DUMLUPINAR ÜNİVERSİTESİ ELEKTRİK ELEKTRONİK MÜHENDİSLİĞİ ÖĞRENCİLERİNİN YABANCI DİL GEREKSİNİMLERİ: "BELİRLİ AMAÇLI YABANCI DİL'E GERSİNİMLERİ VAR MI?"

LANGUAGE NEEDS OF
ELECTRIC-ELECTRONICS
ENGINEERING STUDENTS
AT DUMLUPINAR UNIVERSITY:
"DO THEY NEED ESP?"

Ayhan KAHRAMAN

(Yüksek Lisans Tezi)

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YÜKSEK LİSANS TEZ ÖZETİ

DUMLUPINAR ÜNİVERSİTESİ ELEKTRİK ELEKTRONİK MÜHENDİSLİĞİ ÖĞRENCİLERİNİN YABANCI DİL GEREKSİNİMLERİ: "BELİRLİ AMAÇLI YABANCI DİL'E GEREKSİNİMLEİ VAR MI?"

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Bu çalışmanın temel amacı Dumlupınar Üniversitesi (DPÜ), Mühendislik Fakültesi, Elektrik Elektronik Mühendisliği (EEM) bölümü öğrencilerinin dilsel gereksinimlerini ortaya koymaktır.

Bu amaç doğrultusunda, EEM bölümü öğrencilerinin yabancı dil istekleri, mühendislerin çalışma ortamlarındaki dilsel gereksinimleri ve öğretim elemanlarının öğrencilerin gereksinimleri hakkındaki görüşlerini öğrenebilmek için bir gereksinim analizi yapılmıştır.

EEM öğrencilerinin yabancı dil gereksinimlerini tarafsızca ortaya koyabilmek için farklı üç denek grubu kullanılmıştır: DPÜ Mühendislik Fakültesi EEM öğrencileri, bölüm öğretim elemanları ve mühendisler. Literatürdeki yaygın görüşe göre, yabancı dil müfredatı hazırlanırken öğrencilerin isteklerinin çok önemli olduğu, fakat yeterli olmadığı bilinmektedir. Bu nedenle öğrencilerin görüşlerine ek olarak hem bölüm öğretim elemanlarının hem de bu bölümden mezun mühendislerin görüşlerine başvurulmuştur.

Deneklerin görüşlerini alabilmenin birkaç değişik yolu olduğu bilinmektedir. Bu çalışmada araştırmacı tarafından hazırlanan "Gereksinim Anketi"nden yararlanılmıştır. Anket EEM bölümü öğrencilerinin tümüne, tüm öğretim elemanlarına ve bölümden son 5 yılda mezun olmuş ve rasgele seçilmiş 20 mühendise uygulanmıştır. Bu denek gruplarına uygulanan anket bir pilot çalışma ile önceden aynı bölümün "ikinci öğretim" öğrencilerine uygulanmış ve geçerlilik ve güvenirlilik testlerine bakılmıştır (bakınız Ek. E ve F). Veri analizi sonuçları yüzdelerle (frekans dağılımları ile) tablolara ve grafiklere dökülmüştür.

Bu çalışmanın en belirgin sonuçları öğrencilerin dilsel istekleri, eksiklikleri ve gelecekteki dilsel gereksinimleri olarak gözlemlenmektedir.

Elektrik-Elektronik mühendisliği bölümü öğrencilerinin yabancı dil öğrenmek istemelerinin birincil nedeni, yabancı dilin getireceği avantajlardan yararlanmaktır. Bölüm öğretim elemanları da bu görüşe katılmaktadırlar. Fakat mühendislerin tercihleri farklılık göstermektedir. İngilizce'nin evrensel bir dil olması ve mühendislik alanında yaygın kullanılması mühendislerin en önemli yabancı dil öğrenme nedenleri olarak gözlemlenmektedir. Literatürdeki yaygın görüşe göre, bu bakış açısı yabancı dil öğrenmenin global bir gereksinim olmasından kaynaklanmaktadır.

Üniversiteden mezun olduklarında İngilizce'de en çok hangi dil becerilerine sahip olmak istedikleri sorulduğunda, mühendisler ve öğrenciler en çok konuşma becerilerinin geliştirilmesi konusunda aynı düşünceyi paylaştıkları görülmektedir. Bölüm öğretim elemanları bu düşünceyi paylaşmakla birlikte, mühendislik öğrencilerinin çeviri becerilerinin de aynı derecede önemli olduğunu vurgulamışlardır. Öğrenciler; İngilizce kaynakları okuma becerisini ikincil öncelikli istekleri olarak belirtmişlerdir. Mühendisler bu düşünceyi paylaşmakla birlikte, çeviri becerisini de aynı derecede önemli olduğunu vurgulamışlardır.

İngilizce'de en çok hangi becerilerin eksikliğini çektikleri sorulduğunda ise, yine mühendisler ve öğrenciler konuşma becerisini en belirgin eksiklik olarak göstermişlerdir. Fakat mühendisler ve bölüm öğretim elemanları öğrencilerin bu görüşünü paylaşmamaktadırlar. Onlara göre en önemli dilsel gereksinim yabancı kaynakları okuma ve anlama becerisidir.

Öğrenciler gelecekteki dilsel gereksinimlerini ortaya koyarken birincil tercih olarak konuşma becerisini göstermektedirler. Çünkü, öğrenciler dil bilmeyi onu akıcı konuşabilme olarak algılamaktadırlar. Bu nedenle, öncelikle konuşma becerilerinin sınıf içerisinde daha etkin yürütülmesi gereği ortaya çıkmaktadır.

Mühendisler yukarıda belirtilen becerilere ek olarak, düşüncelerini yazılı olarak ifade edebilmeyi, mesleki kelime bilgisinin önemini ve yabancı kaynaklardan çeviri yapabilme becerisini vurgulamaktadır.

Son olarak; öğrenciler, mühendisler ve bölüm öğretim elemanlarının belirli amaçlı yabancı dil eğitimi verilmesi konusunda ortak bir fikre sahip olmaları düşüncesi ortaya çıkmaktadır.

Bu çalışma "gereksinim analizi"nin kullanılacağı diğer araştırmalara ve yabancı dil öğretiminde program hazırlayacak araştırmacı ve öğretmenlere yardımcı olacağı düşünülmektedir.

ABSTRACT

The main aim of this research has been to find out the language needs of Electric-Electronics Engineering students who are studying English at Dumlupınar University.

In order to identify E-E Engineering students' language needs objectively, the following groups of participants were used as informants: Students of Electric-Electronics Engineering of Dumlupınar University (DPU), engineers who graduated from DPU in the last 5 years, and instructors of Electric-Electronics department. Learners' linguistic wants and needs are unquestionably important in needs assessment but do not serve sufficient data for course designers and therefore engineers' and instructors' opinions about the needs have also been taken into consideration.

The main instrument used to assess linguistic needs of the E-E Engineering students is a questionnaire.

For the first group of participants 55 freshmen, 30 sophomores, 40 juniors and 30 seniors, in total 155 students were asked to fill in the needs analysis questionnaire.

For the second group, all the instructors of the department, in total 14, were given a reverbalized version of the questionnaire.

The last group consists of 20 randomly chosen engineers who were former students of the department. Another version of the reverbalized questionnaire was given to engineers and results were analysed statistically.

However, before having carried out this study, a pilot questionnaire was constructed and given to the fourth year secondary program students to obtain the validity and reliability of the questionnaire.

Pilot and final version of the questionnaire were validated through "response validity" and "face validity" tests. Reliability analyses were conducted through "split-half method" and "Crombach's alpha" test. These procedures have indicated ***reliable*** results as seen in Appendices E and F.

Since this study is descriptive in nature descriptive statistics such as percentages were used to analyse the data. Thus, the results of the analysis of the students', instructors' and engineers' questionnaires were presented in tabular and bar-graph forms.

The analysis of Electric-Electronics engineering students' needs described in this study has revealed that there are similarities and differences of opinion among participants.

The most important similarity or difference lies under students' current linguistic wants, lack of language skills and future linguistic needs.

When E-E Engineering students were asked what their purpose of learning English was they estimated as the most important purpose that having a good knowledge of English will provide them language benefits. The instructors believe also that Electric-Electronics engineering students learn English for individual benefits.

On the other side, engineers' preferences were not similar with those of the students' and instructors'. Engineers were more interested in the global side of English. They emphasized the essentialness of English in the area of engineering and learn English because it is a universal language. Hutchinson and Waters (1987:6) mention that English is the key to the international currencies of technology and commerce and advocated the global face of English as lingua franca. Language learners require English as a means of furthering their specialist education or as a means of efficiently performing a social working role as a scientist, technologist, technician, etc (Mackay and Mountford, 1978:6). In this case, language learning is not only a local but also a global need. As the second most important purpose students highlighted the point that English is very necessary for engineering area. This part of the study indicates that there is a need to develop language skills for E-E Engineering students for use within professional setting.

In the second section of the research, participants were asked which language skills they would like to have mastered the most before graduation. Students' and engineers' upper most desire is the act of speaking. Instructors think that the students should be able to speak English fluently but on the other hand they emphasized the importance of translation. Most observers would agree that scientific and technical knowledge is communicated through printed documents. To get this knowledge, people should be able to read thoroughly and do a "relevant" translation.

Most of the students secondary choice is related with reading skills, namely they would like to read newspapers, magazines, books and papers in English.

When the participants were asked what their present linguistic lacks were, students and engineers again pointed out the lack of speaking skill. Such information is important for understanding the learning needs of each student in class, their strengths as well as areas of greatest need (Bosher, 2002:67). Thus, participants were also asked about the language skills which they intend to use in their professional life in the future. Most of the students believe that they will mostly need **speaking skills** in their vocational fields. That is, the students are certain about the insufficiency of oral practice in English.

However, engineers and instructors do not seem to share the same opinion. Their upper most need is stated as ***"reading and comprehending"*** the publications in English. Walsh (1982:143) claims that most observers would agree that scientific and technical knowledge is communicated mainly through printed documents: scientific texts, science textbooks, research papers, technical manuals, and technical handbooks.

Additionally, engineers highlighted also the lack of translation ability from foreign sources. Translation is highlighted as one of the most important skills because at informal discussions students, engineers and instructors mentioned that departments -at school and at work- might require them to do translation.

Finally, all the participants were certain about the need of language for specific purposes. Additionally, they were also certain about the need of English for occupational purpose (EOP). That is; students, engineers and content course teachers felt the need of instructing in ESP.

It is believed that the findings of this study will provide useful data for language teachers and course designers to train more successful language learners. Consequently, this study might be used for further studies where similar circumstances occur which require a needs assessment.

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Ayhan KAHRAMAN'ın, "LANGUAGE NEEDS OF ELECTRIC-ELECTRONICS ENGINEERING STUDENTS AT DUMLUPINAR UNIVERSITY: "DO THEY NEED ESP" başlıklı tezi 06/05/2004 tarihinde, aşağıda belirtilen jüri üyeleri tarafından Anadolu Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliğinin ilgili maddeleri uyarınca Yabancı Diller Eğitimi Anabilim Dalı İngilizce Öğretmenliği Programı yüksek lisans tezi olarak değerlendirilerek kabul edilmiştir.

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LIST OF ABREVIATION

DPU	- Dumlupınar University
E-E	- Electric-Electronics
EFL	- English as a Foreign Language
ESL	- English as a Second Language
ESP	- English for Specific Purposes
N	- Number of Participants
PSA	- Present Situation Analysis
TSA	- Target Situation Analysis
SPSS	- Statistical Package for the Social Sciences
p	- Probability
EEM	- Elektrik-Elektronik Mühendisliği

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CHAPTER I

INTRODUCTION

1-1 Introduction

The English language has become, especially since World War II, the most important language in the world for international communication. It is also the main language used in the international scientific and technical community. As a result, the last 30 years or so have seen the emergence of special English courses for nonnative speakers which have been concerned, mainly, with teaching English to science and technology students (Walsh, 1982:143). An important reason for the emergence of these special courses has been the demand from the Third World countries for the scientific and technical knowledge of the advanced industrialized countries. Governments, educational institutions, and private companies in many parts of the world have correctly perceived the connections between the English language and science or technology.

Hutchinson and Waters (1987:21) named these special courses as English for a Specific Purpose (ESP) and defined them, as an approach to language learning, which is based on learner, needs. Thus, the question of "Why do these learners need to learn English?" should be starting point to any course in English.

While designing an ESP course, the first step is to analyze the needs of the learners so that the course will include the necessary linguistic and conceptual knowledge and skills that the learners need to learn (Hutchinson and Waters, 1987:21).

Needs analysis should combine target-situation analysis with present-situation analysis. Since a need is defined as "a gap or measurable discrepancy between a current state of affairs and a desired future state" (Bosher and Smalkoski, 2002:59; Berwick (1989:52). In other words, needs analysis shows "the gap between what is and what should be" (Brindley 1989:65).

Established in 1992, Dumlupınar University with seven faculties is a state university in Kütahya, Turkey. The Faculty of Engineering consists of six departments and Electric-Electronics Engineering is one of them.

These departments have different disciplines and branches and their students' have to take compulsory English courses; English I and English II. The main aim in teaching English is to foster a creative use of some skills to meet specific needs and interests and to increase students' attitudes and abilities at getting information and to develop interest and motivation (Akar, 1999). For example, it is observed that Electric-Electronics Engineering students have to read definitely in English for their courses. More importantly, they may need to read for their careers after graduation.

So, the syllabus of the English courses, English I and English II, should take Electric-Electronics Engineering students' linguistic wants and needs into consideration. While designing these English courses learners' needs have been of prime importance but considering only students' needs may not serve sufficient data. Engineers' and content course instructors'opinions about the learners' needs should also be taken into consideration. For instance, today in Turkey, many employers expect their employees to have a good command of foreign languages-especially English- as well. Also, content course teachers state that their students have to acquire at least some basic reading strategies and that they should be encouraged to keep up with the Engineering literature and in the subject-related areas.

Therefore, it is thought that Electric-Electronics Engineering students' needs could be discovered by a needs analysis.

1-2 Statement of the Problem

Beginning in the early 1960s, there were many reports from around the world of a growing dissatisfaction with the language teaching practice then current, where all learners were served up with literature regardless of their aims, needs, or interests (Mc Donough, 1984:84). Strevens (1971) in his article *Alternatives to Daffodils* pointed out the irrelevance of a literary training to large numbers of learners for whom English was a tool in a job or profession (cited in Hutchinson and Waters, 1987:9). Wingard

(1971:55) also described his students' frustration in learning inappropriate English, and set out his own attempts to establish a more relevant program in a university context.

Such mismatch is not a thing of the past; ten-year experience, observations and informal discussions held with the students of Electric-Electronics Engineering at Dumlupınar University showed that the students were not satisfied with the current English program. They say they have to do a lot of reading and translating from science journals, periodicals and books but have difficulties in comprehending the reading passages because they do not know the vocabulary and structures used. They stated that they wish to speak fluently and practice their English, but they are only required to learn grammatical structures.

To avoid such mismatches, frustration or dissatisfaction, it should be made clear why the learners will take English courses and what they expect to learn in those courses. In Bowers' words (1980:67) " ... If we accept... that a student will learn best what he wants to learn, less well what he only needs to learn, less well still what he neither wants nor needs to learn, it is clearly important to leave room in a learning program for the learner's own wishes regarding both goals and processes".

Mackay (1965, cited in Kormos, 2002:518) has pointed out that since it is impossible to teach the whole of a language, all methods must select the part of it that they intend to teach. Therefore, it is necessary that the English department have reliable information on the language use of these students during and after their studies so that what is taught and what is tested can match their needs as closely as possible.

Such investigations are focused on the global level, namely on "the situations in which learners will need to use the language and language related activities which typically occur in those situations" (Tarone and Yule, 1989:37).

Consequently, there seems to be a necessity for a systematic needs assessment and therefore this study was conducted to determine Electric-Electronics Engineering students' linguistic needs at Dumlupınar University.

1-3 Purpose of the Study

This study tries to specify students' linguistic needs by handing out questionnaires to content course teachers, students and former students of the

department, i.e. engineers. It is necessary to analyse learners', engineers' and content course teachers' views to state the required linguistic and conceptual knowledge that the learners need to learn in their academic studies and/or vocational fields. As teachers we have insufficient information about engineering students' use of the target language outside the university and as researchers we have less information concerning the type of situations in which engineering students might need the language after graduation.

Thus, it is very important to make an extensive survey and compare students' linguistic wants with engineers' and content course teachers' opinions since comparing participants' views will indicate the needs and provide useful data for better curriculum designs in and outside the department. The learners play an active role when we ask them their linguistic needs. Hutchinson and Waters (1987:55-56) have defined these needs as wants. As Richtrich (1984:29; cited in Hutchinson and Waters, 1987:56) comments: "... a need does not exist independent of a person. That is, he builds his images of his needs on the basis of data relating to himself and his environment."

It was the realization of above-mentioned thoughts that let us to the design of a needs analysis survey at Dumlupınar University, Engineering Faculty, Electric-Electronics Engineering Department, Kütahya.

The results of the investigation might give useful data for current approach(es) and these can be used in re-structuring the current foreign language curriculum at the E-E Engineering Department.

Although the actual language needs of Electric-Electronics Engineering students might vary regionally, the applied process of questionnaire design, validation and data analysis can serve as a model or example for other institutions as well.

1-4 Research Questions

This study tries to answer the following research questions:

1. For what purpose do Electric-Electronics Engineering students at Dumlupınar University learn English?
2. Which language skills do the Electric-Electronics Engineering students at Dumlupınar University mostly need?
3. Do the students in different years show any similar tendency regarding their language needs?
4. Do the students, graduates and subject specialist instructors show any different tendencies regarding students' language needs?

CHAPTER II

LITERATURE REVIEW

2-1 Introduction

Having emerged in 1960s, English for Specific Purpose (ESP) is not a new term in the field of ELT. From that time on, with a number of learners who want to learn English immediately for specific purposes, the term ESP has gained importance and become a branch of ELT.

Peter Strevens in 1964, Jack Ewer in 1969 and John Swales in 1971 were operating on the basic principle that the English of electrical engineering constituted a specific register different from that of general English. The aim of the analysis was to identify the grammatical and lexical features of these registers (cited in Hutchinson and Waters, 1987:9).

In fact, as Ewer and Latorre's syllabus shows (1969), register analysis revealed that in the sentence grammar of scientific English was a tendency to favor particular forms such as the present simple tense, the passive voice and nominal compounds. This analysis was not found any forms that were not in General English but underlined the fact that all courses are based on perceived need of some sort (cited in Hutchinson and Waters, 1987:10).

As Robinson (1991:7) also mentioned, the aim of such analyses is to produce a syllabus, which gives high priority to the language forms that students would meet in their science studies.

Ewer and Hughes-Davies (1971) have compared the language of the texts their science students had to read with the language of some widely used school textbooks. They found that the school textbooks neglected some of the language forms commonly found in science texts; for example, compound nouns, passive, conditionals, modal verbs. Their conclusion was that the ESP course should give precedence to these forms (cited in Hutchinson and Waters, 1987:10).

As mentioned by Vincent Walsh (1982:143-47), special English courses for non-native speakers have gained importance. It also claimed that most observers agree that

scientific and technical knowledge is communicated mainly through printed documents but it seems to be obvious and yet is in need of stating that science texts are very complicated documents for non-native students as well as for natives. This is a product of three variables: the linguistic, the rhetorical, and the conceptual.

The linguistic part of scientific texts is the language and can be described in terms of vocabulary and syntax. It is said that in any examination of the vocabulary of scientific texts the specialist vocabulary from the subject area is an obvious focal point.

The rhetoric part of scientific text is much more involved with the organization of the language, presentation of the knowledge and writer's assumptions about the reader.

The conceptual part of scientific texts, in addition to linguistic assumptions, the writers of these texts makes assumptions concerning the conceptual knowledge of the reader. These conceptual assumptions are concerned with the rhetoric of texts. It could be argued that a distinction ought not to be made between language and concepts, since concepts are expressed through language; hence the conceptual difficulty of a text is in fact the linguistic difficulty of the text.

Shortly, many readers at some stage in their reading life have been able to read and understand a sentence or paragraph at one level, which might be called linguistic level and fail to understand it at another level, which might be called the conceptual level.

This complexity, better said the rhetorical and conceptual part of a scientific text causes some problems even for EFL/ESL teachers. For instance, Selinker (1979:191-92) describes in his research project involving the study of an academic article in Genetics by a group of ESL teachers and discussion of their questions by a specialist informant. What emerged was that the teachers were not only ignorant of the meanings of technical terms, but that they could not identify when "common language words" were being used technically, misunderstood the meaning – in context – of certain model verbs connectives and even punctuation, because of their lack of specialist knowledge, did not in fact realize.

Cause of the above-mentioned reasons, many linguists as Dresdner (1981:243) attempts to show why the teaching of scientific English at the university level is important and to spell out an approach as to how this type of English can be effectively taught.

He showed the Chilean university students who are inevitable faced with textbooks in English. If the literature on scientific topics is in English, it is inevitable to teach scientific English. For the second question, he suggested to sequence the characteristics of scientific English, such as use of passive voice, functional shifts, special compounds etc (Dresdner, 1981:243-46).

Lutoslawska (1981:247-49) also made similar suggestions and shared her experiences at the university of Krakow and supports Dresdner with the idea that technical university students should have scientific English courses because they need the ability to read technical texts, books or articles and prepare papers for seminars. That means they should have scientific knowledge for reading or dealing with such texts. It is obvious that technical texts not only employ a specialized vocabulary; they also use special structures (passive voice etc.) that occur more often in technical than in literary texts.

Wiriyachitra's study (1982:148-51) at Prince of Songkla University is about reinforcing the development of reading ability. Since scientific materials are saturated with ideas, they require careful and thorough reading. A proficient reader must coordinate a number of skills: he must read rapidly as well as with a thorough understanding of the subject matter.

Many factors are considered when designing a course curriculum or course material for a second language classroom. Identifying the learners' needs, assessing the availability of materials and their appropriateness for the learners, and considering the kind of teaching and learning are some of these factors (Jordan, 1997).

