
**Needs Analysis of Teaching English for Specific
Purposes for Secondary Students applying
to Medical Faculties**

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Abstract:

The purpose of the study was to analyze the needs of teaching English for specific purposes for secondary students applying to medical faculties. The study was held as a first step to design a program based on ESP for general secondary stage students in Egypt. Using the descriptive approach, the tools were applied upon a random sample of (64) students. That includes a short questionnaire prepared by the researcher to distinguish the types of medical language-related difficulties they face in their first year at university. Also, the tools include the needs analysis survey, to measure their types and level of needs in learning ESP. The results showed that reading sub-skills came first needed by students with a total mean of (2.79) then listening sub-skills with a total mean of (2.40) then speaking sub-skills with a total mean of (2.35) and lastly writing sub-skills with a total mean of (2.18). based on the results, the researcher recommended the main objectives and content of teaching ESP for secondary students applying to medical faculties

Keywords: English for Specific Purposes - ESP - Medical Faculties - Needs Analysis

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Introduction

English is now used almost exclusively as the language of science. The adoption of English as the universal language of science has had an extraordinary effect on scientific communication. By learning a single language, scientists around the world gain access to the vast scientific literature and can communicate with other scientists anywhere in the world. However, the use of English as the universal scientific language creates distinct challenges for those who are not native speakers of English.

Psychological and educational studies indicate that language has importance in influencing human activity at work and is of great importance in the transmission of knowledge and ideas. It is a means of understanding between people. Through language, an individual can convince others and exchange his experiences with them. It is a tool of thinking, a person thinks in language, and that is the product of thinking, which is in the form of compositions written or spoken. Without language, one cannot express his thoughts, what he sees or feels, and the language that permeates the experiences of the one nation and the experiences of other nations, it preserves the nation's scientific and literary heritage. (Dadour, 2014)

Accordingly, the demand for English courses designed to meet the needs of a specific group of learners has especially become very urgent. Among the areas that were and are still under the control of English is the scientific field, most of the sciences, including medicine, engineering, pharmacy, astronomy, and health sciences

of different types are taught in all countries of the world - including Egypt - in English. Such sciences cannot be taught at the local level in Arabic or any other language, because of the disruption of scientific communication around the world as well as the lack of ongoing updates on those sciences locally. For example, medical sciences in Egypt are taught in English since the student has been enrolled in the university regardless of whether the student has studied the sciences in Arabic or English at the secondary level.

Also, there is a great overlap between teaching English to students in various stages of education and the readiness of those students to study various sciences in English at the university level, which led to the emergence of the term "English for specific purposes" or ESP, which guides EFL towards the development of some abilities and skills for scientific purposes, This is done in line with the four language skills of listening, speaking, writing, and reading.

Many scholars and authors acknowledged the fact that needs analysis has an important and, if we can say, a vital role to play in the process of designing and carrying out any language course (Jaskova, 2016, p 88). The process of needs analysis often entails a set of activities that are involved in collecting information for the sake of having the necessary bases to develop a curriculum that will meet the needs of a particular group of students (Xhemaili, 2016).

In this regard, Richards and Platt, (1992, p 242) stated that needs analysis is: "The process of determining the needs for which a learner or a group of learners acquires a language and arranges the needs according to priorities." Consequently, a researcher or a teacher engaged in the process of Needs Analysis is likely required to gather information about the learners. This will allow him to know and clearly understand the reason for which language is

supposed to be used in a specific context with certain people to an acceptable level of proficiency. And to conclude, needs analysis is to know the specific needs of a particular group. this means that the analysis will serve as a prelude to an ESP course design because it determines the 'what' and 'how' of an ESP course.

Statement of the problem

Statistics issued by medical and other scientific faculties at Egyptian universities indicate high rates of failure compared to other theoretical or practical faculties that teach in Arabic (Ministry of Higher Education, 2018). According to the Ministry of Higher Education General Administration of Information and Documentation Center, (2018), the percentage of failure at the first year in many scientific faculties that offer their courses in English, including the Faculty of Medicine (Cairo University) is very high, at the academic year 2018/2019, the percentage of failure is (630) students out of a total number of (1024) students at the first year by 77.4%, and this percentage has been repeated in many medical faculties across Egyptian universities, namely Alexandria, Tanta, Ain Shams universities, and that only applies to the rates of first years students at these faculties.

