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Subject Matter and English Language Teachers Perceptions of EST at An-Najah National University

إدراك كل من معلمي الكليات العلمية ومعلمي اللغة الإنجليزية لموضوع تدريس اللغة الإنجليزية لطلبة العلوم والتكنولوجيا (*EST*) في جامعة النجاح الوطنية

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Abstract

The teaching of English for Special Purposes (ESP) has developed from a concern for the needs, desires, interests and attitudes of learners. ESP has many advantages; however, they might not be achieved unless an encouraging atmosphere that meets students' needs is established. This paper examines the perceptions of subject matter teachers and English language teachers of the needs of their EST (English for Science and Technology) students at An –Najah University. Therefore, the paper touches upon needs analysis as an important issue related to the teaching of EST in an attempt to investigate the extent of cooperation and coordination between the English language teachers and subject matter teachers. The paper also investigates the subject matter and English language teachers' perceptions of the need for teaching English language, textbooks, materials, skills and activities in EST courses. The perceptions of the need for subject matter and English language teachers have been investigated by means of a questionnaire. The subjects of the study were (41) subject matter teachers and English language teachers at An-Najah University. The findings of the study revealed that the perceptions of the need for cooperation and coordination between English language and subject matter teachers was very high. The results also indicated that the subject matter teachers showed the highest means for all domains, with the highest mean for the need for appropriate textbooks and materials. This paper concludes with suggestions to reinforce cooperation and coordination between both English and subject matter teachers

ملخـص

لقد تطور موضوع تعليم اللغة الإنجليزية لأغراض خاصة (ESP) بسبب الاهتمام بحاجات واتجاهات المتعلمين. وبالرغم من أن ESP له فوائد كثيرة، إلا أنه وبدون وجود البيئة المشجعة والملائمة لحاجات الطلبة فإنه لن يتحقق نجاح ملموس في تدريس هذا النمط المتخصص من اللغة الإنجليزية لغير الناطقين بها. تفحص هذه الدراسة مدى إدراك كل من معلمي اللغة الإنجليزية (English Teachers) ومعلمي الكليات العلمية (Subject Teachers) لحاجات طلابهم في الكليات العلمية حيث تدرس مساقات لغة إنجليزية إجبارية لطلبة العلوم و التكنولوجيا (EST) كما هو الحال في جامعة النجاح الوطنية، وتعرض هذه الدراسة بإيجاز تحليل الحاجات (Needs Analysis) كقضية حيوية مرتبطة بتعليم اللغة الإنجليزية لأغراض خاصة وذلك في محاولة لفحص مدى التعاون والتنسيق بين معلمي اللغة الإنجليزية ومعلمي الكليات العلمية فيما يتعلق بحاجات طلبة الكليات العلمية (EST) ومحاولة اعتماد معايير معينة عند اختيار الكتب وتصميم الأنشطة. لقد تم فحص هذه الحاجات بواسطة استبانة شملت ٤١ معلما من معلمي اللغة الإنجليزية ومعلمي الكليات العلمية في جامعة النجاح. وكشفت نتائج الدراسة عن الحاجة الملحة للتعاون والتنسيق المستمر بين معلمي اللغة الإنجليزية ومعلمي الكليات العلمية في تقدير حاجات الطلبة. كما بينت النتائج أيضا أن معلمي الكليات العلمية أظهروا أعلى المتوسطات لكل الحاجات والتي كان أعلاها الحاجة إلى الكتب والمواد المناسبة. وخلصت الدراسة إلى مجموعة من التوصيات التي من شأنها تعزيز التنسيق والتعاون بين المعلمين من الفئتين.

Introduction

In the rapidly changing world, teaching English for Specific Purposes (ESP) has become one of the most prominent features of the English language teaching process. ESP practitioners face new opportunities and challenges.

Hutchinson and Waters (1987) reported that ESP is an approach for language teaching in which all decisions regarding content and methods are based on the learners' reasons for learning. It focuses on using English effectively in specific academic fields such as business, law, medicine, sciences, etc. Coffey (1984) classifies ESP, which encompasses a wide range of possible learning situations under (1) English for Academic Purposes (EAP), English for Science and Technology (EST) which is part of (EAP) and (2) English for Occupational Purposes (EOP).

The practice of teaching English for Science and Technology (EST) has gradually become widespread because of a great need to use English internationally. This trend of teaching is based on a more fundamental movement to center instruction on the learner's needs which can be seen in different aspects of ESP methodology: needs analysis, content

orientation, and adoption of communication methodologies in the classroom.

Although teachers do not create needs, they can help students to identify the externally set requirements of the academic and professional world with regard to English taking into consideration the students' own internally felt needs for English.

Nevertheless, experience has shown that teachers are not always aware of the importance of having clearly - defined ESP goals and the skills of evaluating the textbooks and teaching materials accordingly. In many cases, teachers use the most convenient textbooks available on the market, without a prior and proper assessment of their suitability in terms of the very specific needs of the learners. In addition, the learners themselves are not often aware of the fact that many professions require particular linguistic skills that they must learn.

Most of the English language instructors at An-Najah National University have had their training in the humanities and social sciences. While teaching EST students, the English language teachers have had to seek the assistance of the academic staff of the technical faculties in the planning and implementation of the English courses. Therefore, There is a need for cooperation and coordination between subject matter teachers and English language teachers in the planning, development, teaching, and administration of courses.

In EST classes, the English language teacher finds that there is an information gap because he is not a specialist and since the learners are well-informed in their fields, they will proudly help the teacher to fill this gap. Therefore, it is believed that the subject specialist instructor is a very important resource person during all phases of the EST courses. He can play an important role in helping materials writers and English language teachers to make the language program more meaningful and useful to the learners.

Both subject matter and English language teachers should work on the curriculum together and negotiate over the materials and activities that best meet the learners' needs. Such direct cooperation will enhance awareness in language teachers of the very specific needs of the learners and will induce a willingness to select the appropriate teaching materials

accordingly.

Needs Analysis, which developed in the sixties , is fundamental to ESP because it is specifically designed to evaluate the needs of the learners, and to identify their difficulties by observing them while participating in the target situation in conjunction with interviews and questionnaires. There are two kinds of Needs Analysis:

a- Educational needs: as this term suggests, this evaluation targets the specific needs of learners in their academic lives. Science students for example, study medicine , chemistry, physics, biology and like subjects mainly through English. All the textbooks and articles are written in English, most lectures are given in English and lab reports and assignments are done in English. So such students have not only to develop advanced skills of reading and writing in English, but also to display a familiarity with the technical vocabulary related to their fields. Only after a careful assessment can an ESP course be geared to meet their very specific needs.

b- Professional needs: an assessment is done here of the linguistic abilities which are required by learners in their professional lives. Scientists, for example, use English in carrying out research, conducting workshops and attending conferences where in addition to the skills of reading and writing technical English, fluency in spoken English is a must.