Hutchinson and Waters' (1987:3) outline of "A learning-centered approach to ESP" starts with an overview of the origins and development of ESP and considers the question of how ESP fits into the general landscape of English Language Teaching (see Figure1). Then, they look at basic principles and techniques in course design and ask how a teacher or course designer creates a course to fit the needs of a particular group of learners.

The next step is concerned with the practical applications of the course design in the form of a syllabus, materials, methodology and assessment.

They finally consider the role of the ESP teacher and provide information about resources to help the teacher.

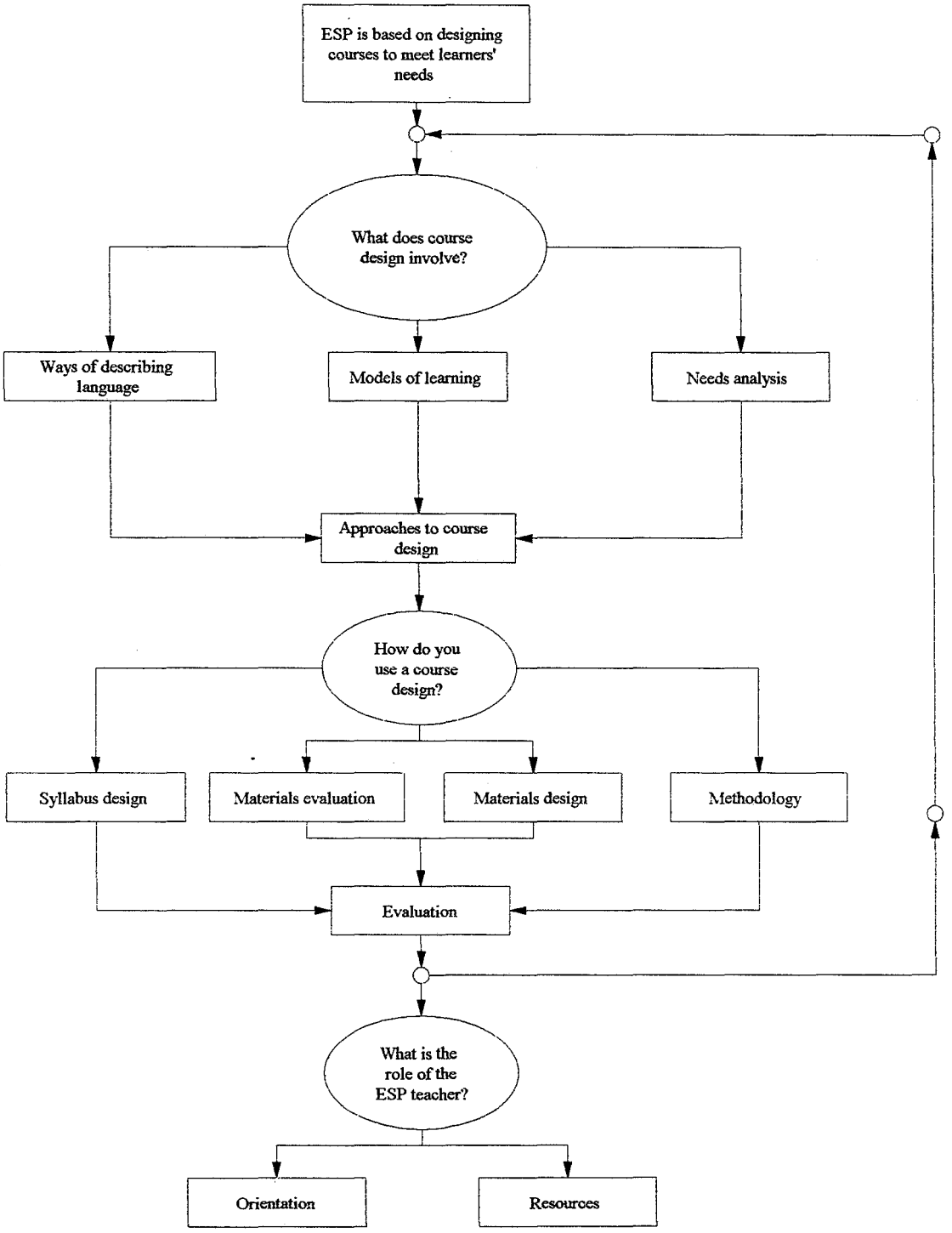

Figure1 :A Learning-Centred Approach to ESP by Hutchinson and Waters (1987)

2-2 Meanings of Needs and Needs Analysis

2-2-1 Needs

The first essential point to make is that needs 'do not have of themselves an objective reality' (Brindley; quoted in Robinson,1981:7). 'What is finally established as a "need" is a matter for agreement and judgment not discovery' (Lawson quoted in Robinson,1981:7). The needs that are established for a particular group of students will be an outcome of a needs analysis project and will be influenced by the ideological preconceptions of the analysts. A different group of analysts working with the same group of students, but with different views on teaching and learning, would be highly likely to produce a different set of needs.

A number of people (for example Berwick, Brindley, Mountford, Widdowson, quoted in Robinson, 1981:7) have discussed the different meanings or types of needs. First, needs might refer to students' study or job requirements, that is, what they have to be able to do at the end of their language course. This is a goal-oriented definition of needs (Widdowson). Needs in this sense 'are perhaps more appropriately described as "objectives"' (Berwick). Second, needs might mean 'what the user-institution or society at large regards as necessary or desirable to be learnt from a program of language instruction' (Mountford). Third, Widdowson considers as a process-oriented definition and relates to transitional behavior. Fourth, it is considered as that the students themselves would like to gain from the language course. This view of needs implies that students may have personal aims in addition to (or even in opposition to) the requirements of their studies or jobs. Berwick has noted that such personal needs 'may be devalued' by being viewed as 'wants or desires'. Finally, we may interpret needs as lacks, that is, what the students do not know or cannot do in English.

Some of these views of needs have been paired, and the members of each pair seen as polar opposites, although the distinctions are not as clear-cut as might be supposed. For example, we can contrast the views of learners and of teachers. Widening the scope of teachers to include authorities, we may note that, in some cases, there is a discrepancy between students' specialist course of study or job and the one, which they

would prefer. In such cases, we might expect students/learners and authorities/ teachers to have different views of the goals and content of the ESP course.

Another possible contrast is between o*bjective* and *subjective* needs:

> The first of these terms ... refers to needs which are derivable 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. The second term refers to the cognitive and affective needs of the learner in the learning situation, derivable from information about affective and cognitive factors such as personality, confidence, attitudes, learners' wants and expectations with regard to the learning of English and their individual cognitive style and learning strategies (Brindley;quoted in Robinson, 1991:8).

Very often, it is the teachers who will perceive the objective needs and the learners who will perceive their subjective needs. However, this is certainly not necessarily the case. Many ESP students have a clear view of some if not all of their objective needs. Conversely, 'many learners may not themselves perceive a particular subjective need (e.g. the need to develop confidence) which a teacher is capable of seeing' (Brindley; cited in Robinsion,1991:8). Other pairings of contrasted views of needs include perceived versus felt needs (perhaps covering the same ground as objective and subjective needs) and target versus learning needs (covering the same ground as goal-oriented and process oriented).

2-2-2 Target Situation Analysis (TSA)

A needs analysis which focuses on students' needs at the end of a language course can be called a target situation analysis (TSA). The best known framework for a TSA type of needs analysis is formulated by Munby (1985:82), who presents a communication needs processor, comprising a set of parameters within which information on the students' target situation can be plotted.

2-2-3 Present Situation Analysis (PSA)

As a complement to TSA we may posit PSA (present situation analysis). A PSA seeks to establish what the students are like at the start of their language course, investigating their strengths and weaknesses. Richterich and Chancerel give the most

extensive range of devices for establishing the PSA. They suggest 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 we shall seek information regarding their respective levels of ability; their resources, for example financial and technical; and their views on language teaching and learning (Robinson, 1991:9).

Similar to Richterich and Chancerel, Jordan (1997) defines needs analysis within four categories (see Figure 2):

1. Student needs
2. Course designer or teacher needs
3. Target-situation needs
4. Employer or sponsor demands

According to Jordan, student needs were handled from student perspective and seen as wants and/or lacks. Course designers and teachers consider needs as perceived needs for present and future purposes. Finally, sponsors and employers are product oriented and needs are seen as demands.

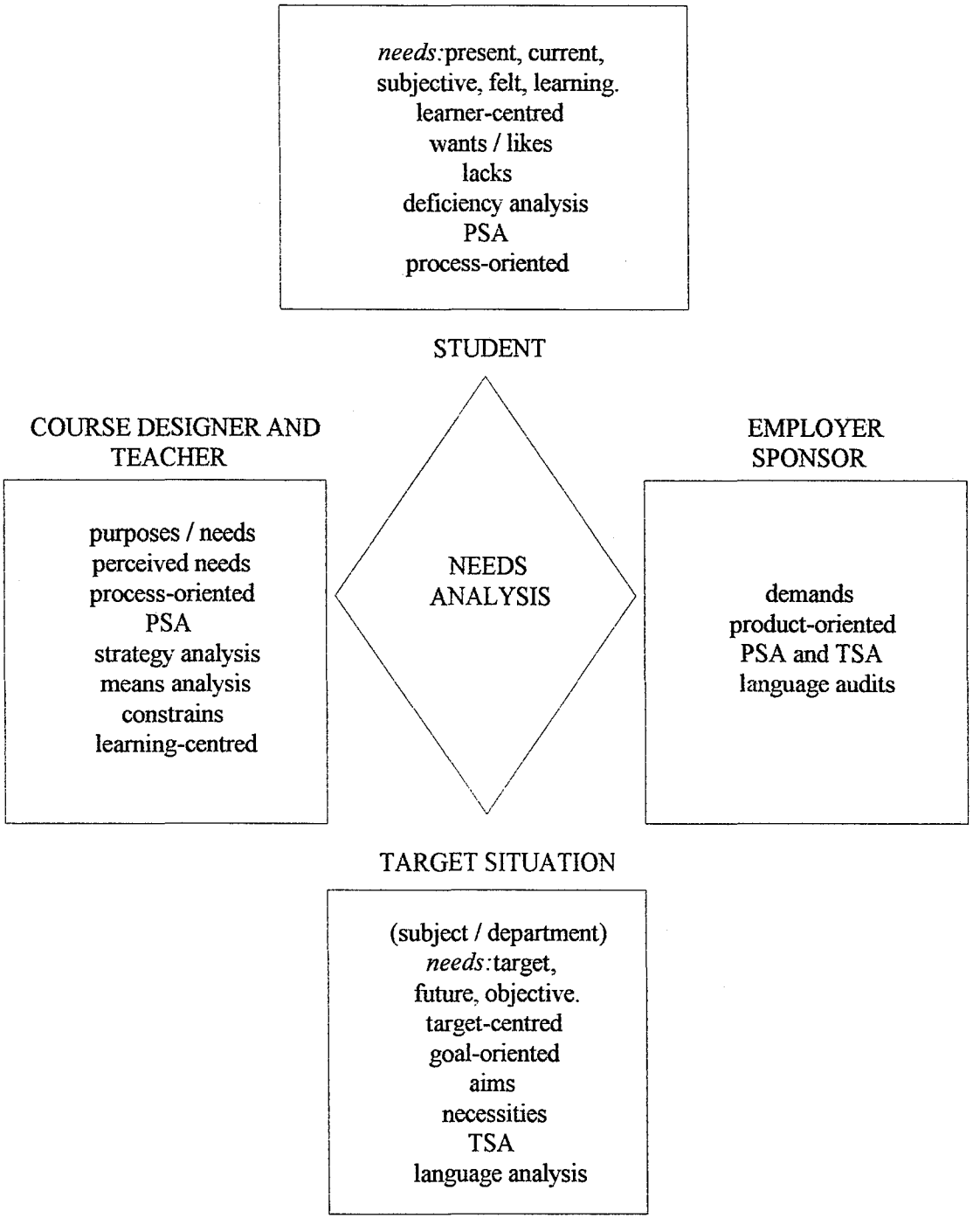

Figure 2. Needs analysis defined by Jordan (1997, p. 29, cited in Akar)

2-3 The Practice of Needs Analysis

Schroeder (1981) suggested that there were essentially four techniques for investigating needs: The questionnaire, the detailed interview, participating observation and press ads. By press ads, he meant that advertisements of job vacancies in the newspaper might indicate the language needs of jobs (cited in Robinson, 1991:12).

He mentioned the advantage of a questionnaire as it can be submitted fairly easily to a large number of people and it is likely that the questionnaire seeks information for both TSA and PSA.

2-4 When Should the Needs Analysis Be Carried Out?

There is general agreement that as much as possible of the needs analysis should be completed before any course or series of courses starts. Richterich and Chancerel, Holliday and Cooke and others, also suggest that needs analysis needs to be repeated during the life of each course because the PSA may change (cited in Robinson, 1991:15).

2-5 Accounts of Practical Experience

Knight (cited in Robinson, 1991:16) describes a one-off one-week course for German technical staff engaged in discussions on quality control with a firm of US consultants. The discussions had just broken down, which was the reason for the ESP course, and so the 'target' needs were actually very immediate. Knight did in fact obtain some information before the start of the course — from telephone calls, company literature and a textbook on quality control. However, he suggests that the identification of 'learner-related needs' is a product of the developing course and the developing rapport between teacher and students or clients. He stresses the importance of 'first-day analysis', which gives both overt information (through interviews, for example) and covert information (for example through simulations, which are a learning activity for

the students but which give diagnostic information to the teacher). As the week progressed, it became clear that the reason for the breakdown was not what the clients had assumed and was perhaps attitudinal rather than linguistic, a conclusion which only emerged through simulation and discussion and which could probably not have been identified before the start of the course.

In 1987 a report entitled "Testing in Finnish University Language Centres" (Economou, cited in Mason, 1994) was produced at Jyväskyla University. This report included a general needs analysis for all the listening comprehension and oral skills courses offered by the language centers throughout Finland. This needs analysis suggested that most students had no immediate listening and speaking needs related to their courses.

The report states (1987:27):

> The only target language needs they [students] have in the short term are in leisure contexts:
> - listening to music, television, or films
> - socializing with native-speaker visitors to Finland
> - traveling to other countries as a tourist

But as the report points out, the university (in this case the sponsor) prefers the language courses to be subject-specific rather than general. This being the case, long-term needs must be considered. The two long-term needs the report identifies are: (1) future needs in certain professions (e.g., dealing with clients who speak the target language), and (2) discussions with professionals from other countries at seminars or conferences.

Studies about the German language needs of foreign engineering students at the Technical University of Berlin (TU Berlin) have shown that good general language knowledge does not necessarily enable learners to use their language skills in situations specific to their specialism. (Monterio et al., 1997, cited in Dlaska, 1999:402) As the authors of the study found, particularly in the field of spoken communication, students with a good general knowledge of German were not able to verbalize the most basic tasks and processes in their field of expertise. They infer that what many LSP-courses at British universities offer does not prepare students adequately for what they aim to train them for in the first place — to study at a foreign university, or to go on a work placement abroad. In his paper, he put forward some principles concerning the teaching

of LSP in Higher Education, which aim at bringing the language skills offered in LSP-courses in line with learners' needs. Practical suggestions for teaching programs integrating those principles are based on a German for Engineers course he teaches at the University of Warwick, UK.

During the academic year 1997-1998, Susan Bosher and Kari Smalkoski (2002:59-79) conducted a needs analysis on the Minneapolis campus of the College of St. Catherine, to determine why many of the ESL students enrolled in the Associate of Science (A.S.) degree nursing program were not succeeding academically. Several procedures, primarily interviews, observations, and questionnaires, were used to gather information about the objective needs of the students, all of whom are immigrants. The course Speaking and Listening in a Health-Care Setting was developed to respond to what was identified as students' area of greatest difficulty: communicating with clients and colleagues in the clinical setting. The content of the course is divided into four units: assertiveness skills, therapeutic communication, information-gathering techniques, and the role of culture in health-care communication. A variety of methods and materials, drawn primarily from sources for developing health-care communication skills in native speakers, were used to actively engage students in the learning process, with particular emphasis on role-plays. The course has been very successful in helping students learn how to communicate more effectively in clinical settings. By helping culturally and linguistically diverse students succeed in their programs, the course is also helping to bring much needed diversity to the health-care professions in the United States.

2-6 Summary

In this chapter literature on needs analysis in the light of English for Specific Purposes (ESP) was reviewed and related studies were stated.

The following methodological chapter will present some introduction to methodology used in this research, the participants, development of the instrument, data collection procedure and data analysis.

CHAPTER III

METHODOLOGY

3-1 Introduction

This study investigates the linguistic needs of the students of the Electric-Electronics Engineering Department at Dumlupınar University. It also takes subject specialists' and engineers' views into consideration.

As teachers of this department with 10 years of experience, they had implicit views of what students need to know in order to function effectively in academic settings. There is also a large body of literature that describes the academic skills university students need to acquire (Jordan, 1997; cited in Kormos, 2002:517-42).

Nevertheless, they knew very little about the purposes that Electric-Electronics students use the target language for outside the university, and they had even less information concerning the type of situations in which students might need the language after graduation.

Nunan (1999:148) suggests that the content of language courses should reflect the purposes for which the students learn the language. Rather than fitting students to courses, courses should be designed to fit students.

This chapter consists of four parts. The first part includes information about the participants. The second describes part development of the instrument. The third part presents data collection procedure and finally, the fourth part describes the data analysis.

3-2 Participants

The participants of this research were selected from three different subject groups: Students, graduates and subject specialist instructors.

The first and the largest group was composed of all the 155 undergraduate students of the Electric-Electronics Engineering Department, at Dumlupınar University - 55 freshmen, 30 sophomores, 40 juniors and 30 seniors. Second group consists of 14

content course instructors of the E-E department and the last group involves 20 engineers, randomly chosen but graduated from this department in the last five years and work in private sector or for the government.

Learners' wants and needs are unquestionably important in needs assessment but asking or finding out only learners' needs may not be enough for course designers. For that reason, data was also gathered from content course instructors and engineers.

As Wiriyachitra (1982:149) states, the subject specialist instructors are also a very important resource people during all phases of the course development. The design of the syllabus from the needs profile, with the help of the subject specialists, make the language program more meaningful and useful to the learners.

However, as Kormos (2002:517-42) also mentioned, subject specialists and language teachers were able to know very little about the purposes engineering students use the target language for outside the university and as researchers we had less information concerning the type of situations in which engineering students might need the language after graduation, since they can attend a wide variety of working places.

So, it is very crucial to make an extensive survey and compare students' linguistic wants and needs with those of the graduates of this department.

For that reason, in this study the data has been collected from all of these mentioned groups of participants and their views will be compared and contrasted to provide useful data for better curriculum designs in and outside the department as Hutchinson and Waters (1987:59) stated before.

Participants were told that they would take part in a study in order to develop the language program. For that reason, participating in this study would be very useful for their own benefit and for the future students.

They were also assured of the confidentiality of the information they would report in their questionnaires.

3-3 Development of the Instrument

Needs analysis is the starting point of developing a syllabus. Therefore, the needs of the students for whom a syllabus will be designed should be stated very carefully (Mc Donough, 1984:29; Flowerdew, 1990:327).

The main instrument used to assess linguistic needs of the E-E Engineering students at Dumlupınar University is a questionnaire. The major advantage of the questionnaire is that data can be collected from large number of respondents in a cost-effective way within short period of time (Kormos, 2002:21).

If the respondents are chosen appropriately, the results obtained with the help of the questionnaires can be generalized to the target population.

For source of items, we did not only make use of existing questionnaires (by Bosher and Smalkoski, 2002; Kormos et al., 2002; Akar, 1999; Ertaş, 1998; Pişiren, 1996; Mohamed, 1987) but collected preliminary qualitative data from E-E engineering students at D.P.U. Fifty freshmen students of E-E Engineering Department were asked for itemizing their thoughts according to these questions:

1. What is Electric-Electronics Engineering students' current purpose of learning English?
2. What are Electric-Electronics Engineering students' linguistic necessities?
3. What kinds of advantages will "an appropriate" language education provide for Electric-Electronics Engineering students?

The result of the survey is a description of the E-E Engineering students' situations in which they use the target language at present and in which they foresee they will need English after graduation.

The obtained categories or items together with those found in the literature were used to compile the first version of the questionnaire namely the pilot version (see Appendix A).

The pilot questionnaire was prepared in Turkish for the purpose of better understanding.

After the pilot version of the questionnaire was compiled, it was submitted to tests of validity and reliability. A pre-condition is that the questionnaire used must be both valid and reliable.

In order to ensure that the respondents interpret the questions in the same way as intended by the researcher, and to see if they fully understand the questions, the

technique of verbal reporting-testing -**Response Validity**- was used (Alderson and Banerjee, 1996, cited in Kormos et al., 2002). Five randomly chosen E-E Engineering students from the target population were asked to think aloud while filling in the questionnaire.

Then, it is intended to check the reliability so a pilot run with the first version of the questionnaire was conducted.

Twenty-nine second education senior class E-E Engineering students answered the pilot questionnaire.

For reliability analysis Cronbach's Alpha and Split-Half methods have been used and the results indicated the reliability as seen in alpha criterion table (see Table 3). For the full analyses results see Appendices E and F.

Reliability Analysis – Scale (Alpha)	
Reliability co-efficient for 34 items	N of cases = 29
Cronbach's Alpha	=, 6762
Standardized item Alpha	α =, 7563
Probability	P =, 0000

(see Appendix E)

Reliability Analysis – Scale (Split-half)			
Reliability co-efficient for 34 items		N of cases = 29	
Reliability Coefficients 34 items			
Correlation between forms	=, 5022	Equal-length Spearman-Brown	=, 6686
Guttman Split-half	=, 6361	Unequal-length Spearman-Brown	=, 6686
Alpha for part 1	=, 7048	Alpha for part 2	=, 1398
17 items in part 1		17 items in part 2	
P =, 0000			

(see Appendix F)

Table 3. Criterion for Reliability of Alpha (α)

$0.00 \leq \alpha < 0.40$	=	not reliable
$0.40 \leq \alpha < 0.60$	=	low reliability
$0.60 \leq \alpha < 0.80$	=	quite reliable
$0.80 \leq \alpha < 1.00$	=	high reliability

(Özdamar, 1999:522)

The pilot version of the questionnaire is handed out to 20 faculty at Anadolu University, Institution of Educational Sciences and at Dumlupınar University Engineering Faculty for checking Face Validity for getting their expert views. We had 13 very valuable feedback.

