A STUDY OF NEEDS, PROBLEMS, AND WANTS OF USING ENGLISH OF ENGINEERING STUDENTS OF QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE AND TECHNOLOGY, PAKISTAN

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ABSTRACT

English language is considered to be an official language in Pakistan and is the medium of instruction within schools, colleges, and universities. However, no study had been conducted to analyse the needs, problems, and wants of students who study engineering programs. The English courses provided are based on English teachers only, so the courses may not be suitable for students' needs. Thus needs analysis needs to be conducted, and the purposes of this research were: (1) to analyse the engineering students' need to use English in present and future situations, (2) to find the main problems of engineering students in using English in their academic studies, (3) to investigate the learners' wants regarding the purpose, content, and methodology of engineering programs, and (4) to explore the difference between Engineering students and their teachers in terms of needs, problems and wants of English language at QUEST Pakistan. The target population of the fourth year engineering students was 523 and the target population of engineering teachers was 173. These participants were selected by systemic and simple random sampling techniques. The sample of this study included 217 students and 132 engineering teachers. The review of the literature was used as the guidelines to design and develop questionnaires for collecting data in this study. The questionnaires were divided into five parts: personal information, English problems, needs, wants, and tasks. The Cronbach's alpha coefficient was used to check the reliability of questionnaires and it was .95. Data were analysed by using descriptive statistics (mean score and standard deviation). Independent *t*-test was used to analyse the difference between students and teachers' needs, wants, and problems. The findings determined the needs, problems, and wants of using four skills. The results indicated the needs and wants of four skills, particularly speaking and writing skills of engineering students. Both teachers and students found problems in speaking skills and thought speaking as well as writing skills should be developed. Thus they needed more courses to be designed in order to meet their needs.

KEY WORDS: ENGINEERING / NEEDS ANALYSIS / STUDENTS' WANTS

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CHAPTER I
INTRODUCTION

English is used all around the world. Wardhaugh, (2006) described that European Union uses English as its official language. Likewise, many commonwealth countries as well as many world organisations consider English as official. In addition, the United Nations also uses English as one of six official languages. It has often been referred to as a "world language" because over a billion people speak English at least at a basic level. According to Schelppegrell and Royster, (1990) English is the only medium of instruction for international business and many multinational companies all around the world arrange English language training for their employees. Adler, (1989) pointed out that technical skills alone are not sufficient for employment success; the capability to converse vividly and persuasively often marks the variances between success and failure, both for individuals and for an organization. As a result, a working knowledge of English has become necessary in many businesses in order for them to meet their goals and to find the needs, problems and, wants of using English prior to implementing any course improves the chances of success of any organization.

This study investigated needs, problems and, wants in English among engineering students at Quaid-e-Awam University of Engineering, Science and Technology (QUEST), Pakistan. A quantitative research tool was used to find the results, which can serve as an input to develop syllabuses or materials for engineering students.

1.1 Background of the study

Need analysis (NA) is essential for any course or curriculum design and development because (1) the results of the NA will be a useful resource in developing appropriate courses to address needs (Read, 2008). (2) The syllabus developed will maximize learning and teaching because they are each provided for in

relevance to the needs, wants, and interests of target students (Nunan, 1988; Long, 2005). To accomplish this, a syllabus designer must identify the learners' needs during the first stage of the design (Bosher & Smalkoski, 2002; Brown, 1995; Cowling, 2007; Edwards, 2000; Long, 2005; Read, 2008).

Needs Analysis has been used as a tool in English course design, especially in engineering courses where the specific needs of the students are difficult to determine. Thus, it is important to identify learner needs, problems, and wants within a particular context (Hutchinson & Waters, 1987). Research has shown (Bosher & Smalkowski, 2002; Butler, 2004; Long, 2005) that there is often a lack of awareness of the existence of NA. The early studies of NA are associated with Munby (1978) who developed one of the earliest models of NA for language course design.

More recently, task-based NAs have been gaining attention (Gilabert, 2005; Long, 2005) due to their use of multiple sources and methods to gather quality data. According to Brindley (1989), the needs are individual learner needs in the learning situation, which entail a number of affective, cognitive, and social factors; whereas, some researchers such as Nunan (1988) use "objective as factual, and subjective as perceived" to describe information about learners' objectives. Moreover, there are various ways in which information can be gathered about the needs of learners; the most frequently used being questionnaires, interviews, observation, and data collection (Hutchinson & Waters, 1987; Long, 2005). Because Needs Analysis is a complicated process, the analysis should use more than one of these methods. The methodologies selected depend on the time and resources available; therefore, the procedures for each will partly depend on accessibility (Hutchinson & Waters, 1987).

English is considered an international language for sharing information through science and technology. Previous research in the field of engineering showed that English language is very important in the academic and professional lives of engineering students (Basturkman, 1998; Pendergrass et al., 2001; Pritchard & Nasr, 2004; Joesba & Ardeo, 2005; Sidek et al., 2006; Hui, 2007; Venkatraman & Prema, 2007). For example, Pendergrass et al. (2001) pointed out the use of English in engineering education and stated that integrating English into engineering, science, and math courses is an effective way to improve the performance of engineering

students in oral and written communication (p. 1). In addition, Pritchard and Nasr (2004) stated 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" (425-445). Similarly, Joesba and Ardeo (2005) stated that English is the international language of science and technology and engineering students have to realize the fact that engineering books, papers, handbooks, and journals are written in English and are included in their reading lists.

Hutchinson and Waters (1987) stated that the expansion of scientific, technical, and economic activities on an international scale after the end of the Second World War in 1945 led to the importance of English study. Hutchinson and Waters (1987) further stated, "As English became the accepted international language of technology and commerce; it created a new generation of learners who knew specifically why they were learning a language" (p. 19). Learners were seen to have different needs and interests, which had an important influence on their motivation to learn. This led to the support of the development of courses in which relevance to learners' needs and interests were of great importance (Read, 2008).

Further, researchers (Gilabert, 2005; Long, 2005) indicated that task-based NAs have gained attention. Needs analysis was introduced into language teaching through the English for Specific Purposes (ESP) movement. Hutchinson and Waters (1987) defined ESP as"an approach to language teaching, course design and materials development in which all decisions as to context and method are based on learners' reason for learning" (p.19). "By the 1980s, in many parts of the world a "needs-based philosophy" emerged in language teaching, particularly in relation to ESP and vocationally oriented program design" (Brindley, 1984 as cited in Richards, 2001, p. 86).

In Pakistan, English is considered an official language and is a medium of instruction in schools, colleges and universities (Mansoor, 2005). Further, the English curriculum has not changed in the official level but is in the process of developing in private sector teaching and learning. The University Grants Commission, (UGC, 1982) reported in its "Report on the Teaching of Language" on national language, English and various regional languages, called "English as 'the language of knowledge,

technology, and international communication, as an important second language" (p. 14). The report further states regarding the future of English in Pakistan:

> *English would continue to be used in the foreseeable future as the language of technology and of international communication. English is increasingly becoming the equivalent to a universal lingua franca and is essential for international intercourse. There is no scope for any country in the world from learning English well and thoroughly and it would be very unwise, in fact, almost suicidal for Pakistan to destroy by neglect all the advantages we already possess in respect of past knowledge of English.* (UGC 1982:14)

English is widely recognised as a foreign language in more than 100 countries of the world including Thailand, China, Japan, Brazil and Europe (Crystal, 2003). Many other countries like Singapore, Pakistan, India and the Philippines teach English as either second language (Crystal, 2003) or medium of instruction or as an official language (Channa, 2012). The importance of English in Pakistan has increased since the publication of the report. The evidence is the decision of the Government of Pakistan to introduce English in all government schools from year one to the graduate and post-graduate levels (Ministry of Education, 2007).

1.2 Statement of the problem

Quaid-e-Awam University of Engineering, Science and Technology (QUEST) students and teachers face problems in providing or developing English language teaching and learning. Different engineering programs at QUEST have been in existence for 32 years without any analysis of the learners' needs. This means that Quaid-e-Awam University has never analysed the learners' needs. Following Strevens (1988), these problems include: (1) the problems of students, (2) the problems of teachers, and (3) methodology.

1. The problems of students

Students are admitted after their intermediate in pre-engineering group exam results and admission test scores on their pre-entry test, conducted every year by the testing centre of QUEST, Pakistan. The background knowledge varies between due to become private college learners and government college learners. These students also vary in terms of their English competency, their behavior and motivation for learning engineering in English.

2. The problems of teachers

Teachers who teach engineering subjects are regular teachers in engineering fields possessing either a bachelor of engineering or master of engineering or even a PhD in engineering. As engineering teachers come from different engineering areas, they are not prepared to teach students with engineering or professional needs in terms of English language.

However, the lack of NA and the one size fits all approach are the two main problems which the Quaid-e-Awam University has to solve in order to provide engineering students with the knowledge needed for their professional development. Engineering learners need to use English for academic and professional purposes since they learn English through other subjects. Thus, the planning, teaching and learning in engineering programs need to be analysed in order to match the learners' needs and the programs provided.

3. Methodology

There are different engineering programs at QUEST, Pakistan. On the one hand, the medium of instruction is English and unfortunately engineering teachers do not always use correct English while teaching or in delivering lectures. On the other hand, the English language centre supports engineering departments and provides English knowledge but unfortunately these English teachers lack the scientific and technical language related to the fields and thus suffer to a great extent. Further, class size is extremely large, from 75 to 120 students. The teaching mode is teacher-centered and includes lecture type classes. In this way students have little or no participation in language activities in class and have little chance to improve English or practice communicative skills as well.

1.3 Rationale of the study

It is worthwhile for an engineering university Pakistan to develop an ESP syllabus in order to solve language teaching and language learning problems. According to Munby (1978), Jordan (1989), Nunan (1990), and Mackey (1981), the first step in developing an ESP syllabus is to do a need analysis (NA) of the language needs of the students. Similarly, Jordan (1997) defined needs analysis as the starting point in course design. Need analysis may be used in order to adapt any language course to accommodate students' needs. To develop NA for engineering students in Pakistan, the studies done in past till now must be reviewed. Munby (1978) developed a detailed NA by focussing on learners' needs using the performance-based approach. The approach is related to areas of practicalities and constraints, teaching methods, learning strategies, and material selection. However, no single research in ESP regarding NA of English for engineering students has been done. Consequently, NA relating to engineering students in Pakistan should be carried out. Quaid-e-Awam University should start reviewing learners' needs in order for the students to comprehend engineering subjects in English and to enhance their capability to meet future needs and solve problems. The findings of this study can be beneficial for material developers and teachers using English.

1.4 Purpose of the study

The purpose of this study was to investigate the needs, problems, and wants of the fourth year engineering students at Quaid-e-Awam University. The findings of this research can be used as a guideline for developing a new curriculum for the learners in this particular context. Those chosen to contribute to this study were divided into two groups related to engineering teaching and learning at Quaid-e-Awam University: (1) students and (2) teachers. The study attempted to answer four research questions:

1. To what extent do the engineering students need to use English in present and future situations?

2. What are the problems of engineering students in using English in their academic studies?

3. What are the learners' wants regarding the purpose, content, and methodology used in engineering programs?

4. Is there any difference between engineering students and their teachers in terms of needs, problems, and wants?

1.5 Significance of the study

1. The results of this study offer relevant information about the needs, problems, and wants of the students in present and future situations.

2. The results of this research will help administrators to develop courses and programs which match the students' needs, and interests.

3. The findings provide a framework for teachers to help students develop more effective English language skills.

4. The findings of this study provide useful recommendations for planners, instructors, and administrators to develop course syllabuses for engineering learners.

1.6 Definitions of the terms

1. Needs analysis or needs assessment (NA) is a set of procedures for specifying the parameters of a course of study. Such parameters include the criteria and rationale for learners, selecting and sequencing of course content, methodology, course length, and number of hours (Nunan, 1988: 45).

2. Needs refers to what the learners need to know in order to work effectively in the target situation (Hutchinson & Waters, 1987: 55).

3. Wants refers to the perception of the learners' needs based on what learners want or feel they need (Hutchinson & Waters, 1987: 55).

4. Problems refer to the difficulties caused by the gap between the students' present language competency and the level required in the academic target situations (Wilkins, 1976).

5. NA means need analysis

6. ESP means English for Specific Purposes

7. QUEST is the abbreviation for Quaid-e-Awam University of Engineering, Science and Technology.

8. UGC, Pakistan means the University Grants Commission of Pakistan and was the former name of the present Higher Education Commission of Pakistan.

9. MoE, Pakistan means Ministry of Education of Pakistan.

CHAPTER II
LITERATURE REVIEW

The purpose of this study is to provide background information on the needs, problems and wants in using English of engineering students in Quaid-e-Awam University of Engineering, Science, and Technology. This review discusses background information about QUEST, English courses at QUEST, English for Specific Purposes (ESP), needs analysis (NA), and review of related literature.

2.1 Background Information of Quaid-e-Awam University

Quaid-e-Awam University of Engineering, Science and Technology (QUEST) is accredited by the Higher Education Commission and Pakistan Engineering Council as a Government university, providing education in the field if Engineering, Science and Technology. Presently, there are four batches (Total 2700 students) studying at QUEST. These four batches are: 2010 with 523 students, 2011 batch having 639 students, 2012 batch with 769 students, and 2013 batch with 769. Similarly, there are total 173 teachers teaching in different departments of the university. Presently, it consists of three academic sectors: Sector A, Sector B, and Sector C. Sector A houses the Departments of Electrical Engineering, Electronics Engineering, Computer Systems Engineering, Information Technology and a well-established Computer Centre. Sector B houses the Departments of Civil Engineering, Mechanical Engineering, Energy & Environment Engineering and Basic Sciences and Related Studies. The Administration Block and all the laboratories of Civil Engineering, Mechanical Engineering and Workshop are located in Sector C. The English Language Centre and the Central Library are located between Sector B and C. There is a well-planned residential colony consisting of a substantial number of bungalows for the teachers and officials and quarters for other employees.

2.2 English courses at QUEST

Quaid-e-Awam University has established an English Language Centre to teach English language to the undergraduate engineering students and teachers. The teachers at the English Language Centre are responsible for designing syllabuses, courses and materials based on the needs of undergraduate engineering students and appropriate for their levels. There are four regular English teachers to teach English in the departments that include Civil Engineering, Mechanical Engineering, Energy and Environment Engineering, Electronics Engineering, Electrical Engineering, and Computer System Engineering. English is taught in the first and second semesters for first year of students. Following is the list of courses according to the department needs.

1. Writing and Communication Skills (Civil Engineering)
2. Communication Skills in English (Energy & Environment Engineering)
3. Communication Skills (Mechanical, Electrical and Electronics Engineering)
4. English Comprehension and Technical Writing (Computer System Engineering)

2.3 Definition of ESP

Teaching English for Specific Purposes (ESP) appeared as a substantial movement within the field of English language teaching and the best definitions of ESP are in the words of Hutchinson and Waters (1987), Strevens (1988), Robinson (1991), and Dudley-Evans and St. John (1998).

Hutchinson and Waters (1987) considered ESP as an approach rather than a product. This means that ESP does not involve in a particular type of language, teaching materials, or methodology. For them, ESP is based on the simple question: Why does this learner need to learn a foreign language? To answer this question, information is gathered about learners, the language required, and the learning context. This is done through the process of needs analysis.

For an extended definition the following extract from Strevens (1988:1-2) is worth mentioning:

A definition of ESP needs to distinguish between four absolute and two variable characteristics:

(1) Absolute characteristics:

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 the language appropriate to those activities, in syntax, lexis, discourse, semantics, etc.
- in contrast with "General English".