Many studies showed difficulties regarding EFL that medical students face in their medical studies. El-Sayed Dadour, (2014) proved that science students have difficulties understanding their English language subjects. Also, Abdul-Majeed al-Tayeb (2012) who investigated the Reading Strategies of ESP Students in the College of Medical Sciences at Umm Al Qura University, proved that medical students use a very limited number of reading strategies, and need to train to use good reading methods that can help them to complete their academic studies successfully.

Rashwan, (2017) proved that the students of medical faculties need help in comprehending terminologies and texts in English. Ibrahim, (2020) also proved that there were several problems that students in medical faculties face such as the lack of some basic skills, especially speaking and listening skills.

The present study aimed to perform a need analysis of teaching English for specific purposes for secondary students applying to medical faculties. Regarded as a data collection process instrument, the use of Need Analysis is inevitable to obtain a better paradigm on language skills, English in this context, should be prepared and distributed (Parnawati and Ulinuha, 2019). Furthermore, Akyel & Ozek (2010) explained that Need Analysis is a solid and effective instrument that assists teachers in clarifying the essential needs of students. This instrument opens possibilities for teachers to adjust the curriculum advancement that addresses the learners' interests. Therefore, Needs Analysis is a vital treasure for lecturers of English for Specific Purposes (ESP) to reveal students' pivotal requirements or necessities and determine the English skills they need to develop to succeed in the future.

Questions of the study

To answer the problem elaborated above, this research aimed at addressing the following research questions:

- 1) What are the main difficulties related to ESP that secondary students applying to medical faculties face?
- 2) What are the ESP needs required for secondary students applying to medical faculties?

Significance of the study

At the theoretical level, the current study aimed to perform needs analysis which is mainly to present learners' wants, needs, and lacks before organizing an ESP program. Needs analysis is the key to collecting insider's view of the ESP situation and the views of chosen learners are of utmost importance. The main aim of the ESP course is to meet the explicit needs of the learners. It is deemed as a learner-centered approach that develops learners' language capacity to be successful in their job sphere or academic needs. A needs analysis is an essential and primary stage that helps to identify the learners' needs, desires, and prerequisites. Furthermore, it identifies their language background, preferences in a bid to design a successful and effective course. Accordingly, the current study intended to carry out this needs analysis in the realm of medical sciences. The data will be gathered via questionnaires. Analyzing the data, the main objectives of this course would be set to achieve viable outcomes.

Delimitations of the study

This study is limited to

- 1) Third-year secondary students of the Egyptian Arabic governmental schools applying to medical faculties.
- 2) Science section students.
- 3) Needs analysis related to all ESP main skills including reading, writing, listening, and speaking sub-skills

Definition of terms

1) Needs Analysis

Richards and Platt, (1992, p 242) defined needs analysis as the process of determining the needs for which a learner or a group of learners acquires a language and arranges the needs according to priorities.

Operationally: Needs Analysis in the current study is defined as the ESP needs required for secondary students applying to medical faculties related to all ESP main skills including reading, writing, listening, and speaking sub-skills

2) English for specific purposes (ESP)

According to the definition of Evans (2000, p 3), ESP is “The way English teaching develops procedures appropriate to learners whose main purpose is learning English for a purpose other than just learning the language system. That purpose may be educational or maybe professional. Betyna, (2018, p. 14) has defined ESP as “An approach to language teaching in which all decisions as to content and method are based on the learner’s reason for learning,”

Operationally: ESP in the current study is defined as the approach to which the designed program is set to meet the specific needs of the high achiever secondary stage students applying to medical faculties.

3) Medical Faculties

Segen (2006, p 513) defined Medical Faculties as University institutions that offer a period of formal education generally divided into basic sciences (anatomy, physiology, pathology, pharmacology) and clinical sciences in which students have courses that combine lectures with a hands-on learning experience

in a hospital setting in surgery, psychiatry, etc. Heath (2019, p. 2) defined Medical Faculties as graduate schools offering study leading to a medical degree, schools in a university offering study leading to degrees beyond the bachelor's degree.