In the light of experts' feedback, itemization results and the pilot study, the final version of the questionnaire, i.e. student questionnaire, is constructed (see Appendix B).

3-3-1 Instrument

The results of piloting of the questionnaire, experts' feedback and itemization results led to some changes and revisions towards the final version of the questionnaire. That is, questions and items were revised and refined relying on the feedback. After the final reshaping, student questionnaire was administered. This modification did not affect reliability of the questionnaire. Standardized item Alpha $\alpha =$ **,7844** (see Table 3).

Student questionnaire (see Appendix B) was reverbalized when used with former students of this department (i.e. engineers, see Appendix C) and content course teachers (see Appendix D), but only to the extent necessary to make it appropriate for the target population.

These above-mentioned questionnaires consist of three parts:

Part I contains demographical information (12 questions) about participants' age, sex, education, etc. However, while analyzing data, personal information was not taken into consideration.

Part II contains five rank-order questions and seeks students' present and future needs. Participants had to list different choices by ranking in order of importance or necessity.

The third part of the questionnaires consisted of 15 Lickert-scale type questions and seeks information about what a foreign language course should provide E-E Engineering students. Participants had to choose the most suitable item for each statement, which ranged from strongly agree (1) to strongly disagree (5).

As far the first 12 questions aimed at obtaining demogaphic data, the questions have been individually analyzed starting from the 13th question onwards:

13th Question refers to Purpose of learning English

14th Question refers to Language wants of E-E Engineering Students

15th Question refers to Present linguistic lacks of E-E Engineering Students

16th Question refers to Current language use of E-E Engineering Students

17th Question refers to Future linguistic Needs of E-E Engineering Students

3-4 Data collection

The main instrument used to assess linguistic needs of the Electric-Electronics Engineering students was a questionnaire and administered primarily in Dumlupınar University, Engineering Faculty, and Department of Electric-Electronics Engineering in May 2003.

Electric-Electronics Engineering students' questionnaire was applied in the subjects' classroom at their regular scheduled class time. That means the questionnaire was administered in four separate lecture sessions to a total of 155 undergraduate students - the freshmen, sophomore, junior and senior classes.

Questionnaires were given to 14 content course teachers and 20 engineers. Respondents were requested to fill in the questionnaire. No time limit was imposed, but respondents took between 15 and 20 minutes to complete the questionnaire.

3-5 Data Analysis

Questionnaire results were computer-coded and analyzed quantitatively with the help of the Statistical Package Program for Social Sciences (SPSS).

This study was descriptive in nature and descriptive statistics such as percentages was employed to analyse the data.

The analysis results of students', instructors' and engineers' questionnaires were then presented in tabular and bar-graph forms (see Appendices G-H-I-J).

CHAPTER IV

RESULTS

The aim of this study was to investigate the linguistic needs of Electric-Electronics Engineering students at Dumlupınar University, Engineering Faculty.

To state what the language learner needs to know in order to function in the target situation, a needs analysis should be carried out and data could be gathered from subject teachers, engineers and learners themselves (Adams-Smiths, 1986; cited in Pişiren, 1996). In other words, the needs analysis shows the gap between what is and what should be (Kormos, 2002:521).

In order to achieve the goal of this study, a needs analysis questionnaire has been conducted and data on students' present and future linguistic needs was collected.

In addition, their needs have been compared and contrasted with those of the teaching staff and engineers, since the aim is to discover the needs of the students objectively.

Alan (1983) has pointed out that no one could learn a language totally. Even native speakers use only a small portion of their language. With the help of needs analysis we should concentrate on what the learner will need to use the language for when finishing the course (cited in Pişiren, 1996).

The results of the analysis of the students', instructors' and engineers' questionnaires were presented in tabular form.

Presentation of Results

4-1 Purpose of Learning English

13^{th} question of the questionnaire presents results concerning students', instructors' and engineers' views on the purpose of learning English.

Table 1. Frequency of purpose of learning English (Question 13)
Items (1-13) as first choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1*	10	18,2	4	13,3	7	17,5	10	33,3	**5***	**25,0***	2	14,3
2	-	-	1	3,3	-	-	2	6,7	1	5,0	-	-
3*	**26***	**47,3***	**16***	**53,3***	**23***	**57,5***	**11***	**36,7***	3	15,0	**8***	**57,1***
4*	10	18,2	8	26,7	5	12,5	4	13,3	**5***	**25,0***	3	21,4
5	-	-	-	-	-	-	-	-	1	5,0	-	-
6	3	5,5	-	-	2	5,0	1	3,3	-	-	-	-
7	2	3,6	-	-	-	-	-	-	1	5,0	1	7,1
8	-	-	-	-	-	-	-	-	-	-	-	-
9	3	5,5	-	-	2	5,0	-	-	2	10,0	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-
11	1	1,8	1	3,3	-	-	1	3,3	1	5,0	-	-
12	-	-	-	-	1	2,5	-	-	-	-	-	-
13	-	-	-	-	-	-	1	3,3	1	5,0	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100,0	14	100,0

Table 2. Frequency of purpose of learning English (Question 13)
Items (1-13) as second choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1	7	12,7	2	6,7	5	12,5	4	13,3	4	20,0	2	14,3
2	1	1,8	-	-	-	-	1	3,3	-	-	-	-
3*	8	14,5	5	16,7	7	17,5	4	13,3	**5***	**25,0***	1	7,1
4*	**18***	**32,7***	**12***	**40,0***	**18***	**45,0***	**14***	**46,7***	3	15,0	**6***	**42,9***
5	2	3,6	1	3,3	-	-	-	-	-	-	-	-
6	3	5,5	3	10,0	3	7,5	-	-	-	-	1	7,1
7	1	1,8	-	-	2	5,0	-	-	-	-	1	7,1
8	2	3,6	1	3,3	-	-	3	10,0	-	-	-	-
9	7	12,7	3	10,0			2	6,7	2	10,0	2	14,3
10	-	-	2	6,7	1	2,5	1	3,3	-	-	-	-
11*	4	7,3	1	3,3	2	50	1	3,3	**5***	**25,0***	1	7,1
12	1	1,8	-	-	-	-	-	-	-	-	-	-
13	1	1,8	-	-	2	5,0	-	-	1	5,0	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100,0	14	100,0

Table 3. Frequency of purpose of learning English (Question 13)
Items (1-13) as third choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1	**12***	**21,8***	3	10,0	4	10,0	2	6,7	3	15,0	1	7,1
2	1	1,8	-	-	2	5,0	-	-	-	-	-	-
3	4	7,3	1	3,3	5	12,5	4	13,3	**4***	**20,0***	-	-
4	2	3,6	**6***	**20,0***	2	5,0	**8***	**26,7***	2	10,0	-	-
5	7	12,7	1	3,3	3	7,5	-	-	1	5,0	-	-
6	3	5,5	5	16,7	4	10,0	3	10,0	-	-	1	7,1
7	1	1,8	2	6,7	1	2,5	-	-	2	10,0	**4***	**28,6***
8	4	7,3	2	6,7	3	7,5	1	3,3	2	10,0	-	-
9	9	16,4	4	13,3	**6***	**15,0***	3	10,0	1	5,0	3	21,4
10	1	1,8	1	3,3	1	2,5	2	6,7	-	-	-	-
11	7	12,7	3	10,0	**6***	**15,0***	6	20,0	2	10,0	2	14,3
12	-	-	-	-	-	-	-	-	-	-	-	-
13	4	7,3	2	6,7	3	7,5	1	3,3	3	15,0	3	21,4
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100,0	14	100,0

First of all freshmen were asked what their purpose of learning English was and required to choose 3 of the items according to their importance. The percentages and order of importance of all participants' responses are indicated above on the Tables 1, 2 and 3. Table 1 indicates items 1 to 13 according to participants' first choices, Table 2 according to participants' second choices and Table 3 according to participants' third choices.

As the frequency table (Table1) shows 26 out of 55 freshmen (47,3%) ranked the 3rd item in the 1st place. That means nearly half of the first year students pointed out that proficiency in English will provide advantages in their professional life.

53,3% of second-year students, 57,5% of third-year students and 36,7% of fourth-year students ranked also the 3rd item in the 1st place (see Table1). The majority of the students remarked similar views upon the purpose of learning English.

So this leads us to the conclusion that more than half of the students' think that having a good English knowledge will provide advantages in their professional life. They estimate that having a good knowledge of English will provide them language benefits such as finding a better job easily, getting better salary and promotion or simply visiting foreign countries.

A high frequency can be seen on Table 1 by the responses of 14 content course instructors for the 13th question (choice 1). When their experience and observation about their students' purpose of learning English were asked, 57,1% of the instructors ranked the 3rd item into 1st position; that is, the highest frequency among the participants (see Table1). The instructors stated that Electric-Electronics engineering students have been learning English for individual benefits. This means, that students and instructors share the same view.

On the other side, engineers' preferences were not similar with those of the students' and instructors' when we compared the responses for the purpose of learning English (see Table 1). 25% of the engineers were more interested in the global side of English and pointed out that their aim of learning English is because of its use as the universal language (Item 1). The other 25% emphasized the essentialness of English in the area of engineering (Item 4). It seems to be that engineers' most important purpose of learning English is different than students' and instructors' (see Table 1).

When Table 1 is examined, it can be seen that most of the students and department instructors share the view that purpose of learning English is based on occupational purpose since proficiency in foreign language offers undeniable advantages in Turkey. As it could be seen in newspaper ads, most of the national and international companies prefer engineers with an excellent English knowledge.

As it is seen on the frequency Table 2, participants except engineers highlighted the 4th item as the second most important one when their opinion about the purpose of learning English was asked. That is 32,7% of freshmen, 40% of sophomores, 45% of juniors, 46,7% of seniors and 42,9% of instructors supported the point that English is very necessary for engineering area (Item 3). On the other side engineers again supported a global view. They highlighted the point that the purpose of learning English is necessary for following the rapid changing technological developments (Item 11) and advocated the occupational purpose as the other participants stated earlier as their uppermost view.

Language learners require English as a means of furthering their specialist education or as a means of efficiently performing a social working role as a scientist, technologist, technician, etc (Mackay and Mountford 1978: 6-7). Turkey is also affected by these outcomes and this study supports these ideas by Mackay and Mountford (1978: 6-7) and Hutchinson and Waters (1987:6-14)

Table 3 shows a discrepancy among the tertiary needs of students, engineers and instructors. 21,8% of freshmen wants to learn English because English is a universal language, 20% of sophomores and 26,7% of seniors learn it because of its essentialness in the area of engineering, 15% of juniors learn English for academic purposes because the sources used at the department are mostly written in English (9th item) and the other 15% 0f juniors highlighted the point that the purpose of learning English is necessary for following the rapid changing technological developments, 20% of engineers tertiary purpose seems to be getting advantages in vocational life and finally, instructors underlines the importance of written sources (books, papers etc) which printed mostly in English language.

The study indicates that there is a need to develop language skills for E-E Engineering students for use within professional setting.

4-2 Language Wants of E-E Engineering Students

In the second section of the research, students were asked which language skills they would like to have mastered the most before graduation (Question 14). They were asked to rank the items as per importance. Frequencies and percentages of the participants' responses were given on Table 4, Table 5 and Table 6.

Table 4. Frequency of language wants before graduation (Question 14)
Items (1-7) as first choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1*	**37***	**67,3***	**17***	**56,7***	**21***	**52,5***	**16***	**53,3***	**16***	**80,0***	**5***	**35,7***
2	8	14,5	9	30,0	13	32,5	8	26,7	1	5,0	1	7,1
3	1	1,8	-	-	-	-	1	3,3	-	-	-	-
4	2	3,6	2	6,7	2	5,0	3	10,0	-	-	3	21,4
5*	5	9,1	1	3,3	3	7,5	2	6,7	2	10,0	**5***	**35,7***
6	1	1,8	-	-	-	-	-	-	1	5,0	-	-
7	1	1,8	1	3,3	1	2,5	-	-	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100,0	14	100,0

Table 5. Frequency of language wants before graduation (Question 14)
Items (1-7) as second choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1	10	18,2	5	16,7	6	15,0	5	12,5	-	-	1	7,1
2*	**21***	**38,2***	5	16,7	8	20,0	6	15,0	5	25,0	**3***	**21,4***
3*	9	16,4	4	13,3	8	20,0	4	10,0	**6***	**30,0***	1	7,1
4*	7	12,7	**8***	**26,7***	**11***	**27,5***	**11***	**27,5***	4	20,0	**3***	**21,4***
5	6	10,9	5	16,7	5	12,5	5	12,5	2	10,0	2	14,3
6*	2	3,6	1	3,3	2	5,0	3	7,5	1	5,0	**3***	**21,4***
7	-	-	2	6,7	-	-	6	15,0	2	10,0	1	7,1
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100,0	14	100,0

Table 6. Frequency of language wants before graduation (Question 14)
Items (1-7) as third choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1	3	5,5	3	10,0	6	20,0	4	13,3	1	5,0	1	7,1
2	6	10,9	1	3,3	4	13,3	**6***	**20,0***	3	15,0	2	14,3
3	6	10,9	3	10,0	**7***	**23,3***	3	10,0	1	5,0	1	7,1
4*	11	20,0	6	20,0	**7***	**23,3***	**6***	**20,0***	**9***	**45,0***	**4***	**28,6***
5*	**13***	**23,6***	**9***	**30,0***	4	13,3	4	13,3	2	10,0	3	21,4
6	8	14,5	5	16,7	2	6,7	5	16,7	4	20,0	2	14,3
7	8	14,5	3	10,0	-	-	2	6,7	-	-	1	7,1
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100,0	14	100,0

Question 14 asked participants which of the language skills they would like to have mastered mostly before their graduation. Table 4 indicates the results of question 14. That is, 67,3% of freshmen, 56,7% of sophomores, 52,5% of juniors and 53,3% seniors would like upper mostly to speak English fluently (Item 1; see also the bar charts in appendix G). Nearly all of the engineers (80%) agree on the above-mentioned item, so their uppermost choice is also ***speaking*** (see Table 4).

However, this result can not show us whether engineers need speaking ability in their workplace or not (this was tested in Question 17) but informal discussions held with participants indicated the belief that knowing a foreign language has the meaning of speaking it fluently. It could be somehow true, as Chastain (1988:179) has mentioned that language students view the world as growing smaller and smaller, and they are aware of a fact that all people have increasing opportunities to communicate with speakers of other languages. They view speaking, as an essential skill for functioning in another country and except when they have special needs such as satisfying a reading requirement for a graduate degree, they enrol in language classes with speaking as one of their principal goals.

It should be not forgotten that, this great desire for speaking might also be related with inadequate former English courses they had taken.

When instructors were asked the same question, 35,7% of them agreed with the rest of the population but another 35,7% clarified the 5th item as the most important one; namely, students of E-E engineering department should be able to translate from English to Turkish without any difficulty. They think their students should be able to speak English fluently but on the other hand they emphasize the importance of transferring of knowledge and this could only be done by translation (see Table 4). Walsh (1982:143) mentioned that foreign governments, educational institutions and private companies in many parts of the world have correctly perceived the connections between the English language and science or technology. Most observers would agree that scientific and technical knowledge is communicated through printed documents. To get this knowledge, people should be able to read thoroughly and do a "relevant" translation.

Table 5 and Table 6 indicate participants' language wants as their second and third choices respectively. Table 5 shows participants secondary choices that is 26,7%

of sophomores, 27,5% of juniors and seniors would like to read newspapers, magazines, books and papers in English (Item 4) but 38,2% of freshmen gave secondary importance for writing vocational or personal letters (Item 2). On the other hand, engineers' second most important want is related with listening skills. They want to watch TV and listen to the radio programs without having comprehension problems (Item 3).

Finally, instructors state three different items as their second most important ones with an equal percentage (Items 2,4 and 6). That is 21,4% of instructors gave secondary importance to writing skills such as writing vocational or personal letters (Item 2). Another 21,4% highlighted the importance of reading skills; reading newspapers, magazines, books and papers in English (Item 4). The last group of instructors (21,4%) mentioned the translation ability as the second most important, especially translating from Turkish into English (Item 6).

Table 6 shows participants' third choices for their language wants. 23,6% of freshmen and 30% of sophomores ranked the fifth item as their third choices. That is their tertiary want is related with translation ability. They would like to translate from English into Turkish without having any linguistic difficulties (Item 5). On the other hand, juniors and seniors have shared opinions regarding their tertiary wants. 23,3 % of juniors, 20% of seniors, 45 of engineers and 28,6 % of instructors state as their tertiary wants the reading skills, that is they wish they could read newspapers, magazines, books and papers in English easily (Item 4). Another 23,3% of juniors wish they could watch TV and listen to the radio in English (Item 3) and finally, the second group of seniors with a frequency of 20% highlighted the second item as their tertiary choice. That is they wish they could write vocational or personal letters.

4-3 Present Linguistic Lacks of E-E Engineering Students

Participants were asked (Question 15) what their present linguistic lacks were. Such information is important for understanding the learning needs of each student in class, their strengths as well as areas of greatest need (Bosher, 2002:67).

Table 7 indicates with a high frequency the greatest present linguistic lack of participants. That is 45,5% of freshmen, 43,3% of sophomores, 52,5% of juniors, 46,7 of seniors and 55% of engineers wish that they could speak English fluently (item 3).

Table 7 shows that only one of 14 instructors believes that speaking fluently (item 3) is the most important need of the engineering students but they, with 28,6%, highlighted the importance of translation from Turkish into English as their uppermost need (item 2).

Table 8 shows participants' secondary choices when asked what their present linguistic lacks were. When students' secondary choices were analysed, it can be seen that they do not have common decision. For instance, 20% of freshmen and 20% of sophomores believe that they could not translate well from English into Turkish (Item 2). On the other hand engineers' (25%) second most important lack is related with writing skills. That is, they wish they could state their thoughts in English (Item 11). Finally, instructors believe by 35,7% that understanding-reading texts in English (item 5) is their students' second most important need as seen in Table 8.

Table 9 shows participants' tertiary lacks. An overall view on Table 9 indicates that the participants have no common decision on their lacks. For instance, freshmen's (18,2%) tertiary lack is related with the act of translating from Turkish into English (Item 2), but sophomores (30%) tertiary lack is related with reading skills that is, they want to read and understand texts in English thoroughly (Item 5). On the other hand, 15% of juniors, 16,7% of seniors and 20% of engineers stated their lack of technical or vocational vocabulary knowledge as their third most important deficiency. Finally, instructors highlighted item 1 and item 2 as their students' tertiary important lack and both are related with translating ability. That means instructors want their students to be able to translate from English into Turkish (item 1) and on the contrary. It is thought that instructors might approach the issue pedagogically.

Considering students' lacks in different years, there is no consensus regarding the second and third choices (see Table 8 and Table 9). That means they were focused on the first most important need; namely on the speaking skills (compare also bar charts in Appendix H). However, it should not be forgotten that this desire for speaking might also be related with inadequate former English courses they had taken.