(2) Variable characteristics:

ESP may be, but is not necessarily:

- restricted as to the language skills to be learned (e.g., reading only)
- not taught according to any pre-ordained methodology

Strevens (1988:1-2)

Besides this, the following claims for ESP are presented:

- it is focussed on the learner's need, wastes no time
- it is relevant to the learner
- it is successful in imparting learning
- it is more cost-effective than "General English"

Strevens (1988:2)

Robinson (1991:3) defined ESP as "normally goal directed" and ESP courses develop from needs analysis which aims to specify what exactly students have to do through the medium of English.

The definitions of Strevens and Robinson are evaluated in the following words:

> Each definition has validity but also weaknesses, either in the definition or in the features described. Strevens' definition is the most comprehensive…, but can lead to certain confusion. By referring to

> content in the second absolute characteristic it may confirm the false impression held by many teachers that ESP is always and necessarily related directly to subject content. Robinson's mention of 'homogeneous classes' as characteristic of ESP may lead to the same conclusion.
>
> (Dudley-Evans &St. John, 1998:3-4)

2.4 Classification of ESP

ESP is traditionally divided into two main areas: (1) English for Academic Purpose (EAP) and (2) English for Occupational Purpose (EOP). Each of these two is further divided into different areas. Robinson (1991: 3-4) divided EOP into three categories: *Pre-experience, In-service* and *Post-experience.* Similarly, she divides EAP into two categories: (1) for study in a specific discipline and (2) as a school subject. Study in a specific discipline is further divided: Pre-study, In-study, and Post-study. Similarly, EAP as a school subject is divided into two categories: Independent and Integrated.

2.5 Development of ESP

English for Specific Purposes (ESP) was not a theory-based movement but was a response to the learners' needs. Therefore, Hutchinson and Waters (1987) describe three convergent reasons that marked the emergence and growth of ESP. These aspects are: (1) demands of the brave new world, (2) revolution in linguistics, and (3) focus on learner.

The "brave New World" started in the mid 1940's after the end of World War II and continues till now. Graddol (1997) pointed out that the main aim of the demands of the brave new world is to gain economic power. For this, a great number of NNSs want to learn English. Similarly, the revolution in linguistics is the second aspect responsible for the emergence and growth of ESP. This revolution came when three British linguists published a landmark volume entitled *The Linguistic Sciences and Languages (*Holliday, McIntosh & Strevens 1964). Not only had this but

Hutchinson and Waters (1987) also pointed out that focus on learner was an issue of educational philosophy/psychology in the 1960's, emphasizing learner-centeredness and course content. The learner's motivation was also seen to have an important influence on the effectiveness of learning.

2.6 Definitions of Learner' Needs

Learner needs has been interpreted differently by different researchers, depending on their frameworks or ideological perceptions. Berwick (1989) asserted that a need is "a gap or measurably discrepancy (what people know and what they ought to know) between a current state of affairs and a desired future state" (p. 59). Similarly, Brindley (1989) gave a simpler definition of need as "the gap between what is and what should be" (p. 76).

However, Hutchinson and Waters (1987) defined learner needs by differentiating between "target needs" and "learning needs". The former comprises (1) necessities or what the learner has to know in order to function effectively in the target situations, (2) lacks or the gap between target needs and the existing proficiency of the learner, and (3) wants or the learner's view on their needs. Robinson (1991) constructed a list of five definitions of learner needs. First, needs refers to the study requirements that learners have to be able to accomplish at the end of their language course. This is a goal-oriented definition of needs. Second, needs means what society regards as necessary to be learned from a program of language instruction. Third, needs means what the learner needs to do to actually acquire the language. This is a process-oriented definition of needs, and is related to transitional behavior, the means of learning. Fourth, needs refers to what the students themselves would like to gain from a language course. Finally, needs are called "lacks**",** that is what the students cannot do in English.

2.7 Definitions of Needs Analysis

According to Nunan (1988), needs analysis refers to the procedures for gathering information about learners and about communication tasks for use in syllabus design. Richards et al. (1992:242-243) defined needs analysis in language teaching:

> *…The process of determining the needs for which a learner or group of learners requires a language and arranging the needs according to priorities. It makes use of both subjective and objective information. The analysis seeks to obtain information on the situation in which a language will be used including whom it will be used with, the objectives and purposes for which the language is needed, the type of communication that will be used, and the level of proficiency that will be required…*
>
> (Richards et al., 1992:242-243)

Ellis and Johnson (1994) added that needs analysis is a method of obtaining a detailed description of learner needs. It takes into account the specific purposes for which the learner will use the language, the kind of language to be used, the starting level, and the target level which is to be achieved. Information can be obtained from a range of different people such as company staff, trainers, and the learners themselves. It will have implications for the future training approach.

However, Bachman and Palmer (1996) argued, "Needs analysis or needs assessment involves the systematic gathering of specific information about the language needs of learners and the analysis of this information for purposes of language syllabus design". Supporting Bachman and Palmer, Graves (2000) stated that needs analysis is a systematic and on-going process of gathering information about students' needs and preferences, interpreting the information, and then making course decisions based on the interpretation in order to meet the needs.

2.8 Components of Needs Analysis

1. Target Situation Analysis (TSA)

The term *Target Situation Analysis* (TSA) was, in fact, first used by Chambers in his 1980 article in which he tried to clarify the confusion of terminology. For Chambers TSA is "communication in the target situation" (p.29). Target Situation Analysis (TSA) is a form of needs analysis, which focuses on identifying the learners' language requirements in the occupational or academic situation they are being prepared for. The earliest TSA procedures were designed to determine 'how much English' was used. Robinson (1991, p. 8) argues, "A need analysis, which focuses on students' needs at the end of a language course, can be called a TSA (Target Situation Analysis)". Munby (1978) formulated the best-known framework of the TSA type of needs analysis. He presents a communicative needs processor, comprising a set of parameters within which information on the students' target situation can be plotted. Dudley-Evans and St. John (1998, p.124) refer to "TSA as tasks and activities where learners are/will be using English for target situation". According to them, TSA generally uses questionnaire as the instrument. Dudley -Evans and St. John (1998, p.124) explain that "TSA includes objective, perceived and product - oriented needs".

2. Present Situation Analysis (PSA)

The term PSA (Present Situation Analysis) was first proposed by Richterich & Chancerel (1987). They formulated the most extensive range of devices for establishing the PSA. They suggested that there are three basic sources of information: the students themselves, the language-teaching establishment, and the "user-institution", for example the students' place of work. For each of these, an ESP practitioner seeks information regarding students' respective levels of ability, resources and views on language teaching and learning. They also suggested that ESP practitioners might also study the surrounding society and culture: the attitude held towards English and towards the learning and use of a foreign/second language (Richterich & Chancerel, 1987).

3. Learning Situation Analysis (LSA)

Hutchinson and Waters (1987) advocated a learning-centered approach in which learners' learning needs play a vital role. If the analyst, by means of target situation analysis, tries to find out what learners do with language (Hutchinson and

Waters, 1987) LSA will tell us what the learner needs to do in order to learn. Obviously, they advocate a process-oriented approach, not a product- or goal-oriented one.

Hutchinson and Waters' (1987) definition of *wants* (perceived or subjective needs of learners) corresponds to learning needs. Similar to the process used for target needs analysis, they suggest a framework for analyzing learning needs which consists of several questions, each divided into more detailed questions. The framework proposed by Hutchinson and Waters (1987) for analysis of learning needs is the following:

- Why does the student need to learn?
- Who is going to be involved in the process? This will need to cover not just the student, but all the people who may have some effect on the process: teachers, sponsors, inspectors, etc.
- Where is the learning to take place?
- What potential does the place provide?
- What limitations does it impose?
- When is the learning to take place?
- How much time is available?
- How will it be distributed?
- What does the student need to learn?
- What aspects of language will be needed and how will they be described?
- What level of proficiency must be achieved?
- What topic areas will need to be covered?
- How will the learning be achieved?
- What learning theory will underlie the course?
- What kind of methodology will be employed?

Hutchinson and Waters, (1987:21-22)

2.9 Critical Review of Types of Need

Brindley (1989) claims that finding a usable definition of needs is difficult in the context of second language learning and Richterich, (as cited in Brindley, 1989) comments that the concept of language needs has never been clearly defined and remains ambiguous. Among the various types of needs which have been mentioned in the literature; however, are target and learning needs (Hutchinson & Waters, 1987; Jordan, 1997; Nunan, 1988), objective and subjective needs (Brindley, 1989; Jordan, 1997), situational and communicative needs (Richards, 2001), situation and language needs (Brown, 1995), and felt and perceived needs (Berwick, 1989; Jordan, 1997).

In Jordan's (1997) typology of needs clarifies the various definitions of needs in terms of their direct relation with people involved in the language learning setting. Jordan recommends that needs analysts consider the needs analysis process from four different perspectives: student, course designer and teacher, employer/sponsor, and target situation needs. As Jordan explains "students' needs" refers to the learners' perceptions of their current needs. "Content teachers" refers to the instructors' perceptions of their learners' needs and lacks. "Former students and employer's needs" refers to the demands from the institution in order to meet the needs in the circumstances where the language will be used by the learners.

Target needs and learning needs are very important definitions of needs types. The main difference between target needs and learning needs is that target needs are what the learners need in order to function successfully in the target situation, whereas learning needs are what the learners need to do in order to meet the target needs. Learning needs are those needs that must be met in order for students to meet the requirements of the target situation. They can be determined by asking such questions as: what knowledge and abilities are required of the learners in order to be able to perform to the required degree of competence in the target situation? Hutchinson and Waters' (1987) learning needs include language items, skills, strategies, and subject knowledge. According to Savage and Storer (2000), learning needs can be seen as instructional logistics needs.

Savage and Storer (2000) characterized learning needs by observing the purpose of the course, background of the learners, types of instructional resources, and location, and time of the course (p. 141). Objective and subjective needs are another

classification of needs types. Objective needs can be defined as "the needs, which canbe obtained from different kinds of factual information about learners, their use of language in real-life communication situations as well as their current language proficiency and language difficulties" (Brindley, 1989: 70). Objective needs are, therefore, those needs that are identified on the basis of clear-cut, observable data gathered about the situation, the learner, the language that learners must acquire, and learners' present proficiency and skill level (Brown 1995). The other important factor that should be embedded into the process of assessing objective needs is to use the information about students' backgrounds including their education, family, profession, age, languages spoken, country and culture.

According to Brindley (1989), subjective needs refer to the "cognitive and affective needs of the learners in the learning situation, derivable from information about affective and cognitive factors such as personality, confidence, self-esteem, expectations, learners' wants with regard to the learning of English and their individual cognitive styles" (p.70). Since they are both related to the students' feelings and expectations about their language needs, subjective needs partially reflect the target needs of Hutchinson and Waters (1987). Hutchinson and Waters' (1987) definition of target needs emphasizes allowing students to express their own expectations towards their target situation requirements. Assessing subjective needs requires information about "students' attitudes towards the target language and culture, toward learning and toward themselves as learners; students' expectations of themselves and of the course; students' underlying purposes" (Graves 2000: 179).

Other classification of needs types divides them into situational and communicative needs. Situational needs focus on the general parameters of a language program and involve the goals, expectations, learning styles, and proficiency levels of learners. Situational needs also take into consideration the teachers' expectations, teaching styles and techniques. A communicative need refers to the learners' requirements in the target situation. Communicative needs are concerned with the setting in which the learners will use the target language, the learners' role in relationships in the target situation, necessary language skills (reading, writing, speaking, listening), the learners' future interactions and language tasks, and the level of language proficiency that is required by the learners' target situation (Richards,

2001). Richards' (2001) definition of communicative needs and Hutchinson and Waters' definition of target needs partially overlap as both of them refer to the learners' needs in the target situation. The main difference between communicative needs and target needs is that while communicative needs directly focus on the language necessities of the learners in their target situation, target needs make comparisons between the required language abilities of the target situation and the existing language abilities of the learners, and define the gaps between the present and target situation.

Brown (1995) identified differences in the distinction between situation needs and language needs by claiming that there should be some information related to a language program's human aspect, that is, the physical, social, and psychological context in which learning takes place. Needs related to this type of information are called situation needs. Brown describes language needs as information about the target linguistic behaviors that the learners must acquire. Language needs include details about the circumstances in which the language will be used. However, Browns' definition of language needs also reflects characteristics of the terms "target situation" used by Hutchinson and Waters (1987) and "communicative needs" as used by Richards (2001) in terms of their special emphasis on the target needs of the learners.

2.10 Approaches to Needs Assessment

Curriculum designers should consider certain fundamental issues before conducting a needs analysis, such as the philosophies of needs assessment, the types of information to be gathered, and the instruments that can be used to collect data.

2.10.1 Philosophies of Needs Assessment

Brown (1995) claims that there are four primary philosophies that may be adopted in a needs assessment: discrepancy, democratic, analytic, or diagnostic. The importance of these philosophies is related to their effect on the type of information that ultimately gets gathered. Firstly, in the discrepancy philosophy, needs are viewed as discrepancies or differences between desired performance from the students and

what they are actually doing. Holding such a philosophy implies that the analyst is concerned with the question of what the learners know and what they ought to know (McKillip, 1987). Discrepancy analysis is a strategy for diagnosing and solving problems. It borrows principles from problem-solving theory and is grounded on model strategies followed by successful managers. Historically, this approach has been applied by business and industrial professionals to solve problems. However, little research is available on how successful experts have processed the information for meaningful problem solving.

According to Rossett (1987), consequent upon the study of the various sources and the significance of the gap/discrepancy between "where they are" and "where they want to or should be," the extent of gap justifies whether training interventions are needed. Discrepancy analysis is defective in schema building, a prerequisite for the development of problem-solving expertise. Its static nature conflicts with the uncommon nature of needs analysis questions. The large gap between novice and expert professionals tends to jeopardize the needs analysis process. Also, there are logistic problems, uncertainty, and mistrust. Secondly, the democratic philosophy proposes that any change that is desired by a majority of the group involved can be defined as a need. Whether this group consists of the students themselves, their teachers, program administrators, or the owners of a private school, the democratic philosophy would lead to a needs analysis that would gather information about the learning most desired by the chosen groups (Brown, 1995). Thirdly, the analytic philosophy assumes that needs are the things that the students will naturally learn next, based on what is known about students and the learning process involved. Finally, the diagnostic philosophy defines needs as anything that would prove harmful if it were missing.

2.10.2 Methodology of Needs Assessment

Discussions on the methodology of needs assessment often begin with deciding on the appropriate time to conduct a needs assessment in the process of developing a program curriculum. Although there is a tendency to conduct needs assessments before setting the goals of a course, a needs assessment study might be conducted before, during, or even after the program. If a needs assessment is

conducted initially, it provides information to the teachers about the background knowledge and desires of their students. The findings of such a needs assessment should help the instructors in determining appropriate materials and teaching approaches. If the needs assessment is conducted at the end of the program, findings should be used to check whether the needs of the students have been met, to identify the weaknesses and strengths of the current curriculum and syllabus, and, perhaps most importantly, to decide on the necessary changes to improve the current program (Richterich & Chancerel, 1987).

In carrying out a needs assessment, the second major step that should be followed is to determine the data sources. Graves (2000) points out that needs assessment should include input from students as well as from various people related to the course, such as teachers, funders, parents, administration, and employers. According to Brown (1995), the researcher should consider the high-stake aspect of the needs analysis when deciding on the groups that will be involved in the study. Further, Brown (1995) identified the target group, audience, needs analysts and resource groups and stated that they are equally responsible for the identification of learners' language needs. The target group refers to the people (learners) about whom information will be gathered. It is the population whose needs are being analysed. Audience refers to all the people who will eventually be required to act upon the analysis, such as teachers or program administrators. Needs analysts are those people who are responsible for conducting the needs analysis. Resource groups are any people who might serve as sources of information about the target group, such as language instructors, content teachers, administrators, or employers.