The English Department at An-Najah University offers two courses on general English for all university students, regardless of their specializations. Although, in theory, the two courses are based on an integrated approach, in practice, the reading skills receive greater emphasis than the skills of speaking, listening and writing . Recently, an ESP program in EST has been established for the students from the faculties of engineering, agriculture, pharmacy, science (biology, chemistry, physics, mathematics) and computer science. One course English for Science was introduced for all these faculties alike. In addition, An-Najah University offers two English ESP courses: one for the humanities students, and another for business and law students.

Much effort has been made to select textbooks and materials to meet the needs and interests of students as perceived by the English language instructors. However, the

researchers decided to conduct a study to analyze students' educational needs as perceived by their English language teachers at the English Department and their subject matter teachers in the EST faculties, with the objective of improving the selection of teaching materials in accordance with the principles underlying ESP programs. The researchers hope that the results of this study will help to point the direction to be taken when new materials are selected, adapted, devised or even written for EST students taking into consideration their needs and interests. The argument of the researchers was that the ESP program offered at An-Najah University should include a variety of specialized courses for the various disciplines, and be based on the different needs of the students as perceived by their English language teachers and subject matter teachers. For example, there should be an ESP course for science students whose majors can be (biology, physics, mathematics ,chemistry, and agriculture), another for Engineering, a third for computer sciences and so on. Furthermore, the researchers assume that cooperation and coordination between both types of teachers is important in overcoming the obstacles that EST teachers and students face in dealing with ESP courses. In conclusion, this paper will touch upon EST and will analyze the needs of EST students as perceived by their subject matter teachers at the science faculties and their English language teachers at the English Department at An-Najah National University. It has to be noted that it is the first time that the researchers at An-Najah National University touch upon this subject, and the findings of this research show that there is a strong need for cooperation and coordination between the two faculties.

Review of the Literature

A lot of scholars have been studying and researching the area of ESP. Strevens (1977) refered to the term ESP as an approach to language teaching in which the content of the syllabus is deliberately matched to the very specific needs of the learners rather than the general education. He maintains that it is taught with the aim of directing the learners' attention to the language used in connection with the purpose of their choice of a subject which is external to the English language classroom. Swales (1980) states that the role of ESP is to help students to become full participants in their chosen profession. However, Robinson (1991) called for a type of ESP program that should concentrate on language learning in general while keeping to a specific purpose. Furthermore, he recommends a systematic assessment of students' needs based on an on -going process since students' needs may change in the course of their study.

Likewise, Markee(1984) argued that ESP programs should be organized in such a way that the content of the concerns offered are made relevant to the specific needs of a specific group of learners. In designing such programs, the quality of the selected textbooks is a vital matter for they must reflect the purpose of those programs. The prescribed textbooks are often not geared towards realizing the learners' needs and expectations because , as Swales (1980) noted, of the market forces when publishers adapt books created for a particular educational environment in order to make profit. If that educational environment lacks appropriateness for a particular group of learners, the result, in Swales's view, is that learners leave them on the shelves. Such behavior implies that textbooks and materials that fail to address the specific needs and concerns of the students will not be chosen and thus will be neglected. Therefore, without a careful preliminary analysis that takes the learners' concerns into consideration in the selection of teaching materials, both teachers and learners fall victims to the large numbers of textbooks available on the market but not adapted to the specific needs of the users. Saqful-Hait (1989) maintained that research in the area of ESP should assess the advantages of ESP courses that might be offered by the English department with the cooperation of other departments at An-Najah University.

According to Gillet (1973), needs analysis (NA) is an identification of difficulties and standard situations by observation of participants functioning in a target situation in conjunction with interviews and questionnaires. Needs analysis provides the teacher with initial insights about the learners' interests, needs, hopes and fears as individuals in order to help them overcome their learning difficulties, and thus make learning a joy rather than a threat. According to Coffey (1984), needs analysis is conceived of as the application of a theory of learning and teaching which considers the linguistic and communicative needs of the learners. This signifies an approach to language teaching where the ESP learners are taught according to their needs to interact with others. According to Zughoul and Hussein (1985), the English language is perceived important for students' academic studies , and for their future professions. They found that students were aware of the importance of English, particularly their ability for reading it. Hutchinson and Waters (1987), defined needs analysis related to students' needs , wants , interests, language proficiency and learning strategies and text processing, as highly important inputs. Despite the fact that the term "Needs Analysis" is used, Hutchinson and Waters (1987) maintained it is lacks rather than needs that come to determine curriculums since what we are really interested in is the gap between the

target proficiency and the present proficiency of the learners. West (1994) reported that although NA grounded in general theories, such as the nature of language and curriculum, it is essentially a pragmatic activity focused on specific situations. Smith (1989) asserted that input provided by the four basic informants: subject matter teachers, English language teachers, learners and institutional requirements in the ESP learning- teaching situation are essential for needs analysis.

Widdoson (1979) believed that a clear understanding of learners' purposes is of assistance in selecting texts and activities which will be seen as relevant for these purposes. According to him, relevance is a matter of perception. Whereas, Dudley- Evans (1983) reported that every ESP practitioner (whether it is a course designer, a materials writer or a class room teacher) has had similar experiences showing that teachers' perceptions of relevance do not necessarily match those of their students.

With regard to the English language teachers' ignorance of the subject matter, Jottini (1981) among others, is of the opinion of adopting team teaching between language teachers and subject specialists. This cooperation between the two groups of instructors is essential for providing a common ground for a profitable ESP teaching course. Tushyeh (1986) asserted that in order to teach ESP courses effectively, there is a need for an expert in the subject matter teacher and in the English language; otherwise, the English language teacher will find himself in a situation trying to teach vocabulary that means nothing to him, but to students who are well-informed of the subject. Dudley-Evans and John (1998) identified five key roles for the ESP practitioner: teacher, course designer and materials provider, collaborator, researcher and evaluator. They conclude that an ESP program should meet the specific needs of the learners; it should make use of the methodology and activities of the discipline it serves.

The cooperation between subject matter teachers and English language teachers may not be without its difficulties but in the opinion of Jottini (1981), it ensures personal contact between students, subject specialists and language teachers. She adds that such difficulties, when (and if) they arise, can be discussed among all three parties and the students can see that both subject matter and language teachers are working with a common aim to help them. She stresses that the purpose of subject- language integration is to help

students realize the role the language plays in their specialization. The trilateral relationship between the ESP teachers, subject matter teachers and learners is an indispensable factor in needs analysis. The ESP teacher alone is not an expert in the learners' specialization in the way the subject matter teacher is. The role of subject matter teachers is to educate and train students in a certain discipline, while the main concern of ESP teachers is with the students' ability to function well in English and communicate successfully in it, both in their academic and professional careers. Thus the relationship between the ESP teacher and the subject matter teacher is interdependent and contact between them is essential.

