islamic Azad university of Shiraz

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ABSTRACT: The present study is an attempt to carry out a needs analysis of Iranian undergraduate students studying computer and mechanical engineering. A total of 365 undergraduate students and eight EAP instructors participated in the study from Islamic Azad university of Shiraz. The instruments were students’ questionnaire; instructor’s questionnaire, instructors’ interview, and observation. Three main research questions were addressed in this study in order to find the English language needs of the students in EAP classes according to the different stakeholders’ attitudes. Qualitative and statistical analyses of the data revealed that the majority of the students are not satisfied with the contents of English textbooks, teaching methodology, evaluation methods, and textbooks. Students preferred Iranian instructors who have their expertise in English but instructors unanimously believed EAP course should be taught by subject specialist. Results of interviews with EAP instructors indicated that the instructors sharply criticize the low level of students’ language proficiency in EAP classes and report that the students’ English language ability is unsatisfactory to meet the expectations in their specialized courses. They recommend an increase in teaching hours of general English courses. Classroom observation revealed that, the activities which received attention in ESP classes of computer and mechanic in BA level were English to Farsi translation of paragraphs, translation of technical terms and reading. This study suggests the syllabus designers to be more aware of the learners’ needs; also it provides a sound basis and valuable implications for curriculum developers and teachers in developing ESP English courses.

Keywords: Computer, English, English for Academic purposes (EAP), Mechanic, Needs analysis

INTRODUCTION

As Johns (1991) suggests one of the utmost contributions of English for Specific Purposes (ESP) to language teaching has been its highlighting on vigilant and extensive needs analysis for course design. In English for Academic Purposes (EAP) course one of the major part of ESP, students are expected to acquire receptive and perceptive academic skills parallel to developing learning strategies and study skills (Jordan, 1997). Given the diversity and complexity of objectives of EAP, it is crucial to conduct an in-depth needs assessment before planning and implementing an EAP curriculum and material (Johns, 1981; Robinson, 1991). Teaching ESP requires understanding of language needs of these students. Students’ needs and wants can be explored by asking the students questions about themselves and the language.

Before designing any language course, it is necessary to identify academic needs. Such needs can be, on one hand, assessed according to teachers’ and syllabus designers’ points of view. More importantly, on the other hand, they can also be analyzed according to learners’ needs and wants. A practical needs analysis will help the syllabus designers to be more aware of the learners’ needs and it will lead in designing courses that promote students’ interest and motivation. Different types of learners have different language needs, and so, what they are taught should be restricted to what they need. These needs are fairly specific; they can be identified and they should determine the content of any course. The present study seems to be necessary as it is one of the first attempt to carry out a needs analysis for computer and mechanical engineering students in the context of Iran. Another major characteristic which distinguishes the present study from other needs analysis studies is that it attempts to check the choices made on an already validated questionnaire in the field. One of the advantages of
conducting needs analysis is that it can be more relevant and applicable to real-world situation and also results in motivating learners rather than providing them with a list of decontextualized structural items. The results of this study would help curriculum developers and syllabus designers in designing courses in which students can utilize their learned knowledge and mastery as tools to meet their real-life needs in meaningful ways.

**Research Questions**

The primary purpose of this study was to identify needs for engineering English courses. This study also aimed at investigating the computer and mechanical engineering English students’ as well as the instructors’ previous experiences with engineering English courses and their attitudes toward those courses. Keeping these purposes in mind, the following research questions are answered in this study:

- Is there any significant difference between instructors and students’ attitudes toward the needs in EAP courses?
- Is there any significant difference between computer and mechanical engineering students’ needs in EAP?
- Is there any significant difference between in-study and post-study students’ needs in EAP courses?

**Null Hypotheses**

There is no significant difference between instructors and students’ in their needs in EAP courses.

There is no significant difference between computer and mechanical engineering students’ attitudes of their needs in EAP courses.

There is no significant difference between in-study and post-study students’ attitudes of their needs in EAP courses.

**Literature review**

Huh (2006) conducted a survey in which a task-based needs analysis for business English course was investigated. The purpose was to conduct a task-based needs analysis for an ESL business English course. A task-based needs analysis was conducted on business English use in the Korean business context with the purpose of identifying business English target tasks. In addition, Korean business professionals’ previous experiences of taking business English classes were investigated as well as their attitudes and wants regarding the courses. Semi-structured interviews and a questionnaire were adopted. In total, 75 Korean business professionals from 13 different companies participated in the study. Through the interviews and the questionnaire survey, 26 business English target tasks were identified along with their frequency. These were classified into more abstract and super-ordinate target task types. Regarding the previous experiences and attitudes toward business English courses, only a small number of Korean business professionals seemed to have taken business English courses, although more than half of them were willing to take such courses.