2.10.3 Instrument types for needs assessment

The second aspect that should be followed while in the process of needs assessment is to decide on the techniques that will be used in the data collection process. There are various techniques that can be used for collecting data for a needs assessment. According to Graves (2000)), data can be used to determine learners' needs that can be collected from test scores, student records, surveys, demographic studies, grades, financial records, or drop-out information.

According to Graves (2000), tests and interviews that assess the proficiency of the students are also a part of needs assessment because of their guidance in determining what students already know and what their lacks are. Yet another identification of data collecting techniques was recommended by Brown (1995). He claims that there are six categories of data gathering instruments for needs analysis: existing information, tests, observations, meetings, interviews, and questionnaires. Brown (1995) claims that the first three instruments may partially consider needs analysts as the out-siders whereas the other three force the needs analysts back into the process of actively gathering or drawing out information from the participants. It is clear that the focus of recent studies in the field of needs analysis is on the last two data collection instruments.

Mackay (1981) explained the advantages and disadvantages of interviews and questionnaires. He emphasizes the point that in interviews, the researcher has the chance to explain incompletely understood questions, but he also claims that interviews require a great deal of time. He argues that questionnaires require less effort on the part of researchers. Questionnaires are easy to prepare and permit open-ended questions can be included. Graves (2000) points out that the questions that will be used in the questionnaire should be clear, unambiguous and useful especially for researchers seeking subjective data.

2.11 A Review of Previous Studies

Needs analysis has been among research topics of high interest in ESP. A large number of studies on this topic have been carried out worldwide. A number of need analysis studies have been conducted to analyze learner needs in different academic settings. Following is a review of previous studies divided in two groups: EAP and EOP.

2.11.1 A Review of EAP Studies

Ongsakul (1984) compared the opinions of teachers of English with those of engineering students at King Mongkut's Institute of Technology Lardkrabung

(KMITL) as regards the status, problems, and needs for the teaching and learning of Technical English at KMITL. The objective of this study was to provide helpful recommendations in order to improve the quality of the technical English program in the Faculty of Engineering. Two sets of questionnaires were used as instruments. The subjects were eight KMITL teachers and 309 second and third year engineering students in the academic year 1983. Both teachers and students wanted the subject matter, teaching methods, educational aids, teacher-made tests, and other facilities to be improved. Moreover, it was found that reading was the most important skill. The content of the English course should be relevant to engineering.

Zughoul and Hussein (1985) explored three major issues regarding the needs of English at Yarmouk University in Jordan: the extent of English language use at the university, perception of the students' language abilities, and perception of English language needs. Results indicated that English may be used in most educational settings except for class discussion. There was also evidence that students tended to overestimate their abilities to use different language skills, while a more realistic estimate is reflected in the responses of the faculty. Both students and faculty agreed on the importance of listening.

Soranastaporn (1993) investigated the needs, problems and wants in English language teaching and learning of nursing students at nursing colleges under the control of the Nursing College Division, Office of the Permanent Secretary, Ministry of Public Health, Thailand. The findings of the study indicated that both nursing students and teachers felt positive towards English and wanted more English courses. Both, teachers and students need to improve reading. However, students want to practice listening and speaking while teachers want them to practice reading and writing.

Chia, Jonnson, Chia and, Olive (1999) conducted a study on English language needs for medical college students and faculties in Taiwan, trying to identify the perceptions that medical college students and faculties had of English language needs in medical contexts. Survey information included respondents' opinions on the importance of English language use in students' studies and their future careers, and suggestions for development of an English curriculum. Results showed that students wanted a Basic English language course at the freshmen level, naming listening as the

most important skill to improve. Students and faculty desired more than one year of English language study.

Chan (2001) conducted research on English language needs of students at Hong Kong Polytechnic University. Students' perceptions with respect to their needs and wants and the self-ratings of their competence in academic and professional domain were presented. Their opinions were compared with those of their English instructors. A survey of 701 tertiary learners and 47 English instructors at the university was conducted. There was consistency in the responses of teachers and students. The consistency was interpreted as the students being able to state their opinions on various skills and being conscious in terms of their competence.

Kormos, et al. (2002) investigated the language wants of English majors in Hungary. The study used questionnaires among second year students, majoring in English language teaching combined with English literature and TESOL. The study found that students used English only for academic purposes and wanted their future occupations seemed to be expressing their opinions, reading texts on the Internet, conversing with non-native speakers, writing email messages and translating oral and written English.

Tajino, James, and Kijima (2005) analyzed beyond needs analysis: soft systems methodology for meaningful collaboration in EAP course design. The initial focus of needs analysis was syllabus specification. The researchers discuss the use of soft systems methodology (SSM), an action research methodology primarily used in the business context, as a way to accommodate disparate elements within a decision-making process as it might apply to EAP course design. The results indicated that designing an EAP course was a complex process. While accepting the claim that an analysis of students‟ needs is essential, reality suggests that a diversity of views and perspectives in order to achieve maximum support and cooperation from factors involved with the course be considered.

Read (2008) conducted a study entitled "Identifying Academic Language Needs through Diagnostic Assessment". The study looked at some specific provisions governing university admission in New Zealand law. The study considered the way in which the Diagnostic English language Needs Assessment (DELNA) is presented to students and staff of the university and procedures for reporting the results. The results

indicated that DELNA is different from other tests of English for academic purposes. It did not work as a gatekeeping device for university admission, and students could not be excluded from the university on the basis of their results. It is not simply a placement procedure to direct students into one or more courses within a required EAP program according to their level and areas of need.

Rehman, Ming, Aziz, and Razak's (2008) study proposed an ESP course framework for foreign postgraduates, studying science and technology at National University of Malaysia. The data collection tools included questionnaires and semi structured interviews. The sample included 252 foreign postgraduate students from three faculties, studying science and technology at the university. This study offered a framework for the ESP speaking course to help foreign postgraduates to meet their needs.

Samawathdana (2009) explored the needs, problems and wants of students studying in the bilingual program at Winit secondary school, Thailand. Results of the study indicated the learners' needs to improve the four communicative skills. Learners had problems in speaking during discussion and presentation. They also had difficulties with writing, particularly in producing compound and complex sentences. They wanted to be able to use English mainly for academic purposes; especially for future study at university.

Akyel and Ozek (2010) conducted a language needs analysis at an English medium university in Turkey. Triangulation was achieved by using two different instruments: semi-structured interviews and questionnaires were used in this study. Firstly, the questionnaires were distributed to 2,328 students in the first, second, third and fourth years in six different departments of five undergraduate schools and one graduate school of the university, and with 125 lecturers who were randomly selected from different departments in those schools. Secondly, the participants for the semi-structured interviews were selected randomly. Fourteen university instructors working at various faculties and institutions in the university, and nine students from different undergraduate and graduate schools participated to the interviews. The results of the investigation indicated that the need for encouragement of the students to use effective learning strategies in an English language education program at prep school. For this purpose, the program needed to stress the application of different strategies and skills

during the learning process, and the qualifications and competencies of the instructors in the implementation of the necessary instruction. Furthermore, the results indicated that there was no distinction between teaching and testing in teaching materials and methods. Another finding of the interviews indicated that the teaching methods and materials should be process-oriented. In addition, both the university instructors and students pointed out that students should be given ample practice in reading and writing for their academic studies. Also, students had great difficulties in speaking English particularly during the first two years of the undergraduate programs.

Dar (2010) conducted her study to explore the need for ESP courses in Pakistani universities. The study scrutinized the target needs of the students in the Advanced English Language Diploma of the National University of Modern Languages who enrolled in the language course for occupational purposes. The sample for the study consisted of 40 students, five teachers and five alumni. The needs, lacks, wants, expectations, preferred style of learning, interest and satisfaction levels of students were determined with the help of needs analysis using questionnaires, interviews and observation tools. The results indicated low interest and satisfaction levels among students due to the general nature of the Diploma course; and students wanted the separate ESP courses for the students who join the English Diploma courses for occupational reasons.

Kumari and Rahman (2012) identified and analysed the language needs of students studying in the Bachelor of Technology degree program (B. Tech.) at the Indian School of Mines. The study offered certain recommendations for updating the English syllabus and making it more learner-centered. The main aim of their study was to find out the needs of these B. Tech. students. The researchers prepared and administered two questionnaires, one for students and one for EST teachers. The data were tabulated and analyzed. Then the researchers had a discussion with some students to re-assess the data collected through questionnaires. The results showed that even after having learned English at primary, secondary and higher secondary levels, the students were unable to use the English language, as they were taught English as a subject in their schools.

Nelson, Devardhi, and Tadessem (2012) discussed some of the issues involved in ESP curriculum development in India. The main focus of this study was

on the topic of language varieties. The study also looked at the type of investigation ESP curriculum developers used to identify the gap between what learners already knew and what they needed to know in order to study or work in their specific target environments. A-part from this, the researchers examined the topic of wide-versus narrow-angled course designs. However, this review study highlighted some of the issues involved in ESP curriculum development. It emphasized the fact that language varieties are self-contained entities, based in and extending from a common core of language. The researchers concluded that needs analysis is an entirely pragmatic and objective endeavor to help course developers identify course content that is truly relevant to the learners; the syllabuses should specify content and method.

Habtoor (2012) carried out a study to evaluate the English for Tourism textbook taught to the students of Tourism and Archaeology at King Saud University, Riyadh, Saudi Arabia. The data were gathered from the questionnaire results of twenty teachers who took part in this evaluation. The study tried to draw out the opinions of the teachers on the textbook components, its practicality, its activities, the language type, the subject, the content, and the four basic language skills incorporated in the book, the sub-skills of grammar and vocabulary, and how they are offered. It also investigated the appropriacy of the book regarding the learners' level and their needs. The results revealed that there was a consensus among the teachers on the suitability of the textbook. The results also revealed that the textbook corresponds to the teachers' expectations and meets the needs of the students in the Saudi Arabian context.

Abdalla (2013) investigated the ESP needs and attitudes of science students at Taif University in Khurma for better academic performance in the present and in the future. This study investigated problems with the ESP courses offered to science students at Taif University in Khurma with reference to students' needs and attitudes. The study was carried out to find the extent to which ESP science students felt their needs, lacks, wants and necessities in learning the language for scientific purposes. In addition, the study also tackled the questions of ESP learners' needs and attitudes and their implications for practicing ESP teachers, syllabus designers and materials writers. The researcher gave a questionnaire to a group of 100 first-year science students at Taif University in Khurma. The findings showed that the majority

of respondents indicated that their needs in studying ESP courses include the four language skills of listening, speaking, reading and writing, together with grammar and vocabulary.

2.11.2 A Review of EOP Studies

Holliday (1995) assessed the English language needs of an oil company in the Middle East. The study aimed to analyze and make recommendations regarding the language needs of national staff, to recommend a broad curriculum framework for language training courses, and to recommend implementation phases for course development and the training of instructors.

Florence and Kate (1996) investigated the workplace English needs of textile and clothing merchandisers who communicated in the international market place. Through questionnaire surveys, telephone interviews, analysis of authentic correspondence and visiting the workplace, a detailed understanding was obtained of the communication demands placed on merchandisers working in this business environment. The survey showed that the use of written English was considerably higher for both groups of respondents, while the use of spoken English was noticeably lower. The fax was rated as the most common and preferred channel of communication followed closely by the telephone. The results from the telephone interviews also confirmed that English was the principal language for written communication in the workplace. Moreover, the interviewees expressed their concern about the need for grammatical accuracy.

Evans (1999) conducted a study on the English language needs of practitioners in the building services industry in Hong Kong, including information about the use of English in the workplace in transitional Hong Kong and detailed information upon which to base the development of English for professional purposes courses for building service engineering degree students at Hong Kong Polytechnic University. It was found that most of the subjects were required to write and read faxes, letters, memos and reports in English on a regular basis. English did not appear to play a very important role in every day oral communication in the workplace, and when it was used, tended to be restricted to more formal situations such as seminars, presentations and conferences.

Li and Mead (2000) investigated English needs of textile and clothing merchandisers who communicated in the international market place. The study was conducted to obtain up-to-date information on the types of communication required in the industry with the hope of enabling the development of teaching and learning materials that match the specific workplace needs. The results showed that the participants were alerted to the very definite likelihood that they would need to communicate in English with customers. The Fax was the preferred channel of communication.

Edwards (2000) carried out a needs assessment study to identify the language needs of German bankers in order to design an ESP course for bank personnel. Four skills were explored. An interview with the director of the bank's language department was conducted and a questionnaire was given to the participants in the course to reveal institutional and personal objectives. Students' past learning experience was reflected through the questionnaire as well. Writing and specialist vocabulary in banking came up as specific needs. An ESP course was designed and guidelines for teaching methodology were set.

Kuen (2001) examined the communicative needs in sales in a Malaysian business context. The study looked at the communicative needs of sales personnel in a Malaysian owner-managed group of companies. More specifically, it focused on the productive skills of speaking and writing which sales personnel needed in their job, and the types of communicative events sales personnel were involved in and the communicative skills that they needed. The result showed that sales personal needed to communicate in English both in spoken and written modes. Consequently, they needed to be equipped with a repertoire of communication skills in English in order to perform effectively in their job.

Al-Khatib (2005) conducted an exploratory study of the use of English by tourism and banking personnel. The researcher attempted to examine the communication needs of personnel in the workplace by shedding light on their perceptions of needs, wants and lacks. Also he attempted to explore the workers' attitudes toward English and the use of English in the workplace. The sample consisted of 30 senior personnel who were equally distributed by type of work. The data were collected by means of a questionnaire, interviews, and analysis of authentic

workplace texts. The results showed that the workers' perceptions of their needs, wants and lacks were greatly affected by their attitudes toward English.

Cook (2006) investigated the aspirations of adult ESOL learners among adult migrants learning English in the UK by using a case study methodology. The results indicated that the methods employed for attempting to meet their needs, which included individualized learning plans are inadequate because they ignore the real life experiences of ESOL learners. Migrant ESOL learners fail to realize their full potential as users of English and as members of the work force and future citizens.

Cowling (2007) conducted a needs analysis (NA) to develop a set of English language intensive courses at a large Japanese industrial firm. The case study emphasized the NA practices. The results showed that great care is needed in the planning and execution stages as this area of syllabus design is often more complex than described in the syllabus design literature.

Preechawat (2010) investigated the English language needs of Thai office staff at Diethelm Travel (Thailand), Ltd. This study also intended to explore problems which the Thai staff encounters when using English in the workplace, examine the English skills which are important for Thai staff, and determine an appropriate English training course for Thai staff. The subjects in this study were 85 Thai members of staff working at Diethelm Travel (Thailand), Ltd. The findings indicated that the majority of participants agreed that workplace English is important and they accepted that writing was the most-used in their work. Writing skills were perceived as the largest difficulty, especially, grammar. However, the majority of the group indicated they would like to improve speaking most, not writing. Most participants preferred an English training course with a combination of Business English and Tourism English, and instruction to be primarily delivered in English with a native English speaking instructor.