4-3 Present Linguistic Lacks of E-E Engineering Students

Table 7. Frequency of present linguistic lacks (Question 15)
Items (1-12) as first choice

Items	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
	N	%	N	%	N	%	N	%	N	%	N	%
1	6	10,9	1	3,3	6	15,0	2	6,7	1	5,0	2	14,3
2*	6	10,9	4	13,3	5	12,5	7	23,3	2	10,0	***4****	***28,6****
3*	***25****	***45,5****	***13****	***43,3****	***21****	***52,5****	***14****	***46,7****	***11****	***55,0****	1	7,1
4	1	1,8	1	3,3	1	2,5	2	6,7	1	5,0	-	-
5	3	5,5	3	10,0	1	2,5	-	-	2	10,0	2	14,3
6	2	3,6	1	3,3	1	2,5	-	-	2	10,0	1	7,1
7	2	3,6	1	3,3	2	5,0	3	10,0	1	5,0	1	7,1
8	4	7,3	-	-	2	5,0	1	3,3	-	-	1	7,1
9	3	5,5	5	16,7	1	2,5	-	-	-	-	1	7,1
10	-	-	-	-	-	-	-	-	-	-	1	7,1
11	1	1,8	-	-	-	-	1	3,3	-	-	-	-
12	2	3,6	1	3,3	-	-	-	-	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100.0	14	100,0

Table 8. Frequency of present linguistic lacks (Question 15)
Items (1-12) as second choice

Items	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
	N	%	N	%	N	%	N	%	N	%	N	%
1*	***11****	***20,0****	***6****	***20,0****	6	15,0	1	3,3	3	15,0	3	21,4
2*	6	10,9	4	13,3	***11****	***27,5****	***7****	***23,3****	3	15,0	-	-
3	3	5,5	3	10,0	5	12,5	3	10,0	2	10,0	1	7,1
4	7	12,7	4	13,3	3	7,5	3	10,0	1	5,0	1	7,1
5*	4	7,3	3	10,0	4	10,0	6	20,0	1	5,0	***5****	***35,7****
6	3	5,5	1	3,3	1	2,5	3	10,0	2	10,0	-	-
7	6	10,9	3	10,0	1	2,5	1	3,3	1	5,0	1	7,1
8	5	9,1	3	10,0	2	5,0	-	-	1	5,0	-	-
9	7	12,7	-	-	5	12,5	4	13,3	-	-	2	14,3
10	-	-	-	-	1	2,5	1	3,3	1	5,0	-	-
11*	1	1,8	2	6,7	1	2,5	1	3,3	***5****	***25,0****	1	7,1
12	2	3,6	1	3,3	-	-	-	-	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100.0	14	100,0

Table 9. Frequency of present linguistic lacks (Question 15)
Items (1-12) as third choice

Items	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
	N	%	N	%	N	%	N	%	N	%	N	%
1*	3	5,5	3	10,0	3	7,5	***5****	***16,7****	1	5,0	***3****	***21,4****
2*	***10****	***18,2****	3	10,0	4	10,0	2	6,7	1	5,0	***3****	***21,4****
3	8	14,5	2	6,7	2	5,0	3	10,0	3	15,0	2	14,3
4	2	3,6	2	6,7	5	12,5	3	10,0	2	10,0	1	7,1
5	7	12,7	***9****	***30,0****	5	12,5	2	6,7	2	10,0	1	7,1
6	1	1,8	2	6,7	4	10,0	-	-	2	10,0	-	-
7	4	7,3	1	3,3	2	5,0	1	3,3	-	-	1	7,1
8	6	10,9	1	3,3	2	5,0	2	6,7	2	10,0	-	-
9*	4	7,3	4	13,3	***6****	***15,0****	***5****	***16,7****	***4****	***20,0****	2	14,3
10	3	5,5	2	6,7	2	5,0	2	6,7	-	-	-	-
11	2	3,6	1	3,3	2	5,0	1	3,3	3	15,0	1	7,1
12	5	9,1	-	-	3	7,5	4	13,3	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100.0	14	100,0

4-4 Future Linguistic Needs of E-E Engineering Students

Table 10. Frequency for linguistic needs (Question 17)
Items (1-10) as first choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1*	***26****	***47,3****	***13****	***43,3****	***21****	***52,5****	***12****	***40,0****	5	25,0	1	7,1
2	6	10,9	1	3,3	2	5,0	2	6,7	1	5,0	1	7,1
3*	6	10,9	6	20,0	4	10,0	2	6,7	***11****	***55,0****	***7****	***50,0****
4	4	7,3	2	6,7	2	5,0	7	23,3	1	5,0	1	7,1
5	3	5,5	2	6,7	3	7,5	1	3,3	2	10,0	2	14,3
6	7	12,7	4	13,3	7	17,5	3	10,0	-	-	2	14,3
7	1	1,8	-	-	-	-	-	-	-	-	-	-
8	2	3,6	1	3,3	1	2,5	1	3,3	-	-	-	-
9	-	-	1	3,3	-	-	2	6,7	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100.0	14	100,0

Table 11. Frequency for linguistic needs (Question 17)
Items (1-10) as second choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1	8	14,5	4	13,3	5	12,5	1	3,3	1	5,0	1	7,1
2*	4	7,3	3	10,0	2	5,0	2	6,7	2	10,0	***4****	***28,6****
3*	10	18,2	***6****	***20,0****	***12****	***30,0****	***10****	***33,3****	2	10,0	3	21,4
4*	***11****	***20,0****	2	6,7	4	10,0	1	3,3	2	10,0	***4****	***28,6****
5*	6	10,9	5	16,7	5	12,5	3	10,0	***7****	***35,0****	-	-
6	8	14,5	5	16,7	4	10,0	5	16,7	1	5,0	2	14,3
7	2	3,6	1	3,3	1	2,5	-	-	1	5,0	-	-
8	5	9,1	4	13,3	5	12,5	3	10,0	1	5,0	-	-
9	1	1,8	-	-	2	5,0	5	16,7	3	15,0	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100.0	14	100,0

Table 12. Frequency for linguistic needs (Question 17)
Items (1-10) as third choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1	6	10,9	2	6,7	6	15,0	3	10,0	1	5,0	1	7,1
2	4	7,3	-	-	-	-	2	6,7	2	10,0	2	14,3
3	6	10,9	5	16,7	7	17,5	3	10,0	1	5,0	1	7,1
4	3	5,5	3	10,0	2	5,0	2	6,7	3	15,0	1	7,1
5*	9	16,4	***7****	***23,3****	8	20,0	1	3,3	1	5,0	***4****	***28,6****
6*	***14****	***25,5****	4	13,3	***10****	***25,0****	***8****	***26,7****	2	10,0	2	14,3
7	2	3,6	2	6,7	3	7,5	4	13,3	2	10,0	-	-
8	4	7,3	3	10,0	2	5,0	4	13,3	-	-	2	14,3
9*	5	9,1	4	13,3	2	5,0	3	10,0	***8****	***40,0****	1	7,1
10	2	3,6	-	-	-	-	-	-	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100.0	14	100,0

In this section of the research students were asked about the language areas which they intend to use English when they will do their jobs in the future; Question 17.

The same question was administered to 20 engineers and 14 content course instructors so that the expectations of current students and the frequency of engineers could be compared.

However, as Kormos (2002:520) has also mentioned, subject specialists and language teachers might know very little about the purposes engineering students use the target language for outside the university and as researchers we had less information concerning the type of situations in which engineering students might need the language after graduation, since they can attend a wide variety of working places.

Consequently, it is very crucial to make an extensive survey and compare students' linguistic wants and needs with those of the graduates of this department.

Table 10 shows participants' upper most language use in the future. 47,3% of freshmen, 43,3 of sophomores, 52,5% of juniors and 40% of seniors, that is nearly half of the total number of the students, believe that they will mostly need **speaking skills** in their vocational fields (item 1). However, engineers and instructors do not seem to share the same opinion. Results of question 17 shows us that their upper most need is stated as "***reading and comprehending***" the publications in English thoroughly (item 3). Walsh (1982:143) claims that most observers would agree that scientific and technical knowledge is communicated mainly through printed documents: scientific texts, science textbooks, research papers, technical manuals, and technical handbooks. It is for this reason that textbook readings form an important part of nearly every language course and that so much emphasis is placed on reading-reference skills. He adds that this emphasis on the written word and reading skills is characteristic of ESP courses in many parts of the world.

Additionally, engineers' second and third most important needs were also not speaking. 35% of engineers indicated the need of translating from foreign sources as the 2nd most important need and 40% of them highlighted surfing in Internet without having any linguistic difficulty as the third one. These results have been given in Tables 11 and 12, respectively. (Compare also the bar charts in appendix J). Concerning the 2nd choices, instructors also have different opinions. Table 11 indicates that 28,6% of instructors believe that the students' most important need for occupational purpose is

"speaking" but only in order to realize his daily or vocational activities (item 2). However, another 28,6% group of instructors clarified the 4th item as the second most important one; that is instructors think that E-E engineering students need mostly reading skills only in order to obtain information from publications written in English (see Table 11).

Finally, it is essential to analyse students' choices for the second and third most important items. Table 11 indicates the secondary language needs of the participants in their vocational fields. For instance, 20% of freshmen think that they will need reading skills mostly for comprehending the essential parts of a text (Item 4). On the other hand, 20% of sophomores, 30% of juniors and 33,3% of seniors think also the essentialness of reading skills but they think they will need to comprehend the text wholly (Item 3).

Table 12 indicates tertiary needs of the participants in their vocational fields. For instance freshmen (25,5%), juniors (25%) and seniors (26.7%) think that they will need writing skills such as corresponding with other companies (item 6). Then again, 23,3% of sophomores think that they will need translation ability such as translating from foreign publications (Item 5).

Consequently, when students were asked to estimate the most important skill in their future job, nearly half of the E-E engineering students (N: 72/155) opted again the need for "**speaking**" (item 1 in Table 10). That is, their most important need at present and in the future seems to be "**speaking**", but in their professional life engineers and instructors do not value speaking skills as one of their most important need.

4-5 Current Language Uses of E-E Engineering Students

Informal discussions held with students seemed to suggest that students do not use English very often outside the university. For instance, in their private lives, they rarely watch English language movies, news and hardly ever-read newspapers in English. They also have little chance to converse with native or non-native speakers of English. Nevertheless, they sometimes translate instruction manuals for family members and acquaintances and chat on the Internet.

Table 13. Current language use (Question 17)
Items (1-9) as first choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1	3	5,0	-	-	1	2,5	1	3,3	1	5,0	-	-
2	1	1,8	1	3,3	-	-	1	3,3	-	-	1	7,1
3	4	7,3	2	6,7	2	5,0	1	3,3	1	5,0	-	-
4*	***21****	***38,2****	5	16,7	11	27,5	***11****	***36,7****	3	15,0	3	21,4
5	7	12,7	8	26,7	4	10,0	6	20,0	3	15,0	3	21,4
6*	15	27,3	***12****	***40,0****	***20****	***50,0****	8	26,7	***12****	***60,0****	***6****	***42,9****
7	2	3,6	-	-	-	-	2	6,7	-	-	1	7,1
8	2	3,6	2	6,7	2	5,0	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100.0	14	100,0

Table 14. Current language use (Question 17)
Items (1-9) as second choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1	6	10,9	-	-	1	2,5	3	10,0	1	5,0	-	-
2	2	3,6	1	3,3	2	5,0	1	3,3	1	5,0	1	7,1
3	6	10,9	2	6,7	2	5,0	4	13,3	2	10,0	-	-
4*	***14****	***25,5****	***13****	***43,3****	***14****	***35,0****	***8****	***26,7****	***9****	***45,0****	3	21,4
5*	13	23,6	7	23,3	9	22,5	4	13,3	4	20,0	***6****	***42,9****
6*	***14****	***25,5****	7	23,3	7	17,5	7	23,3	3	15,0	4	28,6
7	-	-	-	-	4	10,0	3	10,0	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	1	2,5	-	-	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100.0	14	100,0

Table 15. Current language use (Question 17)
Items (1-9) as third choice

	Freshmen		Sophomores		Juniors		Seniors		Engineers		Instructors	
Items	N	%	N	%	N	%	N	%	N	%	N	%
1	4	7,3	5	16,7	7	17,5	2	6,7	2	10,0	3	21,4
2	3	5,5	1	3,3	1	2,5	2	6,7	1	5,0	-	-
3*	8	14,5	***8****	***26,7****	6	15,0	4	13,3	***7****	***35,0****	-	-
4*	9	16,4	6	20,0	***9****	***22,5****	***7****	***23,3****	2	10,0	***6****	***42,9****
5	11	20,0	2	6,7	6	15,0	6	20,0	3	15,0	1	7,1
6*	***13****	***23,6****	7	23,3	***9****	***25,5****	***7****	***23,3****	4	20,0	3	21,4
7	7	12,7	1	3,3	2	5,0	2	6,7	1	5,0	1	7,1
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
Total	55	100,0	30	100,0	40	100,0	30	100,0	20	100.0	14	100,0

Question 16 comprises situations in which students use English currently both in and outside the university. Outcomes of question 16 were analysed wholistically. The

findings regarding different groups of participants were similar and likewise the groups highlighted two items, ranking under importance the 6th and 4th items sequentially, as shown above in Tables 13 and 14 (compare also bar charts in appendix I).

The results indicate the use of the language upper mostly for academic purposes, for instance, instructors (42,9%), engineers (60%), juniors (50%) and sophomores (40%) use the English language when keeping up with engineering related publications (see the 6th item on Table 13). On the other hand 38,2% of freshmen and 36,7% of seniors indicate the importance of keeping up with the developments in the field of engineering where English language is mostly used (item 4).

Participants', except instructors', second choice is related with the use of Internet that is they use English currently when keeping up with the Internet (item 4) but instructors' second choice emphasized the importance of translating foreign sources (5th item). Translation is highlighted as one of the most important skills because at informal discussions students, engineers and instructors mentioned that departments -at school and at work- might require them to do translation.

Finally, second-year students and engineers indicate as their 3rd choice that they listen to English radios or watch English TV channels (item 3) thus emphasizing listening skills (see Table 15). 23,6% of freshmen as well as 25,5% of juniors and 23,3% of seniors use English when keeping up with engineering related publications (item 6). The other 25,5% group of juniors and 23,3% group of seniors use English when keeping up with the Internet (item 4). Then again instructors (42,9%) believe also that students use English when keeping up with the Internet (item 4).

To sum up, these results provide useful data for the researcher; for instance, engineers' current use of language may give us an idea about students' target use.

CHAPTER V

CONCLUSION

5-1 Summary of the Study

The main aim of our research has been to find out the language needs of Electric-Electronics Engineering students who are studying English at Dumlupınar University.

In order to carry out this study, different groups of participants were used as informants: Students of Electric-Electronics Engineering of Dumlupınar University (DPU), engineers who graduated from DPU, and instructors of Electric-Electronics department.

For the first group of participants 55 freshmen, 30 sophomores, 40 juniors and 30 seniors, in total 155 students were asked to fill in the needs analysis questionnaire.

For the second group, all the instructors of the department, in total 14, were submitted a reverbalized version of the questionnaire.

The last group consists of 20 randomly chosen engineers who were former students of the department. Another version of the reverbalized questionnaire was handed out to engineers and results were analysed statistically.

However, before having carried out this study, a pilot questionnaire had been constructed and performed with fourth year but secondary program students. The aim was to indicate the validity and reliability of the questionnaire.

Pilot and final version of the questionnaire were validated through "response validity" and "face validity" tests. Reliability analyses were conducted through "split-half method" and "Crombach's alpha" tests. These procedures indicated reliable results as seen in Appendices E and F.

Since this study was descriptive in nature descriptive statistics such as percentages and frequencies were used to analyse the data. Thus, the results of the analysis of the students', instructors' and engineers' questionnaires were presented in tabular form.

5-2 General Conclusions

As mentioned before, the main aim of our research has been to find out the language needs of Electric-Electronics Engineering students who are studying English at Dumlupınar University. The analysis of E-E Engineering students' needs described in this study has revealed that there are similarity and differences of opinion among participants. That is, the most important similarity or discrepancy lies under current linguistic wants, lack of language areas and future linguistic needs.

When E-E Engineering students were asked what their purpose of learning English was (Question 13, regarding the first research question), they estimated as the most important purpose that having a good knowledge of English will provide them language benefits such as finding a better job, getting better salary and promotion or simply visiting foreign countries. The instructors believe also that Electric-Electronics engineering students learn English for individual benefits.

On the other side, engineers' preferences were not similar with those of the students' and instructors' when we compared the responses for the purpose of learning English (see Table 1). 25% of the engineers were more interested in the global side of English. They emphasized the essentialness of English in the area of engineering and learn English because it is a universal language. Hutchinson and Waters (1987:6) mention that English is the key to the international currencies of technology and commerce and advocated the global face of English as lingua franca. Language learners require English as a means of furthering their specialist education or as a means of efficiently performing a social working role as a scientist, technologist, technician, etc (Mackay and Mountford, 1978:6). In this case, language learning is not only a local but also a global need.

As the second most important purpose students highlighted the point that English is very necessary for engineering area when their opinion about the purpose of learning English was asked.

This part of the study indicates that there is a need to develop language skills for E-E Engineering students for use within professional setting.

In the second section of the research, participants were asked which language skills they would like to have mastered the most before their graduation (Question 14).

Students' upper most desire is to speak English fluently. Nearly all of the engineers agree on the above-mentioned item, so their uppermost choice is also ***speaking***. When instructors were asked, they stated the belief that the students should be able to speak English fluently but on the other hand they emphasized the importance of translation. Most observers would agree that scientific and technical knowledge is communicated through printed documents. To get this knowledge, people should be able to read thoroughly and do a "relevant" translation.

Most of the students secondary choice is related with reading skills, namely they would like to read newspapers, magazines, books and papers in English.

When the participants were asked what their present linguistic lacks were, students and engineers again pointed out the lack of speaking skill. Such information is important for understanding the learning needs of each student in class, their strengths as well as areas of greatest need (Bosher, 2002:67). Thus, participants were also asked about the language skills which they intend to use in their professional life in the future. Most of the students believe that they will mostly need **speaking skills** in their vocational fields. That is, the students are certain about the insufficiency of oral practice in English.

However, engineers and instructors do not seem to share the same opinion. Their upper most need is stated as ***"reading and comprehending"*** the publications in English. Walsh (1982:143) claims that most observers would agree that scientific and technical knowledge is communicated mainly through printed documents: scientific texts, science textbooks, research papers, technical manuals, and technical handbooks.

Additionally, engineers highlighted also the lack of translation ability from foreign sources. Translation is highlighted as one of the most important skills because at informal discussions students, engineers and instructors mentioned that departments -at school and at work- might require them to do translation.

Finally, all the participants were certain about the need of language for specific purposes. Additionally, they were also certain about the need of English for occupational purpose (EOP). That is; students, engineers and content course teachers felt the need of instructing in ESP.

5-3 Pedagogical Implications

New developments in educational psychology also contributed to the rise of ESP, by emphasizing the central importance of the learners and their attitudes to learning. Learners were seen to have different needs and interests, which would have an important influence on their motivation to learn and therefore on the effectiveness of their learning. This lent support to the development of courses in which relevance to the learners' needs and interests was paramount (Hutchinson and Waters, 1987:8-11).

It is very important to spot linguistic needs of learners before entering the classroom and begin to instruct only relying some kind of experience. That is not a bad idea but much worst thing is not to realize that such kinds of theories are the starting point of investigating learners' worldview.

As teachers of English language we can trust our experiences but we are not able to foresee every kind of need especially future needs of learners. Therefore, we conducted a needs assessment at Dumlupınar University E-E Engineering Department.

We hoped that the findings of this study, with others in the literature of applied linguistics, have concluded very useful data for language teachers and course designers to train more successful language learners.

Consequently, this study can be used for further studies where similar circumstances occur which requires a needs assessment.

APPENDICES

APPENDIX A

PİLOT ANKET

Sevgili öğrenciler;

Bu anket mühendislik fakültesi öğrencilerinin yabancı dil gereksinimlerini belirlemeyi amaçlamaktadır.

Anket sonuçları gizli kalacak ve başka amaçlar için kullanılmayacaktır.

Katılımınızdan dolayı teşekkür ederim. Okt. Ayhan KAHRAMAN

1- Yaş ☐ 17-20 ☐ 21-25 ☐ 25 üstü

2- Cinsiyet ☐ Erkek ☐ Kız

3- Bölümünüz ..... Mühendisliği

4- Sınıf ☐ 1.Sınıf ☐ 2.Sınıf ☐ 3.Sınıf ☐ 4.Sınıf

5- Öğretim ☐ 1.Öğretim ☐ 2. Öğretim

6- Üniversite öncesi İngilizce eğitimini hangi okulda aldınız?

- ☐ Süper Lise
- ☐ Fen Lisesi
- ☐ Özel Okul
- ☐ Anadolu Lisesi
- ☐ Yurtdışında
- ☐ Diğer Devlet Okullarında

7- İngilizce hazırlık eğitimi aldınız mı? ☐ Evet ☐ Hayır

8- Yedinci soruya cevabınız evet ise haftada kaç saat İngilizce gördünüz?

☐ 10-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ Diğer (Belirtiniz).....

9- Ortaöğretimde haftada kaç saat İngilizce gördünüz?

☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ Hiç ☐ Diğer (Belirtiniz).....

10- Lisede haftada kaç saat İngilizce gördünüz?

☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ Hiç ☐ Diğer (Belirtiniz).....

11- Üniversitede İngilizce eğitimi aldınız mı?

☐ Evet ☐ Muaftım

12- Üniversitemizde verilmekte olan yabancı dil öğretiminin yeterli olduğu düşüncesine katılıyor musunuz?

☐ Kesinlikle Katılıyorum. ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

13- Haftalık İngilizce ders saati sizce ne kadar olmalı?

- ☐ Haftada 4 saat
- ☐ Haftada 6 saat
- ☐ Haftada 8 saat
- ☐ Haftada 10 saat
- ☐ 4 yıla yayılmış bir İngilizce eğitimi
- ☐ Hazırlık sınıfı
- ☐ Hazırlık sınıfı + 4 yıla yayılmış bir İngilizce eğitimi
- ☐ Diğer (belirtiniz) .....

14- Haftalık İngilizce saatinin artırılması ile İngilizce eğitimi daha kaliteli olacaktır düşüncesine katılıyor musunuz?

☐ Kesinlikle Katılıyorum. ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

15- İngilizce öğrenme nedenlerinizi belirtiniz. (en önemli 3 seçeneği 1'den 3'e kadar numaralandırınız.)

- ☐ Yabancı dil zorunlu okutulduğu için,
- ☐ Yabancı dile karşı özel ilgim var.
- ☐ İngilizce bilmenin meslek hayatımda getireceği avantajlardan (kolay iş bulma, daha iyi maaş, yükselme olanakları vs) yararlanmak için,
- ☐ Mühendislik alanında yabancı dil bilmek gereklidir.
- ☐ Meslek harici ; yabancılarla daha iyi iletişim kurabilmek için,
- ☐ Yurt dışındaki iş imkanlarını değerlendirebilmek için,
- ☐ Akademik çalışmalarımda (makale,tez,literatür tarama vs) gerekli.
- ☐ Eğitimimi yurt dışında devam ettirmeyi düşündüğüm için,
- ☐ Sadece sınıf geçmek için,
- ☐ TOEFL, KPDS, ÜDS veya FCE türü sınavlara girmek için,
- ☐ Diğer (belirtiniz) .....

16- Üniversiteden mezun olduğunuzda İngilizce'de aşağıdaki dil becerilerinden **en çok** hangilerine sahip olmak istersiniz. (en önemli 3 seçeneği 1'den 3'e kadar numaralandırınız.)

- ☐ İngilizce'yi akıcı konuşabilmek.
- ☐ Mesleki veya özel yazışmalar yapabilmek.
- ☐ İngilizce televizyon ve radyo yayınlarını rahatlıkla dinleyebilmek.
- ☐ İngilizce gazete,dergi,kitap ve makaleleri rahatlıkla okuyabilmek.
- ☐ İngilizce'den Türkçe'ye rahatlıkla çeviri yapabilmek.
- ☐ Türkçe'den İngilizce'ye rahatlıkla çeviri yapabilmek.

☐ İyi derecede İngilizce gramer bilgisine sahip olmak.

☐ Diğer (belirtiniz) .....

17-Aşağıdaki önermelere ne kadar katılıyorsunuz?

a) İngilizce'den Türkçe'ye çeviri yapamıyorum.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

b) Türkçe'den İngilizce'ye çeviri yapamıyorum.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

c) İngilizce'yi akıcı konuşamıyorum.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

d) Yabancılarla İngilizce yazılı iletişime giremiyorum.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

e) Okuduğum İngilizce metinleri anlamıyorum.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

f) İngilizce Şarkıları, filmleri ve genel konuşmaları anlamıyorum.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

g) Genel İngilizce kelime bilgim yetersiz.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

h) Teknik (Mesleki) İngilizce kelime bilgim yetersiz.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

i) Telaffuzum iyi değil.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

j) Düşüncelerimi İngilizce'de yazıya dökemiyorum.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

k) Dil bilgisinde (gramerde) yetersizim.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Hiçbir fikrim Yok. ☐ Katılmıyorum. ☐ Kesinlikle Katılmıyorum

l) Bölümünüzde Teknik (Mesleki) İngilizce verilmesi konusuna katılıyor musunuz?