Atai and Nazari (2011) investigated reading comprehension needs of Iranian EAP students of health information management (HIM). This study attempted to assess target and present reading comprehension needs of EAP students of Health Information Management (HIM). Participants included content teachers (N = 15), EAP teachers (N =10), graduate students (N =15), and undergraduate students (N = 180) majoring in HIM at three major medical universities in Tehran, Iran. The results indicated that ‘skimming texts’, ‘using bilingual general dictionaries’, ‘scanning texts’, ‘knowledge of HIM terminologies’, ‘guessing meanings of words’, and ‘understanding main ideas’ were perceived as either ‘important’ or ‘very important’ to students’ success by all the participants. Also, findings showed that undergraduate students’ GEP, in general, and reading comprehension, in particular, is lower than what is required in the EAP course.

Al-Tamimi and Shuib (2010) reported on a survey conducted to investigate the English language needs of petroleum engineering students at Hadhramout University of Science and Technology. A total of 81 third, fourth, and final-year petroleum undergraduates in the academic year 2006-2007 were identified and approached for the process of NA. A questionnaire was used for data collection. The result emphasized the significance of English for petroleum engineering students and identified the students’ lacks, wants and necessities with regard to English. Of the four language skills, listening have been perceived to be the most frequently used skill by the students. Also, the result revealed that the majority of the students responded negatively to the usefulness of the English language course in terms of meeting their English language needs. Furthermore, it is clear that the vast majority of the respondents (92.5%) stated that the time allocated to the English language course was not enough to reach the required level in the English language.

Hwang and Lin (2010) provided a description of the linguistic needs and perceptions of medical students and faculty members in Taiwan. The following issues were discussed: (1) frequency of the use of English by medical students, (2) importance of using English in the medical field, (3) evaluations of medical students’ proficiency in English, (4) needs analysis of the English course for the School of Medicine, (5) suggestions for
improving the English curriculum for the School of Medicine, and (6) other assistance or requirements for medical students’ linguistic needs. Participants were 378 medical students selected from the Department of Medicine at Chung Shan Medical University, including 117 freshmen, 79 sophomores, 59 juniors, 79 seniors, 44 fifth graders and 24 faculty members.

Nikui nezhad (n.d.) reported the results of an academic English needs analysis survey which was carried out at Kashiun University among three different majors, electrical engineering, Persian Literature, and chemistry. The participants in the present study were sixty university students. They were taking ESP as a compulsory course during their university studies at Kashiun University. Through the implementation of a needs analysis questionnaire in ESP classes the felt academic needs of learners in terms of skills and sub-skills are specified.

Mazdayasna and Tahririan (2008) conducted a study to investigate the foreign language learning needs of undergraduate medical sciences students studying in faculties of nursing and midwifery in Iran. 681 undergraduate students as well as 168 subject-specific instructors and 6 EFL instructors participated in the study. Statistical analysis of the data revealed that most of the students perceived that they needed to master the foreign language before they attended their specialized courses because they needed to use Persian and English sources to study their subject. It can be inferred from the result that this course does not fully prepare the students to embark on their studies because it does not sufficiently take into account their (1) learning needs, (2) present level of foreign language proficiency, (3) objectives of the course, (4) resources available in terms of staff, materials, equipment, finances and time constraint, (5) the skill of the teachers and the teacher’s knowledge of the specific area.

The studies which articulated above manifested that each of them explored different needs analysis. It depends on the aims of the study and experience of researcher how to identify needs and analyze them. Every researcher has his/her own particular preferences and for this reason he/she chooses particular path and design in order to achieve his goals and reject or verify research hypothesis. The variety of the needs analysis elements reveals that it is not a straightforward process; rather it is complicated and comprehensive study which requires meticulous consideration. As it can be inferred no serious study has identified or analyzed the language needs of computer and mechanic English courses and as a result the researcher come to the conclusion that this survey is needed in the realm of ESP course.