Kattan, (1989) conducted a study on the role of needs analysis in ESP, and the data revealed that different departments have different needs, and there are major specific needs. For example, science and nursing majors have to perform activities in English that are different from business, and law majors. Thus, ESP teachers must work in teams with both field specialists and learners in order to assess their needs.

Sionis (1988) maintained that in order to have more realistic and efficient teaching, a powerful ally can be found in the person of the technical expert which leads to fruitful exchange of information and cooperation between subject matter and language teachers. Similarly, Crandall (1998) asserted that co-teaching within the same classroom can also offer an on-going means of developing both the knowledge and the skills for integrated instruction.

Cooperation and coordination are referred to as team teaching. By Crandall (1998) and Sionis (1988). Jordan (1997), asserted that there should be team teaching and sharing of teaching by both the subject matter teacher and the English language teacher. According to him, the specialist acts as an informant on what goes on in the subject discipline. Byron (2000) conducted a study on the effectiveness of team teaching, and concluded that team-language teaching that is based on cooperation between subject matter and English language teachers has successfully improved writing and oral communicative skills of most students. He added that the team teaching approach enabled both subject matter and English language teachers to build a bottom up ESP curriculum based on designing materials that meat the students' actual needs. In general, Hutchinson and Waters (1987) believe that cooperation between subject matter and English language specialists should be a two-way process:

the subject matter specialist can help the ESP teacher in learning more about the learners' specific needs, at the same time, the ESP teacher can make the subject matter specialist more aware of the language.

According to Schleppegrell (1991), developing and teaching ESP courses is demanding and requires creativity but can be extremely rewarding when it is responsive to students' needs. Yeserskaye (1998), asseted that interest in developing courses that provide interdisciplinary perspective is increasing since the aim is to meet the linguistic and academic needs of the students in a stimulating and challenging opportunity for professional development and sharing teaching responsibilities in collecting and designing materials. Similarly, Davis (1997) proved convincingly that "team - taught" interdisciplinary courses are an improvement over the traditional disciplinary structure.

Finally, this study will focus on the perceptions of both subject matter and English language teachers regarding EST students' needs at An-Najah National University. It also highlights the need for cooperation and coordination among subject matter teachers and ESP teachers in a joined effort to select relevant and appropriate materials and activities based on their perceptions of the needs of their students.

Purpose of the Study

This study aims at answering the following questions:

1- What are the perceptions of both English language teachers and subject matter teachers of the needs of their EST students?

2- What are the subject matter teachers' perceptions of EST according to English language teachers?

3- What are the English language teachers' perceptions of EST according to subject matter teachers?

4- What are the perceptions of English language teachers and subject matter teachers of the need for cooperation and coordination between both of them?

5- What are the perceptions of English language teachers and subject matter teachers of the

need for a variety of textbooks and materials in EST courses?

6- What are the perceptions of English language teachers and subject matter teachers of the need for teaching English language in EST courses?

7- What are the perceptions of English language teachers and subject matter teachers of the need for skills and language activities in EST courses?

8- Are there any Significant Differences at ($\alpha = 0.05$) in EST for all the domains between the means of the subject matter teachers and the English language teachers due to the teachers' variable?

Significance of the Study

The significance of this study stems from the fact that designing and developing materials and activities that match the needs of EST learners and their teachers are highly important in ESP in order to overcome the obstacles that they face in dealing with ESP courses.. This study also emphasizes the need for cooperation and coordination between the subject matter teachers and the English language teachers.

Methodology

Subjects

The population of this study consists of 100 English language teachers at the English Department and subject matter teachers in the EST department for the year 2004, at An-Najah University. The sample of the study was randomly chosen . It included 41 teachers divided as (26) EST teachers, and (15) English language teachers. The sample is distributed according to the two independent variables : English language teachers and subject matter teachers as in table (1) below.

Table (1): Sample Distribution According To the Teacher Variable

Teacher	No.	Percent %
English	15	36.6
Subject	26	63.4
Total	41	100

Instrumentation

A: The Questionnaire

The researchers developed a questionnaire to investigate the EST students' needs, the subject matter and English teachers' perceptions of the need for cooperation and coordination between them, the need for teaching English language in EST courses, and the need for textbooks and activities for EST courses. The researchers distributed 41 questionnaires (15 for English language teachers and 26 for subject matter teachers). The subjects responded to the questionnaire on a 5 point Likert scale (1=strongly disagree; 2=disagree; 3=undecided; 4=agree; 5=strongly agree). The subjects were told that the questionnaire would be used for research purposes only.

The questionnaire contained 47 items as in the appendix (1), page (29) and consisted of the following domains:

1- Items (1-7) showed subject matter and English teachers' perceptions regarding EST students' needs.

2- Items (8-14) showed subject matter teachers' perceptions, from the view point of English teachers.

3- Items (15-18) showed English language teachers' perceptions from the view point of subject matter teachers.

4- Items (19-25) showed the perceptions of English language teachers and subject matter teachers of the need for cooperation and coordination between them.

5- Items (26-32) showed the perceptions of English language teachers and subject matter teachers of the need for textbooks and materials in EST courses.

6- Items (33-43) showed the perceptions of English language teachers and subject matter teachers of the need for teaching English language in EST courses.

7- Items (44-47) showed the perceptions of English language teachers and subject matter teachers of the need for skills and language activities in EST courses.

B: Procedure and Data Collection

The data for the questionnaire were collected according to the opinions of English language teachers and EST teachers in (8) faculties: Biology, Physics , Chemistry, Mathematics, Engineering, Agriculture, Computer Science, and Pharmacy. To analyze the findings, the researcher used the following ranks.

(80% and more)	very high degree
(70% - 79.9%)	high
(60% - 69.9%)	moderate
(50% - 59.9%)	low
(less than 50%)	very low

C: Variables of the Study

The questionnaire included two kinds of variables: dependent and independent. The dependent variables included the responses of the teachers on the questionnaire. The independent variables are subject (EST) teachers and English language teachers.

Validation of the Instrument

To ensure content validity , the researchers discussed the problem with subject matter teachers and English language teachers who have had experience in teaching English and then distributed the questionnaire to four referees from the College of Education and English Department at An-Najah University who are experts in this area. They were asked to judge the appropriateness of each item for the whole purposes of the study. Some of them

suggested some modifications in the arrangements of some items, which the researchers took into account.

The Reliability of the Instrument

The reliability of the study was calculated by using the Cronbach Alpha formula. Accordingly, the reliability coefficient was 0.85, which fits the purpose of the study according to Kerlinger (1973).