Abdulaziz, Shah, Mahmood and, Fazal e Haq (2012) explored issues that general English teachers in Pakistan encounter when they opt for a comparatively more diverse and effort demanding job of ESP teaching. The researchers aimed to find the reasons for the issues that included needs analysis for quality education and practical solutions. The researchers conducted interviews among ESP practitioners having prior experience of general English teaching, and ESP classes were observed in

order to verify the results of the interviews. The study identified more than 17 issues and challenges along with their solutions. The findings provided glimpses of the possible interconnection between the issues and helped to identify dependent and independent issues. The researchers highlighted the need and significance of ESP teacher training and ESP teaching, respectively, in Pakistan.

In short, different approaches to needs analysis have attempted to meet the needs of learners in the process of learning a second language. No single approach to needs analysis can be a reliable indicator of what is needed to enhance learning. It can be concluded that various groups require different language skills based on the purpose of each group or occupation. Needs analysis can be identified as the first step in any planning or design process and used as the way to gather the desired results which are actual needs. Finally, an appropriate solution will be specific to each group.

CHAPTER III
RESEARCH METHODOLOGY

This chapter presents the research methodology used in the study and the description begins with research design. The population, participants and sampling are given in detail. The next part explains the research instruments, data collection procedures and data analysis.

3.1 Research design

The present study was based on a survey of the academic needs, problems, and wants of engineering learners using quantitative methods for gathering information. The research design can be illustrated as follows.

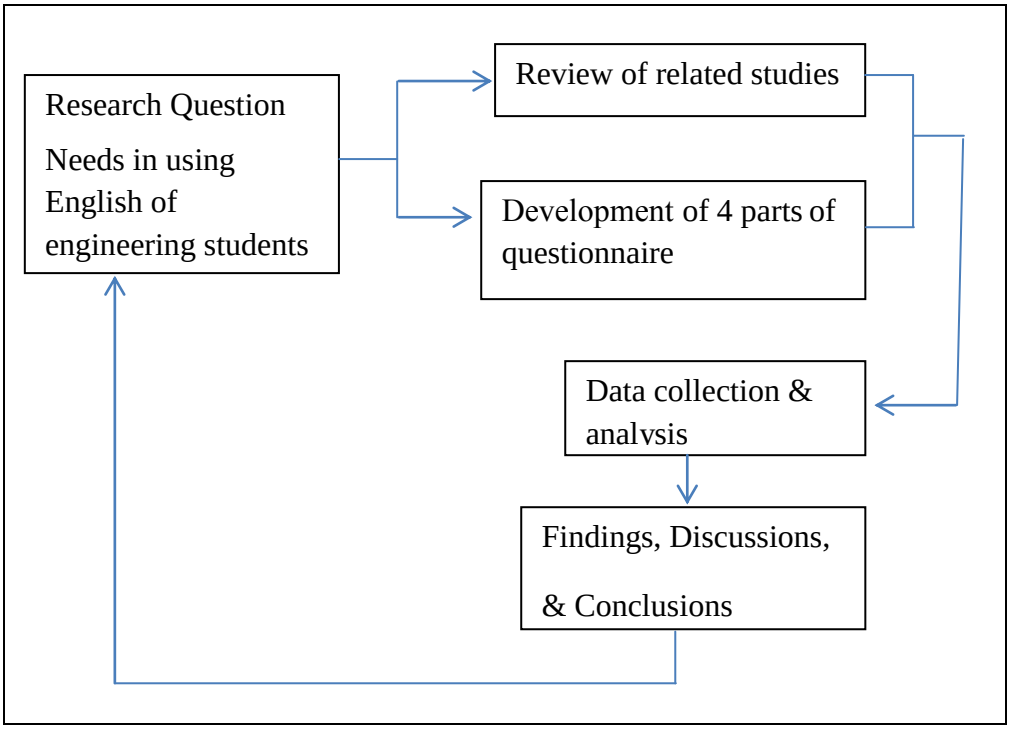

Figure 3.1 Research Design

3.2 The population, sample, subjects, and sampling

Fourth year Engineering students (523) and teachers (173) of engineering at Quaid-e-Awam University of Engineering, Science and Technology, Pakistan, were the target population in the present study. The total population was 696. Engineering students are studying English as a compulsory subject in the first and second semesters of their first year in the academic year 2010. The target population came from six departments.The sample size was calculated according to Krejcie and Morgan (1970). See Table 3.1 below. These two groups were selected by simple random sampling. Below, Table 3.1 shows the number of the population and subjects.

Table 3.1 Populations and subjects

	Students	Teachers	Total
Population	523	173	696
Subjects	217	132	349

3.3 Instruments

Questionnaires were employed as a research instrument in this study. The researcher developed the questionnaires by himself. To ensure the appropriateness and comprehensibility of the questionnaire items; two thesis advisors were consulted, and three experts (Associate Professor Ratana Vattanapath, Assistant Professor Dr. Thanayus Thanathiti, and Dr. Pathomporn Indrangkura Na Ayudthya) verified it. The questionnaires were piloted with 30 students and 30 instructors who were similar the actual participants in the study. Based on the results and the students' comments, the questionnaires were modified and finalized for large-scale data collection.

There were two separate sets of questionnaires: for teachers and students. Questionnaires for both teachers and students were in English because English is the medium of instruction in universities in Pakistan. The questions included in the questionnaires were both closed and open-ended in form. The questionnaires comprised four parts as follows.

Part 1: Background information about the respondent

Part 2: The respondent's opinions concerning the needs in terms of English learning skills for engineering students.

Part 3: The respondent's opinions concerning the problems in terms of English learning skills.

Part 4: The respondent's opinions concerning the wants of the engineering learners in terms of curriculum, content, methodology, skills, and teachers

The questionnaires included items related to all research questions which pertained to the needs in the present and future, problems and wants of learners; this information was obtained using a five-point Likert scale. The average mean scores are translated according to the formula cited by Lerdchayantee (1996). The mean range for each scale is defined below in Table 3.2.

Table 3. 2 Interpretation of five-point Likert scale

Scale	Needs and Problems	Wants	Mean Range
5	Very extensive	Very strong	4.21-5.00
4	Extensive	Strong	3.41-4.20
3	Moderate	Moderate	2.61-3.40
2	Rarely	Rare	1.81-2.60
1	Least	Least	1.00-1.80

3.3.1 Construction and development of the questionnaires

The procedures in constructing questionnaires were as follows.

(1) Literature and research related to engineering education, English for specific purposes and needs analysis were reviewed.

(2) Based on the information from the literature review, draft questionnaires were designed for learners and engineering teachers focusing on the study and research questions.

(3) Three experts checked these questionnaires for validity. Comments and suggestions from the experts were followed and items were corrected before trialling the questionnaires out.

(4) The final questionnaires were given to engineering learners and teachers teaching at another university where engineering learners and teachers had the same characteristics as those at QUEST. This was done to find ambiguities and errors.

(5) The questionnaires were collected and analysed for reliability by using Cronbach's alpha reliability coefficient. Ambiguities and errors were corrected, and the questionnaires were edited and revised. These questionnaires were used for a pilot study.

3.4 Pilot study

A pilot study was done at Mehran University of Engineering, Science and Technology (MUET), Pakistan, because its learners and teachers of engineering had the same characteristics as those at QUEST. Questionnaires developed by the researcher were distributed to 30 engineering students and 30 teachers at MUET, Pakistan.

Both students and teachers were asked to express their views on questionnaires, content, and present English teaching and learning at the university. They were not informed that the study was a pilot in order to increase their interest in answering the questionnaires. Some mistakes and ambiguities were rectified and questionnaires were revised under the supervision of thesis advisors before using them in the actual context.

3.5 Validity and Reliability of the Questionnaires

Validity is the ability of an instrument to measure what it is designed to measure. Researchers and experts in the field are persons who decide that an instrument is observing what it is set out to observe. Two approaches for establishing the validity of a research instrument are logic and statistical evidence. There are three types of validity: face and content validity (a judgement based upon the logical link between the questions and the objectives of the study); concurrent and predictive

validity (a judgement based on the degree to which an instrument can forecast an outcome and how well an instrument compares with a second assessment done concurrently); and construct validity (a judgement based upon statistical procedures) (Kumar, 1996).

To ensure the validity of the questionnaire, the first draft of the questionnaire was constructed and revised based on recommendations from the thesis advisor, the thesis committee, and three experts (Associate Professor Ratana Vattanapath, Assistant Professor Dr. Thanayus Thanathiti, and Dr. Pathomporn Indrangkura Na Ayudthya) in the field. In the present study, the researcher used face and content validity. The researcher constructed the questions in the research instrument based on the objectives of the study. Checking the validity of the instrument, each question or item on the scales and the questionnaire content assured a logical link with the objectives. The judgement on what an instrument measures was based upon the researcher, the thesis committee and the experts in the needs analysis study.

Reliability is the extent to which an independent researcher, on analyzing the data, would reach the same conclusions and the extent to which a replication of the study would yield similar results. There are two types of reliability: internal reliability, which refers to the consistency of the results obtained from a piece of research; and external reliability, which refers to the extent to which independent researchers can reproduce a study and obtain results similar to those obtained in the original study (Nunan, 1992).

For checking the reliability of the research instrument, the researcher used internal reliability to check the consistency of the results obtained from the study. The questionnaires, 217 for students and 132 for teachers used in the study, were evaluated by using Cronbach’s alpha Coefficient method with a .95 per cent confidence level to assure reliability.

3.6 Distribution and Collection of Research Tools

A consent letter including the objectives of the study as well as a description of the research methodology was sent to the Dean of the QUEST, Pakistan. After permission was obtained, consent forms and questionnaires were sent to all the teachers and students who were randomly selected by simple random sampling requesting their participation. These consent forms offered important information to the teacher and student participants. The first part described the objectives of the study, the research methodology employed in the present study, and the risks and benefits of the study. The second part assured the participants that their participation would be kept anonymous. Their participation in this study did not affect their study or their work. They could withdraw from the study any time they wanted because they volunteered to participate in the study.

3.7 Data Analysis

Questionnaire data

The questionnaires were analyzed with the help of statistical techniques. The statistical procedures in the present study were arithmetic mean (M), and standard deviation (SD). The independent *t*-test was employed to investigate the difference between students' opinions about needs, problems and, wants and the opinions of their teachers.

CHAPTER IV
FINDINGS

This chapter presents the results obtained from the questionnaires. The findings about needs, problems, and wants in using English among engineering students at QUEST are described in detail with tables based on the four research questions.

Research Question One

To what extent do the engineering students need to use English in present and future situations?

Questionnaire presents engineering students' and teachers' opinions concerning their needs for using English skills in engineering programs in part 2. Thus the level of the extent of needs to use English skills and the mean scores for the students' needs and presented in Tables 4.1 to 4.5.

4.1 Finding one

Needs for using English language skills

Table 4.1 Needs of engineering students for English skills

	Needs								
	S			T					
English	*M*	*SD*	level	*M*	*SD*	level	df	*t*	sig
Speaking	4.72	.86	VE	4.52	.76	VE	329	1.5	.13
Writing	4.66	.44	VE	4.53	.61	VE	329	-2.1	.03
Listening	4.39	.96	VE	4.45	.87	VE	329	1.6	.10
Reading	4.37	.60	VE	4.56	.66	VE	329	.62	.53

N=207 and 124, p<.03

Students rated their needs for speaking and writing higher than their teachers did; whereas their teachers rated that their students' need for listening and reading higher than their students did. Moreover, there was a significant difference between students' and teachers' opinions on students' needs for writing *(p < .03)*. Finally, the opinions of neither group were dispersed (*SD* < 1.0).

1. Needs for listening

Table 4.2 Needs of engineering students for listening

	Needs								
	S			T					
Listening Skills	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Lecture (long)	4.52	.52	VE	4.33	.78	VE	329	-.69	.48
Presentation	4.33	.68	VE	4.33	.65	VE	329	-.48	.62
Lecture (complicate)	4.30	.64	VE	4.11	.86	Ex.	329	-1.38	.16
Presentation at work	4.26	.66	VE	4.18	.68	Ex.	329	.27	.78
Technical vocabulary	4.25	.67	VE	4.20	.70	Ex.	329	.11	.91
conversation (long)	4.20	.71	Ex	4.33	.69	VE	329	2.17	.03
Lecture (short)	4.09	.75	Ex.	4.04	.87	Ex.	329	-.14	.88
conversation (short)	4.01	.63	Ex.	4.00	.61	Ex.	329	-.48	.62
General vocabulary	4.00	.83	Ex.	4.07	.67	Ex.	329	.92	.35
Meeting at work	3.96	.45	Ex.	3.89	.56	Ex.	329	.24	.80
Drama/movies (subtitle)	3.87	.83	Ex.	3.72	.90	Ex.	329	-1.40	.16
Inquiry	3.81	.65	Ex.	3.73	.69	Ex.	329	-.34	.73
Complain (customer)	3.71	.61	Ex.	3.66	.67	Ex.	329	-2.44	.01
English songs (subtitle)	3.60	.68	Ex.	3.72	.83	Ex.	329	1.20	.23
English songs (no subtitle)	3.56	.69	Ex.	3.50	.78	Ex.	329	.093	.09
Drama/movies (no subtitle)	3.48	.91	Ex.	3.37	.92	Mod.	329	-2.04	.04

N=207 and 124, p<.03

Engineering students indicated their needs in listening to long lectures, presentations, complicated lecture, technical vocabulary, long conversations, short conversations, and general vocabulary higher than their teachers did; whereas their teachers indicated that their students needed listening for presentations, long lectures, and long conversations. Moreover, there was a significant difference between students' and teachers' opinions on students' needs for listening to long conversations *(p< .03).* Finally, the opinions of neither group were dispersed (*SD* < 1.0).

2. **Needs for speaking**

Table 4.3 Needs of engineering students for speaking

	Needs								
	S			T					
Speaking skills	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Long speaking	4.54	.81	VE	4.16	1.02	Ex.	329	-4.06	.00
General vocabulary	4.46	.66	VE	4.40	.66	VE	329	.064	.94
Complicate speaking	4.45	.82	VE	4.10	1.00	Ex.	329	-3.12	.00
Different situations	4.43	.65	VE	4.30	.64	VE	329	-1.45	.14
Short speaking	4.24	.76	VE	3.98	.91	Ex.	329	-2.72	.00
Lecture/seminar	4.18	.68	Ex.	4.08	.71	Ex.	329	-2.41	.01
Presentation/report in front of class	4.15	.71	Ex.	4.08	.67	Ex.	329	-2.29	.02
Dialogue dealing	4.07	.75	Ex.	3.79	.88	Ex.	329	-3.70	.00
Technical vocabulary	3.87	.60	Ex.	3.95	.62	Ex.	329	1.08	.27
Horizontal conversations	3.72	1.04	Ex.	3.69	.94	Ex.	329	-.88	.38
Grapevine	3.71	.88	Ex.	3.59	.85	Ex.	329	-2.07	.03
Upward communications	3.61	.73	Ex.	3.72	.78	Ex.	329	.02	.97
Downward interactions	3.57	.79	Ex.	3.62	.77	Ex.	329	.10	.92

N=207 and 124, p<.00

Engineering students rated their needs in speaking for speaking at length, general vocabulary, complicated speaking, different situations, and speaking briefly, lectures/seminars, presentations/reports in front of class, and dialogue dealing higher than their teachers did; whereas their teachers rated highly their students' need in speaking for general vocabulary, different situations, speaking at length, complicated speaking, lectures/seminars, and presentations/reports in front of class.

Moreover, there was a significant difference between students' and teachers' opinions on students' needs for dialogue dealing *($p < .00$).* Finally, the opinions of both groups were dispersed in regard to speaking at length ($SD > 1.02$).