METHOD

Design
This study is a qualitative-quantitative survey and different sources and methods were employed to achieve triangulation of the data. In other words in this study mixed method was employed. An ex-post facto design, which aims at investigating the current state of affairs, regardless of what has occurred and carrying out a treatment or any manipulation was utilized. Along with the needs of the university students, EAP practitioners’ experiences of EAP courses and their attitudes toward the courses were investigated to reveal what they really expect and want.

Participants
The study is conducted at the Engineering Faculty of Islamic Azad University of Shiraz. The participants include undergraduate students as well as eight university professors.

A total of 365 computer and mechanical engineering undergraduate students were chosen through convenient sampling procedure. The sample comprised 237 (65%) males 128 (35%) female students with an age range of 18 to 58 years. It included 190 computer and 175 mechanic students. To elicit more representative data from undergraduate students, both ‘in-study’ students and ‘post-study’ students were invited to answer the questionnaire. That is, 181 students were studying required EAP course in the second academic semester of 1393-1394, while 184 others had already passed their required EAP courses.

In addition, eight EAP instructors who taught ESP courses filed the EAP questionnaires. The EAP instructors and content practitioners were selected from the corresponding English and content departments. In other words the sample of EAP teachers consisted of EFL instructors from the English language departments and the content instructors from the computer and mechanic faculties. It should be stated that the Iranian EAP courses are run by either EFL instructors or content teachers. All professors were Ph.D. holders in their field.

Instruments
This survey consisted of triangulation instrumentation and sources. Therefore, instruments which were used in this study were: a) questionnaires for undergraduate computer and mechanic students and instructors (as a quantitative measure); b) semi-structure interview from EAP practitioners, and c) observation (as qualitative measures) which would have helped cross-checking of the findings of the survey.
All the items will be answered by **Engineering students** on a 5-point likert scale and there is a blank space for providing comments. Mazdayasna & Tahirian’s (2008) questionnaire was modified in order that it can be used in this context. Furthermore semi-structured interview from Engineering professors is done. The questions on interview were generally based on Atai and Nazari (2011). The researcher conducted and tape-recorded interviews with EAP practitioners and then transcribed them in order to obtain their comments. Moreover unstructured-observation of English classes by the researcher is planned, in order to find out the genuine analysis of the engineering student in EAP courses such as different oral and written skills and sub skills.

**Questionnaire**

The questionnaires were expected to capture the views of computer/mechanic undergraduate students’ English needs. The questionnaires were adapted from Mazdayasna and Tahirian (2008) which was designed and prepared to identify medical students’ needs and then modified to be appropriate for computer/mechanic undergraduate students with some tiny changes in diction of the questionnaire.

To decide on the content of the questionnaires, the existing questionnaires in the literature (Mazdayasna & Tahirian, 2008), and qualitative data from post graduate and EAP practitioners of computer and mechanic were employed. In order to explore whether the instruments used in this study met the fundamental psychometric requirements, reliability and validity of the questionnaires had to be considered. The Cronbach alpha reliability for the first 22 items was 0.93. This shows that the participants’ responses are consistent enough to be used for further analysis. A factor analysis though varimax rotation was carried out to probe the construct validity of the first 22 items of the questionnaire. The SPSS extracted 4 factors which account for 63.38 percent of the total variance.

The questionnaire that was administered to computer and mechanic undergraduate students consists of: six items which dealt with personal information such as name (optional), sex, semester, field of study, age, telephone (optional), E-mail (optional), and whether they had passed their general English course and specialized English course. The main part had two sections. The first section, which was composed of twenty-two items (items 1-22), was designed to explore the opinions of the students about their expressed needs for English language skills in their academic studies. The second section, which consisted of fifteen items (items 23-37), explored the opinions of the students concerning language demands, their language needs, their attitudes towards language instruction, the length of the course, the content, syllabus, and methodology of the specialized English course. The first section (items 1-22), required respondents to express their opinions about each statement by marking the options on a five-point Likert scale ranging from 5 (always) to 1 (never). The first seven items of the second section (items 23-30) similarly used a Likert scale ranging from 5 (to a very great extent) to 1 (to a very little extent), while items 30-37 were multiple-choice format. At last, item 38, an open-ended question asks the students to write their view point about EAP course which can reveal some truth which was not elicited from the above items. The Cronbach alpha reliability for the 14 items is .70. A factor analysis though varimax rotation is carried out to probe the construct validity of the second 14 items of the questionnaire. The SPSS extracted 6 factors which account for 65.87 percent of the total variance.