Statistical Analysis

The data collected by the researchers were analyzed by using different techniques to answer the questions of the study.

- Means, standard deviations, percentages in order to study the importance of ranks for each item and domain.
- Independent T-Test to show significant differences between variables.
- Cronbach Alpha formula to determine the reliability coefficient of the questionnaire.

Study Results

The summaries of the results obtained from the statistical analysis are introduced and the main results of the eight study questions will be highlighted.

Results of the First Question

Q1.What are the perceptions of both English language teachers and subject matter teachers of the needs of their EST students?

To answer this question, the researchers used the means, standard deviations, percentages and ranks for each item in the EST students' needs domain. Table (2) shows the results of the first question.

Table (2): Means, Standard Deviations, Percentages and Ranks of subject matter teachers and English language Teachers' Perceptions of the Students' Needs Domain Items.

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
1	The teacher's character and personality affects comprehension in English classes.	2.93	1.67	3.08	1.41	3.02	1.49	60.4	moderate
2	EST students need more challenging EST comprehension texts than the current ones.	2.67	1.35	3.00	1.02	2.88	1.14	57.6	low
3	Students should decide their needs.	2.80	1.37	2.73	1.40	2.76	1.37	55.2	low
4	Students attend the English classes because they are required to fulfill the university requirement.	2.40	1.24	2.88	1.24	2.71	1.25	54.2	low
5	Three hours a week are enough time for an English course for EST students.	2.47	1.36	3.35	1.16	3.02	1.29	60.4	moderate
6	The passing grade for an English course for EST students should be more than 60%.	3.13	1.30	3.04	1.43	3.07	1.37	61.4	moderate
7	Improving speaking skills is a priority for EST students.	3.47	1.25	3.31	1.16	3.37	1.18	67.4	moderate
Total	**Students' needs domain**	**2.84**	**0.82**	**3.05**	**0.77**	**2.97**	**0.79**	**59.4**	**low**

The results of table (2) show that the rank for EST students' needs from the point of view of their English language teachers and subject matter teachers was low with a mean of (2.97) and a percentage of (59.4) The results also show that the total mean for the perceptions of the subject matter teachers of their students' needs is high (3.05) compared with that of the English language teachers (2.84).

Results of the Second Question

Q.2. What are the subject matter teachers' perceptions of EST according to English language teachers?

To answer this question, the researchers used the means, standard deviations, percentages and ranks for each item in the subject matter teachers' domain. Table (3) shows the results of the second question.

Table (3): Means, Standard Deviations, Percentages and Ranks for the Subject matter Teachers' Perceptions of EST Domain Items

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
8	The subject matter teacher should decide the students' needs.	3.60	1.35	3.27	1.12	3.39	1.20	67.8	moderate
9	The subject matter teacher is able to determine what is bad grammar.	3.20	1.15	3.73	1.08	3.54	1.12	70.8	high
10	The subject matter teacher should take into consideration English teachers' concern regarding teaching correct English to EST students.	3.13	1.46	3.46	0.86	3.34	1.11	66.8	moderate

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
11	Subject matter teachers should teach proper English.	3.20	0.94	3.81	1.39	3.59	1.26	71.8	high
12	Subject matter teachers whose English is weak should be trained in the English Department.	2.67	1.40	3.69	0.88	3.32	1.19	66.4	moderate
13	Knowledge of rules of the English language is important for giving a successful EST lecture (i.e. sending the message, receiving feedback and communicating).	3.87	1.25	3.69	1.09	3.76	1.14	75.2	high
14	Students' weak English affects comprehension and communication in EST classes.	3.60	0.91	3.92	0.98	3.80	0.95	76.0	high
Total	**Subject matter teachers' domain**	**3.32**	**0.82**	**3.65**	**0.54**	**3.53**	**0.66**	**70.6**	**high**

The results of table (3) indicate that the rank for the subject matter teachers' perceptions of EST from the point of view of English language teachers was high with a mean of (3.35) and a percentage of (76.0). Moreover, the results show that the total mean for the perceptions of subject matter teachers was (3.65) as perceived by English language teachers which was higher than that for the English language teachers (3.32).

Results of the Third Question

Q.3. What are the English language teachers' perceptions of EST according to subject matter teachers?

To answer this question, the researchers used the means, standard deviations, percentages and ranks for each item in the English language teachers' domain. Table (4) shows the results of the third question.

Table (4): Means, Standard Deviations, Percentages and Ranks for the Perceptions of the English Language Teachers' Domain Items

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
15	The English language teachers' lack of scientific knowledge affects his/her confidence.	3.20	1.26	3.63	1.02	3.46	1.12	69.2	moderate
16	English language teachers should be exposed to written scientific texts in order to function more effectively (i.e by attending lectures in science department and sitting in lab. sessions).	3.93	1.03	3.31	0.93	3.54	1.00	70.8	high
17	ESP teachers (English teachers) should decide students' needs.	3.80	0.86	3.38	1.30	3.54	1.16	70.8	high
18	English teachers should allow EST students to fill in the information gap in ESP courses.	3.53	1.41	3.50	0.99	3.51	1.14	70.2	high
Total	**English teachers' domain**	**3.61**	**0.81**	**3.45**	**0.76**	**3.51**	**0.77**	**70.2**	**high**

The results of table (4) indicate that the rank for the perceptions of English language teachers from the view point of the subject matter teachers was high with a mean of (3.51) and a percentage of (70.2). The results also show that the total mean for the perceptions of the English language teachers was (3.61), and it was higher than that for the subject matter teachers (3.45).

Results of the Fourth Question

Q.4. What are the subject matter and English teachers' perceptions of the extent of the cooperation and coordination between English language teachers and subject matter teachers?

To answer this question, the researchers used the means, standard deviations, percentages and ranks for each item in the cooperation and coordination domain. Table (5) shows the results of the fourth question.

Table (5): Means, Standard Deviations, Percentages and Ranks for the Perceptions of Cooperation and Coordination Domain Items

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
19	English teachers, subject matter teachers and students should all take part in planning textbooks.	3.93	0.80	3.42	1.21	3.61	1.09	72.2	high
20	Contacts between English teachers and subject matter teachers about attitudes, needs and expectations should be encouraged.	3.27	1.10	3.73	1.19	3.56	1.16	71.2	high
21	There should be cooperation between students, ESP teachers and subject matter teachers in deciding students' needs.	3.33	1.45	3.81	0.85	3.63	1.11	72.6	high

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
22	A subject matter teacher should be trained in the English Department before being assigned to the Science Department.	3.73	0.88	3.54	1.17	3.61	1.07	72.2	high
23	English teachers should be encouraged to attend lectures or lab-sessions every now and then in the science department in an attempt to determine the quality and quantity of English used inside the classroom.	3.20	1.08	3.58	1.10	3.44	1.10	68.8	moderate
24	Formal contacts between the English Department and the science departments should be encouraged.	3.20	1.37	3.65	1.13	3.49	1.23	69.8	moderate
25	There should be coordination between ESP teachers on matters like choosing textbooks, course plan and unified exams.	3.27	1.49	3.75	1.15	3.56	1.29	71.2	high
Total	**Cooperation and Coordination domain**	**3.42**	**0.65**	**3.63**	**0.55**	**3.55**	**0.59**	**71.0**	**high**

The results of table (5) indicate that the mean and percentage for the perceptions of the extent of cooperation and coordination between the subject matter teachers and the English language teachers as perceived by the two types of teachers were the highest among all the domains. They were (3.55) and (71%) respectively. In addition, the results showed that the subject matter teachers showed a higher total mean (3.63) than the English language teachers (3.42).