3. Needs in reading

Table 4.4 Needs of engineering students for reading

	Needs								
	S			T					
Reading skills	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Essay	4.21	.57	VE	4.32	.53	VE	329	1.55	.12
Newspapers	4.18	.72	Ex.	4.03	.77	Ex.	329	.126	.90
Textbook	4.08	.70	Ex.	4.09	.78	Ex.	329	-.53	.59
Instructions for test	4.04	.67	Ex.	3.93	.62	Ex.	329	.08	.93
Passages (short)	4.04	.53	Ex.	3.96	.64	Ex.	329	1.60	.11
Passages (long)	4.03	.58	Ex.	3.93	.67	Ex.	329	1.22	.23
Advertisement	3.98	.87	Ex.	3.77	.82	Ex.	329	-.77	.43
Articles	3.98	.60	Ex.	4.00	.72	Ex.	329	2.55	.01
Memo	3.97	.75	Ex.	3.83	.76	Ex.	329	-1.20	.22
Magazines	3.96	.83	Ex.	3.83	.76	Ex.	329	.42	.67
Journals	3.93	.67	Ex.	4.00	.72	Ex.	329	1.33	.18
Manual	3.92	.73	Ex.	3.87	.78	Ex.	329	-.14	.88
Instructions for examination	3.90	.56	Ex.	3.83	.51	Ex.	329	-.28	.77
Report	3.89	.85	Ex.	3.90	.81	Ex.	329	2.27	.02
Email	3.84	.78	Ex.	3.55	.80	Ex.	329	-1.70	.08
Novel	3.78	.72	Ex.	3.55	.75	Ex.	329	-1.20	.22
Web blog	3.73	.54	Ex.	3.49	.62	Ex.	329	-.99	.32

N=207 and 124, p<.01

Engineering students rated their needs for reading of essays lower than their teachers did; while they rated their need for reading newspapers, text-books, short passages and instructions for tests, and long passages higher than their teachers did; whereas their teachers rated their students' need for essays higher than their students did; and they rated their need for reading text books, newspapers, and articles lower than their students did.

Moreover, there was a significant difference between students' and teachers' opinions on students' needs of reading articles *($p < .01$).* Finally, the opinions of neither were dispersed (SD > 1.0).

4. **Needs for writing**

Table 4.5 Needs of engineering students for writing

	Needs								
	S			T					
Writing skills	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Summarize from listening	4.36	.86	VE	4.20	.93	Ex.	329	-1.81	.07
Essay	4.28	.85	VE	4.11	.85	Ex.	329	-2.33	.02
Paragraph (long)	4.20	.79	Ex.	4.20	.77	Ex.	329	-.44	.65
Email/online chatting	4.16	.86	Ex.	3.93	.87	Ex.	329	-4.19	.00
Summarize from reading	4.13	.85	Ex.	4.04	.90	Ex.	329	-1.32	.18
Paragraph (short)	4.11	1.01	Ex.	3.95	1.05	Ex.	329	-1.23	.21
Simple/complex sentences	4.06	.69	Ex.	4.09	.72	Ex.	329	1.55	.12
General vocabulary	4.06	.58	Ex.	4.09	.51	Ex.	329	1.52	.12
Business letter/fax/email	4.00	.75	Ex.	4.06	.69	Ex.	329	.24	.80
Instructions	3.94	.81	Ex.	3.90	.72	Ex.	329	-.20	.83
Report	3.91	.82	Ex.	3.77	.78	Ex.	329	-.86	.38
Complaint	3.89	.80	Ex.	3.74	.93	Ex.	329	-1.41	.15
Web blog/email	3.85	.81	Ex.	3.80	.84	Ex.	329	-1.73	.08
Technical vocabulary	3.85	.91	Ex.	3.70	1.05	Ex.	329	.90	.36
Report	3.82	1.04	Ex.	3.61	1.02	Ex.	329	-1.65	.10
Mobile messages	3.79	1.08	Ex.	3.74	1.07	Ex.	329	-.29	.76
Meeting summary	3.67	.92	Ex.	3.58	.99	Ex.	329	-.88	.37

N=207 and 124, p<.00

Engineering students rated their need for writing essays, long paragraphs, email/online chatting, summarizing from reading, short paragraphs, general vocabulary and simple/complex sentences higher than their teachers did; whereas their teachers rated their students' need for writing long paragraphs, summarizing from listening, essays, general vocabulary and simple/complex sentences, business letters/faxes/email, summarizing from reading, and short paragraphs.

Moreover, there was a significant difference between students' and teachers' opinions on students' needs for writing email/online chatting *($p < .00$).* Finally, the opinions of neither were dispersed for text messages ($SD > 1.0$).

Research Question Two

What are the problems of engineering students in using English in their academic studies?

Questionnaire part 2 asked both engineering students and teachers to indicate their opinions concerning the extent of needs and problems in the academic studies of engineering students. The extent of problems in using English and the mean scores for the students' problems are presented in Tables 4.6 to 4.10.

Finding two

Problems in using English

Table 4.6 Problems of engineering students in using English

English skills	Problems								
	S			T					
	M	*SD*	level	*M*	*SD*	level	df	*t*	sig
Speaking	4.62	.70	VE	4.59	.66	VE	329	1.5	.13
Writing	4.54	.48	VE	4.50	.50	VE	329	-2.1	.03
Listening	4.47	.70	VE	4.41	.66	VE	329	1.6	.10
Reading	4.28	.62	VE	4.58	.55	VE	329	.62	.53

N=207 and 124, p<.03

Students rated their problems in speaking and writing higher than their teachers did; whereas their teachers rated their students' problems in listening and reading higher than their students did.

Moreover, there was a significant difference between students' and teachers' opinions on students' problems in writing *(p < .03)*. Finally, the opinions of neither were dispersed (*SD* < 1.0).

1. **Problems in listening**

Table 4.7 Problems in listening skills of engineering students

	Problems								
	S			T					
Listening Skills	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Presentation	4.62	.57	VE	4.59	.55	VE	329	-.48	.62
Presentation at work	4.22	.62	VE	4.24	.66	VE	329	.27	.78
Lecture (complicate)	4.12	.74	Ex.	4.00	.76	Ex.	329	-1.38	.16
Complain (customer)	4.10	.62	Ex.	3.91	.70	Ex.	329	-2.44	.01
Lecture (long)	4.07	.71	Ex.	4.01	.70	Ex.	329	-.69	.48
Technical vocabulary	4.03	.76	Ex.	4.04	.77	Ex.	329	.11	.91
Meeting at work	4.00	.45	Ex.	4.00	.50	Ex.	329	.24	.80
General vocabulary	3.95	.79	Ex.	4.03	.73	Ex.	329	.92	.35
Lecture (short)	3.89	.70	Ex.	3.88	.70	Ex.	329	-.14	.88
Inquiry	3.87	.62	Ex.	3.85	.64	Ex.	329	-.34	.73
conversation (long)	3.84	.74	Ex.	4.03	.77	Ex.	329	2.17	.03
conversation (short)	3.78	.60	Ex.	3.75	.56	Ex.	329	-.48	.62
Drama/movies (subtitle)	3.51	.73	Ex.	3.41	.61	Ex.	329	-1.40	.16
English songs (subtitle)	3.43	.77	Ex.	3.54	.86	Ex.	329	1.20	.23
Drama/movies (no subtitle)	3.22	.61	Mod.	3.08	.58	Mod.	329	-2.04	.04
English songs (no subtitle)	3.04	.80	Mod.	3.05	.71	Mod.	329	.093	.09

N=207 and 124, p<.01

Engineering students rated their problems in listening to presentations, complicated lectures, customer complaints, long lectures, and short conversations higher than their teachers did; whereas their teachers rated that their students' problems in listening to presentations at work and problems in listening for technical vocabulary, general vocabulary, long conversations and English songs with subtitles.

Moreover, there was a significant difference between students' and teachers' opinions on students' problems in listening to customer complaints *(p< .01).* Finally, the opinions of neither group were dispersed (*SD* < 1.0).

2. Problems in speaking

Table 4.8 Problems in speaking skills of engineering students

	Problems								
	S			T					
Speaking skills	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Long speaking	4.59	.61	VE	4.20	.94	Ex.	329	-4.06	.00
Different situations	4.45	.75	VE	4.33	.74	VE	329	-1.45	.14
General vocabulary	4.43	.76	VE	4.43	.75	VE	329	.06	.94
Complicate speaking	4.35	.89	VE	4.01	1.02	Ex.	329	-3.12	.00
Short speaking	4.30	.77	VE	4.04	.94	Ex.	329	-2.72	.00
Dialogue dealing	4.02	.74	Ex.	3.68	.86	Ex.	329	-3.70	.00
Lecture/seminar	4.00	.65	Ex.	3.82	.64	Ex.	329	-2.41	.01
Presentation/report in front of class	3.96	.46	Ex.	3.84	.44	Ex.	329	-2.29	.02
Technical vocabulary	3.84	.53	Ex.	3.91	.64	Ex.	329	1.08	.27
Grapevine	3.67	.72	Ex.	3.50	.70	Ex.	329	-2.07	.03
Upward communications	3.64	.82	Ex.	3.64	.82	Ex.	329	.028	.97
Downward interactions	3.56	.64	Ex.	3.57	.65	Ex.	329	.10	.92
Horizontal conversations	3.54	.65	Ex.	3.47	.65	Ex.	329	-.88	.38

N=207 and 124, p<.00

Engineering students rated their problems in speaking for speaking at length, different situations, complicated speaking, speaking briefly; and dialogue dealing, lectures/seminars, presentations/reports in front of class and grapevine higher than their teachers did; whereas their teachers rated their students' problems in speaking for technical vocabulary and downward interactions higher than their students did.

However, both students and teachers had similar opinions on the problems including general vocabulary and upward communications. Moreover, there was significant difference between students' and teachers' opinions on students' problems in dialogue dealing *($p < .00$).* Finally, the opinions of neither group were dispersed ($SD > 1.0$).

3. Problems in reading

Table 4.9 Problems in reading skills of engineering students

	Problems								
	S			T					
Reading skills	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Essay	4.28	.56	VE	4.38	.59	VE	329	1.55	.12
Textbook	4.20	.60	Ex.	4.16	.67	Ex.	329	-.53	.59
Journals	4.11	.68	Ex.	4.21	.66	VE	329	1.33	.18
Instructions for examination	4.02	.74	Ex.	4.00	.72	Ex.	329	-.28	.77
Instructions for test	3.96	.70	Ex.	3.96	.69	Ex.	329	.08	.93
Newspapers	3.92	.89	Ex.	3.93	.89	Ex.	329	.12	.90
Passages (long)	3.80	.66	Ex.	3.89	.68	Ex.	329	1.22	.22
Memo	3.71	.67	Ex.	3.62	.60	Ex.	329	-1.20	.22
Articles	3.63	.56	Ex.	3.83	.71	Ex.	329	2.55	.01
Manual	3.59	.63	Ex.	3.58	.66	Ex.	329	-.14	.88
Magazines	3.54	.91	Ex.	3.58	.84	Ex.	329	.42	.67
Report	3.50	.50	Ex.	3.65	.59	Ex.	329	2.27	.02
Email	3.45	.84	Ex.	3.31	.67	Mod.	329	-1.70	.08
Advertisement	3.43	.80	Ex.	3.37	.72	Mod.	329	-.77	.43
Passages (short)	3.38	.64	Mod.	3.51	.74	Ex.	329	1.60	.11
Novel	3.30	.72	Mod.	3.20	.72	Mod.	329	-1.20	.22
Web blog	3.24	.91	Mod.	3.14	.86	Mod.	329	-.99	.32

N=207 and 124, p<.01

Engineering students rated their problems in reading for text books, instructions for examinations, memos, manuals, emails, advertisements, novels and web blogs higher than their teachers did; whereas their teachers rated their students' problem in reading essays and journals, newspapers, long passages, articles, magazines, reports and short passages higher than their students did.

However, the students and teachers' opinions on the problems in reading were the same on instructions for tests. Moreover, there was a significant difference between students' and teachers' opinions on students' problems of articles *($p < .01$).* Finally, the opinions of neither group were dispersed (SD > 1.0).

4. Problems in writing

Table 4.10 Problems in writing skills of engineering students

	Problems								
	S			T					
Writing skills	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Essay	4.43	.54	VE	4.28	.57	VE	329	-2.33	.02
Email/online chatting	4.33	.60	VE	4.02	.73	Ex.	329	-4.19	.00
Paragraph (long)	4.28	.58	VE	4.25	.62	VE	329	-.44	.65
Summarize from reading	4.21	.91	VE	4.08	.85	Ex.	329	-1.32	.18
Summarize from listening	4.20	.73	Ex.	4.04	.83	Ex.	329	-1.81	.07
Business letter/fax/email	4.11	.66	Ex.	4.12	.59	Ex.	329	.247	.80
General vocabulary	4.10	.66	Ex.	4.21	.60	VE	329	1.52	.12
Web blog/email	4.10	.68	Ex.	3.96	.73	Ex.	329	-1.73	.08
Paragraph (short)	4.07	.81	Ex.	3.95	.78	Ex.	329	-1.23	.21
Simple/complex sentences	4.06	.68	Ex.	4.18	.64	Ex.	329	1.55	.12
Instructions	4.03	.62	Ex.	4.02	.59	Ex.	329	-.208	.83
Complaint	4.02	.76	Ex.	3.90	.81	Ex.	329	-1.41	.15
Meeting summary	3.94	.72	Ex.	3.86	.81	Ex.	329	-.88	.37
Report	3.87	.70	Ex.	3.74	.70	Ex.	329	-1.65	.10
Mobile messages	3.80	1.06	Ex.	3.76	1.06	Ex.	329	-.29	.76
Report at work	3.79	.58	Ex.	3.73	.61	Ex.	329	-.865	.38
Technical vocabulary	3.78	.77	Ex.	3.86	.78	Ex.	329	.903	.36

N=207 and 124, p<.00

Engineering students rated problems in writing essays, emails/online chatting, long paragraphs, summarizing from reading, summarizing from listening, web blogs/emails, instructions, complaints, minutes of meetings, reports, text messages, and reports at work higher than their teachers did; whereas their teachers rated their students' problems in writing business letters/faxes/emails, general vocabulary, simple/complex sentences and technical vocabulary higher than their students.

Moreover, there was a significant difference between students' and teachers' opinions on students' problems in writing emails/online chatting *($p < .00$).* Finally, the opinions of neither group were dispersed ($SD > 1.0$).