Operationally: Medical Faculties in the current study is defined as the university institutions that offer medical science programs in English to secondary stage high achievers graduates to prepare them within seven years to be general medical practitioners.

Literature Review

Needs analysis has developed and is regarded as one of the main instruments in the language learning process, either general English or ESP. The overview of needs analysis in language teaching has depicted its history, theoretical foundation, and approaches (Lee, 2016). The importance of learners' perspectives in developing the principle of ESP curriculum has also been noted by many experts. They argue that the learners' perspective mostly covers the area in which they will exercise their English skills in the future.

Currently, Needs Analysis is a pivotal and must-used instrument (as guidance and evaluation of the course) in language teaching. Needs analysis can help teacher traces the information of the skills mastered by the students and skills they want to upgrade and improve. A need analysis goes along several procedures; data collection on the perspective of students' desires learners' needs and hopes, beliefs, and viewpoints (Lee, 2016). Therefore, detailed information such as materials, methods, and the class environment is comprehensively acquired for the sake of learning goals and targets (Boroujeni & Fard, 2013).

Types of Needs

There are two types of Needs Analysis: formal needs analysis is quite new in the ELT enterprise. On the other hand, informal needs analysis has been conducted by many teachers for the task of assessing what learners need to master (language skills). But one may ask the following question: why were different approaches born and then replaced by others? The rationale behind this question is that teachers have intended to meet their students' needs during learning. The current concept of needs analysis in ESP, according to Yoestara, (2017, p 20) includes consideration of the following aspects:

- A. Professional information about the learners: the tasks and activities learners are/will be using English for target situation analysis and objective needs.
- B. Personal information about the learners: factors that may affect the way they learn such as previous learning experiences, cultural information, reasons for attending the course and expectations of it, attitude to English wants, means, subjective needs.
- C. English language information about the learners: what their current skills and language use are- present situation analysis- which allows us to assess (D).
- D. The learners' lacks: the gap between (C) and (A) - lacks.
- E. Language learning information: effective ways of learning the skills and language in (D) - learning needs.

Even though needs analysis attempts to collect as much information as possible to build a comprehensive understanding of the needs and issues facing students. Once those needs are understood, it is a lot easier to identify potential solutions.

Dardig, (2015) emphasized the importance of comprehensive data collection within needs analysis, he referred to the communicative syllabus design in which both situations and functions are established within the frame of needs analysis.

Hamad, (2018, p 14) stated that the target needs and target level performance were given more importance. The needs and performance are established through investigating the target situation and making this the necessary point to develop any material or design any course to fulfill the tasks to meet the students' needs. Many ESP practitioners argue the fact that target needs are of great importance. That is why it is referred to as an umbrella term. This last, and in practice, hides several significant distinctions. At this level, it is important to consider the target situation in terms of necessities, lacks, and wants. The following decryption will shed some light on the concept of learning needs.

1. Learning Needs

Learning needs can be defined as, Fanou (2015, p 20) stated "Needs analysis is the first step in course design as it provides validity and relevancy for all subsequent course design activities. Lamri (2016, p 63) briefly stated that the learning needs clarify the means through which learners proceed to achieve their target needs starting with realizing their lack. Lozada, (2016, p 7) divided learning needs into two types:

1. The first is the goal-oriented definition: it aims at explaining what the learner wants to do with the language.
2. The second is 'a process-oriented ' definition: it aims to tackle what the learner does to "actually acquire the language.

2. Target Needs

Target needs are relatively related to the phase of establishing the rationale behind what the language is used for. In other words, it refers to what the learner needs to do in the target situation for instance the workplace. According to Hamad, (2018, p 32) targets needs are mainly related to:

1. **Necessities.** (Target-situation analysis). It refers to what learners have to know to function effectively in the target situation. e.g., a businessman may need to know about letters, know how to speak at sales conferences, be able to read catalogs, etc.
2. **Lacks.** (Deficiency Analysis) it refers to what the learner does not know already.
3. **Wants.** (Subjective Needs Analysis) it refers to learner perceived needs which are an important factor in motivation. That is why they must not be ignored.