**Interview**

This assumed that interviewing with EAP practitioners would provide in-depth information about EAP classrooms. The main aim of conducting interviews was to personally elicit information regarding the interviewees’ perspectives concerning the learning needs of students, areas of difficulty which students encounter as well as exploring the attitude and expectations of the participants regarding the EAP course. The questions on interview were generally based on Atai and Nazari (2011). All interviews with eight EFL instructors and subject-specific instructors were tape recorded and then transcribed by the researcher.

**Observation**

By observing each classroom, the researcher might have been able to not only confirm the findings of this study, but also learn what had not been revealed through the introspection and retrospection through the interviews and the questionnaire survey (Long, 2005). The researcher took part in EAP classes in other to observe 6 different EAP classes, which included 4 computer and 2 mechanic classes.

**Data analysis procedures**

All of the participants answered the questionnaire in one session. The respondents were offered the guidelines needed for completing the questionnaire and for any probable misunderstanding by the researcher. For the ‘In-study’ group, the researcher herself, took part to observe the EAP classes and at the end of each session gave the
questionnaires to the students to ensure the highest possible rate of return. For the ‘Post-study’ group, the questionnaire was administered during one of the subject-specific class sessions.

Data for the study were collected over the second educational semester of 1393-1394. After distributing the questionnaire, the researcher explained the aim of the study and answered the related questions of participants. However, there were some respondents (about 150) who neither completed nor returned it. The administration of questionnaire took 10 to 15 minutes.

To find an answer to the questions formulated for the purpose of this study, the following statistical analyses were performed: Descriptive analysis was performed to obtain a several picture of the data. Chi square was conducted to find the difference in the selection of responses to any single item in the questionnaire.

Also interviews from the instructors were transcribed and then analyzed to get the impression of them as one of the main stakeholders. The researcher visited the respective departments and asked the students to participate in the study. When marking the questionnaires, the participants were given some instructions on answering the questions. The collected data fed into the software SPSS for Windows to investigate the reliability and validity of the instrument using Factor Analysis.

**Interviews’ results**

The researcher interviewed with eight EAP practitioners from the computer and mechanical engineering departments to capture their attitudes toward the needs of learners in EAP classrooms. The responses provided by the interviewees were recorded and then transcribed by the researcher. The questions on interview were generally based on students’ language proficiency, time allocation, number of the students, the language of instruction, the practitioner, activities, authenticity, textbooks, teaching and testing methodology, and efficacy of the courses. The interviewees had a high rate of agreement with the following issues:

As relates to general foreign language proficiency, they reported that the students’ English language ability was unsatisfactory to meet the expectations in their specialized courses. They believed that because the students’ language proficiency is very low, they cannot understand and comprehend specialized English. This is also in line with (Atai, 2002) which argues that, it seems that the EAP program designers and textbook writers at Iranian universities have lost sight of students’ GEP level on entrance to EAP courses.

Most of the instructors were particularly not satisfied with the low reading ability of the students and they pointed out that they had no other alternative but to translate specialized English texts into Farsi in order to put the message across to the students. This is also in line with Atai and Nazari (2011) which showed that undergraduate students’ GEP, in general, and reading comprehension, in particular, is lower than what is required in the EAP course.

Instructors admitted that the students commonly need to improve their general English before enrolling in EAP classes. This is in line with Mazdayasna and Tahririan (2008) which stated that students need to master the foreign language before they attended their specialized courses.

Interviewees believed that the specialized English courses do not develop the students’ level of proficiency adequate to use English in real contexts. This indicates that in spite of the fact that the students take a general English course before their subject-specific English course, their level of general English proficiency (GEP) is low. This is in line with what has also been echoed in the literature on EFL/ESP in Iranian settings (Alavi & Tahririan, 1996; Atai, 2000; Tahririan, 1987, 1990).

They asserted that subject-specific English courses should be offered throughout the four years of their study.

All the EAP practitioners believed in the necessity of change in their students’ English education. The finding is in line with Atai (2002) which argues, the current Iranian EAP courses are not designed systematically and coherently as they are not research-based. The specialized English courses, according to them, should provide students with authentic academic language texts.

Regarding the use of technical and semi-technical vocabulary, all the interviewees believed that students only memorize the limited amount of technical and semi-technical vocabulary which they are taught in the ESP courses in order to succeed in their final examination. After they pass their English courses, they still lack the ability to use grammatical structures and terminology properly. They also have problems using semi-technical vocabulary in real contexts.