Table 4.11 Wants in terms of curriculum objectives, content, and methodology

	Wants								
	S			T					
Objective of using English:	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
To use English like a native speaker	4.40	.75	VS	4.41	.69	VS	329	.12	.90
To use English in and out of class	4.45	.76	VS	4.50	.70	VS	329	.64	.52
To use English to perform job effectively	4.54	.70	VS	4.44	.65	VS	329	-1.25	.21
Teaching methodology:	3.93	.74	S	4.07	.74	S	329	1.65	.09
Lecturing (teacher do most teaching)									
Presentation based	3.83	.65	S	3.94	.56	S	329	1.52	.12
Class discussion	3.88	.70	S	4.04	.53	S	329	2.21	.02
Problems focus on grammar	4.09	.68	S	4.25	.60	VS	329	2.22	.02
Problems focus on reading	4.15	.78	S	4.35	.68	VS	329	2.36	.01
Problems focus on writing	4.12	.93	S	4.16	.82	S	329	.47	.63
Problems focus on practice	3.91	.98	S	3.91	.94	S	329	-.01	.98
Summer camp to practice English	3.96	.95	S	4.00	.89	S	329	.43	.66
with Native Speakers									
Experiment based (in and out classroom)	3.95	.92	S	4.09	.79	S	329	1.41	.15
Teaching techniques: Computer aided	4.32	.72	VS	4.46	.61	VS	329	1.85	.06
language learning									
Role play	4.25	.66	VS	4.33	.69	VS	329	1.13	.25
Use of humour	3.91	.82	S	3.95	.77	S	329	.36	.71
Using interactive method	3.94	.71	S	3.83	.71	S	329	-1.42	.15
Using drama method	3.49	.86	S	3.58	.78	S	329	.87	.38
Using worksheets for tests	3.52	1.29	S	3.52	1.15	S	329	-.01	.98
Using worksheets for examination	3.58	1.29	S	3.62	1.20	S	329	.25	.80
Using tasks	3.58	1.08	S	3.64	.98	S	329	.522	.60
Using portfolio	3.44	1.16	S	3.54	1.11	S	329	.799	.42
Using observation	3.40	1.13	S	3.33	.95	Mod.	329	-.536	.59
Checking learners' progress	3.49	1.19	S	3.43	1.02	Mod.	329	-.500	.61
Using criteria	3.48	1.06	S	3.64	.86	S	329	1.467	.14
Instructors:	3.29	.76	Mod.	3.56	.78	S	329	3.08	.00
Native									
Pakistani	3.71	.65	S	3.80	.68	S	329	1.21	.22
Native and Pakistani	3.88	.82	S	3.94	.80	S	329	.638	.52
Teach English every year	3.84	.92	S	4.01	.88	S	329	1.70	.09
Teach English only first year	3.70	1.12	S	3.67	1.00	S	329	-.187	.85

	Wants								
	S			T					
	M	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Practice project in English situation	3.94	.82	S	3.83	.87	S	329	-1.16	.24
Want to have English native friends	4.01	.68	S	3.93	.71	S	329	-1.05	.29
Teachers should use 100% English in class	4.00	.68	S	3.95	.64	S	329	-.65	.51
Teachers should frequently talk in English	4.00	.52	S	4.12	.48	S	329	1.92	.05
Teachers should teach four skills	3.98	.54	S	4.08	.52	S	329	1.69	.09
Teachers should guide students every time	3.95	.48	S	4.00	.49	S	329	.87	.38
Content of using English:	3.80	1.13	S	3.82	.96	S	329	.13	.89
Modern contents based on: journals									
The Internet	3.85	1.16	S	3.79	.94	S	329	-.59	.55
Media	3.83	.94	S	3.87	.83	S	329	.42	.67
Some content should be taken from:	3.78	.93	S	3.87	.83	S	329	.92	.35
English text									
Local text	3.73	.99	S	3.87	.90	S	329	1.28	.20
Content should be in: English, general, engineering, science, history, culture of people speaking English	1.97	1.09	R	1.67	1.04	R	329	-2.46	.01
Content should be in: English, general, engineering, science, history, culture of people speaking English	3.14	1.72	Mod.	3.02	1.64	Mod.	329	-.60	.54

N=207 and 124, p<.00

Research Question Three

What are the learners' wants regarding the purpose, content, and methodology used in engineering programs?

Questionnaire part 3 asked opinions concerning wants in learning in terms of curriculum objectives, content, methodology and teachers. The extent of wants for English and the mean scores are presented in Tables 4.11 to 4.14.

Finding three

Finding three is explained here on the basis of research question three as follows. It is categorized into three parts: (1) objectives for using English, content, and teaching methodology.

1. Objectives for using English

Engineering students rated their wants for using English to perform their jobs effectively, to use English in and out of class, and to use English like a native speaker higher than their teachers did; whereas their teachers rated their students' had wants in terms of objectives for using English in and out of classroom, using English to perform their jobs effectively and using English like a native speaker of English lower than their students did.

Table 4.12 Objectives of using English

	Wants								
	S			T					
Objective of using English	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
To use English to perform your job effectively	4.54	.70	VS	4.44	.65	VS	329	-1.25	.21
To use English in and out of classroom	4.45	.76	VS	4.50	.70	VS	329	.642	.52
To use English like a native speaker of English	4.40	.75	VS	4.41	.69	VS	329	.124	.90

N=207 and 124, p<.05

Moreover, there was significant difference between students' and teachers' opinions on students' wants for objectives for using English that include using English to perform their jobs effectively *($p < .05$).* Finally, the opinions of neither group were dispersed ($SD > 1.0$).

2. Content

Table 4.13 Content of using English

	Wants								
	S			T					
Content	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Modern contents based on:	3.85	1.16	S	3.79	.94	S	329	-.594	.55
The Internet									
Media	3.83	.94	S	3.87	.83	S	329	.421	.67
journals	3.80	1.13	S	3.82	.96	S	329	.135	.89
Some content should be taken from:	3.78	.93	S	3.87	.83	S	329	.924	.35
English text									
Local text	3.73	.99	S	3.87	.90	S	329	1.28	.20

N=207 and 124, p<.05

As discussed in Table 4.13, engineering students rated their wants in terms of modern contents based on the Internet higher than their teachers did and they rated using content from media, journals, English texts and local texts lower than their teachers did; whereas their teachers rated their students' wants for modern contents based on media, English texts, local texts and modern contents based on journals higher than their students did.

Moreover, there was significant difference between students' and teachers' opinions on students' wants for content taken from local texts *(p < .05).* Finally, the opinions of neither group were dispersed (*SD* > 1.0).

3. Teaching methodology

Table 4.14 Teaching methodology

	Wants								
	S			T					
Teaching methodology	*M*	*SD*	Level	*M*	*SD*	Level	df	*t*	sig
Problems focus on reading	4.15	.78	S	4.35	.68	VS	329	2.36	.01
Problems focus on writing	4.12	.93	S	4.16	.82	S	329	.476	.63
Problems focus on grammar	4.09	.68	S	4.25	.60	VS	329	2.22	.02
Provide summer camp to practice English with Native Speakers	3.96	.95	S	4.00	.89	S	329	.439	.66
Experiment based (in and out classroom)	3.95	.92	S	4.09	.79	S	329	1.41	.15
Lecturing (teacher do most teaching)	3.93	.74	S	4.07	.74	S	329	1.65	.09
Problems focus on practice	3.91	.98	S	3.91	.94	S	329	-.016	.98
Class discussion	3.88	.70	S	4.04	.53	S	329	2.21	.02
Presentation based	3.83	.65	S	3.94	.56	S	329	1.52	.12

N=207 and 124, p<.05

As shown in Table 4.14 engineering students rated their wants for teaching methodology focussing on reading, focussing on writing, focussing on grammar, providing summer camp to practice English with native speakers, based on experiments (in and out class), using lectures (teacher doing most teaching), focussing on practice, using class discussion, and based on presentation rated lower than their teachers did; whereas teachers rated their students' wants for all the items mentioned in Table 4.14 higher than their students did except that problems focussing on practice had the same rating from both students and teachers.

Moreover, there was a significant difference between students' and teachers' opinions on students' strong wants of teaching methodology in terms of problems focus on reading *($p < .01$).* Finally, the opinions of neither group were dispersed ($SD > 1.0$).

Research Question Four

Is there any difference between engineering students and their teachers in terms of needs, problems, and wants?

Questionnaire part 2 asked opinions concerning needs and problems and part 3 asked opinions in term of wants. The extent of needs and problems in English were the same as question one. The extent of needs, problems and wants for English and the mean scores are presented. The *t*-test was used to assess the difference between engineering students and their teachers in terms of needs, problems and, wants. The results are shown in Table 4.1-4.14.

Finding four

The difference between students and their teachers' opinions in terms of needs, problems and wants are categorized as follows.

Needs

Needs for using English language Skills

Students rated their needs for speaking and writing higher than their teachers did; whereas their teachers rated their students' need for listening and reading higher than their students did. Moreover, there was a significant difference between students' and teachers' opinions on students' needs for speaking. Finally, the opinions of neither group were dispersed.

1. **Needs for listening**

Engineering students rated their needs for listening to long lectures, presentations, complicated lectures, technical vocabulary, long conversations, short conversations, and general vocabulary higher than their teachers did; whereas their teachers rated their students' needs for listening to presentations, long lectures, and long conversations. Moreover, there was a significant difference between students'

and teachers' opinions on students' needs for long conversations. Finally, the opinions of neither group were dispersed.

2. **Needs for speaking**

Engineering students rated their needs for speaking at length, general vocabulary, complicated speaking, different situations, and speaking briefly, lectures/seminars, presentations/reports in front of class, and dialogue dealing higher than their teachers did; whereas their teachers rated their students' need for general vocabulary, different situations, speaking at length, complicated speaking, lectures/seminars, and presentations/reports in front of class. Moreover, there was a significant difference between students' and teachers' opinions on students' needs for dialogue dealing. Finally, the opinions of neither group were dispersed.

3. **Needs for reading**

Engineering students rated their needs for reading essays lower than their teachers did; while they rated their need for reading newspapers, text books, short passages, instructions for tests, and long passages higher than their teachers did; whereas their teachers rated their students' need for reading essays higher than their students did; they rated their need for reading text books, newspapers, and articles lower than their students rated. Moreover, there was a significant difference between students' and teachers' opinions on students' needs of articles. Finally, the opinions of neither group were dispersed.

4. **Needs for writing**

Engineering students rated their need for writing essays, long paragraphs, emails/online chatting, summaries from reading, short paragraphs, general vocabulary and simple/complex sentences higher than their teachers did; whereas their teachers rated their students need for writing long paragraphs and summaries from listening, essays, general vocabulary and simple/complex sentences, business letters/faxes/emails, summaries from reading, and short paragraphs. Moreover, there was a significant difference between students' and teachers' opinions on students'

needs of email/online chatting. Finally, the opinions of neither group were dispersed on mobile messages.

Problems

Problems in using English

Students rated their problems in speaking and writing higher than their teachers did; whereas their teachers rated their students' problems in listening and reading higher than their students did. Further, there was a significant difference between students' and teachers' opinions on students' problems in writing. Finally, the opinions of neither group were dispersed.

1. Problems in listening

Engineering students rated their problems in listening presentations, complicated lectures, customer complaints, long lectures, and short conversations higher than their teachers did; whereas their teachers rated their students' problems in listening presentations at work, technical vocabulary, general vocabulary, long conversations and English songs with subtitles. Moreover, there was a significant difference between students' and teachers' opinions on students' problems of customer complaints. Finally, the opinions of neither group were dispersed.

2. Problems in speaking

Engineering students rated their problems in speaking at length, different situations, complicated speaking, speaking briefly, dialogue dealing, lectures/seminars, presentations/reports in front of class and grapevine higher than their teachers did; whereas their teachers rated their students' problems in speaking technical and downward interactions higher than their students did.

However, both students and teachers had the same opinions on the problems including general vocabulary and upward communications. Moreover, there

was a significant difference between students' and teachers' opinions on students' problems of dialogue dealing. Finally, the opinions of neither group were dispersed.

3. Problems in reading

Engineering students rated their problems in reading text books, instructions for examinations, memos, manuals, emails, advertisements, novels and web blogs higher than their teachers did; whereas their teachers rated their students' problem in reading essays, journals, newspapers, long passages, articles, magazines, reports and short passages higher than their students did.

However, both students and teachers' opinions on the problems in reading were the same for instructions for tests. Moreover, there was a significant difference between students' and teachers' opinions on students' problems of articles. Finally, the opinions of neither group were dispersed.

4. Problems in writing

Engineering students rated their problems in writing essays, emails/online chatting, long paragraphs, summaries from reading, summaries from listening, web blogs/emails, instructions, complaints, minutes of meeting, reports, mobile messages, and reports at work higher than their teachers did; whereas their teachers rated their students' problems in writing business letters/ faxes/emails, general vocabulary, simple/complex sentences and technical vocabulary higher than their students did.

Moreover, there was a significant difference between students' and teachers' opinions on students' problems of emails/online chatting. Finally, the opinions of neither group were dispersed.

Wants

Tables 4.11 to 4.14 show that engineering students expressed very strong wants for using English to perform their jobs effectively, for using English in and out of class, and for using English like a native speaker. However, engineering teachers felt their students had a very strong want for using English in and out of classroom, for

using English like a native speaker, and for using English to perform their jobs effectively. Similarly, engineering students expressed their strong wants for modern contents based on Internet, modern contents based on media, modern contents based on journals, contents taken from English texts, and contents taken from local texts.

Further, engineering students felt strong wants for a teaching methodology that included problems focussing on reading, problems focussing on writing, problems focussing on grammar, summer camps to practice English with native speakers, based on experiments (in and out of class), lecturing (teacher doing most teaching), problems focussing on practice, class discussions, and based on presentations.

In short, engineering teachers felt that their students had very strong wants for a teaching methodology based on the problems focussing on reading, and problems focussing on grammar. Teachers also felt that their student had strong wants for a methodology that included problems focussing on writing, based on experiments (in and out of class), lecturing (teacher doing most teaching), class discussions, summer camps to practice English with native speakers, based on presentations, and problems focussing on practice.

CHAPTER V
DISCUSSION

This chapter provides a discussion of the findings from the study of needs, problems and, wants in using English of engineering students at QUEST. The discussion follows the order of the findings based on the four research questions:

(1) To what extent do the engineering students need to use English in present and future situations?

(2) What are the problems of engineering students in using English in their academic studies?

(3) What are the learners' wants regarding the purpose, content, and methodology used in engineering programs?

(4) Is there any difference between engineering students and their teachers in terms of needs, problems, and wants?

5.1 Needs

The results of this study indicate the same needs for present and future, as the participants rated all skills as very extensive and extensive needs. The results indicate that engineering students need all four English language skills for their professional needs and future needs. Moreover, the discussion is presented according to the following needs based on the four skills.

1. Listening needs

Both engineering students and teachers rated needs in terms of listening to general vocabulary, long or short conversations, English songs with or without subtitles, dramas/movies with or without subtitles in daily life; technical vocabulary, short, long, and complicated lectures, presentations in learning; presentations, meetings, inquiries and customer complaints at work as extensive needs. The students

seem to have a lot of opportunities to practice these listening skills in order to meet present and future needs.

Similarly, studies in other countries also show that their learners needed listening skills in the target language (Zughul & Hussain, 1985; Edwards, 2000).

2. Speaking needs

Both, students and teachers perceived extensive needs in speaking in different situations, general vocabulary, brief, lengthy, and complicated speaking, technical vocabulary, lectures/seminars, presentations/reports in front of class and dialogue dealing. The students rated speaking skills including lengthy speaking, general vocabulary, complicated speaking, different situations, and speaking briefly as extensive needs.

Similarly, they had an extensive need for speaking skills including lectures/seminars, presentations/reports in front of class, dialogue dealing, technical vocabulary, horizontal conversations, grapevine, upward communications, and downward interactions.

Similarly, Rehman, Ming, Aziz and Razak (2008) indicated that learners in an ESP speaking course in Malaysia needed speaking skills for oral presentations and classroom discussions.

3. Reading needs

In this study, engineering students found very extensive needs for reading essays. They also perceived extensive needs for reading newspapers, text books, short passages and instructions for tests, long passages, articles and advertisements, memos, magazines, journals, manuals, instructions for examinations, reports, emails, novels, and web blogs.

This corresponds with the findings of a Hungarian study on English needs in which learners used reading skills including reading newspapers, text books, and online information (Kormos, 2002). Soranastaporn (1993) also found that students needed reading skills for academic purposes.

4. Writing needs

This study indicated that the engineering students felt a very extensive need for writing essays. They also perceived extensive needs in writing long paragraphs, emails/online chatting; summaries from reading, short paragraphs, general vocabulary, simple/complex sentences, business letters/faxes/emails, instructions, reports, complaints, technical vocabulary, web blogs and emails.