Here the researcher thinks that the wants of individuals cannot all be accounted for. However, as a least to consider, the wants of the majority can be discussed and partially met. Expectations need negotiation. This is since sometimes there is a 'deferred needs' problem, students' wants are usually discovered by a short, anonymous questionnaire, and one needs to consider how realistic wants are. This was briefly speaking about the two categorizations of need.

The Importance of Needs Analysis to ESP Course Design

Although teachers are not permitted to lengthen or shorten- in terms of both content and format- any course they teach. However, they are free to use different techniques and methods through which they can enhance students learning of any course,

specifically ESP courses. In other words, using those techniques will serve as a means to encourage and help their students to set their aims and plan their future in learning. In this regard, Agustina, (2014, p 39) stated "a current trend in teaching is to take into account learners' wants: they might want or need to carry out a variety of communicative tasks in the target language".

Ermerawati, (2016, p 23) stated that a convenient way to gather information on how learners prefer to learn is through NA. It enables the teacher to gather information about his learners' wants, lacks, to be able to prepare for the ESP syllabus. It is recommended, thus, that the universities do a wide range of Needs Analysis that includes the university undergraduates, graduates, professors, and any other relevant parties.

Related Studies

Chao (2016) investigated **the EFL needs of university students in transportation science**, the goal of this study was also to examine similarities or differences between teachers' and students' perceptions on their needs; For these purposes, a questionnaire survey was distributed to senior students. Then, eight volunteered students, two English instructors, and three subject instructors were interviewed. Four themes were identified. First, Transportation Science students' English needs and wants were different from their English lacks. Although the results showed that the students lacked ESP skills, they believed that they needed and wanted to learn EGP skills. Second, both instructors and students agreed that students needed to improve general English proficiency, especially speaking. On the other hand, the instructors questioned the feasibility of ESP courses due to the lack of qualified ESP instructors.

Aniqoh, (2018) made a **need analysis of ESP materials for medical laboratory technology students in the health polytechnics**. This study aimed to identify the students' needs of ESP materials for the medical laboratory technology department in the health polytechnics and to explore the lectures' needs also. The study involved 80 students and 3 lecturers as the experts of the study. The findings of the need analysis from students and teachers then were figured out to show that teaching English included the four all language skills components like listening, reading, speaking, and writing and the two language contents like structure (grammar) and the knowledge of vocabularies. Both language skills and content should be necessary for the student's academic studies and target career.

Asrifan, (2020) performed a study about **need analysis on tourism department in Indonesia vocational high schools**. This study aimed to explore the content that should be included to design English language materials based on needs analysis in the tourism program and to find out the response of teachers to the development of English material in the tourism program. fundamental analysis uses qualitative descriptive. the study results indicated that the content to be included in the English language material in the tourism program is speaking and pronunciation for language skills and components; media videos and images; and asking questions about teaching techniques. the creation of English language materials consists of several speaking practice presentations, many videos to practice listening, speaking, and reading, reading sections and documents, and some information that the tourism program learners need to know.

Pranoto, (2020) also performed a study about **the need analysis of ESP for physical education students in**

Indonesia. This study aimed at constructing the ideal English material for physical education students of universities in Lampung. this research was conducted in two universities. the participants are 50 students, and 10 lecturers of the physical education study program from both respective universities. the findings reveal that physical education students need ESP in a varied range of topics. the highly desired topics are English for sports journalism, English for professional athletes, referees, and coaches. furthermore, based on the perspective of lecturers, they believe that students speaking, and writing must be well developed to compete at the international level as professional athletes, coaches, journalists, etc. the result of the analysis concludes the importance of ESP for physical educations students. further research shall be conducted to test the effectiveness of the English topics constructed based on this current research.

Mafiyah, (2020) also used **a need analysis approach to ESP syllabus design in hospitality vocational secondary education.** This study aimed to describe the initial phase syllabus design in the context of hospitality vocational secondary school. It focuses on identifying the hospitality students' specific needs in English and introducing ESP-based instruction in the context of the hospitality program. The subject of the research were students and teachers taken from two vocational secondary schools. The results claimed that ESP syllabus design was important as addressing students' immediate needs as language learner and their long term as professionals in the hospitality services.