☐ Kesinlikle Katılıyorum. ☐ Katılıyorum ☐ Kesinlikle Katılmıyorum. ☐ Katılmıyorum. ☐ Hiçbir fikrim Yok.

m) Mesleğimi yaparken Teknik (Mesleki) İngilizce'ye ihtiyaç duyacağım.

☐ Kesinlikle Katılıyorum. ☐ Katılıyorum ☐ Kesinlikle Katılmıyorum. ☐ Katılmıyorum. ☐ Hiçbir fikrim Yok.

n) Mesleğimi yaparken Genel İngilizce yeterli olacaktır.

☐ Kesinlikle Katılıyorum ☐ Katılıyorum ☐ Kesinlikle Katılmıyorum ☐ Katılmıyorum. ☐ Hiçbir fikrim Yok.

l) Diğer (belirtiniz) .....

18- İngilizce'de en çok eksikliğini çektiğiniz 3 maddeyi önem sırasına göre numaralandırınız.

☐ İngilizce'den Türkçe'ye çeviri yapamıyorum.

☐ Türkçe'den İngilizce'ye çeviri yapamıyorum.

☐ İngilizce'yi akıcı konuşamıyorum.

☐ Yabancılarla İngilizce yazılı iletişime giremiyorum.

☐ Okuduğum İngilizce metinleri anlamıyorum.

☐ İngilizce Şarkıları, filmleri ve genel konuşmaları anlamıyorum.

☐ Genel İngilizce kelime bilgim yetersiz.

☐ Teknik (Mesleki) İngilizce kelime bilgim yetersiz.

☐ Telaffuzum iyi değil.

☐ Düşüncelerimi İngilizce'de yazıya dökemiyorum.

☐ Dil bilgisinde (gramerde) yetersizim.

☐ Diğer (belirtiniz) .....

19- İngilizce'yi hayatınızın hangi alanlarında kullanıyorsunuz? (Uygun seçenek veya seçeneklere (x) koyunuz.)

☐ Yabancılarla İngilizce konuşuyorum.

☐ Yabancılarla İngilizce yazışıyorum.

☐ İngilizce şarkı dinliyorum.

☐ Yabancı TV kanallarını izliyorum.

☐ Çeviri yapıyorum.

☐ Alanımla ilgili yayınları takip ediyorum.

☐ Alanımla ilgili olmayan yayınları takip ediyorum.

☐ İngilizce'yi hiçbir şekilde kullanmıyorum.

☐ Diğer (belirtiniz) .....

20- Mesleğe adım attığınızda İngilizce'de aşağıdaki becerilerden hangilerine daha fazla gereksinim duyacağınızı düşünüyorsunuz? (en önemli 3 seçeneği 1'den 3'e kadar numaralandırınız.)

- ☐ İngilizce'yi akıcı konuşabilme,
- ☐ İngilizce'yi işimi görecek kadar konuşabilme,
- ☐ Okuduğum kaynakları tamamıyla anlayabilme,
- ☐ Okuduğum kaynakların özünü anlayabilme,
- ☐ Yabancı kaynaklardan çeviri yapabilme,
- ☐ Her türlü resmi ve özel yazışmaları yapabilme,
- ☐ Yabancı TV,radyo gibi kanallardan bilgi toplayabilme,
- ☐ Simültane (anında) çeviri yapabilme,
- ☐ İngilizce'ye gereksinim duyacağımı düşünmüyorum.
- ☐ Diğer (belirtiniz) .....

APPENDIX B

Sevgili Öğrencim;

Bu anket "Dumlupınar Üniversitesi Mühendislik Fakültesi Elektrik Elektronik Mühendisliği Bölümü Öğrencilerinin Yabancı Dil Gereksinimleri" konulu bir araştırmada, görüşlerinizden faydalanmak üzere hazırlanmıştır.

Bu araştırma ile mühendis adayı siz öğrencilerin mesleğe adım attığınızda ihtiyacını duyabileceğiniz yabancı dil gereksinimlerinizi birlikte belirlemeyi amaçlamaktadır.

Araştırmada toplanacak bilgiler araştırma kapsamı dışında kullanılmayacaktır.

Araştırmanın başarısı vereceğiniz samimi cevaplarla doğru orantılı olacak ve anketin güvenirliliğine büyük ölçüde katkı sağlayacaktır. Bu nedenle, maddeleri dikkatli okuyup görüşünüze en uygun olan seçeneği içtenlikle cevaplamanızı rica ederim.

Araştırmaya katılımınızdan ve vereceğiniz samimi cevaplardan dolayı teşekkür eder, eğitim hayatınızda başarılar dilerim.

Ayhan KAHRAMAN

I- KİŞİSEL BİLGİLER

1- Yaş ☐ 17-20 ☐ 21-25 ☐ 25 üstü

2- Cinsiyet ☐ Erkek ☐ Kız

3- Bölümünüz ..... Mühendisliği

4- Sınıf ☐ 1.Sınıf ☐ 2.Sınıf ☐ 3.Sınıf ☐ 4.Sınıf

5- Öğretim ☐ 1.Öğretim ☐ 2. Öğretim

6- Üniversite öncesi İngilizce eğitimini hangi okulda aldınız?

☐ Süper Lise
☐ Fen Lisesi
☐ Özel Lise
☐ Anadolu Lisesi
☐ Yurtdışında
☐ Lise (Devlet)
☐ Meslek lisesi
☐ Dershane
☐ Diğer (Belirtiniz).....

7- İlköğretim veya lise öğreniminizde İngilizce hazırlık eğitimi aldınız mı? ☐ Evet ☐ Hayır

Cevabınız **"HAYIR"** ise **10.** soruya geçiniz.

8- İlköğretimde hazırlık eğitimi aldıysanız, haftada kaç saat İngilizce gördünüz?

☐ 10-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ Diğer (Belirtiniz).....

9- Lisede hazırlık eğitimi aldıysanız, haftada kaç saat İngilizce gördünüz?

☐ 10-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ Diğer (Belirtiniz).....

10- İngilizce hazırlık sınıfı hariç, ilköğretim 4. ve 5. sınıflarda haftada kaç saat İngilizce gördünüz?

☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ Hiç ☐ Diğer (Belirtiniz).....

11- İngilizce hazırlık sınıfı hariç, ilköğretim 6. 7. 8. sınıflarda haftada kaç saat İngilizce gördünüz?

☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ Hiç ☐ Diğer (Belirtiniz).....

12- İngilizce hazırlık sınıfı hariç, lise 1. 2. 3. sınıflarda haftada kaç saat İngilizce gördünüz?

☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ Hiç ☐ Diğer (Belirtiniz).....

II- GEREKSİNİM ANALİZİ

13- İngilizce öğrenme nedenleriniz nelerdir? **(en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.)**

- ☐ Günümüzde İngilizce evrensel bir dildir.
- ☐ Yabancı dile karşı özel ilgim var.
- ☐ İngilizce bilmenin meslek hayatımda getireceği avantajlardan (kolay iş bulma, daha iyi maaş, yükselme olanakları vs) yararlanmak.
- ☐ Mühendislik alanında yabancı dil bilmek gereklidir.
- ☐ Yabancılarla daha iyi iletişim kurabilmek.
- ☐ Yurt dışındaki iş imkanlarını değerlendirebilmek.
- ☐ Lisans ve/veya akademik çalışmalarımda (makale, tez, rapor) gereklidir.
- ☐ Eğitimimi yurt dışında devam ettirmeyi düşünüyorum.
- ☐ Bölümde kullanılan veya önerilen kaynakların büyük bir kısmı İngilizce.
- ☐ İnternette zorluk çekmemek.
- ☐ Hızlı gelişen teknolojiyi takip etmek.
- ☐ Yabancı kültürleri daha yakından tanımak.
- ☐ TOEFL, KPDS, ÜDS türü sınavlara girmek.
- ☐ Diğer (belirtiniz) .....

14- Üniversiteden mezun olduğunuzda İngilizce'de aşağıdaki dil becerilerinden **en çok** hangilerine sahip olmak istersiniz. **(en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.)**

- ☐ İngilizce'yi akıcı konuşabilmek.
- ☐ Mesleki veya özel yazışmalar yapabilmek.
- ☐ İngilizce televizyon ve radyo yayınlarını rahatlıkla dinleyebilmek.
- ☐ İngilizce gazete,dergi,kitap ve makaleleri rahatlıkla okuyabilmek.
- ☐ İngilizce'den Türkçe'ye rahatlıkla çeviri yapabilmek.
- ☐ Türkçe'den İngilizce'ye rahatlıkla çeviri yapabilmek.
- ☐ İyi derecede İngilizce gramer bilgisine sahip olmak.
- ☐ Diğer (belirtiniz) .....

15- İngilizce'de en çok eksikliğini çektiğiniz **3 maddeyi** önem sırasına göre sıralayınız.

- ☐ İngilizce'den Türkçe'ye çeviri yapmak.
- ☐ Türkçe'den İngilizce'ye çeviri yapmak.
- ☐ İngilizce'yi akıcı konuşmak.
- ☐ Yabancılarla İngilizce yazılı iletişime girmek.
- ☐ Okuduğum İngilizce metinleri anlamak.

18- İngilizce dil eğitiminin size dil açısından neler sağlaması gerektiğini düşünüyorsunuz?	Kesinlikle Katılıyorum	Katılıyorum	Hiçbir Fikrim Yok	Katılmıyorum	Kesinlikle Katılmıyorum
İngilizce'den Türkçe'ye çeviri yapabilmeliyim.					
Türkçe'den İngilizce'ye çeviri yapabilmeliyim.					
İngilizce'yi akıcı konuşabilmeliyim.					
Yabancılarla İngilizce yazılı iletişime girebilmeliyim.					
Okuduğum İngilizce metinleri anlayabilmeliyim.					
İngilizce şarkıları, filmleri ve genel konuşmaları anlayabilmeliyim.					
İngilizce kelime bilgim yeterli seviyeye ulaşmalı.					
Teknik (mesleki) İngilizce kelime bilgim yeterli seviyeye ulaşmalı.					
Telaffuzum yeterli olmalı.					
Düşünceleri İngilizce'de yazıya dökebilmeliyim.					
Dilbilgisinde (gramer) yeterli seviyeye ulaşmalı.					
Mesleğimi yaparken Genel İngilizce yeterli olacaktır.					
Mesleğimi yaparken Teknik (mesleki) İngilizce'ye ihtiyaç duyacağım.					
Bölümümüzde Teknik (mesleki) İngilizce verilmesi gerektiğini düşünüyorum.					
İnternette dil sorunu yaşamamalıyım.					
Diğer düşüncelerinizi belirtiniz.					

APPENDIX C

Sayın .....;

Bu anket "Dumlupınar Üniversitesi Mühendislik Fakültesi Elektrik Elektronik Mühendisliği Bölümü Öğrencilerinin Yabancı Dil Gereksinimleri" konulu bir araştırmada, görüşlerinizden faydalanmak üzere hazırlanmıştır.

Bu araştırma ile mühendis adayı öğrencilerin mesleğe adım attığında ihtiyacını duyabileceği yabancı dil gereksinimlerini birlikte belirlemeyi amaçlamaktadır.

Araştırmada toplanacak bilgiler araştırma kapsamı dışında kullanılmayacaktır.

Araştırmanın başarısı vereceğiniz samimi cevaplarla doğru orantılı olacak ve anketin güvenirliliğine büyük ölçüde katkı sağlayacaktır. Bu nedenle, maddeleri dikkatli okuyup görüşünüze en uygun olan seçeneği içtenlikle cevaplamanızı rica ederim.

Araştırmaya katılımınızdan ve vereceğiniz samimi cevaplardan dolayı teşekkür eder, çalışma hayatınızda başarılar dilerim.

Ayhan KAHRAMAN

I- KİŞİSEL BİLGİLER

1- Adınız – Soyadınız :.....

2- Unvanınız :.....

3- Mesleğiniz:.....

4- Mezun olduğunuz üniversite – fakülte/enstitü

Lisans:.....

Yüksek Lisans:.....

Doktora:.....

5- Ana Bilim Dalınız:.....

6- Kurumdaki göreviniz: .....

7- Yabancı dil veya dilleriniz:.....

7b- Lisans eğitimi öncesi İngilizce hazırlık eğitimi aldınız mı? ☐ Evet ☐ Hayır

8- Lisans eğitiminde ve/veya sonrasında İngilizce hazırlık eğitimi aldınız mı? ☐ Evet ☐ Hayır

9- Hazırlık sınıfı hariç yoğun bir İngilizce eğitimi aldınız mı? ☐ Evet ☐ Hayır

10- **9. soruya** cevabınız evet ise nerde ve haftada kaç saat ?.....

.....

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11- İngilizce hazırlık sınıfı hariç,orta öğretimde haftada kaç saat İngilizce gördünüz?

☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ Hiç ☐ Diğer (Belirtiniz).....

12- İngilizce hazırlık sınıfı hariç, lisede haftada kaç saat İngilizce gördünüz?

☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ Hiç ☐ Diğer (Belirtiniz).....

II- GEREKSİNİM ANALİZİ

13- İngilizce öğrenme nedenleriniz nelerdir? (**en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.**)

- ☐ Günümüzde İngilizce evrensel bir dildir.
- ☐ Yabancı dile karşı özel ilgim var.
- ☐ İngilizce bilmenin meslek hayatımda getireceği avantajlardan (kolay iş bulma, daha iyi maaş, yükselme olanakları vs) yararlanmak.
- ☐ Mühendislik alanında yabancı dil bilmek gereklidir.
- ☐ Yabancılarla daha iyi iletişim kurabilmek.
- ☐ Yurt dışındaki iş imkanlarını değerlendirebilmek.
- ☐ Lisans ve/veya akademik çalışmalarımda (makale, tez, rapor) gereklidir.
- ☐ Eğitimimi yurt dışında devam ettirmeyi düşünüyorum.
- ☐ İş hayatımızda karşılaştığımız kaynakların büyük bir kısmı İngilizce.
- ☐ İnternette zorluk çekmemek.
- ☐ Hızlı gelişen teknolojiyi takip etmek.
- ☐ Yabancı kültürleri daha yakından tanımak.
- ☐ TOEFL, KPDS, ÜDS türü sınavlara girmek.
- ☐ Diğer (belirtiniz) .....

14- Üniversiteden mezun olduğunuzda İngilizce'de aşağıdaki dil becerilerinden **en çok** hangilerine sahip olmak isterdiniz? (**en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.**)

- ☐ İngilizce'yi akıcı konuşabilmek.
- ☐ Mesleki veya özel yazışmalar yapabilmek.
- ☐ İngilizce televizyon ve radyo yayınlarını rahatlıkla dinleyebilmek.
- ☐ İngilizce gazete,dergi,kitap ve makaleleri rahatlıkla okuyabilmek.
- ☐ İngilizce'den Türkçe'ye rahatlıkla çeviri yapabilmek.
- ☐ Türkçe'den İngilizce'ye rahatlıkla çeviri yapabilmek.
- ☐ İyi derecede İngilizce gramer bilgisine sahip olmak.
- ☐ Diğer (belirtiniz) .....

15- İngilizce'de en çok eksikliğini çektiğiniz **3 maddeyi** önem sırasına göre sıralayınız.

- ☐ İngilizce'den Türkçe'ye çeviri yapmak.
- ☐ Türkçe'den İngilizce'ye çeviri yapmak.
- ☐ İngilizce'yi akıcı konuşmak.
- ☐ Yabancılarla İngilizce yazılı iletişime girmek.
- ☐ Okuduğum İngilizce metinleri anlamak.

- ☐ İngilizce genel konuşmaları, şarkıları ve filmleri anlamak.
- ☐ Pratik yapmak.
- ☐ Genel İngilizce kelime bilgisi.
- ☐ Teknik (mesleki) İngilizce kelime bilgisi.
- ☐ Telaffuz.
- ☐ Düşüncelerimi İngilizce'de yazıya dökmek.
- ☐ Dil bilgisi (gramer) .
- ☐ Diğer (belirtiniz) .....

16- İngilizce'yi hayatınızın hangi alanlarında kullanıyorsunuz? (**en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.**)

- ☐ Yabancılarla İngilizce konuşurken.
- ☐ Yabancılarla İngilizce yazışırken.
- ☐ Yabancı kanalları (radyo, TV, vs) izlerken.
- ☐ İnternette.
- ☐ Çeviri yaparken.
- ☐ Mühendislikle ilgili yayınları takip ederken.
- ☐ Mühendislikle ilgili olmayan yayınları takip ederken.
- ☐ İngilizce'yi hiçbir şekilde kullanmıyorum.
- ☐ Diğer (belirtiniz) .....

17- Mesleğinizde İngilizce'de aşağıdakilerden hangilerine daha fazla gereksinim duyulmaktadır? (**en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.**)

- ☐ İngilizce'yi akıcı konuşabilmek.
- ☐ İngilizce'yi işimi görecek kadar konuşabilmek.
- ☐ Okuduğum kaynakları tamamıyla anlayabilmek.
- ☐ Okuduğum kaynakların özünü anlayabilmek.
- ☐ Yabancı kaynaklardan çeviri yapabilmek.
- ☐ Çalıştığım kurumda İngilizce yazışmaları yapabilmek.
- ☐ Yabancı kanalları (radyo, TV, vs) izleyebilmek.
- ☐ Simültane (anında) çeviri yapabilmek.
- ☐ İnternette dil sorunu yaşamamak.
- ☐ İngilizce'ye hiç gereksinim duymuyorum.
- ☐ Diğer (belirtiniz) .....

18- Üniversitede İngilizce dil eğitiminin dil açısından neler sağlaması gerektiğini düşünüyorsunuz?	Kesinlikle Katılıyorum	Katılıyorum	Hiçbir Fikrim Yok	Katılmıyorum	Kesinlikle Katılmıyorum
İngilizce'den Türkçe'ye çeviri yapabilmeliyim.					
Türkçe'den İngilizce'ye çeviri yapabilmeliyim.					
İngilizce'yi akıcı konuşabilmeliyim.					
Yabancılarla İngilizce yazılı iletişime girebilmeliyim.					
Okuduğum İngilizce metinleri anlayabilmeliyim.					
İngilizce şarkıları, filmleri ve genel konuşmaları anlayabilmeliyim.					
İngilizce kelime bilgim yeterli seviyeye ulaşmalı.					
Teknik (mesleki) İngilizce kelime bilgim yeterli seviyeye ulaşmalı.					
Telaffuzum yeterli olmalı.					
Düşünceleri İngilizce'de yazıya dökebilmeliyim.					
Dilbilgisinde (gramer) yeterli seviyeye ulaşmalı.					
Mesleğimi yaparken Genel İngilizce yeterli olacaktır.					
Mesleğimi yaparken Teknik (mesleki) İngilizce'ye ihtiyaç duyacağım.					
Bölümümüzde Teknik (mesleki) İngilizce verilmesi gerektiğini düşünüyorum.					
İnternette dil sorunu yaşamamalıyım.					

19- Elektrik-Elektronik Mühendisi olarak Genel İngilizce ve Mesleki İngilizce gereksinimlerinizle ilgili neleri eklemek istersiniz?

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APPENDIX D

Sayın Meslektaşım;

Bu anket "Dumlupınar Üniversitesi Mühendislik Fakültesi Elektrik Elektronik Mühendisliği Bölümü Öğrencilerinin Yabancı Dil Gereksinimleri" konulu bir araştırmada, görüşlerinizden faydalanmak üzere hazırlanmıştır.

Bu araştırma ile mühendis adayı öğrencilerin mesleğe adım attığında ihtiyacını duyabileceği yabancı dil gereksinimlerini birlikte belirlemeyi amaçlamaktadır.

Araştırmada toplanacak bilgiler araştırma kapsamı dışında kullanılmayacaktır.

Araştırmanın başarısı vereceğiniz samimi cevaplarla doğru orantılı olacak ve anketin güvenirliliğine büyük ölçüde katkı sağlayacaktır. Bu nedenle, maddeleri dikkatli okuyup görüşünüze en uygun olan seçeneği içtenlikle cevaplamanızı rica ederim.

Araştırmaya katılımınızdan ve vereceğiniz samimi cevaplardan dolayı teşekkür eder, çalışmalarınızda başarılar dilerim.

Araştırmacı
Ayhan KAHRAMAN

I- KİŞİSEL BİLGİLER

1- Adınız – Soyadınız :.....

2- Unvanınız :.....

3- Mesleğiniz:.....

4- Mezun olduğunuz üniversite – fakülte/enstitü

Lisans:.....

Yüksek Lisans:.....

Doktora:.....

5- Ana Bilim Dalınız:.....

6- Yürütmekte olduğunuz ana ders hangisidir?.....

7- Yabancı dil veya dilleriniz:.....

7b- Lisans eğitimi öncesi İngilizce hazırlık eğitimi aldınız mı? ☐ Evet ☐ Hayır

8- Lisans eğitiminde ve/veya sonrasında İngilizce hazırlık eğitimi aldınız mı? ☐ Evet ☐ Hayır

9- Hazırlık sınıfı hariç yoğun bir İngilizce eğitimi aldınız mı? ☐ Evet ☐ Hayır

10- **9. soruya** cevabınız evet ise nerde ve haftada kaç saat ?.....

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11- İngilizce hazırlık sınıfı hariç,orta öğretimde haftada kaç saat İngilizce gördünüz?

☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ Hiç ☐ Diğer (Belirtiniz).....

12- İngilizce hazırlık sınıfı hariç, lisede haftada kaç saat İngilizce gördünüz?

☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ Hiç ☐ Diğer (Belirtiniz).....