Results of the Fifth Question

Q.5. What are the subject matter and English teachers' perceptions of the need for a variety of textbooks and materials in EST courses?

To answer this question, the researchers used the means, standard deviations, percentages and ranks for each item in the textbooks and materials domain. Table (6) shows the results of the fifth question.

Table (6): Means, Standard Deviations, Percentages and Ranks for the Perceptions of Textbooks and Materials Domain Items

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
26	The materials offered in the English courses for science are useful.	3.33	1.11	3.15	1.22	3.22	1.17	64.4	moderate
27	There is a need for a course on writing for science faculties.	2.80	1.15	3.42	1.36	3.20	1.31	64.0	moderate
28	There is a need to divide the ESP courses into language levels and occupational divisions separating the pharmacy students from agriculture and science students.	3.20	1.42	3.96	0.92	3.68	1.17	73.6	high
29	EST students should be exposed to authentic texts in their general English courses.	2.80	1.15	3.27	1.34	3.10	1.28	62.0	moderate

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
30	Adapted scientific texts are more fruitful than texts that are authentic (i.e taken directly from science books).	3.00	1.46	4.00	1.05	3.63	1.30	72.6	high
31	ESP texts that students use have enough emphasis on culture.	3.07	1.53	3.65	1.02	3.44	1.25	68.8	moderate
32	ESP courses should help students practice English in real life situations e.g. lab sessions, workshops, and conferences.	3.07	0.70	3.81	0.75	3.54	0.81	70.8	high
Total	**Textbooks and materials domain**	**3.04**	**0.86**	**3.61**	**0.53**	**3.40**	**0.71**	**68.0**	**moderate**

The results of table (6) indicate that the rank for perceptions of the need for textbooks and materials from the point of view of both types of teachers was moderate, with a mean of (3.40) and a percentage of (68.0). The results also show that the total mean for the perceptions of the subject matter teachers was (3.61) compared with that for the English teacher (3.04).

Results of the Sixth Question

Q.6. What are the subject matter and English teachers' perceptions of the need for teaching English language in EST courses?

To answer this question, the researchers used the means, standard deviations, percentages and ranks for each item in the need for teaching English language domain.

Table (7) shows the results of the sixth question.

Table (7): Means, Standard Deviations, Percentages and Ranks for the Perceptions of Teaching English Language in EST Courses Domain Items

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
33	English is important for teaching science.	3.33	1.23	3.96	0.96	3.73	1.10	74.6	high
34	The use of mother tongue in teaching English for science is useful.	3.40	1.45	3.54	0.90	3.49	1.12	69.8	moderate
35	ESP courses should be introduced as prerequisites at an early stage (i.e. before majoring).	3.47	0.92	3.77	1.18	3.66	1.09	73.2	high
36	ESP courses affect EST students' motivation since the materials are science-based.	3.40	1.30	3.27	1.12	3.32	1.17	66.4	moderate
37	Students have a positive attitude toward the English language.	3.40	1.45	3.31	1.09	3.34	1.22	66.8	moderate
38	English is a major course compared to the science college requirements.	3.27	0.96	3.77	1.11	3.59	1.07	71.8	high
39	There is a need for EST.	3.00	1.36	3.50	1.07	3.32	1.19	66.4	moderate
40	General English courses have proved to be successful.	2.87	1.51	3.23	1.03	3.10	1.22	62.0	moderate

41	Formal learning environments are more beneficial than informal surroundings.	3.07	1.10	3.65	1.23	3.44	1.21	68.8	moderate
42	The number of students in the English classes should be large.	2.87	1.46	3.62	1.10	3.34	1.28	66.8	moderate
43	Students should put in the necessary effort to improve their English.	3.27	1.33	3.31	1.09	3.29	1.17	65.8	moderate
Total	**English language domain**	**3.21**	**0.74**	**3.53**	**0.78**	**3.37**	**0.76**	**67.4**	**moderate**

The results of table (7) show that the rank for the subject matter teachers and English language teachers' perceptions of the need to teach English language in EST courses was moderate with a mean of (3.37) and a percentage of (67.4%). The results indicate that the subject matter teachers' mean was (3.53), while the English language teachers' mean was (3.21).

Results of the Seventh Question

Q.7. What are the subject matter and English teachers' perceptions of skills and language activities in EST courses.

To answer this question, the researchers used the means, standard deviations, percentages and ranks for each item in the skills and language activities domain. Table (8) shows the results of the seventh question.

Table (8): Means, Standard Deviations, Percentages and Ranks for perceptions of skills and language activities domain items

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
44	There is a need for communicative approaches in EST courses such as individual, pair , or group work to provide a different learning style.	3.13	1.13	3.50	1.14	3.37	1.13	67.4	moderate
45	Using lists of vocabulary overcomes the students' weakness in English for EST classes.	3.00	1.46	3.38	1.10	3.24	1.24	64.8	moderate
46	Summarizing the lecture in Arabic is useful in EST courses.	3.13	1.25	3.35	1.20	3.27	1.20	65.4	moderate
47	Tutorial work is necessary to understand the scientific text.	3.26	1.34	3.33	1.15	3.00	1.04	60.0	moderate
Total	**Skills and language activities domain**	**3.13**	**0.88**	**3.39**	**0.79**	**3.29**	**0.82**	**65.8**	**moderate**

The results of table (8) show that the rank for the perceptions of the need for skills and language activities as perceived by the subject matter teachers and the English language teachers was moderate with a mean of (3.29) and a percentage of (65.8%). The results reveal that the total mean for the subject matter teachers was (3.39), while it was (3.13) for English language teachers.

Results of the Eighth Question

Q.8. Are there any significant differences at (α= 0.05) in EST for all the domains between the means of the subject matter teachers and the English language teachers due to the teachers' variable?

To answer this question, independent T-Test has been used to analyze the data from the questionnaire. Table (9) shows the results for both subject matter teachers and English language teachers over the different domains.