Design of the study

The current study adopted the quantitative design using the descriptive approach, the needs analysis survey will be the main

tool to gather necessary information and it intends to represent their needs, desires, and lacks before starting the ESP program. A survey is deemed as a deductive procedure and it is a good method of collecting initial data.

Firstly, we observed their English classes, current methodology, and students' involvement. According to this observation, the survey was prepared to find out their further needs. The survey included all ESP main skills including reading, writing, listening, and speaking sub-skills. These skills represent their preferable learning techniques, skills, methodology, challenges, and evaluation within medical faculties.

Participants of the study

A random sample was selected and consisted of (64) students attending their first year in Medical faculties in Cairo and Alexandria (Faculty of Medicine - Cairo University) and (Faculty of Medicine - Alexandria University) during June 2019, this time was chosen because it represents the end of the year Where students have already begun to attend theoretical and practical lectures in their studies in medical faculties. The cities of Cairo and Alexandria were chosen because of the cultural diversity that characterizes the university students in these cities, where students come from almost all regions and governorates Unlike universities located in the provinces, the majority of which are limited by the cultural nature of the population in the province. The researcher applied the Needs Analysis Survey upon that group, as they have already faced the challenges and difficulties that the current study might solve with their colleagues would be on board a few months later. So, they were suitable participants and their needs analysis would be helpful to design the ESP program. The following table should conclude information about the study Participants:

Instruments of the study

Research on the needs of language learners should be performed by assessing their needs through surveys and interviews. The survey and interview are given to student and faculty members to obtain backgrounds, and goals targeted. The more the students' needs are obvious, the more the aims are articulated. Thus, the ESP class becomes successful (Lee, 2016, p.97). The data of the current study were collected using the following tools:

1) The ESP main difficulties Questionnaire

The researcher designed a short questionnaire of six questions aimed to identify the main difficulties related to ESP that secondary students applying to medical faculties face. The questionnaire intended to identify the reason for the student's failure at the faculty's first year in comparison to their school type at the secondary stage. Also, the questionnaire to distinguish types of difficulty such as dealing with medical terms. The questionnaire ended with students' recommendations to improve the curriculum of English at the secondary stage.

2) The ESP Needs Analysis Survey

The ESP Needs Analysis Survey was a structured survey comprising (24) items. The survey was developed adapting from the literature review and a survey developed by Hutchinson and Waters (1992), with modification by the researcher to address the first-year medical student needs. The survey contained four sections regarding English skills, each skill contained sub-skills.

The Needs Analysis survey elicited the high achievers students' level of needs in English language subskills via responses on (24)

sub-skills on a three Likert scale: 1. Always, 2. Frequently, 3. Rarely, the subskills were:

- The first (8) items (1 to 8) were about reading sub-skills that include: Reading medical textbooks, Understanding medical terminology. Reading medical manuals, course handouts, written lectures, instructions for medical equipment and instructions for labs, and Understanding illnesses & diseases.
- The second (6) items (9 to 14) were about writing sub-skills that include: Writing medical reports, assignments, field-trip reports, short projects, taking notes in lectures, and Writing test/exam answers
- The third (5) items (15 to 19) were about listening sub-skills that include: Following lectures, question/answer sessions in class, listening to spoken presentations, instructions and explanations in labs, and Listening to medical instructions.
- The fourth (5) items (20 to 24) were about speaking sub-skills that include: Participating in discussions, asking questions in class, Making class presentations, Interactions in hospitals and pharmacy

As far as the survey design and layout were concerned, the optimal length of all items was one page that did not exceed a twenty-minute completion limit. Further, special attention was paid to its layout in terms of fonts, spacing, and paper quality. All of that depends on the fact that the professional quality of the layout can give a good impression of the survey, which in turn affects the quality of the responses.

Data Analysis & Results

This next section presents data analysis and results of the study, including the statistical analysis of the data and the study results. All the data were statistically treated using the Statistical Package for Social Sciences (SPSS) version (23). Cohen's d formula was used to estimate the effect size. The effect size can be calculated directly from the t-value and the number of participants to decide on the effect according to the following table:

Table (1) The Referential Framework for Identifying the Effect Size of T-values

| Effect Size | Interpretation |
|-------------|----------------|
| Small | 0.2 – 0.5 |
| Medium | 0.5 – 0.8 |
| Large | 0.8 - higher |

Results of the first Question

What are the main difficulties related to ESP that secondary students applying to medical faculties face?