II- GEREKSİNİM ANALİZİ

13- Sizce öğrencilerinizin İngilizce öğrenme nedenleri nelerdir? **(en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.)**

- ☐ Günümüzde İngilizce evrensel bir dildir.
- ☐ Yabancı dile karşı özel ilgileri var.
- ☐ İngilizce bilmenin meslek hayatında getireceği avantajlardan (kolay iş bulma, daha iyi maaş, yükselme olanakları vs) yararlanmak.
- ☐ Mühendislik alanında yabancı dil bilmek gereklidir.
- ☐ Yabancılarla daha iyi iletişim kurabilmek.
- ☐ Yurt dışındaki iş imkanlarını değerlendirebilmek.
- ☐ Lisans ve/veya akademik çalışmalarında (makale, tez, rapor) gereklidir.
- ☐ Eğitimlerini yurt dışında devam ettirmeyi düşünüyorlar.
- ☐ Bölümde kullanılan veya önerilen kaynakların büyük bir kısmı İngilizce.
- ☐ İnternette zorluk çekmemek.
- ☐ Hızlı gelişen teknolojiyi takip etmek.
- ☐ Yabancı kültürleri daha yakından tanımak.
- ☐ TOEFL, KPDS, ÜDS türü sınavlara girmek.
- ☐ Diğer (belirtiniz) .....

14- Öğrencileriniz bölümden mezun olduklarında İngilizce'de aşağıdaki dil becerilerinden **en çok** hangilerine sahip olmak istiyorlar?. **(en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.)**

- ☐ İngilizce'yi akıcı konuşabilmek.
- ☐ Mesleki veya özel yazışmalar yapabilmek.
- ☐ İngilizce televizyon ve radyo yayınlarını rahatlıkla dinleyebilmek.
- ☐ İngilizce gazete,dergi,kitap ve makaleleri rahatlıkla okuyabilmek.
- ☐ İngilizce'den Türkçe'ye rahatlıkla çeviri yapabilmek.
- ☐ Türkçe'den İngilizce'ye rahatlıkla çeviri yapabilmek.
- ☐ İyi derecede İngilizce gramer bilgisine sahip olmak.
- ☐ Diğer (belirtiniz) .....

15- Gözlemlerinize dayanarak, öğrencileriniz İngilizce'de en çok nelerin eksikliğini çekiyorlar? **(en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.)**

- ☐ İngilizce'den Türkçe'ye çeviri yapma.
- ☐ Türkçe'den İngilizce'ye çeviri yapma.
- ☐ İngilizce'yi akıcı konuşma.
- ☐ Yabancılarla İngilizce yazılı iletişime girme.

- ☐ Okuduğu İngilizce metinleri anlama.
- ☐ İngilizce genel konuşmaları, şarkıları ve filmleri anlama.
- ☐ Pratik yapma.
- ☐ Genel İngilizce kelime bilgisi.
- ☐ Teknik (mesleki) İngilizce kelime bilgisi.
- ☐ Telaffuz.
- ☐ Düşüncelerini İngilizce'de yazıya dökme.
- ☐ Dil bilgisi (gramer) .
- ☐ Diğer (belirtiniz) .....

16- Gözlemlerinize dayanarak, öğrencileriniz İngilizce'yi hayatlarının hangi alanlarında kullanıyorlar? **(en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.)**

- ☐ Yabancılarla İngilizce konuşurken.
- ☐ Yabancılarla İngilizce yazışırken.
- ☐ Yabancı kanalları (radyo, TV, vs) izlerken.
- ☐ İnternette.
- ☐ Çeviri yaparken.
- ☐ Mühendislikle ilgili yayınları takip ederken.
- ☐ Mühendislikle ilgili olmayan yayınları takip ederken.
- ☐ İngilizce'yi hiçbir şekilde kullanmıyor.
- ☐ Diğer (belirtiniz) .....

17- Öğrencileriniz mesleğe adım attıklarında İngilizce'de aşağıdakilerden hangilerine daha fazla gereksinim duyacaklar? **(en önemli 3 seçeneği 1'den 3'e kadar sıralayınız.)**

- ☐ İngilizce'yi akıcı konuşabilmeli.
- ☐ İngilizce'yi işini görecek kadar konuşabilmeli
- ☐ Okuduğu kaynakları tamamıyla anlayabilmeli.
- ☐ Okuduğu kaynakların özünü anlayabilmeli.
- ☐ Yabancı kaynaklardan çeviri yapabilmeli.
- ☐ Çalıştığım kurumda İngilizce yazışmaları yapabilmeli.
- ☐ Yabancı kanalları (radyo, TV, vs) izleyebilmeli.
- ☐ Simültane (anında) çeviri yapabilmeli.
- ☐ İnternette dil sorunu yaşamamalı.
- ☐ İngilizce'ye gereksinim duyacağını düşünmüyorum.
- ☐ Diğer (belirtiniz) .....

18- Elektrik-Elektronik Mühendisliği öğrencilerine İngilizce dil eğitiminin dil açısından neler sağlaması gerektiğini düşünüyorsunuz?	Kesinlikle Katılıyorum	Katılıyorum	Hiçbir Fikrim Yok	Katılmıyorum	Kesinlikle Katılmıyorum
İngilizce'den Türkçe'ye çeviri yapabilmeli.					
Türkçe'den İngilizce'ye çeviri yapabilmeli.					
İngilizce'yi akıcı konuşabilmeli.					
Yabancılarla İngilizce yazılı iletişime girebilmeli.					
Okuduğu İngilizce metinleri anlayabilmeli.					
İngilizce şarkıları, filmleri ve genel konuşmaları anlayabilmeli.					
İngilizce kelime bilgileri yeterli seviyeye ulaşmalı.					
Teknik (mesleki) İngilizce kelime bilgileri yeterli seviyeye ulaşmalı.					
Telaffuzları yeterli olmalı.					
Düşünceleri İngilizce'de yazıya dökebilmeli.					
Dilbilgisinde (gramer) yeterli seviyeye ulaşmalı.					
Mesleklerinde Genel İngilizce yeterli olacaktır.					
Mesleklerini yaparken Teknik (mesleki) İngilizce'ye ihtiyaç duyacaklar.					
Bölümümüzde Teknik (mesleki) İngilizce verilmesi gerektiğini düşünüyorum.					
İnternette dil sorunu yaşamamalı.					

19- Elektrik-Elektronik Mühendisliği öğretim üyesi olarak öğrencilerinizin Genel İngilizce ve Mesleki İngilizce gereksinimleri konularında ilave etmek istedikleriniz.

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APPENDIX E

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

N of Cases = 29,0

Statistics for Scale	Mean	Variance	Std Dev	N of Variables
	90,0690	225,4951	15,0165	34

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2,6491	,1034	6,2414	6,1379	60,3333	3,0061

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2,2791	,0961	9,4655	9,3695	98,5385	5,7938

Inter-item Covariances	Mean	Minimum	Maximum	Range	Max/Min	Variance
	,1319	-2,3116	3,1330	5,4446	-1,3554	,3007

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	,0836	-,5924	,8997	1,4920	-1,5188	,0640

Analysis of Variance

Source of Variation	Sum of Sq.	DF	Mean Square	F	Prob
Between People	185,7018	28	6,6322		
Within People	4860,8824	957	5,0793		
Between Measures	2876,8600	33	87,1776	40,6004	,0000
Residual	1984,0223	924	2,1472		
Nonadditivity	23,4929	1	23,4929	11,0602	,0009
Balance	1960,5295	923	2,1241		
Total	5046,5842	985	5,1234		
Grand Mean	2,6491				

Reliability Coefficients 34 items

Alpha = ,6762 Standardized item alpha = ,7563

APPENDIX F

R E L I A B I L I T Y A N A L Y S I S - S C A L E (S P L I T)

N of Cases = 29,0

Statistics for	Mean	Variance	Std Dev	N of Variables
Part 1	53,0690	105,4236	10,2676	17
Part 2	37,0000	48,3571	6,9539	17
Scale	90,0690	225,4951	15,0165	34

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
Part 1	3,1217	2,2414	5,9310	3,6897	2,6462	,9975
Part 2	2,1765	,1034	6,2414	6,1379	60,3333	4,7280
Scale	2,6491	,1034	6,2414	6,1379	60,3333	3,0061

Item Variances	Mean	Minimum	Maximum	Range	Max/Min	Variance
Part 1	2,0879	1,0468	4,3842	3,3374	4,1882	1,3638
Part 2	2,4703	,0961	9,4655	9,3695	98,5385	10,5083
Scale	2,2791	,0961	9,4655	9,3695	98,5385	5,7938

Inter-item Covariances	Mean	Minimum	Maximum	Range	Max/Min	Variance
Part 1	,2571	-1,9606	1,2931	3,2537	-,6595	,3791
Part 2	,0234	-1,9704	3,1330	5,1034	-1,5900	,3254
Scale	,1319	-2,3116	3,1330	5,4446	-1,3554	,3007

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
Part 1	,2022	-,5287	,8997	1,4284	-1,7016	,1225
Part 2	,0051	-,5924	,5157	1,1081	-,8706	,0369
Scale	,0836	-,5924	,8997	1,4920	-1,5188	,0640

Analysis of Variance

Source of Variation	Sum of Sq.	DF	Mean Square	F	Prob.
Between People	185,7018	28	6,6322		
Within People	4860,8824	957	5,0793		
Between Measures	2876,8600	33	87,1776	40,6004	,0000
Residual	1984,0223	924	2,1472		
Nonadditivity	23,4929	1	23,4929	11,0602	,0009
Balance	1960,5295	923	2,1241		
Total	5046,5842	985	5,1234		
Grand Mean	2,6491				

R E L I A B I L I T Y A N A L Y S I S - S C A L E (S P L I T)

Reliability Coefficients 34 items

Correlation between forms =,5022 Equal-length Spearman-Brown =,6686

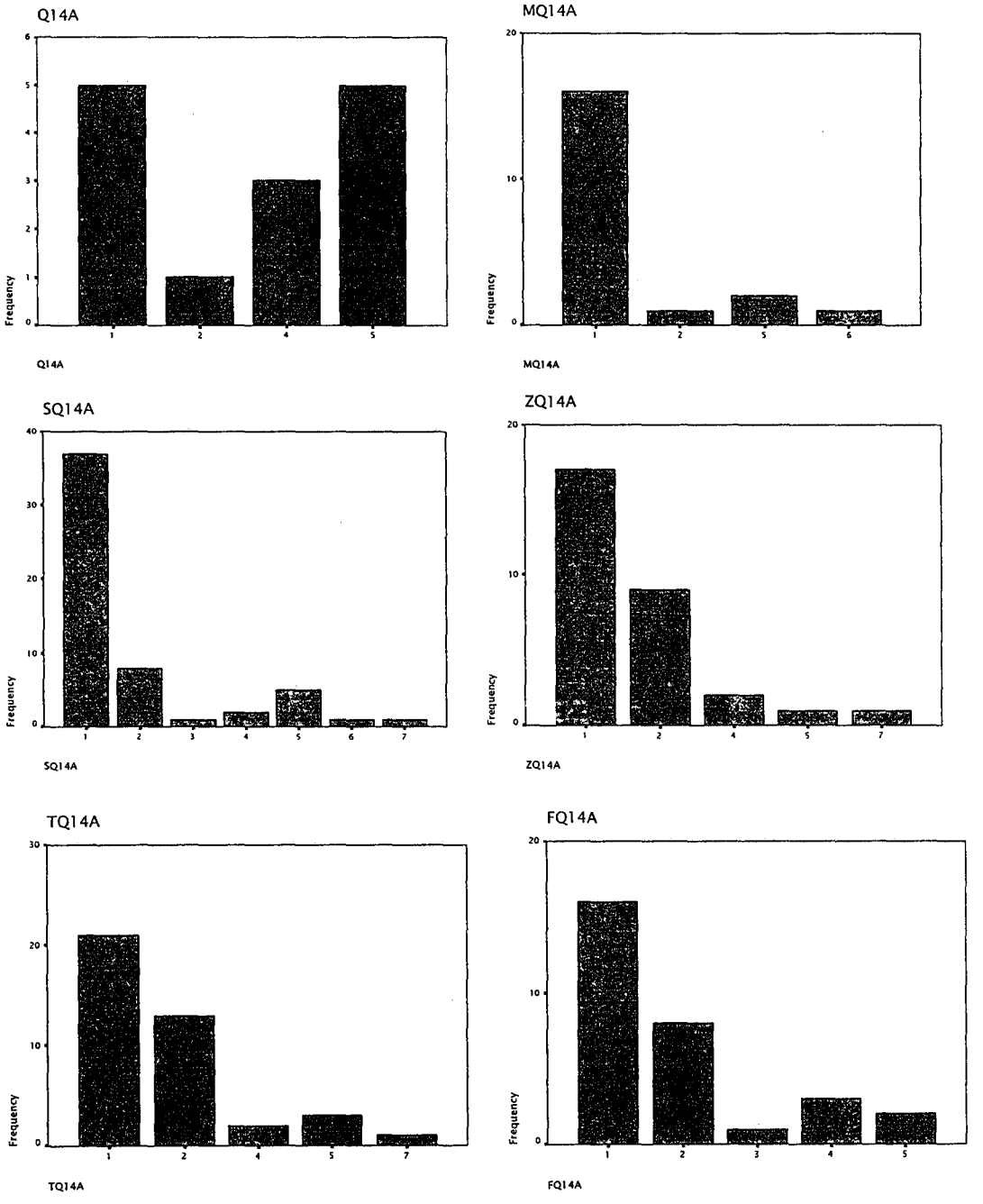
Guttman Split-half = ,6361 Unequal-length Spearman-Brown = ,6686

Alpha for part 1 = ,7048 Alpha for part 2 = ,1398

17 items in part 1 17 items in part 2

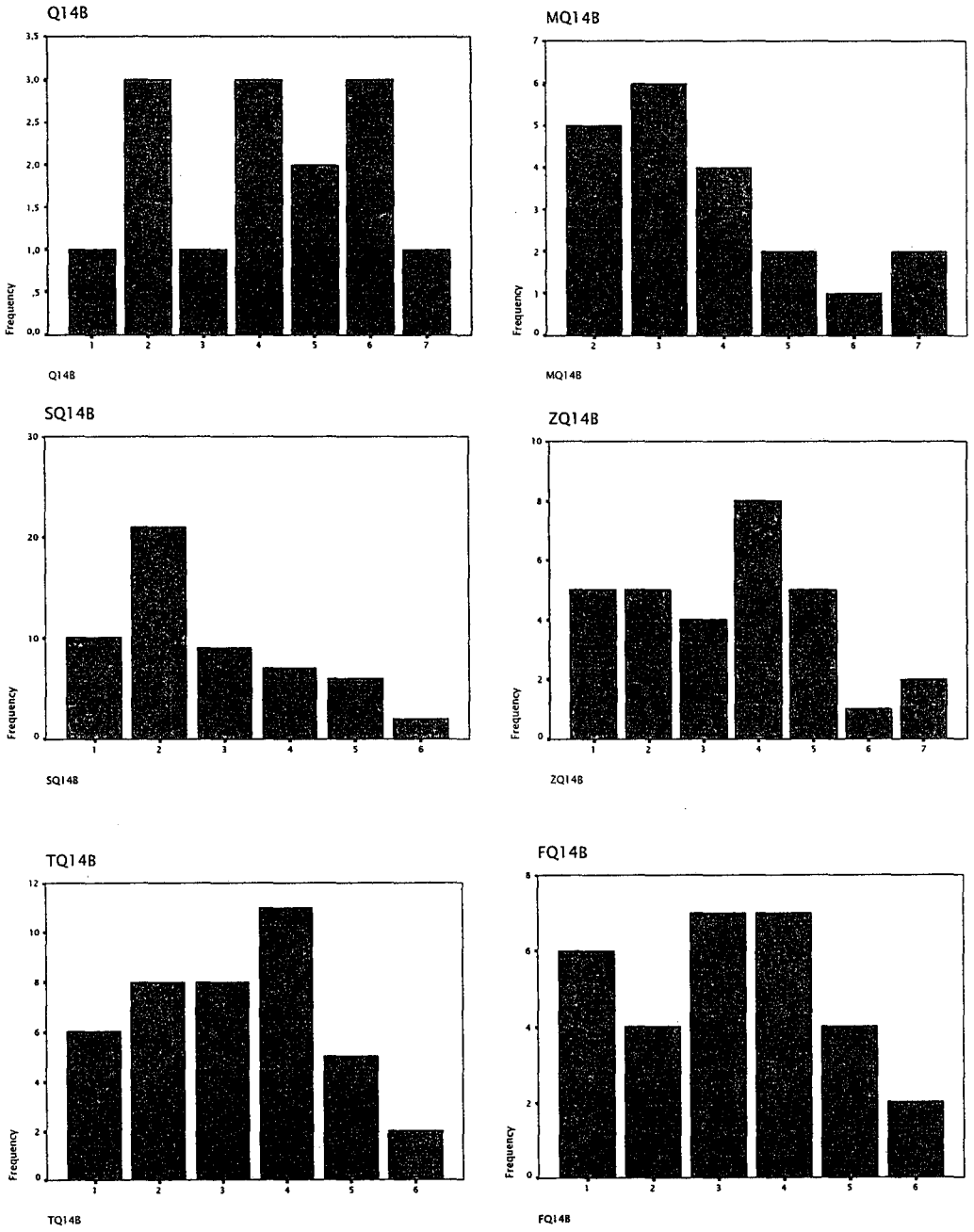
APPENDIX G

Bar charts for question 14 (choice 1)



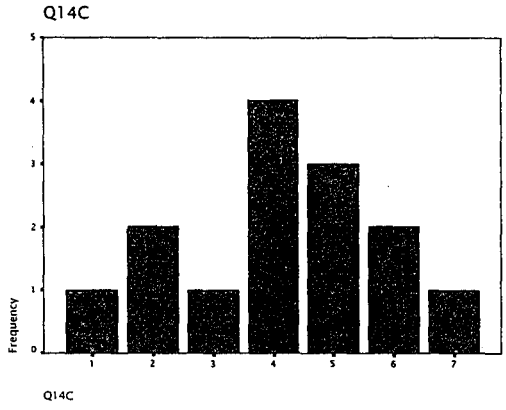
Q = Instructors **ZQ = Sophomores**
MQ = Engineers **TQ = Juniors**
SQ = Freshmen **FQ = Seniors**
x axis = frequency **y axis = item numbers**
(see appendices B – C - D)

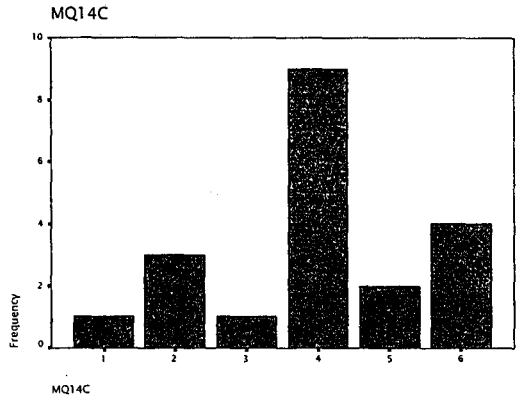
Bar charts for question 14 (choice 2)

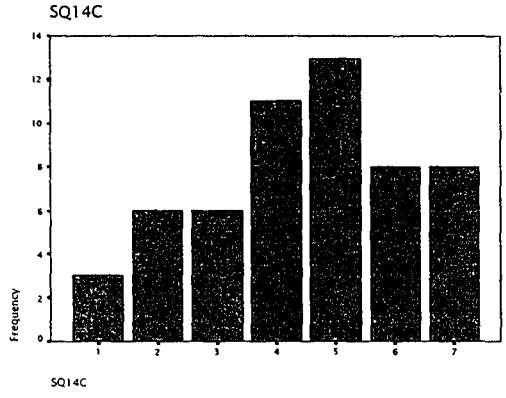


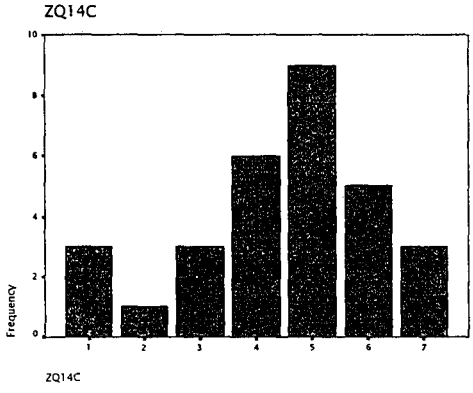
Q = Instructors **ZQ = Sophomores**
MQ = Engineers **TQ = Juniors**
SQ = Freshmen **FQ = Seniors**
x axis = frequency **y axis = item numbers**
(see appendices B – C - D)

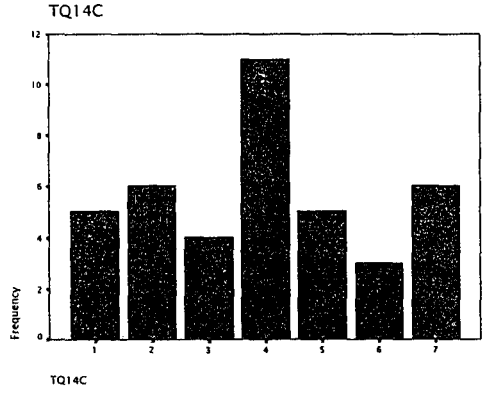
Bar charts for question 14 (choice 3)