They also believe that the only skill that undergraduate computer and mechanic students in Iran need is reading, and the other skills such as listening, speaking, and writing are needed for higher education. This is in contrast with Al-Tamimi and Shuib (2010) with regard to the four language skills, listening have been perceived to be the most frequently used skill by the students in EAP classes.
They strongly believed that EAP courses must be taught by subject specialist rather than English language specialist.

They thought that the time allocated to the English language courses are not enough to reach the required level in the English language. As a result, they strongly recommend that general English courses should be increased to 4 credits in BA level in order that students can reach an acceptable level of general English proficiency and good command of English structure and common core vocabulary to fulfill the expectations in EAP classes, and afterward 4 credit specialized English courses would be useful, helpful and fruitful. This is in line with Al-Tamimi and Shuib (2010) which reported that the vast majority of the respondents (92.5%) stated that the time allocated to the EAP course was not enough to reach the required level in the English language.

Observations’ results

In all the classes which the researcher observed, the instructor or Volunteer students read from the passages and afterward the students translated word by word and found an equivalent in Farsi and subsequently the instructor himself translated the English texts into Farsi and the students wrote the translation. Classes were heterogeneous because some students were already familiar with English while others did not have such experiences and could not take part in the class activities. If all of them had been the same level it would be much better for instructor to teach. The language of instruction was Farsi because not only most of the students could not comprehend English but also instructors do not have a perfect command of English to handle the classes in English. Pronunciation received attention only when students read inaccurately (because they do not have comprehensible input at all) and instructors corrected them immediately.

The only activities which received attention in EAP classes of computer and mechanic in BA level were reading comprehension, English to Farsi translation, and technical terms, but other activities such as listening, speaking, writing, grammar, Farsi to English translation, and teaching core vocabularies received no, or at best little attention in these classes (maybe because they are not needed in BA level). The evaluations in these EAP classes were summative and just in written form and just based on the students’ ability to translate English to Farsi and they were asked to find an equivalent for technical terms. Most of the EAP practitioners prefer not to use SAMT publications book series and they prepare the materials for their classes themselves and based on their own tastes. Classes were monotonous and boring without students’ motivation and active involvement.

Questionnaires’ results

To find if there is any significant difference between perceptions of computer and mechanic undergraduate students and that of their teachers regarding the needs, the first research question, an analysis of chi-square is run to compare the teachers and students’ perceptions towards their needs. The chi-square observed value of 37.51 (P = .000 < .05) indicates significant differences between the teachers and students’ perceptions towards needs.

| Table1. Chi-Square perceptions towards needs by groups (students vs. teachers) |
|-----------------|--------|-------|--------------|
|                 | Value  | df    | Asymp. Sig. (2-sided) |
| Pearson Chi-Square | 37.513 | 4     | .000          |

Although the frequencies and percentages show the distributions of the choices selected by the two groups, the Std. residual identifies the exact paces of differences between the two groups. Based on these statistics it can be concluded that the students’ selections of choices are not beyond the expectation while the teachers have selected the “always” and “never” choices significantly beyond what was expected. Since the Std. Residuals for these two choices are beyond the ranges of +/- 1.96, it can be concluded that the teachers hold a significantly positive view (Std. Residual = 5.20 towards needs more than the students and at the same times they hold a significantly less negative (Std. residual = - 2.6) views towards their needs). Based on these results it can be concluded that the first null-hypothesis as there is no significant difference between perceptions of computer and mechanic undergraduate students and that of their teachers regarding the needs is rejected. The teachers hold a more positive view towards needs.

The result of the second research question: Is there any significant difference between perceptions of the computer and mechanic undergraduate students regarding their needs?

An analysis of chi-square is run to compare the computer and mechanical undergraduate students’ perceptions towards their needs. The chi-square observed value of 31.61 (P = .000 < .05) indicates significant differences between the computer and mechanic undergraduate students’ perceptions towards needs.
A needs analysis of students studying computer and mechanic in the Iranian universities was conducted with the aim of investigating undergraduate students' foreign language learning needs. As mentioned before, all the three null hypotheses are rejected. Investigating the first research question, most of the students perceived "usually" as the need to develop all four language skills while their teachers perceived "sometimes" as the students' needs for EAP courses in BA level. For the second research question, computer students selected "sometimes" more than other choices while mechanic students selected "usually". For the last research question in study students selected the midpoint more, while post study selected "usually".