To answer this question, the researcher applied The ESP main difficulties questionnaire on the study sample (N=64) Students. the following table represents the data collected from the students:

Table (2) The main difficulties related to ESP that secondary students applying to medical faculties face

| Item | N = 64 | Percentage |
|---|-----------|------------|
| 1 The study in medicine is in English | 40 | 63% |
| 2 Medical Terminology | 46 | 72% |
| 3 The secondary stage English didn't qualify. | 60 | 93.5% |
| Total | 64 | |

As shown in table (2), we can find that 63% of the students believed that the most important reasons are the difficulty of dealing with the study in English, and 72% of the students found it difficult to deal with medical terminology, Also, 93.5% of the students believed that the EFL curriculum at the third grade did not qualify them to deal with such terms they are dealing with at the university. The results proved that the main criteria of problems faced by students in medical faculties in Egypt are related to the process of teaching and learning English at the secondary stage.

Results of the Second Question

What are the ESP needs required for secondary students applying to medical faculties?

To answer this question, the researcher applied the Needs Analysis Survey on a sample of (64) Students to measure their level of needs in English language subskills that secondary students applying to medical faculties N=64 attending their first year in Medical faculties in Cairo and Alexandria via responses on (24) skills on a three Likert scale: 1. Always, 2. Frequently, 3. Rarely.

The results were interpreted according to the 3-Likert scale description as follows:

Table (3) The 3-Likert scale description criteria

| Likert scale | Interval | Difference | Description |
|--------------|-------------|------------|-------------|
| 1 | 1.00 – 1.66 | 0.66 | Bad |
| 2 | 1.67 – 2.33 | 0.66 | Undecided |
| 3 | 2.34 – 3.00 | 0.66 | Good |

The results of the survey regarding the Reading Sub-Skills obtained from the Participants (N=64) were as follows:

Table (4) Descriptive statistics of the Reading sub-skills Needs Analysis

| Reading Sub-Skills | | Always | Frequently | Rarely | Mean | SD | Rank |
|--------------------|---|--------|------------|--------|------|------|------|
| 1 | Reading medical textbooks | N 60 | 2 | 2 | 2.91 | .387 | 4 |
| | | % 93.8 | 3.1 | 3.1 | | | |
| 2 | Understanding medical terminology | N 64 | 0 | 0 | 3.00 | .000 | 1 |
| | | % 100 | 0 | 0 | | | |
| 3 | Reading medical manuals | N 51 | 13 | 0 | 2.80 | .406 | 5 |
| | | % 79.7 | 20.3 | 0 | | | |
| 4 | Reading course handouts | N 42 | 11 | 11 | 2.48 | .776 | 7 |
| | | % 65.6 | 17.2 | 17.2 | | | |
| 5 | Reading written lectures | N 35 | 23 | 6 | 2.45 | .665 | 6 |
| | | % 54.7 | 35.9 | 9.4 | | | |
| 6 | Reading instructions for medical equipment. | N 61 | 3 | 0 | 2.95 | .213 | 3 |
| | | % 95.3 | 4.7 | 0 | | | |

| | | | | | | | | |
|---|------------------------------------|------|------|----|---|------|------|---|
| 7 | Reading instructions for labs | N | 51 | 13 | 0 | 2.80 | .406 | 5 |
| | % | 79.7 | 20.3 | 0 | | | | |
| 8 | Understanding illnesses & diseases | N | 63 | 1 | 0 | 2.98 | .125 | 2 |
| | % | 98.4 | 1.6 | 0 | | | | |

Table (4) shows in general that the reading sub-skills means seemed to be good range from (2.48 to 3.00) so all the sub-skills are above the standard rate and should be addressed in the ESP program. the participants show strong demand for understanding medical terminology, so the program was designed to contain a whole section of every unit based on terminology. also, they show strong demand for understanding illnesses & diseases, so the program content had a whole unit regarding that topic. the results of the survey regarding the writing sub-skills obtained from the participants (n=64) are as follows:

Table (5) Descriptive statistics of the Writing sub-skills Needs Analysis

| | Writing Sub-Skills | | Always | Frequently | Rarely | Mean | SD | Rank |
|----|----------------------------|---|--------|------------|--------|------|------|------|
| 9 | Writing medical reports | N | 54 | 9 | 1 | 2.83 | .420 | 1 |
| | | % | 84.4 | 14.1 | 1.6 | | | |
| 10 | Writing assignments | N | 18 | 21 | 25 | 1.89 | .819 | 5 |
| | | % | 28.1 | 32.8 | 39.1 | | | |
| 11 | Writing field-trip reports | N | 46 | 11 | 7 | 2.61 | .681 | 3 |
| | | % | 71.9 | 17.2 | 10.9 | | | |
| 12 | Writing short projects | N | 15 | 29 | 20 | 1.92 | .741 | 4 |
| | | % | 23.4 | 45.3 | 31.3 | | | |
| 13 | Taking notes in lectures. | N | 4 | 23 | 37 | 1.48 | .617 | 6 |
| | | % | 6.3 | 35.9 | 57.8 | | | |

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|-----------|-------------------|---|------|------|------|------|------|---|
| 14 | Writing | N | 22 | 32 | 10 | 2.19 | .687 | 2 |
| | test/exam answers | % | 34.4 | 50.0 | 15.6 | | | |

Table (5) shows in general that the writing sub-skills means seemed to be undecidedly ranging from (1.48 to 2.83) so all the sub-skills above the standard rate including “writing medical reports” and “writing field-trip reports” should be addressed in the esp program. the results of the survey regarding the listening sub-skills obtained from the participants (n=64) are as follows:

Table (6) Descriptive statistics of the Listening sub-skills Needs Analysis

| Listening Sub-Skills | | Always | Frequently | Rarely | Mean | SD | Rank | |
|----------------------|--|--------|------------|--------|------|------|------|---|
| 15 | Following lectures | N | 64 | 0 | 0 | 3.00 | .000 | 1 |
| | | % | 100 | 0 | 0 | | | |
| 16 | Following question/answer sessions in class | N | 51 | 13 | 0 | 2.80 | .406 | 2 |
| | | % | 79.7 | 20.3 | 0 | | | |
| 17 | Listening to spoken presentations | N | 9 | 32 | 23 | 1.78 | .678 | 4 |
| | | % | 14.1 | 50.0 | 35.9 | | | |
| 18 | Listening to instructions and explanations in labs | N | 8 | 31 | 25 | 1.73 | .672 | 5 |
| | | % | 12.5 | 48.4 | 39.1 | | | |
| 19 | Listening to medical instructions. | N | 50 | 9 | 5 | 2.70 | .609 | 3 |
| | | % | 78.1 | 14.1 | 7.8 | | | |

Table (6) shows in general that the listening sub-skills means seemed to be undecided range from (1.73 to 3.00) so all the sub-skills above the standard rate including “following lectures”, “following question/answer sessions in class” and “listening to

medical instructions” should be addressed in the ESP program. the results of the survey regarding the speaking sub-skills obtained from the participants (n=64) are as follows:

Table (7) Descriptive statistics of the Speaking sub-skills Needs Analysis

| | Speaking Sub-Skills | | Always | Frequently | Rarely | Mean | SD | Rank |
|----|------------------------------|---|--------|------------|--------|------|------|------|
| 20 | Participating in discussions | N | 8 | 27 | 29 | 1.67 | .691 | 5 |
| | | % | 12.5 | 42.2 | 45.3 | | | |
| 21 | Asking questions in class | N | 20 | 15 | 29 | 1.86 | .870 | 4 |
| | | % | 31.3 | 23.4 | 45.3 | | | |
| 22 | Making class presentations | N | 46 | 12 | 6 | 2.63 | .655 | 3 |
| | | % | 71.9 | 18.8 | 9.4 | | | |
| 23 | Interactions in hospitals | N | 55 | 9 | 0 | 2.86 | .350 | 1 |
| | | % | 85.9 | 14.1 | 0 | | | |
| 24 | Interactions in pharmacy | N | 52 | 9 | 3 | 2.77 | .527 | 2 |
| | | % | 81.3 | 14.1 | 4.7 | | | |