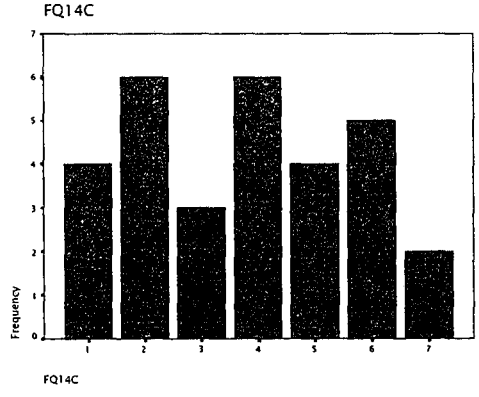








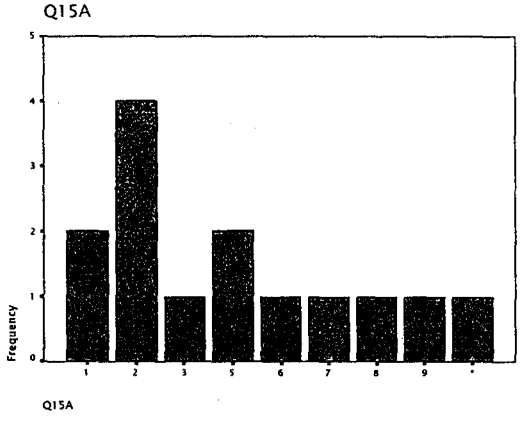


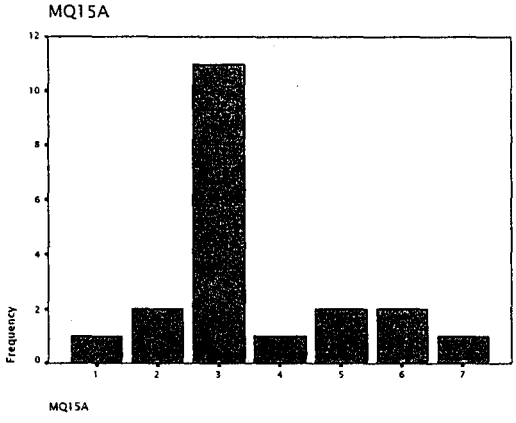


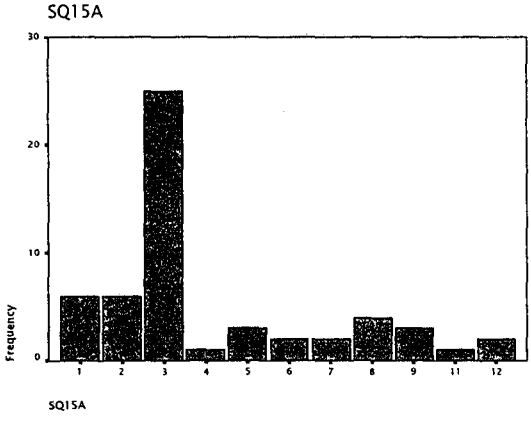
Q = Instructors **ZQ = Sophomores**
MQ = Engineers **TQ = Juniors**
SQ = Freshmen **FQ = Seniors**
x axis = frequency **y axis = item numbers**
(see appendices B – C - D)

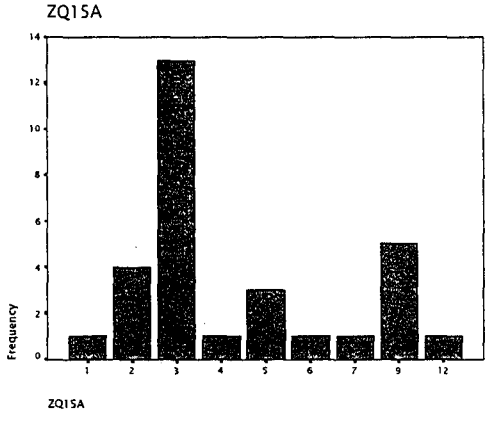
APPENDIX H

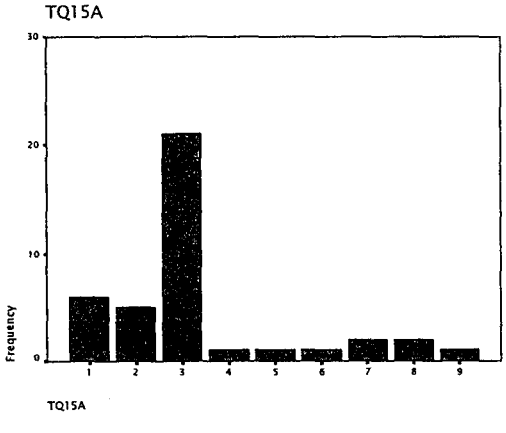
Bar charts for question 15 (choice 1)

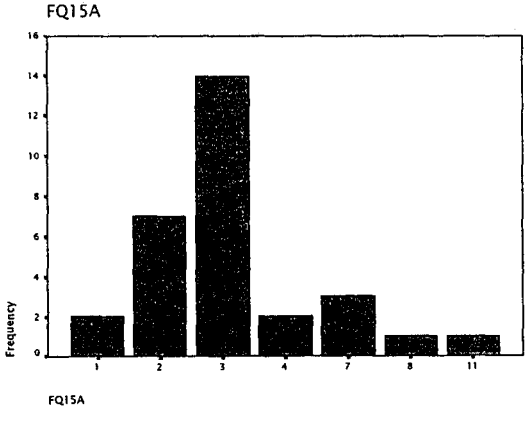






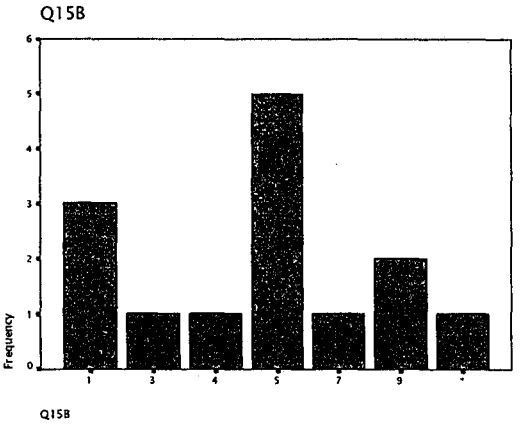


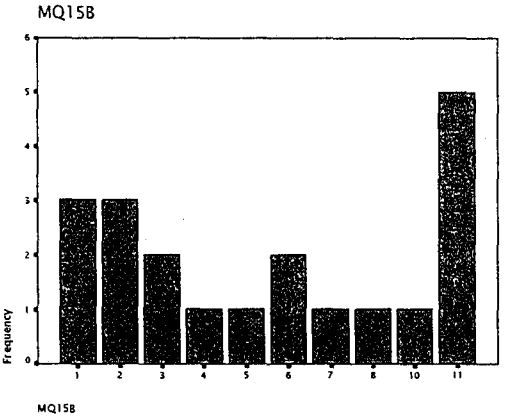


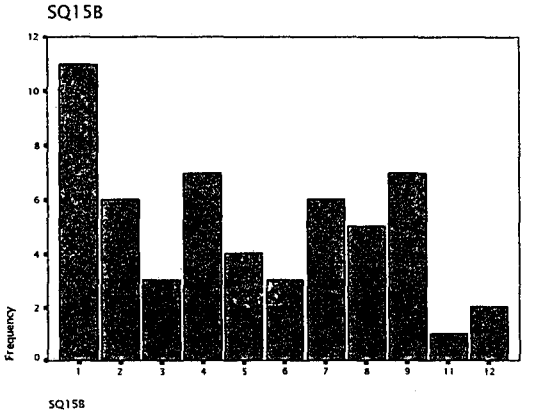


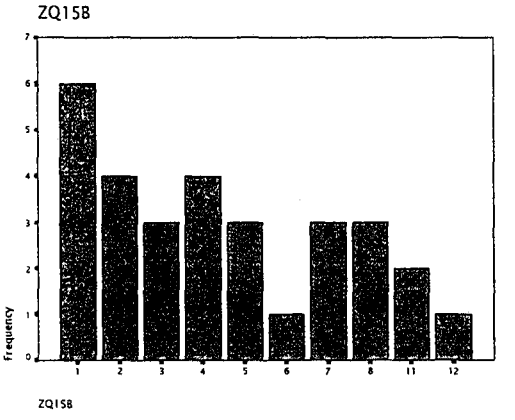
Q = Instructors **ZQ = Sophomores**
MQ = Engineers **TQ = Juniors**
SQ = Freshmen **FQ = Seniors**
x axis = frequency **y axis = item numbers**
(see appendices B - C - D)

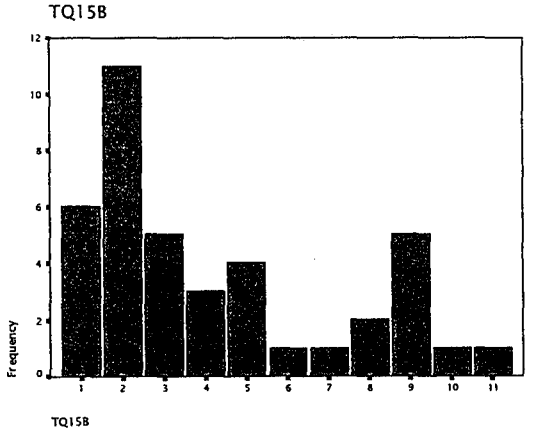
Bar charts for question 15 (choice 2)

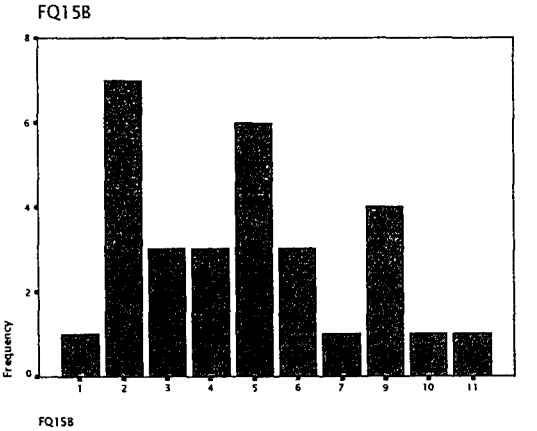






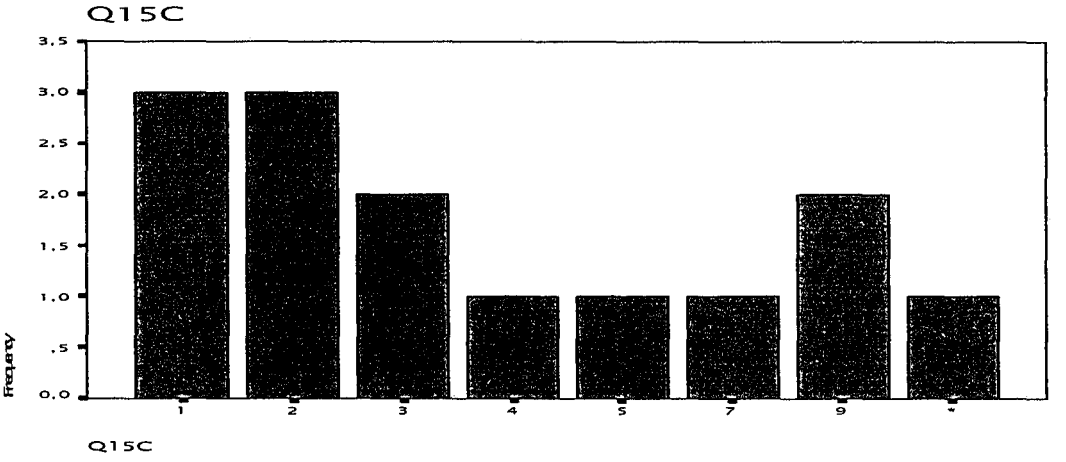


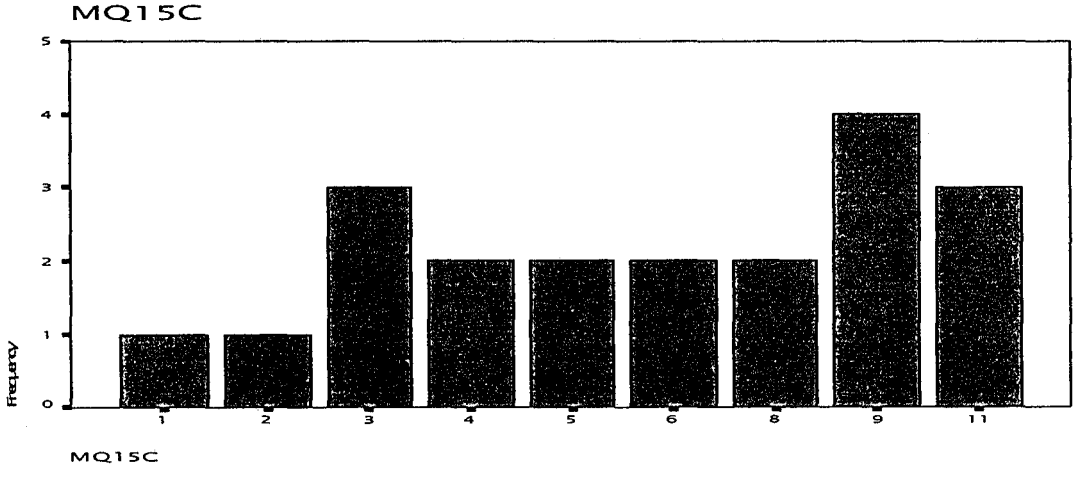


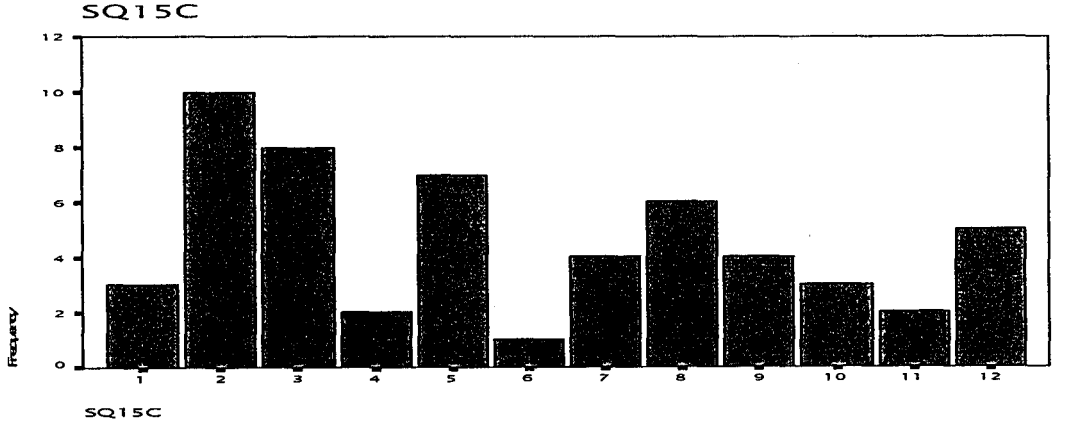


Q = Instructors **ZQ = Sophomores**
MQ = Engineers **TQ = Juniors**
SQ = Freshmen **FQ = Seniors**
x axis = frequency **y axis = item numbers**
(see appendices B – C - D)

Bar charts for question 15 (choice 3/1)

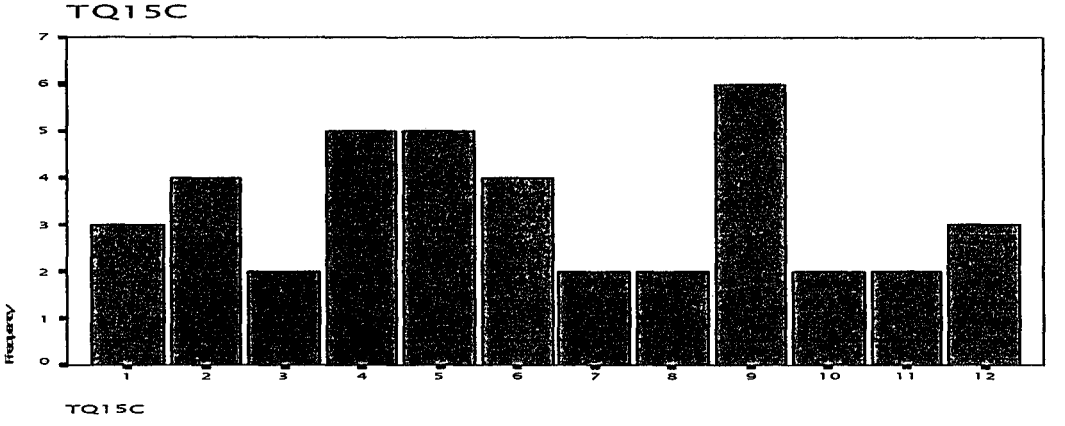


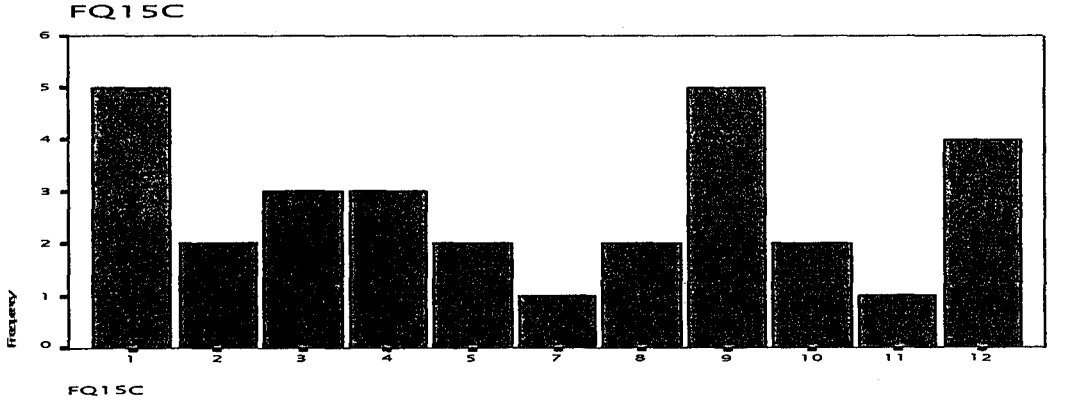




Q = Instructors
MQ = Engineers
SQ = Freshmen
x axis = frequency y axis =item numbers

Bar charts for question 15 (choice 3/2)

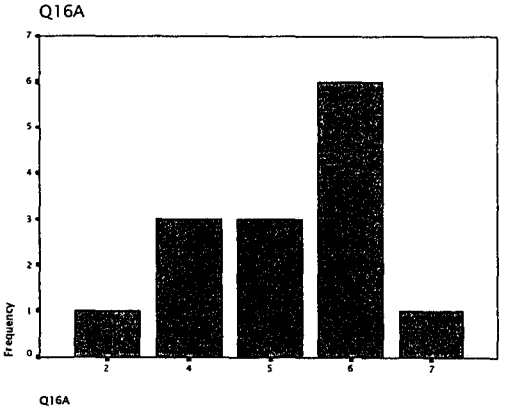


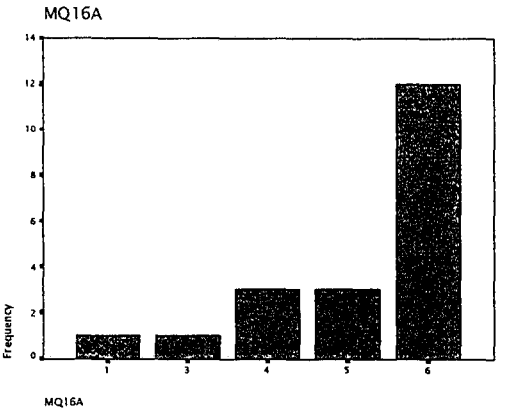


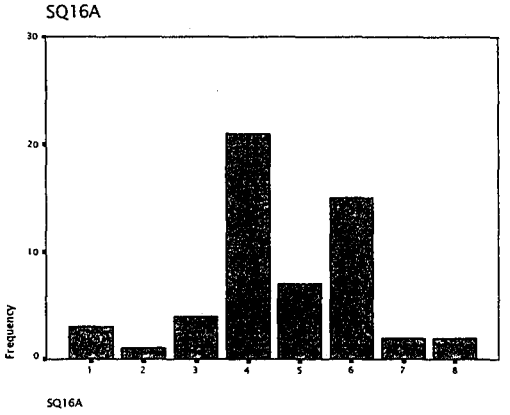
ZQ = Sophomores
TQ = Juniors
FQ = Seniors
x axis = frequency y axis = item numbers

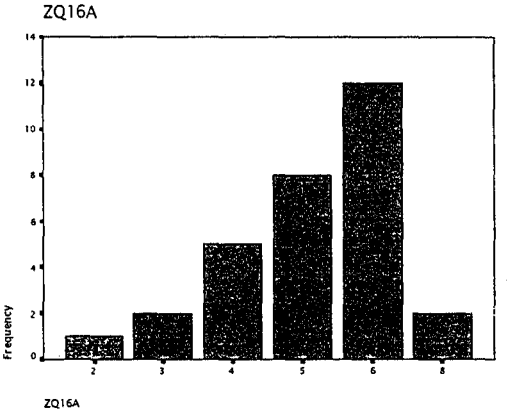
APPENDIX I

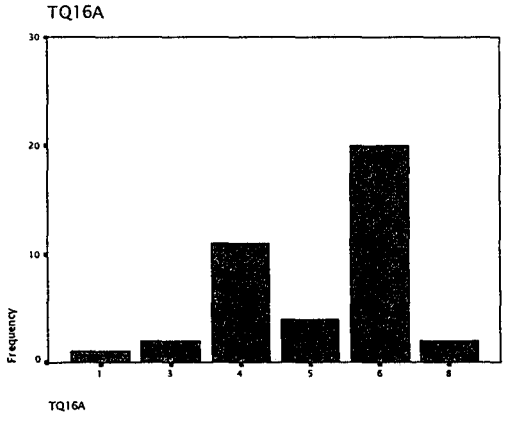
Bar charts for question 16 (choice 1)

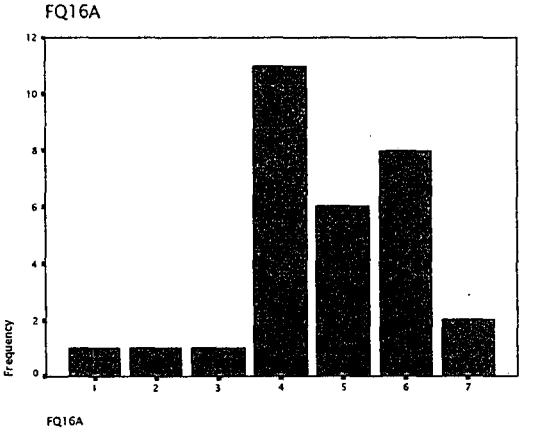








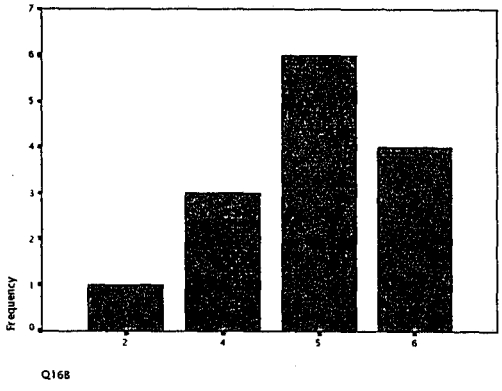




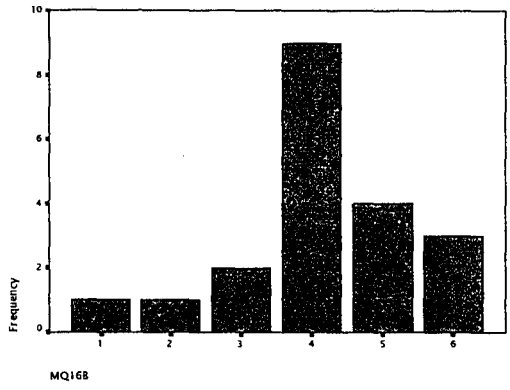
Q = Instructors	**ZQ = Sophomores**
MQ = Engineers	**TQ = Juniors**
SQ = Freshmen	**FQ = Seniors**
x axis = frequency	**y axis = item numbers** (see appendices B – C - D)