**CONCLUSIONS**

A needs analysis of students studying computer and mechanic in the Iranian universities was conducted with the aim of investigating undergraduate students' foreign language learning needs. As mentioned before, all the three null hypotheses are rejected. Investigating the first research question, most of the students perceived "usually" as the need to develop all four language skills while their teachers perceived "sometimes" as the students' needs for EAP courses in BA level. For the second research question, computer students selected "sometimes" more than other choices while mechanic students selected "usually". For the last research question in study students selected the midpoint more, while post study selected "usually".
Based on these results it can be concluded that the majority of students are not satisfied with the number of students, the contents of English textbooks, teaching methodology, evaluation methods, textbooks, foreign culture load of textbooks, contents of textbooks in EAP classes, and selected the “seldom” and “sometimes” choices.

Although the majority of students prefer to do their activities alone, the differences are not statistically significant. The results showed that students preferred more than one partner to working with one partner. The majority of the students preferred English course to be offered on the third or fourth terms. The least favored time for presenting these courses was the last and the first terms. The majority of students preferred English course to be offered all over the terms. The least favored time for presenting these courses was in one term. The results indicated that the majority of students study English courses once a month. This was followed by those who study English courses once a week. The least attempted answers were “twice and thrice a week”. The majority of students preferred Iranian instructors who have their expertise in English. This is followed by Iranian teachers who have expertise in computer / mechanic courses. The least favored were instructors form English speaking countries. The majority of students preferred to master English language skills before they are offered in university. The least favored time for learning English was after finishing courses.

The findings of the study based on the interviews with EAP instructors and observation support the view that students need to increase their general proficiency in English before admitting the EAP courses. Most of the students felt that the current two-credit ESP course was insufficient and reported that they had expected to be offered specialized English courses throughout their 4 year undergraduate studies in order to meet their English language needs. A solid majority of the instructors also reported that the students needed to develop their general reading skills, and they agreed that the students should be helped to increase their repertoire of vocabulary in order to be able to read extensively in their specialized classes. This indicates that in spite of the fact that the students take a general English course before their subject-specific English course, their level of general English proficiency (GEP) is low. This is in line with what has also been echoed in the literature on EFL/ESP in Iranian settings (Alavi & Tahririan, 1996; Atai, 2000; Tahririan, 1987, 1990). Both students and instructors perceived that they needed to master an appropriate level of English before they attend their specialized courses. More significantly, most of the students reported that they needed to use both Persian and English sources when studying their subject courses. The students seemed not to have clear perceptions of their language needs for academic study and their future careers. Students also perceived that English instructors lack sufficient expertise and background knowledge required for teaching specialized English courses. All subject specific instructors indicated that subject specialist should teach ESP courses not EFL teachers. A vast majority of the students in the 'In-study' and 'Post-study' groups agreed that reading comprehension, followed by writing are the most important skills needed for their studies. The EAP instructors consistently ranked the importance of the four skills higher than the students did.

The instructors in different universities do not use their materials uniformly (University Books for the Students of Humanities i.e., SAMT Publication), and in some departments, especially where the instructors are subject specialists, instructors either compile their own materials or select articles to adapt for their classes at their own discretion. As we saw above, these courses may either be conducted by EFL instructors or by subject-specific instructors. Clearly, some expertise must be brought to the scene to make the ESP teaching practice more consistent with meeting students’ needs. If such factors are not considered, the design of the course may be unsuitable for the situation and the expected results may not be achieved. Based on what was revealed by the study, the EAP courses for computer and mechanic students similar to other subject-specific English courses in Iranian universities, is conducted without having assessed students’ learning needs – which is the indispensable first step in curriculum development for academic or specific academic purposes. To this end, perceptions of four major groups of stakeholders (i.e. in study students, post study students, content instructors, and EAP teachers) were elicited and analyzed.