Table (7) shows in general that the speaking sub-skills means seemed to be good range from (2.48 to 3.00) so all the sub-skills above the standard rate including “making class presentations”, “interactions in hospitals” and “interactions in pharmacy” should be addressed in the ESP program. the results of the survey regarding all English skills obtained from the participants (n=64) are as follows:

Table (8) Descriptive statistics of all English Skills and subskills Needs Analysis

| | | Reading | Writing | Listenin | Speakin |
|----------------|---------|---------|---------|----------|---------|
| | | Sub- | Sub- | g Sub- | g Sub- |
| | | skills | skills | skills | skills |
| N | Valid | 64 | 64 | 64 | 64 |
| | Missing | 0 | 0 | 0 | 0 |
| Mean | | 2.7969 | 2.1849 | 2.4031 | 2.3562 |
| Std. Deviation | | .16888 | .23592 | .21820 | .27938 |

Table (8) shows that the reading sub-skills came first needed by students with a total mean of (2.79) then listening sub-skills with a total mean of (2.40) then speaking sub-skills with a total mean of (2.35) and at the last rate writing sub-skills with a total mean of (2.18).

Conclusions

According to the current study, the needs analysis survey of the ESP program showed strong demand for reading sub-skills, then listening sub-skills, then speaking sub-skills, and at the last rate writing sub-skills. All these results are in harmony with the results of Al Tayeb (2012) who made an investigation into the reading strategies of ESP students in the college of medical sciences at Umm al Qura University. the study referred also to the strong demand for reading skills. Also, the results reached the same conclusions as el-Sayed Dadour (2014) who measured integrating the teaching of science and reading in the light of the ESP approach. All these studies coincide with the current study at the same basic

needs of reading sub-skills by students who learn English for scientific purposes.

Recommendations

Based on the findings of the current study, the following pedagogical implications are suggested:

- 1) English Teachers at the secondary stage should be aware of the significance of ESP as a learning approach to enhance the students' scientific literacy.
- 2) The use of ESP enables students to create positive attitudes towards learning in particular university specialties after the secondary stage.
- 3) English teachers at the secondary stage should know that they are dealing with students who are about to begin their university studies and need to develop their English skills based on these fields of study.
- 4) In terms of long-term learning, needs analysis allows for learning materials to be sustained over time with its content and its functions: organizing and maintaining resources and information over time by the students after the secondary stage.

Also, the study found that there is nothing called ESP teachers in our Egyptian classrooms. The researcher thinks that they are an important and powerful factor in the ESP classroom because of their influence and roles in teaching and learning. English teachers in our schools are novices regarding ESP and teaching in the recommended ESP program will be a challenging task for them. Consequently, an induction program is highly recommended for those teachers. So, the current study strongly recommends that English departments in the university support ESP teachers in their ESP professional development.

The university, as well as secondary schools, should, first, help ESP teachers attend workshops and conferences about ESP for the 21st-century classroom concerning how to integrate content into ESP and use student-centered approaches. ESP teachers need to match the content, the student's prior knowledge, and the level of proficiency. With the knowledge gained from professional learning, the ESP teachers could more easily apply this knowledge to the recommended changes through integrating content and teaching ESP in a student-centered way.

Suggestions for further research

The researcher presents the following for future studies:

- 1) A study that investigates the effect of ESP according to other needs criteria such as engineering, history, technology, and functional purposes.
- 2) The effect of a training program based on ESP in promoting teachers' ability to enhance the language needs of other types of students as International General Certificate for Secondary Education (IGCSE) students.
- 3) Studies that deal with high achiever secondary students who have problems in achieving in universities integrate the experience of their colleagues in universities with their needs in the secondary stage.

A corpus analysis of science-related language skills might be examined as a basis for the development of teaching materials in this area. Future research might be done by defining exactly what determines whether a word is domain-specific and how many domain-specific words are found in textbooks. Research might also explore the discourse used in the four main English skills related to terminology and specific use of language. Lastly, some specific

language areas that were far beyond the scope of the study could be investigated. For example, future studies might investigate the specific aspects of pronunciation that the students in ESP courses have difficulty with. The researcher might compare the students' difficulties in language acquisition with those of the literature of similar ESP studies.

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