Bar charts for question 16 (choice 2)

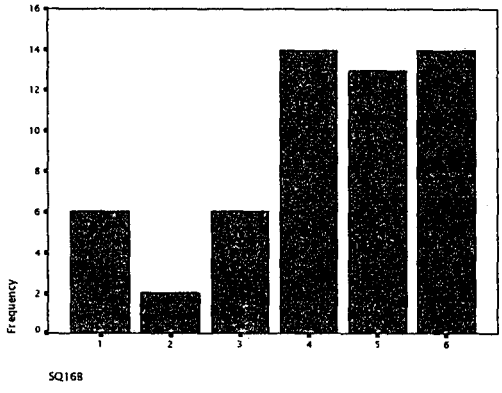
Q16B



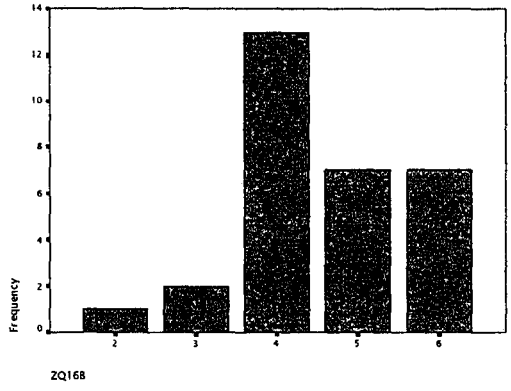
MQ16B



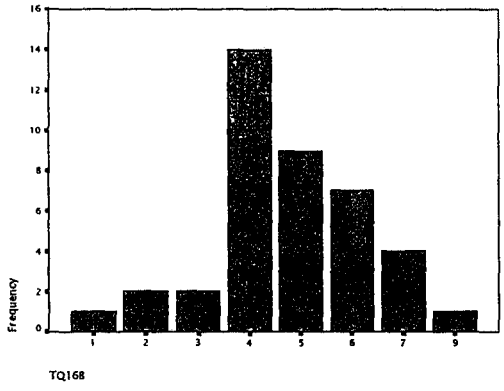
SQ16B



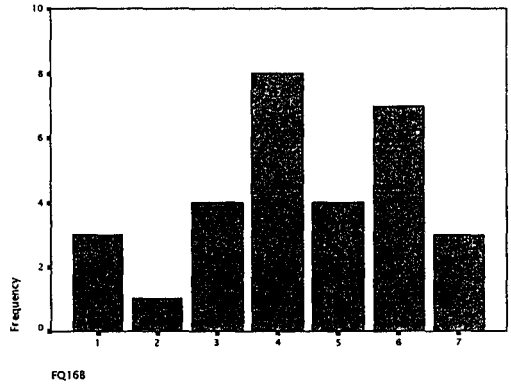
ZQ16B



TQ16B



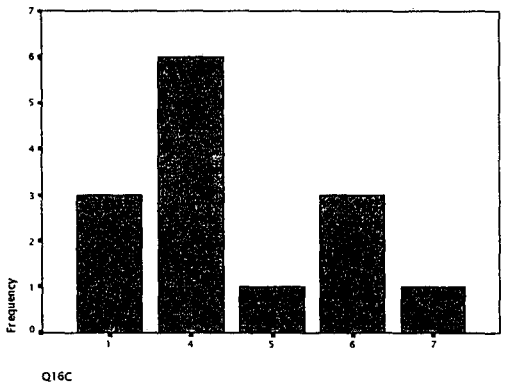
FQ16B



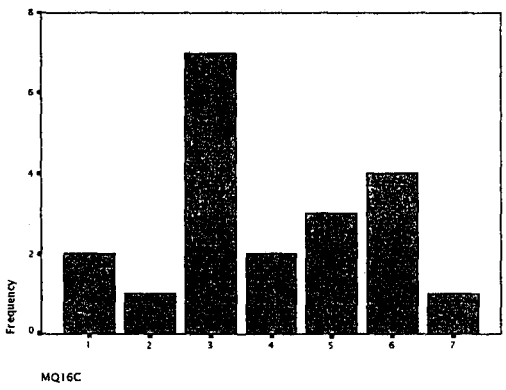
Q = Instructors	**ZQ = Sophomores**
MQ = Engineers	**TQ = Juniors**
SQ = Freshmen	**FQ = Seniors**
x axis = frequency	**y axis = item numbers** (see appendices B – C - D)

Bar charts for question 16 (choice 3)

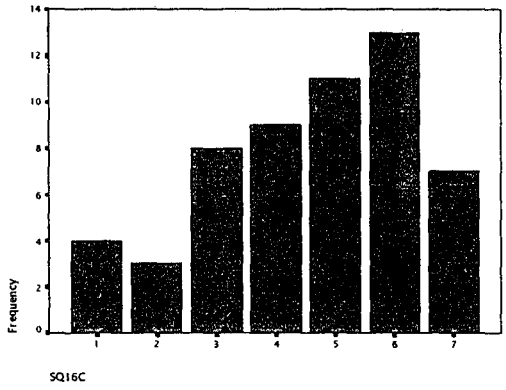
Q16C



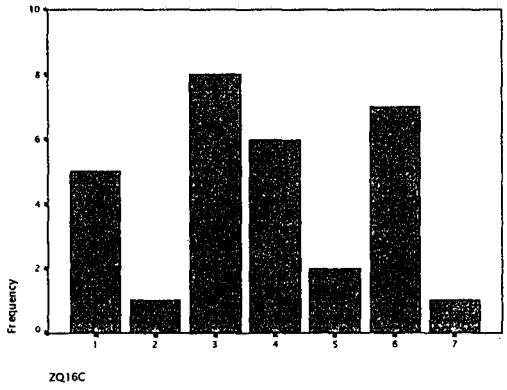
MQ16C



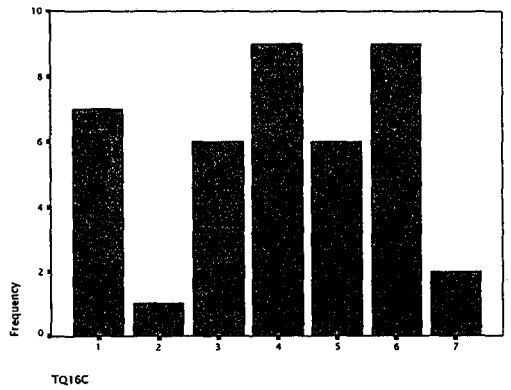
SQ16C



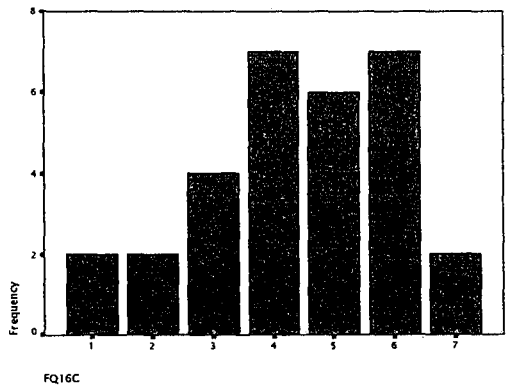
ZQ16C



TQ16C



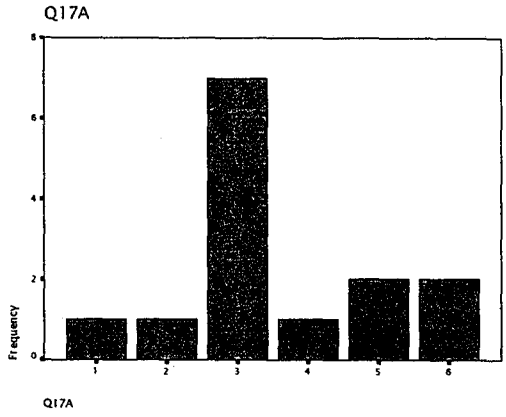
FQ16C

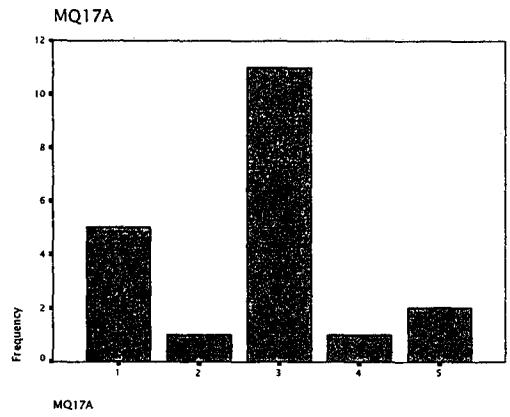


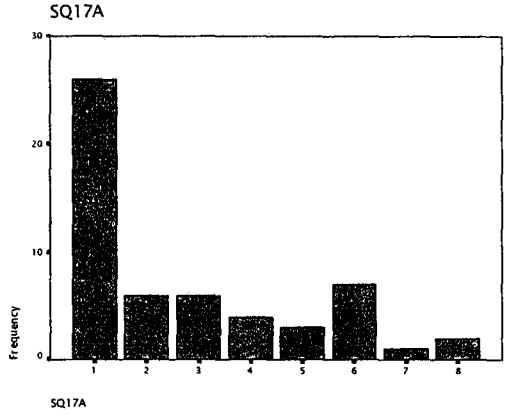
Q = Instructors	**ZQ = Sophomores**
MQ = Engineers	**TQ = Juniors**
SQ = Freshmen	**FQ = Seniors**
x axis = frequency	**y axis = item numbers** (see appendices B – C - D)

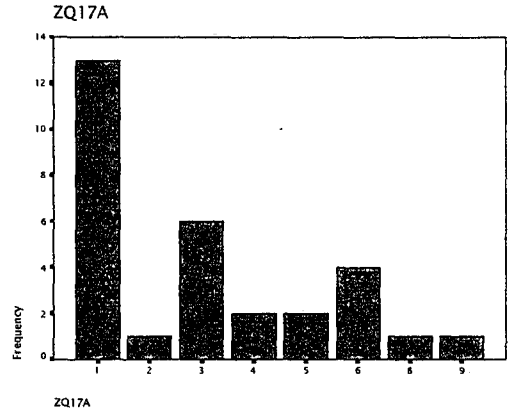
APPENDIX J

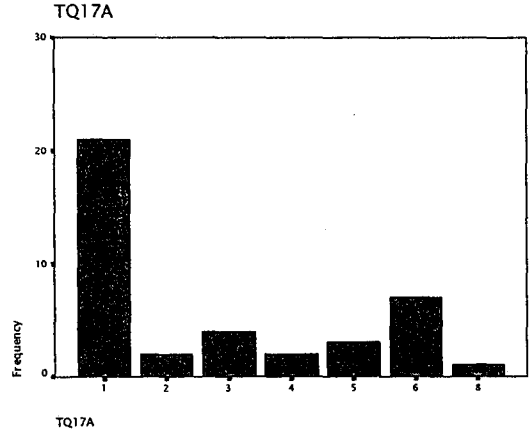
Bar charts for question 17 (choice 1)

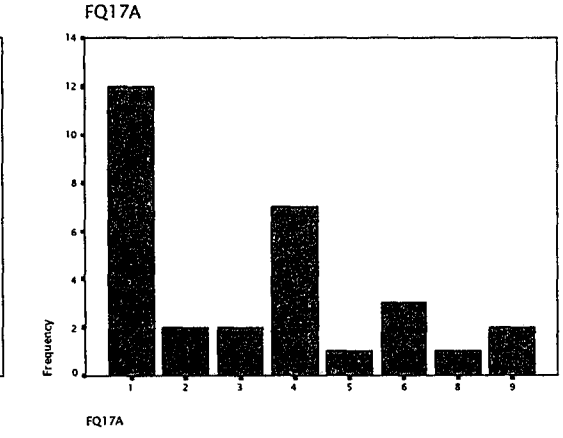








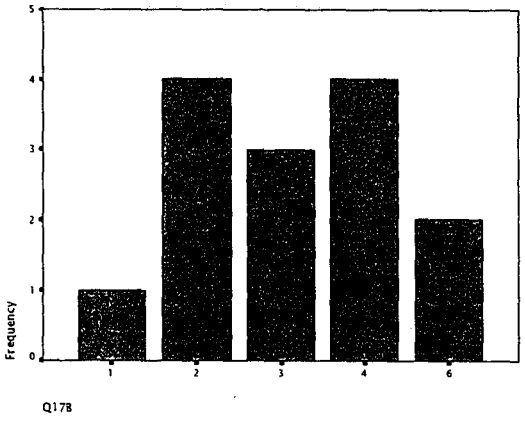




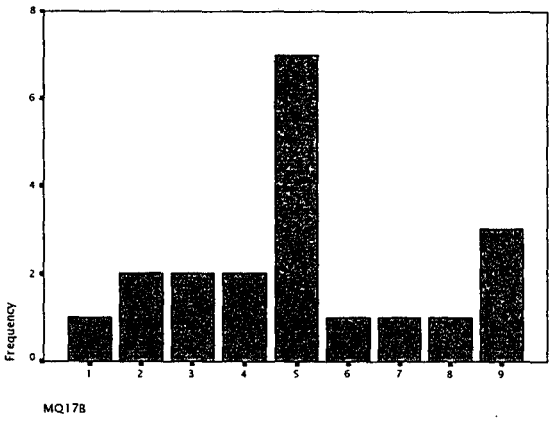
Q = Instructors	**ZQ = Sophomores**
MQ = Engineers	**TQ = Juniors**
SQ = Freshmen	**FQ = Seniors**
x axis = frequency	**y axis = item numbers** (see appendices B – C - D)

Bar charts for question 17 (choice 2)

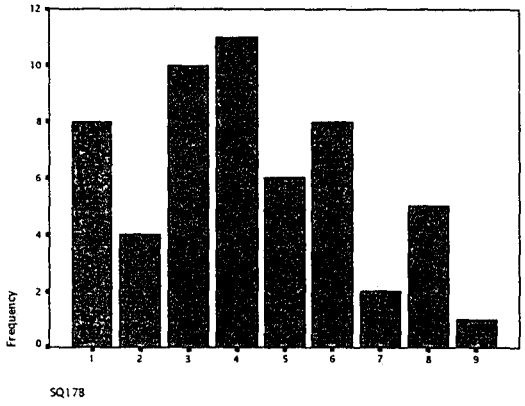
Q17B



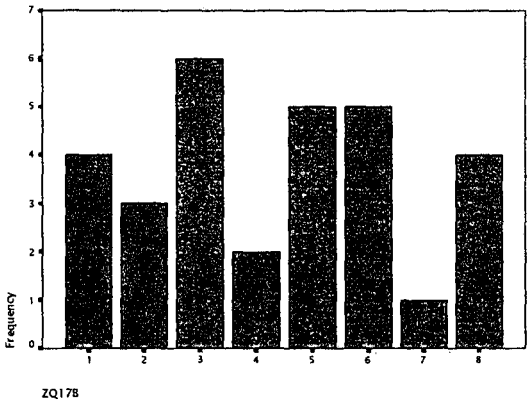
MQ17B



SQ17B



ZQ17B



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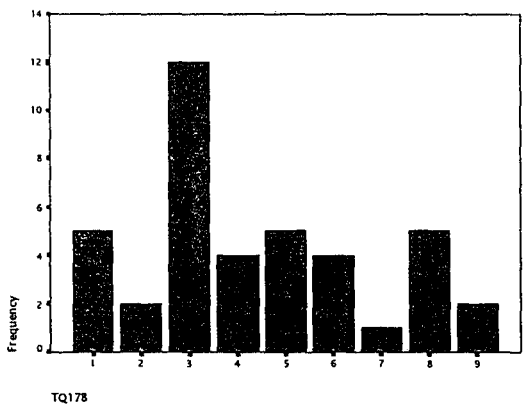
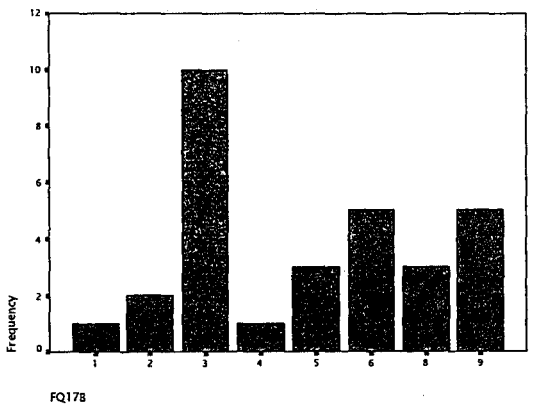
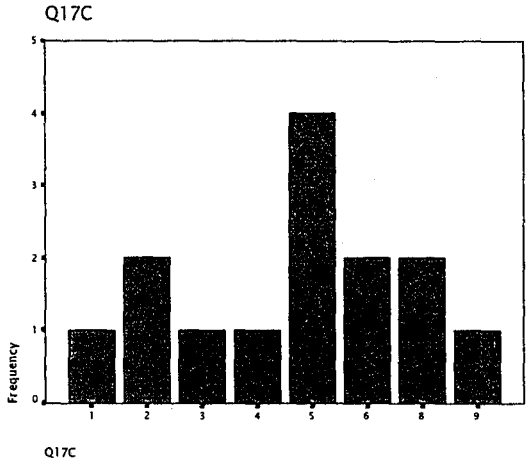


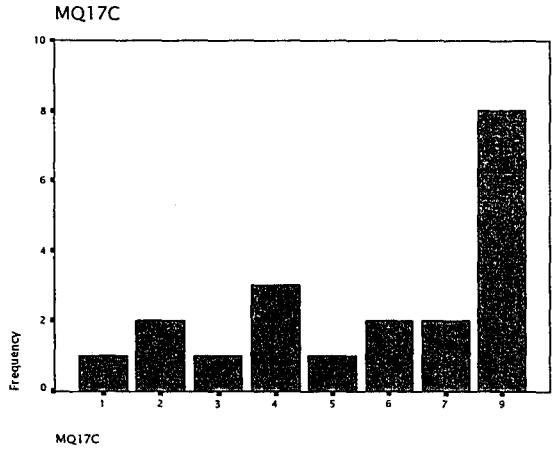
FQ17B

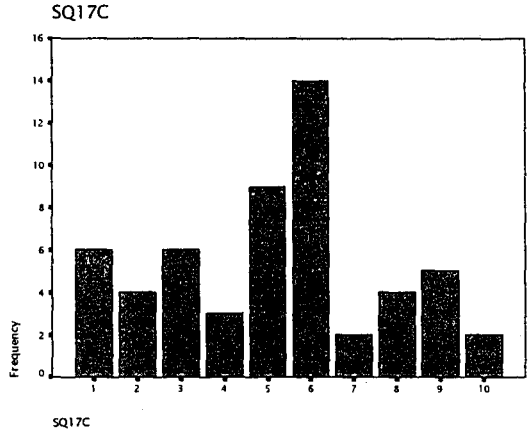


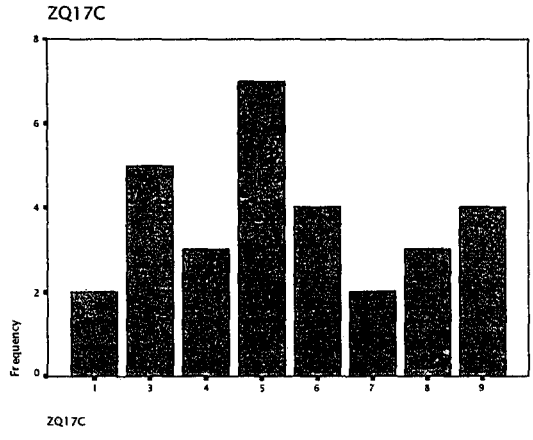
Q = Instructors	**ZQ = Sophomores**
MQ = Engineers	**TQ = Juniors**
SQ = Freshmen	**FQ = Seniors**
x axis = frequency	**y axis = item numbers** (see appendices B – C - D)

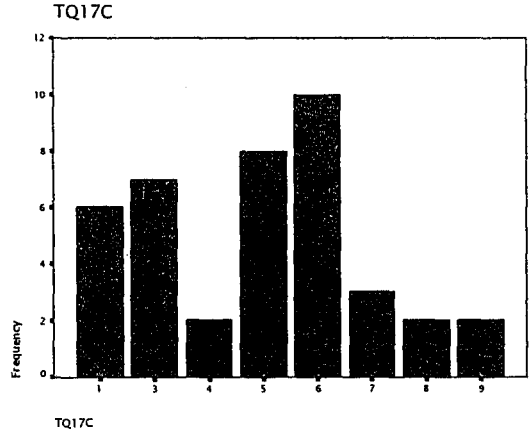
Bar charts for question 17 (choice 3)

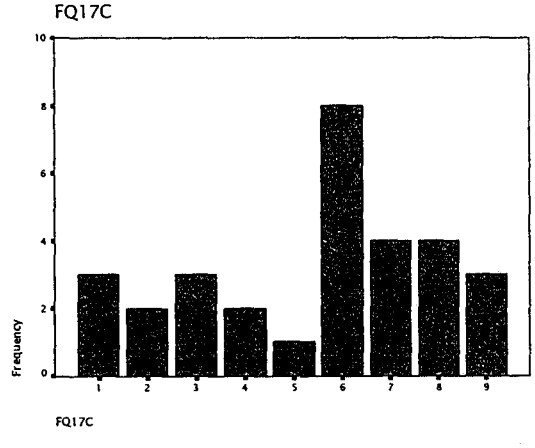












Q = Instructors	**ZQ = Sophomores**
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x axis = frequency	**y axis = item numbers** (see appendices B – C - D)

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