5.2 Problems

The results show that both engineering students and teachers rated problems in all four skills as extensive.

1. Problems in listening

The results show that engineering students had their problems in listening skills based on their daily life, at learning, and at work. In daily life, students' extensive problems in listening were general vocabulary, long conversations, short conversations, dramas/movies with subtitles, English songs with subtitles; they had moderate problems in listening to dramas/movies having no subtitles, and English songs having no subtitles.

Similarly, in learning, students' very extensive problem was presentations and extensive problems were technical vocabulary and long lectures. Further, in working, students' very extensive problem in listening was presentations and students' extensive problem in listening was customer complaints.

Similarly, studies in other countries also show that their learners had problems in listening (Edwards, 2000).

2. Problems in speaking

According to the results, engineering students had very extensive problems in speaking including speaking at length, different situations, general vocabulary, complicated speaking, and speaking briefly.

Similarly, engineering students had extensive problem in different areas of speaking including dialogue dealing, lectures/seminars, and presentations/reports in front of class, technical vocabulary, grapevine, upward communications, downward interactions, and horizontal conversations. Kuen (2001) examined the problems in speaking in a Malaysian business context.

3. Problems in reading

Engineering learners perceived a very extensive problem in reading skills in terms of essays. Results indicate extensive problems in reading including textbooks, journals, instructions for examinations, and instructions for tests, newspapers, long passages, memos, articles, manuals, magazines, reports, emails, and advertisements. They perceived a moderate problem in reading short passages, novels, and web blogs. Soranastaporn (1993) also found that students had problems in reading.

5. Problems in writing

As seen in Table 4.5, engineering students indicated that they had a very extensive problems in writing essays, emails/online chatting, long paragraphs, and summaries from reading. Similarly, students had extensive problems in writing including summaries from listening, business letters/faxes/emails, general vocabulary and web blogs, short paragraphs, simple/complex sentences, instructions, complaints, minutes of meeting, reports, text messages, and technical vocabulary.

Similarly, the study of (Preechawat, 2010) explored the problems which Thai office staff at Diethelm Travel (Thailand), Ltd. encountered when writing.

5.3 Wants

The results show that both engineering students and teachers expressed very strong wants in terms of all four skills. This is explained as follows:

1. Objectives for using English

The results show that engineering students expressed very strong wants for using English to perform their jobs effectively, for using English in and out of class, and for using English like a native speaker.

However, engineering teachers felt their students had a very strong want for using English in and out of class, for using English like a native speaker, and for using English to perform their jobs effectively. Similarly, Al-Khatib's (2005) study mentions that there is greater use of English by tourism and banking personnel. The researcher attempted to examine the communication wants of personnel in the workplace.

2. Content

Engineering students expressed strong wants for modern content based on the Internet, modern content based on media, modern content based on journals, content taken from English texts, and content taken from local texts. Similarly, engineering teachers felt their students wanted some content taken from English texts, content taken from local texts, modern content based on media, modern content based on journals, and modern content based on the Internet.

Similarly, Ongsakul's (1984) study at King Mongkut's Institute of Technology Lardkrabung (KMITL) found that both teachers and students wanted the subject matter, teaching methods, educational aids, teacher-made tests, and other facilities to be improved.

3. Teaching methodology

Engineering students felt strong wants for a teaching methodology that includes problems focussing on reading, problems focussing on writing, problems focussing on grammar, summer camps to practice English with native speakers, based on experiment (in and out of class), lecturing (teacher doing most teaching), problems focussing on practice, class discussions, and presentations. However, engineering teachers thought that their students had very strong wants for a teaching methodology based on the problems focussing on reading, and problems focussing on grammar.

Teachers also felt that their students had strong wants in terms of a methodology that includes problems focussing on writing, based on experiment (in and out of class), lecturing (teacher doing most teaching), class discussions, summer camps to practice English with native speakers, presentations, and problems focussing on practice. Cook (2006) and Cowling (2007) found that university learners wanted English courses to provide a variety of teaching methods and learning processes.

CHAPTER VI
CONCLUSION

This chapter presents the conclusions based on the four research questions, suggests applications for the results, and makes recommendations for future studies.

6.1 Summary of the study

This research was conducted to identify the needs, problems, and wants of engineering students at QUEST. Data were collected by distributing questionnaires to 217 engineering students and 132 engineering teachers. The findings reveal that the majority of participants felt extensive needs for using the four skills in daily life, at learning and at work. The findings are similar to those of Soranastaporn (1993) and Samawathdana (2009) who revealed that most participants agreed that English is important for their academic development. A brief description in terms of the four research questions and the needs, problems, wants and, differences is given as follows:

Needs

The results of this study indicate that the needs for the present and future are the same because the participants rated all skills as very extensive or extensive. However, Both engineering students and teachers felt extensive needs for listening in terms of general vocabulary, long or short conversations, of speaking in different situations, short, long, and complicated speaking, of reading newspapers, text-books, short passages and instructions for tests, long passages, and articles. Similarly, this study indicates that the engineering students felt a very extensive need for writing essays. They also perceived extensive needs in writing long paragraphs, emails/online chatting, and summaries from reading.

Problems

The results show that both engineering students and teachers expressed very extensive problems in all four skills. The results show that engineering students had problems in listening skills including general vocabulary, long conversations, dramas/movies with subtitles, English songs, and presentations; in speaking including speaking in different situations, general vocabulary, complicated speaking, dialogue dealing, lectures/seminars, presentations/reports in front of class, and technical vocabulary; in reading in terms of essays, textbooks, journals, instructions for examinations, and instructions for tests, newspapers, long passages, and articles; in writing essays, emails/online chatting, long paragraphs, and summaries from reading, summaries from listening, business letters/faxes/emails, general vocabulary and web blogs.

Wants

The results show that engineering students and teachers expressed very strong wants for using English to perform their jobs effectively, for using English in and out of class, and for using English like a native speaker. However, they also expressed strong wants for modern content based on the Internet, media, and journals; content taken from English texts, and content taken from local texts. Similarly, they felt strong wants for a teaching methodology based on problems focussing on reading, problems focussing on writing, problems focussing on grammar, summer camps to practice English with native speakers, based on experiment (in and out of class), lecturing (teacher doing most teaching), problems focussing on practice, class discussions, and presentations.

Comparison

Students rated their needs for speaking and writing higher than their teachers did; whereas their teachers rated their students' need for listening and reading higher than their students did. However, students rated their problems in speaking and

writing higher than their teachers did; whereas their teachers rated their students' problems in listening and reading higher than their students did. Similarly, engineering students expressed strong wants for modern content based on the Internet, modern content based on media, modern content based on journals, content taken from English texts, and content taken from local texts; whereas teachers thought that their students had very strong wants for a teaching methodology based on problems focussing on reading, and problems focussing on grammar. Further, there was a significant difference between students' and teachers' opinions. Finally, the opinions of neither group were dispersed.

6.2 Application of the results

Engineering students at QUEST use English only for carrying out their academic studies instead for their professions. They do not think of studying or using English in the future. Thus, the QUEST administration and English teachers should design different English courses on the basis of content related to the specific needs that were identified in this study. Writing and speaking were rated the most important in using English. So, courses must be designed that include writing as the top priority, ahead of speaking and other skills.

Further, teachers should arrange compulsory and optional English courses with objectives related to the engineering students and engineering programs. According to the results of this study, the teaching methodology should be based on the students' use of English in and out of class, having summer camps and problems focussing on modern content including media, the internet and journals.

6.3 Recommendations for Further Research

This study was conducted in order to explore the needs, problems, and wants of engineering students at QUEST, Pakistan in using English. This research study was limited to the English language needs, problems and wants of engineering

students. The information obtained from the questionnaire represents a basic step for language planners when they create and improve appropriate English courses.

1. It is recommended that for further studies, semi-structured interviews should be conducted; class observation should be undertaken and work documents should be examined at university and college levels in order to collect data regarding perceptions towards English language needs, problems and wants. However, further studies must be conducted among college or university students and teachers in other fields, such as bioscience, medical science, and technical education, which use English as a medium of instruction.

2. This study examined the needs, wants, and, problems of engineering students in using English without regard for the demographic data concerning the students. To obtain more motivating data, further research should investigate other aspects including age, gender, field of study, task-based activities, and students' involvement in class based on their needs, problems and wants.

3. This study used two set of questionnaires to collect data. However, future research should include qualitative and quantitative methods in order to provide more in-depth information.

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APPENDIX

QUESTIONNAIRE FOR STUDENTS

A STUDY OF NEEDS, PROBLEMS AND WANTS OF USING ENGLISH OF ENGINEERING STUDENTS AT QUAID-E-AWAM UNIVERSITY, PAKISTAN

Objective: this questionnaire is designed to survey the needs, problems and wants of English for engineering students at QUEST.

This questionnaire is divided into four parts.
Part 1: Background information
Part 2: Learners' opinions concerning the learners' problems and needs of engineering students.
Part 3: Learners' opinion concerning the learners' wants in terms of curriculum, content, methodology, skills and students.
Part 4: Learners' opinion concerning their wants in terms of English teaching in engineering context.

Part 1: Background information

Instructions: please Tick mark (×) the correct item.

1. Sex □ Female □Male
2. Age □ under 20 □ under 25 □ Over 25
3. Department

□ Energy and Environment Engineering □Civil Engineering □ Electrical Engineering □ Mechanical Engineering □ Computer System Engineering □ Any other

4. Is English important in your subject teaching?

□ Yes □ No □Neutral

5. If you have answered yes, how often do you use English in classroom?

□ Regularly □ Often □ Occasionally □ Seldom

6. Please choose your current level of English proficiency (choose only one)

□Beginner □Elementary □ Lower intermediate □ Upper intermediate □ Advanced

Part 2: General Opinions

Please indicate students' opinions concerning the students' needs and problems in using English skills in engineering program by circling the appropriate numbers by:

5 = Essential 4 = Very necessary 3 = Necessary 2 = Fairly Necessary 1 = Unnecessary

Questions		
Do learners need or have problems in English skills?	**Problems**	**Needs**
Listening	⑤④③②①	⑤④③②①
Speaking	⑤④③②①	⑤④③②①
Reading	⑤④③②①	⑤④③②①
Writing	⑤④③②①	⑤④③②①
Listening: Do learners need or have problems in listening skills?		
Daily life		
General vocabulary	⑤④③②①	⑤④③②①
Conversation (short)	⑤④③②①	⑤④③②①
Conversation (long)	⑤④③②①	⑤④③②①
English songs (subtitle)	⑤④③②①	⑤④③②①
English songs (no subtitle)	⑤④③②①	⑤④③②①
Drama/movies (subtitle)	⑤④③②①	⑤④③②①
Drama/movies (no subtitle)	⑤④③②①	⑤④③②①
Learning	**Problems**	**Needs**
Technical vocabulary	⑤④③②①	⑤④③②①
Lecture (short)	⑤④③②①	⑤④③②①
Lecture (long)	⑤④③②①	⑤④③②①
Lecture (complicate)	⑤④③②①	⑤④③②①
Presentation	⑤④③②①	⑤④③②①
Working		
Presentation at work	⑤④③②①	⑤④③②①
Meeting at work	⑤④③②①	⑤④③②①
Inquiry	⑤④③②①	⑤④③②①
Complain (customer)	⑤④③②①	⑤④③②①

Others (please specify) ……	⑤④③②①	⑤④③②①
Speaking: Do learners need or have problems in speaking skills?	**Problems**	**Needs**
Daily life		
General vocabulary	⑤④③②①	⑤④③②①
Different situations.....	⑤④③②①	⑤④③②①
Short speaking	⑤④③②①	⑤④③②①
Long speaking	⑤④③②①	⑤④③②①
Complicate speaking	⑤④③②①	⑤④③②①
Learning		
Technical vocabulary	⑤④③②①	⑤④③②①
Lecture/seminar.....	⑤④③②①	⑤④③②①
Presentation/report in front of class	⑤④③②①	⑤④③②①
Dialogue dealing	⑤④③②①	⑤④③②①
Working		
Upward communications.....	⑤④③②①	⑤④③②①
Downward interactions	⑤④③②①	⑤④③②①
Horizontal conversations.....	⑤④③②①	⑤④③②①
Grapevine	⑤④③②①	⑤④③②①
Others (please specify) ……	⑤④③②①	⑤④③②①
Reading: Do learners need or have problems in reading skills?		
Daily life		
Newspapers	⑤④③②①	⑤④③②①
Magazines.....	⑤④③②①	⑤④③②①
Advertisement	⑤④③②①	⑤④③②①
Web blog	⑤④③②①	⑤④③②①
Email	⑤④③②①	⑤④③②①
Novel	⑤④③②①	⑤④③②①
Learning		
Instructions for test.....	⑤④③②①	⑤④③②①
Instructions for examination.....	⑤④③②①	⑤④③②①

Passages (long)	⑤④③②①	⑤④③②①
Passages (short)	⑤④③②①	⑤④③②①
Essay	⑤④③②①	⑤④③②①
Textbook	⑤④③②①	⑤④③②①
Articles	⑤④③②①	⑤④③②①
Journals	⑤④③②①	⑤④③②①
Working		
Report	⑤④③②①	⑤④③②①
Manual	⑤④③②①	⑤④③②①
Memo	⑤④③②①	⑤④③②①
Others (please specify) ……	⑤④③②①	⑤④③②①
Writing: Do learners need or have problems in writing skills?		
Daily life		
General vocabulary	⑤④③②①	⑤④③②①
Simple/complex sentences	⑤④③②①	⑤④③②①
Mobile messages	⑤④③②①	⑤④③②①
Email/online chatting	⑤④③②①	⑤④③②①
Learning		
Technical vocabulary	⑤④③②①	⑤④③②①
Instructions	⑤④③②①	⑤④③②①
Report	⑤④③②①	⑤④③②①
Essay	⑤④③②①	⑤④③②①
Paragraph (long)	⑤④③②①	⑤④③②①
Paragraph (short)	⑤④③②①	⑤④③②①
Summarize from reading	⑤④③②①	⑤④③②①
Summarize from listening	⑤④③②①	⑤④③②①
Working		
Business letter/fax/email	⑤④③②①	⑤④③②①
Report	⑤④③②①	⑤④③②①
Meeting summary	⑤④③②①	⑤④③②①
Complaint	⑤④③②①	⑤④③②①
Web blog/email	⑤④③②①	⑤④③②①

Others (please specify) …… ..... ⑤④③②① ⑤④③②①

Part 3: Learners' opinions concerning their 'Wants' in learning in terms of curriculum objectives, content, methodology and teachers.

Instruction: Please tick (×) marks the item you choose.