Table (9): T-Test Results for Differences in the EST for the Perceptions of all the Domains According to Subject Matter Teachers Variable

Domain	Teacher	N	Mean	SD	D.F	T	Sig.*
Students' Needs	English	26	2.84	0.82	39	0.849	0.401
	Subject	15	3.05	0.77			
Subject Matter Teachers	English	26	3.32	0.82	39	1.551	0.129
	Subject	15	3.65	0.54			
English Language Teachers	English	26	3.62	0.81	39	0.653	0.518
	Subject	15	3.64	0.76			
Cooperation and Coordination	English	26	3.42	0.65	39	1.141	0.261
	Subject	15	3.63	0.55			
Textbooks and Materials	English	26	3.04	0.85	39	2.654	0.011*
	Subject	15	3.61	0.54			
Teaching English Language	English	26	3.21	0.72	39	1.543	0.131
	Subject	15	3.53	0.60			
Skills and Language activities	English	26	3.13	0.88	39	0.974	0.336
	Subject	15	3.39	0.70			
Total score	English	26	3.26	0.27	39	2.224	0.032*
	Subject	15	3.47	0.32			

* significant at (α= 0.05) critical at (1.96)

The results of table (9) show that the computed T-Test values for different domains and total score are respectively (0.849, 1.551, 0.653, 1.141, 2.654, 1.543, 0.974, 2.224).

This means that there are significant differences at (α= 0.05) on the textbooks and materials and on the total score domains due to the teachers variable, and that those differences are in favor of the subject matter teachers over English language teachers.

In order to show the items with the highest ranks in the high rank perceptions in all domains, the researchers listed all the items with the high ranks as shown in table (10).

Table (10): The items with high rank perceptions

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
9	The subject matter teacher is able to determine what is bad grammar.	3.20	1.15	3.73	1.08	3.54	1.12	70.8	high
11	Subject matter teachers should teach proper English.	3.20	0.94	3.81	1.39	3.59	1.26	71.8	high
13	Knowledge of rules of the English language is important for giving a successful EST lectures (i.e. sending the message, receiving feedback and communicating).	3.87	1.25	3.69	1.09	3.72	1.14	75.2	high
14	Students' weak English affects comprehension and communication in science classes.	3.60	0.91	3.92	0.98	3.81	0.95	76.0	high

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
16	English language teachers should be exposed to written scientific texts in order to function more effectively (i.e by attending lectures in the Science Department and sitting in lab. Sessions).	3.93	1.03	3.31	0.93	3.54	1.00	70.8	high
17	ESP teachers (English teachers) should decide students' needs.	3.80	0.86	3.38	1.30	3.54	1.16	70.8	high
18	English teachers should allow EST students to fill in the information gap in EST courses.	3.53	1.41	3.50	0.99	3.51	1.14	70.2	high
19	English teachers, subject matter teachers and students should all take part in planning textbooks.	3.93	0.80	3.42	1.21	3.61	1.09	72.2	high
20	Contacts between English teachers and subject matter teachers about attitudes, needs and expectations should be encouraged.	3.27	1.10	3.73	1.19	3.56	1.16	71.2	high
21	There should be cooperation between students, ESP teachers and subject matter teachers in deciding students' needs.	3.33	1.45	3.81	0.85	3.63	1.11	72.6	high

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
22	A subject matter teacher should be trained in the English Department before being assigned to the science faculties	3.73	0.88	3.54	1.17	3.61	1.07	72.2	high
25	There should be coordination between ESP teachers on matters like choosing textbooks, course plan and unified exams.	3.27	1.49	3.75	1.15	3.56	1.29	71.2	high
28	There is a need to divide the ESP courses into language levels and occupational divisions separating the pharmacy students from agriculture and EST students.	3.20	1.42	3.96	0.92	3.63	1.17	73.6	high
30	Adopted scientific texts are more fruitful than texts that are authentic (i.e taken directly from science books).	3.00	1.46	4.00	1.05	3.65	1.30	72.6	high
32	ESP courses should help students practice English in real life situations e.g. lab sessions, workshops, and conferences.	3.07	0.70	3.81	0.75	3.54	0.81	70.8	high
33	The English language is important for teaching science.	3.33	1.23	3.96	0.96	3.73	1.10	74.6	high

No.	Item	English language teacher		Subject matter teacher		Total		%	Rank
		Mean	S.D	Mean	S.D	Mean	S.D		
35	EST courses should be introduced as pre- requisites at an early stage (i.e. before majoring).	3.47	0.92	3.77	1.18	3.66	1.09	73.2	high
38	English is a major course compared to the science college requirements.	3.27	0.96	3.77	1.11	3.59	1.07	71.8	high

Table (10) shows the high rank perceptions in different domains. It shows that items (14), (33), (13) and (35) were among the items with the highest means. These items assert the importance of English language for teaching science courses. In addition, they emphasize that knowledge of rules of the English language is necessary for comprehension and communication in EST classes.

Discussion

The purpose of the study was to describe English language teachers and subject matter teachers' perception of the needs of their EST students, in addition to the English language and subject matter teachers' perceptions of one another, the extent of cooperation and coordination, textbooks and materials, need for teaching English language and skills and language activities in EST courses at an-Najah University.

The results indicated that the domain with the highest mean was the need for cooperation and coordination (3.55), while the lowest was for EST students' needs (2.97). Such a result shows a strong need for cooperation and coordination between subject matter teachers and English language teachers when deciding upon textbooks, materials and activities taking into consideration the needs of EST students . However, the perceptions of the need for corporation and coordination was greater among the subject matter teachers who were obviously more aware of their EST students' needs. According to the subject matter teachers, coordination between them and the English teachers is recommended. This result is in agreement with Byron (2000) and Hutchinson and Waters (1987) who said that

there should be cooperation and coordination between subject matter teachers and English language teachers.

The data analysis showed that the means of the subject matter teachers for all the domains were higher than those of English teachers. This indicates that the subject matter teachers are more capable at deciding their EST students' needs in EST courses regarding cooperation and coordination, language skills and activities, and textbooks. The English language teachers seem to lack a comprehensive knowledge of EST students' needs which does not indicate ,of course, that they are not aware of them.

The results also indicated that there were significant differences at (α= 0.05) between the means of the subject matter teachers and the English language teachers on the perceptions of the need for textbooks and materials, and on the total score domain. The differences were in favor of subject matter teachers over English teachers. The subject matter teachers believed that the greatest need was for appropriate textbooks and activities. Such a result is in accordance with the assumption of the researchers that understanding of the EST courses and the needs of the EST students is essential when selecting textbooks and designing activities for EST students.