The findings, however, revealed significant differences between the perceptions of stakeholders (i.e. students vs. instructors; computer vs. mechanic; in-study vs. post-study). Although questionnaires are among the most commonly used instruments in needs analysis studies (Robinson, 1991), the data obtained through questionnaires may be one-dimensional (Hyland, 2006) and imprecise. Therefore as Long (2005) argues, inconsistencies in perceptions of respondents should be handled through triangulation and cross-checking of data. Moreover the results of observations and interviews as well as the students' questionnaire and teacher's questionnaire showed that the students were not fully aware of the aims of EAP courses and future language use domains. Concerning the undergraduate students, both EAP teachers and undergraduate students agreed that the undergraduate students still need improvement in many EAP reading skills. However, upon closer analysis of the assessments, it can be concluded that the EAP teachers’ perceptions are more accurate. This finding, then,
confirms Long’s (2005) holding that students’ viewpoints are not adequate and should not be considered as “the reliable source, the best source or the only legitimate source” in analyzing their needs (p. 26).

Concerning undergraduate students’ problems in the EAP courses, the results of questionnaires, interviews, and observations highlighted such problems as textbooks, and the students’ low GEP. It seems that the EAP program designers and textbook writers at Iranian universities have lost sight of students’ GEP level on entrance to EAP courses (Atai, 2002). However, as Robinson (1991) states, “curriculum developers, syllabus designers, and EAP instructors’ failure to obtain an accurate idea of the students’ initial level of ability can lead to serious problems and hasty redesign of a course” (p. 14). The EAP courses at Iranian universities are offered either by EFL experts or subject-specific instructors from the corresponding content departments with little collaboration between the two camps. Our analysis of the observations as well as interviews with teachers revealed that EFL instructors did not enjoy a proper command of background content knowledge on the course topics. On the other hand, content teachers lacked the methodological skills and did not have an acceptable command of English. Finally, as Atai (2002) argues, the current Iranian EAP courses are not designed systematically and coherently as they are not research-based. Normally, target needs are not operationally defined to the stakeholders at implementation level of the curriculum.

**Pedagogical Implications**

The findings of the current study can have multiple pedagogical implications for the language education specifically in Iran. The results can be informative and useful for language policy makers, language instructors especially those running EAP and ESP courses, language teaching methodologists, syllabus designers and textbook developers, and language testers especially those working within the realm of EAP and ESP.

As Hutchinson and Waters (1987) argue, the data obtained from needs analysis studies should provide the basis for curriculum developers, syllabus designers, materials writers, methodologists, and evaluators. The operational objectives for these courses should be set through triangulation of the databases and interactive communication between curriculum developers, course designers, and other stakeholders. In order to develop a successful curriculum, there needs to be interactive negotiations among a panel of researchers and practitioners. And this cannot be achieved unless practitioners take heed of theoreticians and vice versa.

Also, as the students’ GEP levels were rather low, we suggest program designers to set a criterion GEP level for students upon entry to the EAP course. It seems more logical to invest in students’ GEP through remedial courses, if significant improvements in EAP courses are considered. Also, the current EAP teachers may use the results of this study to refresh and update their methodological policies and options according to the students’ needs rather than idealistic goals prescribed by the syllabus designers. The findings of this study provide a sound basis and valuable implications for curriculum developers and teachers in developing ESP courses.

**Suggestions for Further Research**

This study was done in one university. In order words, other researchers can either replicate the current study in other similar educational setting and universities or make it more innovative by exploring other issues related to EAP and ESP in Iran.

This study cannot totally be representative of the whole country. In other words, other researchers can run a nation-wide study by getting a larger population involved in such a survey. For so doing, questionnaires can be administered via e-mail and electronically and hence have a larger sample which subsequently adds to the generalizability of the study. This aim can be better fulfilled by involving participants from more academic majors across the country.

, the ideas and viewpoints of English speaking EAP/ESP teachers can also be taken into account so that the possible differences between EAP/ESP courses in Iran and abroad can be investigated in a comparative educational study. In a practical move, Iranian language policy makers can utilize other countries’ useful experiences in such programs and hence raise the status of these programs in Iran.

In addition, this study used an already developed questionnaire. Other researchers can find the shortcomings of this questionnaire and develop a better one if possible by involving more constructs and factors relevant to EAP and ESP in Iran. It is suggested that a systematic approach be taken towards the development and validation of a questionnaire. The researchers might want to conduct interviews and observations to further triangulate the results. Also, the gender of students might also change the results. It is suggested that the same study be carried out with focus on gender role in perceptions of the needs.
Limitations and Delimitations of the Study

The study is conducted in the context of Islamic Azad university of Shiraz which could not totally be a representative of whole country; therefore, the need for expanding the realm of research to other universities is inevitable. Also the participants in this study were selected conveniently. It may not be a representative of the target population accurately.

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