A very strong want 5 strong want 4 simple want 3 rare want 2 least want1

Objective of using English	**Want**
To use English like a native speaker of English	⑤④③②①
To use English in and out of classroom	⑤④③②①
To use English to perform your job effectively	⑤④③②①
Teaching methodology	
Lecturing (teacher do most teaching)	⑤④③②①
Presentation based	⑤④③②①
Class discussion	⑤④③②①
Problems focus on grammar	⑤④③②①
Problems focus on reading	⑤④③②①
Problems focus on writing	⑤④③②①
Problems focus on practice	⑤④③②①
Provide summer camp to practice English with Native Speakers	⑤④③②①
Experiment based (in and out classroom)	⑤④③②①
Others (please specify)	⑤④③②①
Teaching techniques	
Computer aided language learning	⑤④③②①
Role play	⑤④③②①
Use of humour	⑤④③②①
Using interactive method	⑤④③②①
Using drama method	⑤④③②①
Others (please specify)	⑤④③②①

Assessment and evaluation

Using worksheets for tests..... ⑤④③②①
Using worksheets for examination..... ⑤④③②①
Using tasks ..... ⑤④③②①
Using portfolio ..... ⑤④③②①
Using observation..... ⑤④③②①
Checking learners' progress ..... ⑤④③②①
Using criteria ..... ⑤④③②①
Others (please specify) ..... ⑤④③②①

Instructors

Native ..... ⑤④③②①
Pakistani ..... ⑤④③②①
Native and Pakistani..... ⑤④③②①
Teach English every year ..... ⑤④③②①
Teach English only first year..... ⑤④③②①
Practice project in English situation..... ⑤④③②①
Want to have English native friends..... ⑤④③②①
Teachers should use 100% English in class ... ⑤④③②①
Teachers should frequently talk in English .... ⑤④③②①
Teachers should teach four skills ..... ⑤④③②①
Teachers should guide students every time.... ⑤④③②①

Others (please specify) ..... ⑤④③②①

Content of using English **Want**

Modern contents based on:-

journal..... ⑤④③②①
the Internet..... ⑤④③②①
media ..... ⑤④③②①

Some content should be taken from:-

English text..... ⑤④③②①
local text ..... ⑤④③②①

Others (please specify)…… ..... ⑤④③②①

Content should be in:-

(Please rank 1-6 in order of priority in which 1 = most want, and 6= least want)

□English □general □engineering □science

□history □culture of people speaking English

Part 4: Needs, wants, and likes of English courses improvement.

Instruction: Please tick marks (×) the item you choose.

Very strong need 5 Strong need 4 Moderate need 3 fairly need 2 rarely need1

To what extent do you want the objective of English course focus on:	**Needs**	**Wants**	**Likes**
Listening	⑤④③②①	⑤④③②①	⑤④③②①
Speaking	⑤④③②①	⑤④③②①	⑤④③②①
Reading	⑤④③②①	⑤④③②①	⑤④③②①
Writing	⑤④③②①	⑤④③②①	⑤④③②①
Tasks and Activities			
Individual	⑤④③②①	⑤④③②①	⑤④③②①
Pair	⑤④③②①	⑤④③②①	⑤④③②①
Group	⑤④③②①	⑤④③②①	⑤④③②①
Contents correspond to:			
Daily life	⑤④③②①	⑤④③②①	⑤④③②①
Learning	⑤④③②①	⑤④③②①	⑤④③②①
Working	⑤④③②①	⑤④③②①	⑤④③②①
Practice a skill through self:			
Face to face conversation	⑤④③②①	⑤④③②①	⑤④③②①
Telephone conversation	⑤④③②①	⑤④③②①	⑤④③②①
Skype conversation	⑤④③②①	⑤④③②①	⑤④③②①
Live conversation	⑤④③②①	⑤④③②①	⑤④③②①
Writing (SMS)	⑤④③②①	⑤④③②①	⑤④③②①
Practice a skill through class:			
Simulation	⑤④③②①	⑤④③②①	⑤④③②①
Role play	⑤④③②①	⑤④③②①	⑤④③②①
Real situation	⑤④③②①	⑤④③②①	⑤④③②①

In class:

Suggestions	⑤④③②①	⑤④③②①	⑤④③②①
Comments	⑤④③②①	⑤④③②①	⑤④③②①
Discussions	⑤④③②①	⑤④③②①	⑤④③②①
Critical activities	⑤④③②①	⑤④③②①	⑤④③②①
Creative activities	⑤④③②①	⑤④③②①	⑤④③②①
Problem solving	⑤④③②①	⑤④③②①	⑤④③②①
Accept for criticize	⑤④③②①	⑤④③②①	⑤④③②①
Present with new media	⑤④③②①	⑤④③②①	⑤④③②①
Present with innovation	⑤④③②①	⑤④③②①	⑤④③②①
Others (please specify)……	⑤④③②①	⑤④③②①	⑤④③②①

Thank you very much

MANSOOR AHMED CHANNA

QUESTIONNAIRE FOR TEACHERS

A STUDY OF NEEDS, PROBLEMS AND WANTS OF USING ENGLISH OF ENGINEERING STUDENTS AT QUAID-E-AWAM UNIVERSITY, PAKISTAN

Objective: this questionnaire is designed to survey the needs, problems and wants of English for engineering students at QUEST.

This questionnaire is divided into four parts.
Part 1: Background information
Part 2: Learners' opinions concerning the learners' problems and needs of engineering students.
Part 3: Learners' opinion concerning the learners' wants in terms of curriculum, content, methodology, skills and students.
Part 4: Learners' opinion concerning their wants in terms of English teaching in engineering context.

Part 1: Background information

Instructions: please Tick mark (×) the correct item.

1. Sex □ Female □Male
2. Age □ under 25 □ under 35 □ Over 35
3. Educational background

□ Bachelor Degree □Master Degree □Any other

4. How many years have you been working in the field of teaching?

□1-5 year □5-10 year □10-15 year □over15 year
□Any other

5. (A) Is English important in your subject teaching?

□ Yes □ No □Neutral

5. (B) if you have answered yes, how often do you use English in classroom?

□ Regularly □ Often □ Occasionally □ Seldom

6. Please choose your current level of English proficiency (choose only one)

□Beginner □Elementary □ Lower intermediate □ Upper intermediate □ Advanced

Part 2: General Opinions

Please indicate students' opinions concerning the students' needs and problems in using English skills in engineering program by circling the appropriate numbers by:
5 = Essential 4 = Very necessary 3 = Necessary 2 = Fairly Necessary 1 = Unnecessary

Questions		
Do learners need or have problems in English skills?	**Problems**	**Needs**
Listening	⑤④③②①	⑤④③②①
Speaking	⑤④③②①	⑤④③②①
Reading	⑤④③②①	⑤④③②①
Writing	⑤④③②①	⑤④③②①
Listening: Do learners need or have problems in listening skills?		
Daily life		
General vocabulary	⑤④③②①	⑤④③②①
Conversation (short)	⑤④③②①	⑤④③②①
Conversation (long)	⑤④③②①	⑤④③②①
English songs (subtitle)	⑤④③②①	⑤④③②①
English songs (no subtitle)	⑤④③②①	⑤④③②①
Drama/movies (subtitle)	⑤④③②①	⑤④③②①
Drama/movies (no subtitle)	⑤④③②①	⑤④③②①
Learning	**Problems**	**Needs**
Technical vocabulary	⑤④③②①	⑤④③②①
Lecture (short)	⑤④③②①	⑤④③②①
Lecture (long)	⑤④③②①	⑤④③②①
Lecture (complicate)	⑤④③②①	⑤④③②①
Presentation	⑤④③②①	⑤④③②①
Working		
Presentation at work	⑤④③②①	⑤④③②①
Meeting at work	⑤④③②①	⑤④③②①

Inquiry	⑤④③②①	⑤④③②①
Complain (customer)	⑤④③②①	⑤④③②①
Others (please specify) ……	⑤④③②①	⑤④③②①
Speaking: Do learners need or have problems in speaking skills?	**Problems**	**Needs**
Daily life		
General vocabulary	⑤④③②①	⑤④③②①
Different situations	⑤④③②①	⑤④③②①
Short speaking	⑤④③②①	⑤④③②①
Long speaking	⑤④③②①	⑤④③②①
Complicate speaking	⑤④③②①	⑤④③②①
Learning		
Technical vocabulary	⑤④③②①	⑤④③②①
Lecture/seminar	⑤④③②①	⑤④③②①
Presentation/report in front of class	⑤④③②①	⑤④③②①
Dialogue dealing	⑤④③②①	⑤④③②①
Working		
Upward communications	⑤④③②①	⑤④③②①
Downward interactions	⑤④③②①	⑤④③②①
Horizontal conversations	⑤④③②①	⑤④③②①
Grapevine	⑤④③②①	⑤④③②①
Others (please specify) ……	⑤④③②①	⑤④③②①
Reading: Do learners need or have problems in reading skills?		
Daily life		
Newspapers	⑤④③②①	⑤④③②①
Magazines	⑤④③②①	⑤④③②①
Advertisement	⑤④③②①	⑤④③②①
Web blog	⑤④③②①	⑤④③②①
Email	⑤④③②①	⑤④③②①
Novel	⑤④③②①	⑤④③②①

Learning

Instructions for test	⑤④③②①	⑤④③②①
Instructions for examination	⑤④③②①	⑤④③②①
Passages (long)	⑤④③②①	⑤④③②①
Passages (short)	⑤④③②①	⑤④③②①
Essay	⑤④③②①	⑤④③②①
Textbook	⑤④③②①	⑤④③②①
Articles	⑤④③②①	⑤④③②①
Journals	⑤④③②①	⑤④③②①

Working

Report	⑤④③②①	⑤④③②①
Manual	⑤④③②①	⑤④③②①
Memo	⑤④③②①	⑤④③②①

Others (please specify) …… ..... ⑤④③②① ⑤④③②①

Writing: Do learners need or have problems in writing skills?

Daily life

General vocabulary	⑤④③②①	⑤④③②①
Simple/complex sentences	⑤④③②①	⑤④③②①
Mobile messages	⑤④③②①	⑤④③②①
Email/online chatting	⑤④③②①	⑤④③②①

Learning

Technical vocabulary	⑤④③②①	⑤④③②①
Instructions	⑤④③②①	⑤④③②①
Report	⑤④③②①	⑤④③②①
Essay	⑤④③②①	⑤④③②①
Paragraph (long)	⑤④③②①	⑤④③②①
Paragraph (short)	⑤④③②①	⑤④③②①
Summarize from reading	⑤④③②①	⑤④③②①
Summarize from listening	⑤④③②①	⑤④③②①

Working

Business letter/fax/email	⑤④③②①	⑤④③②①
Report	⑤④③②①	⑤④③②①

Meeting summary ..... ⑤④③②① ⑤④③②①

Complaint ..... ⑤④③②① ⑤④③②①

Web blog/email ..... ⑤④③②① ⑤④③②①

Others (please specify) …… ..... ⑤④③②① ⑤④③②①

Part 3: Learners' opinions concerning their 'Wants' in learning in terms of curriculum objectives, content, methodology and teachers.

Instruction: Please tick (×) marks the item you choose.

A very strong want 5 strong want 4 simple want 3 rare want 2 least want1

Objective of using English	**Want**
To use English like a native speaker of English	⑤④③②①
To use English in and out of classroom	⑤④③②①
To use English to perform your job effectively	⑤④③②①
Teaching methodology	
Lecturing (teacher do most teaching).....	⑤④③②①
Presentation based	⑤④③②①
Class discussion.....	⑤④③②①
Problems focus on grammar.....	⑤④③②①
Problems focus on reading	⑤④③②①
Problems focus on writing.....	⑤④③②①
Problems focus on practice.....	⑤④③②①
Provide summer camp to practice English with Native Speakers.....	⑤④③②①
Experiment based (in and out classroom)	⑤④③②①
Others (please specify)	⑤④③②①
Teaching techniques	
Computer aided language learning.....	⑤④③②①
Role play.....	⑤④③②①
Use of humour	⑤④③②①

Using interactive method..... ⑤④③②①

Using drama method ..... ⑤④③②①

Others (please specify) ..... ⑤④③②①

Assessment and evaluation

Using worksheets for tests..... ⑤④③②①

Using worksheets for examination..... ⑤④③②①

Using tasks ..... ⑤④③②①

Using portfolio ..... ⑤④③②①

Using observation..... ⑤④③②①

Checking learners' progress ..... ⑤④③②①

Using criteria ..... ⑤④③②①

Others (please specify) ..... ⑤④③②①

Instructors

Native ..... ⑤④③②①

Pakistani ..... ⑤④③②①

Native and Pakistani..... ⑤④③②①

Teach English every year ..... ⑤④③②①

Teach English only first year..... ⑤④③②①

Practice project in English situation..... ⑤④③②①

Want to have English native friends..... ⑤④③②①

Teachers should use 100% English in class ... ⑤④③②①

Teachers should frequently talk in English .... ⑤④③②①

Teachers should teach four skills ..... ⑤④③②①

Teachers should guide students every time.... ⑤④③②①

Others (please specify) ..... ⑤④③②①

Content of using English **Want**

Modern contents based on:-

Journal ..... ⑤④③②①

The Internet ..... ⑤④③②①

Media..... ⑤④③②①

Some content should be taken from:-

English text..... ⑤④③②①

Local text..... ⑤④③②①

Others (please specify)…… ..... ⑤④③②①

Content should be in: -

(Please rank 1-6 in order of priority in which 1 = most want, and 6= least want)

□English □general □engineering □science

□history □culture of people speaking English

Part 4: Needs, wants, and likes of English courses improvement.

Instruction: Please tick marks (×) the item you choose.

Very strong need 5 Strong need 4 Moderate need 3 fairly need 2 rarely need1

To what extent do you want the objective of English course focus on:	**Needs**	**Wants**	**Likes**
Listening	⑤④③②①	⑤④③②①	⑤④③②①
Speaking	⑤④③②①	⑤④③②①	⑤④③②①
Reading	⑤④③②①	⑤④③②①	⑤④③②①
Writing	⑤④③②①	⑤④③②①	⑤④③②①
Tasks and Activities			
Individual	⑤④③②①	⑤④③②①	⑤④③②①
Pair	⑤④③②①	⑤④③②①	⑤④③②①
Group	⑤④③②①	⑤④③②①	⑤④③②①
Contents correspond to:			
Daily life	⑤④③②①	⑤④③②①	⑤④③②①
Learning	⑤④③②①	⑤④③②①	⑤④③②①
Working	⑤④③②①	⑤④③②①	⑤④③②①
Practice a skill through self:			
Face to face conversation	⑤④③②①	⑤④③②①	⑤④③②①
Telephone conversation	⑤④③②①	⑤④③②①	⑤④③②①
Skype conversation	⑤④③②①	⑤④③②①	⑤④③②①
Live conversation	⑤④③②①	⑤④③②①	⑤④③②①
Writing (SMS)	⑤④③②①	⑤④③②①	⑤④③②①
Practice a skill through class:			
Simulation	⑤④③②①	⑤④③②①	⑤④③②①

Role play	⑤④③②①	⑤④③②①	⑤④③②①
Real situation	⑤④③②①	⑤④③②①	⑤④③②①
In class:			
Suggestions	⑤④③②①	⑤④③②①	⑤④③②①
Comments	⑤④③②①	⑤④③②①	⑤④③②①
Discussions	⑤④③②①	⑤④③②①	⑤④③②①
Critical activities	⑤④③②①	⑤④③②①	⑤④③②①
Creative activities	⑤④③②①	⑤④③②①	⑤④③②①
Problem solving	⑤④③②①	⑤④③②①	⑤④③②①
Accept for criticize	⑤④③②①	⑤④③②①	⑤④③②①
Present with new media	⑤④③②①	⑤④③②①	⑤④③②①
Present with innovation	⑤④③②①	⑤④③②①	⑤④③②①
Others (please specify)……	⑤④③②①	⑤④③②①	⑤④③②①

Thank you very much

MANSOOR AHMED CHANNA

BIOGRAPHY

NAME	Mansoor Ahmed Channa
DATE OF BIRTH	May 13, 1974
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INSTITUTIONS ATTENDED	Shah Abdul Latif University, 1992-1994 Bachelor of Science (General Science) Shah Abdul Latif University, 1995-1997 Master of Arts (English) Mahidol University, 2011-2013 Master of Arts (Applied Linguistics)
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