A variety of EST courses should be offered on a more specialized basis item (28), such as separating the engineering students from the science students or the computer science students and so on. Such a concern on the part of the subject matter teachers could be attributed to the fact that the subject matter teachers are more interested in the content of EST courses, than the English language teachers. Accordingly, Schlppegrell (1991) agrees that developing and teaching ESP courses are demanding specially that EST courses are getting more specialized.

The data analysis showed that the following items received the highest means:- 13, 14, 28, 35,30,,22,38,16,17,32. After examining these items , the researchers found that for item(13) , the English language teachers scored the highest mean (3.87) compared with the subject matter teachers (3.69). This indicates that for English teachers knowledge of rules of the English language is important for giving a successful science lecture. However, the subject matter teachers did not see a need for knowing the rules in order to send the

message or receive feedback and communicate because according to subject matter teachers understanding the content is more important than the rules of the language.

However, regarding item (14), the highest mean (3.92) was for subject matter teachers, while the lowest (3.60) was for English language teachers . This indicates a high concern among subject matter teachers that EST students' weak English in general affects their comprehension and communication in EST classes. This strong concern among subject matter teachers in comparison with English language teachers reflects the subject matter teachers' awareness of the importance of the English language for EST students for their future education and professional needs. Such a finding of course does not imply that the English language teachers are not aware of the fact that students' weakness in English language hinders their understanding and communication in EST classes.

After analyzing item (28), concerning the need for separating ESP courses into language and occupational levels, it is obvious that the subject matter teachers have the highest responses (3.96) which is significant in the study. This finding reinforces the researchers' assumptions that the EST program offered at An-Najah University should take into consideration having sub-divisions of ESP courses in order to meet the needs of science students (Biology, Physics, Mathematics, Chemistry, and Agriculture), Engineering students and computer science students.

In addition, the responses on item (35) reflect the subject matter teachers' concern for the importance of introducing ESP courses at early stages as pre-requisite courses at school level. This implies that English language teachers are aware of the fact that offering EST in courses of a pre-university level will provide students with a scientific background that helps them at university levels.

However, the lowest responses were on items (3) and (4) which show that both English language teachers and subject matter teachers had different responses towards the students' needs. According to both types of teachers as in item(3) , it is not the students alone who should decide their needs. Such a result reinforces the researchers' call that there should be cooperation between English language teachers and subject matter teachers in addition to EST students on deciding the needs of EST students. The result of this study

is in agreement with Smith (1989); Byron(2000) and Hutchinson and Waters (1987) who found that cooperation between the English language teachers and subject matter teachers is essential for the students' progress in learning EST courses. And concerning item (4), English language teachers and subject matter teachers disagreed on the idea that students attend the English classes because they were required to fulfill the university requirement. The subject matter teachers believe that students attend the English classes because they have to fulfill a requirement. In contrasts, the English teachers agree with the researchers' belief that studying English is indispensable for EST students' academic and professional needs.

Conclusion

This paper aimed at investigating the perceptions of subject matter teachers and English language teachers of EST and students' needs at An-Najah National University. The results indicated a great need for cooperation and coordination between both groups of teachers, although subject matter teachers reflected the highest degree for that need. In addition , the results indicated a significant difference between the means of the subject matter teachers and the English language teachers on the perceptions of the need for appropriate textbooks and materials . The researchers believe that the role of EST textbooks, on one hand, is a critical one, since the kind of materials and textbooks should answer the question whether the scientific discourse should be simplified or kept authentic. Preparing EST teachers; on the other hand, is not easy ,too, since they need to develop competence, experience and training on how to choose texts that meet students' needs and how to teach them. EST at An-Najah is still in its infancy and a lot needs to be done, since each new course requires creativity. It is believed that cooperation and coordination between subject teachers in EST faculties and English language teachers at the English department can be effective in EST teaching situations and is worth a try.

Recommendations

Based on the findings of the study, the researchers recommend the following:

First: Coordination and cooperation between subject matter teachers and English language teachers should be fostered to provide for greater success of an ESP program. Both types of teachers should work together to discuss their students' needs, and accordingly prepare the materials suitable for use in their classes. For example, a subject matter teacher can be

invited to give a lecture on English grammar to his students once in a while. The students then are asked to evaluate the lecture. It might be a sensitive question when there is no coordination and cooperation between both types of teachers. The researchers believe that future research should focus on the extent and type of such cooperation and coordination.

Second: An EST teacher - training program is needed. The result will be a well-trained and a well - informed EST teacher, who has knowledge in both the language and the subject. The EST teachers' scientific illiteracy can be a problem since the EST teacher is supposed to teach the language and the essential skills needed such as reading , writing, listening and speaking. His main concern should be a good mastery of the English language that ensures the students' comprehension and communication in their specialization subject.

Third: When designing materials for EST courses, students' needs and interests should be taken into consideration for future research. Therefore, the researchers believe that there is a strong need for further research on Needs Analysis (NA) of the EST courses that are offered at An-Najah University.

Fourth: The ESP courses should be divided into sub-courses that ensure homogeneous learner groups and developing materials accordingly. Experience has shown that there are class differences between pharmacy and agriculture texts , and between the needs and achievements of pharmacy students and agriculture.

Fifth: The needs of the community are important factors in designing the EST courses. As a result, there should be cooperation between the English department, the science faculties and the Ministry of Education in planning pre-university and university EST courses.

References

- Byron, A., "Team Teaching: Plus or Minus ESP", ***FORUM***, **38(1)**, (2000), 38-42.
- Crandall, J., " Collaborate and Cooperate: Teacher Education for Integrating Language and Content Instruction" , ***FORUM***, **36 (1)**, (1998), 2-9.
- Coffey, D., "English for Special Purposes: State of the Article", ***Language teaching and Linguistics Abstracts***. **17(1)**,(1984),2-16.
- Davis, J.R., "Interdisciplinary Courses and Team Teaching: New Arrangements for Learning", Arizona:Oryx Press,(1997).
- Douglas, D., " Assessing language for Specific Purposes", Cambridge, Cambridge University Press, (2000).
- Dudly-Evans, A., " Papers in Team Teaching and Syllabus Design", ***REIC Occasional Papers***, Singapore: REIC, (1983).
- Gatehouse, K., " Key Issues in English for Specific Purposes (ESP) Curriculum Development", ***The Internet TESL Journal***, **7(10)**, (2001).
- Dudley-Evans,T., and John,M., "Developments in English for Specific Purposes: A Multi-disciplinary Approach", Cambridge: Cambridge University Press, (1998).
- Gillet, B., " A meliorer La Formation Professinalle Par L' etude du Travil, In Helen Basturkmen, Rifining Procedures: A needs Analysis Project at Kuwait University, ***FORUM***, **36(4)**, (1998), 2-9.
- Hutchinson T. and Waters A. "English for Specific Purposes: A learner-centered Approach",Cambridge: Cambridge University Press,(1987).
- Jordan,R., " English for Academic Purposes: A Guide and Resource Book for Teachers", Cambridge: Cambridge University Press,(1997).
- Jottini, L., "Teaching Second Language Reading: ESP Goals, Techniques and Procedures", Milano-Dott.: A. Giuffre Editor, (1981).
- Kattan, J.," Assessing English Language Needs at Bethlehem University", ***Bethlehem University Journal***, **7(8)**, (1989), 39-59.
- Kenning, M., " language Learning Interests at University", ***language Learning Journal***, **23(1)**, (2001), 48-57.
- Kerlinger, F., " Foundations of Behavioral Research", 2nd Ed., USA, Holt, Rinehart and Winston, Inc., (1973).
- Krajk, J., " Making Web-Based Quizzes in an Internet", ***Teaching English with Technology***, **3(1)**, (2003), 9-16.
- Markee, N., "Methodological Component in ESP Operations", ***The ESP Journal***, **8(3),**(1984),3-25.
- Robinson P., " ESP Today: A Practitioners' Guide", Englewood Cliffs, NJ: Prentice Hall,(1991).
- Saqful-Hait, D., " English language Teaching in Higher Education in the West Bank: A Case Study of Needs Assessment at An-Najah National University", Unpublished Master Thesis, Palestine, Nablus, An-Najah National University, (1989).
- Schleppegrell,M., "English for Specific Purposes: A Program Design Model", ***FORUM***, **10(1)**,(1991), 12-14.
- Sionis, C., " Involving the Technical Expert in the ESP Courses", ***FORUM***, **26(4),** (1988), 15-18.
- Smith, Adam,"ESP in Practice: Models and Challenges for Teaching", Washington, D.C. ,United States Information Agencies, (1989).
- Strevens, Peter, "Survey Article - Special purpose- Language teaching (SP-LT): A perspective", ***Language Teaching and Linguistics Abstracts***,**10 (3)**,(1977),146-163.
- Swales, John,"The Textbook Problem", ***The ESP Journal***, **2(1)**,(1980), 11-23.

- Tushyeh, H., "ESP in the West Bank: Theoretical and Practical Perspectives", Nablus, An-Najah National University, English Department, (1986).
- West, R., "Needs Analysis in Language Teaching", Cambridge: Cambridge University Press, (1994).
- Widdeson, H.G., "Explorations in Applied Linguistics", Oxford: Oxford University Press, (1979).
- Yeserskaye, Lyudmilla, "A Case of Team-Teaching in ESP", St. Petersburg State Regional Institute of Economy and Finance, Baltic State Technical University, SPELTA, International Conference, SIGs Parade, (1998).
- Zughoul, M.R. and Hussein, R.F., "English for Higher Education in the Arab World: A Case Study of Needs Analysis of Yarmouk University", ***English for Specific Purposes Journal***,**4(1)**, (1985),133-152.

Appendix (1)
The Questionnaire

Dear Colleagues

The questionnaire you are going to answer will be used for research purposes only.

Remember there is no correct answer. So, please be as objective as possible.

1-Subject (EST) teachers ☐ English Teachers ☐

(1) Students' Needs

No	Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	The teacher's character and personality affects comprehension in English classes.					
2	EST students need more challenging EST comprehension texts than the current ones.					
3	Students should decide their needs.					
4	Students' attend the English classes because they are required to fulfill the university requirement.					
5	Three hours a week are enough time for an English course for science students.					
6	The passing grade for an English course for EST students should be more than 60%.					
7	Improving speaking skills is a priority for EST students.					

(2) Subject Matter Teachers' Perceptions

No	Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
8	The subject matter teacher should decide the students' needs.					
9	The subject matter teacher is able to determine what is bad grammar.					
10	The subject matter teacher should take into consideration English teachers' concern regarding teaching correct English language to EST students.					
11	Subject matter teachers should teach proper English.					
12	Subject matter teachers whose English is weak should be trained in the English Department.					
13	Knowledge of rules of English language is important for giving a successful EST lecture (i.e. sending the message, receiving feedback and communicating).					
14	Students' weak English affects comprehension and communication in EST classes.					

(3) English Language Teachers' Perceptions

No	Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
15	The English language teacher's lack of scientific knowledge affects his/ her confidence.					
16	English language teachers should be exposed to written scientific texts in order to function more effectively (i.e by attending lectures in the science department and sitting in lab. sessions).					
17	ESP teachers (English teachers) should decide students' needs.					

No	Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
18	English teachers should allow EST students to fill in the information gap in ESP courses.					

(4) Perceptions of Cooperation and Coordination

No	Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
19	English language teachers, subject matter teachers and students should all take part in planning textbooks.					
20	Contacts between English language teachers and subject matter teachers about attitudes, needs and expectations should be encouraged.					
21	There should be cooperation between students, ESP teachers and teachers in deciding students' needs.					
22	A subject matter teacher should be trained in the English Department before being assigned to a science department.					
23	English teachers should be encouraged to attend lectures or lab-sessions every now and then in the science department in an attempt to determine the quality and quantity of English used inside the classroom.					
24	Formal contacts between the English Department and the science departments should be encouraged.					
25	There should be coordination between ESP teachers on matters like choosing textbooks, course plan and unified exams.					

(5) Perceptions of Textbooks and Materials

No	Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
26	The materials offered in the English courses for science are useful.					
27	There is a need for a course on Writing for Science.					
28	There is a need to divide the ESP courses into language levels and occupational divisions separating the pharmacy students from agriculture and science students.					
29	EST students should be exposed to authentic texts in their general English courses.					
30	Adapted scientific texts are more fruitful than texts that are authentic (i.e taken directly from science books).					
31	ESP texts that students use have enough emphasis on culture.					
32	ESP courses should help students practice English in real life situations e.g. lab sessions, workshops, and conferences.					

(6)Perceptions of the Need for Teaching English Language in EST Courses

No	Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
33	The English language is important for teaching science.					
34	The use of the mother tongue in teaching English for science is useful.					
35	ESP courses should be introduced as pre- requisites at an early stage (i.e. before majoring).					

No	Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
36	ESP courses affect EST students' motivation since the materials are science-based.					
37	Students have a positive attitude toward the English language.					
38	English is a major course just like the science college requirements.					
39	There is a need for EST.					
40	A general English cource course has proved to be successful.					
41	Formal learning environments are more beneficial than informal surroundings.					
42	The number of students in the English classes should be large.					
43	Students should put in the necessary effort to improve their English.					

(7) Perceptions of Skills and Language Activities

No	Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
44	There is a need for communicative approaches in EST courses such as individual, pair , or group work to provide a different learning style.					
45	Using lists of vocabulary overcomes the students' weakness in English for science classes.					
46	Summarizing the lecture in Arabic is useful in EST courses					
47	Tutorial work is necessary to understand the scientific text.					