

Investigating the English Language Present and Target Needs: A Study of Undergraduate Science Students at the Faculty of Science-University of Aden, Yemen

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DOI: [https://doi.org/10.47372/jef.\(2024\)18.2.80](https://doi.org/10.47372/jef.(2024)18.2.80)

Abstract: This study aims at investigating the present and target English language needs of the science students at the Faculty of Science, University of Aden. In the light of Hutchinson and Waters' (1987) learning and target needs frameworks, the study depends mainly on two approaches: the present situation analysis and the target situation analysis. The data was collected by using a semi-structured interview with ten faculty members, namely, one English teacher, seven science subject teachers and two academic administrators. The study obtains a number of results that although English language plays an important role in students' academic studies and future careers, it is more important in academic studies than future careers, reading and writing skills are the most needed skills followed by listening and speaking, and most importantly the present situation of teaching English at the Faculty of Science, University of Aden is not appropriate and must be improved. The study includes a number of suggestions and implications that may hopefully contribute to developing the English programme at the Faculty of Science, University of Aden.

Keywords: Needs Analysis, English for Specific Purposes, English for Academic Purposes, English for Science and Technology.

1. Introduction: English language has become the language of instruction in educational settings all over the world. Students are obliged to learn English to accomplish their academics tasks during their study. English for Academic Purposes (EAP) has emerged as a necessary discipline in higher education to help students in their academic studies. In the field of science, previous research showed that English is of crucial importance to students to make them function successfully in their academic and future careers (Al-Tamimi & Shuib, 2010, Abuklaish, 2014 and Pritchard & Nasr, 2004, etc.). For example, Pritchard & Nasr (2004, p. 426) in their study of Engineering students in Egyptian College of Technology emphasise that "English is of particular importance for engineering and science students because it is the principal international language of science and is looked upon as an effective means for enabling those students to become familiar with professional texts written in English". Unfortunately, Pritchard & Nasr (ibid) confess that science students and graduates in the Arab World in general are found to have many problems in using the English language. In this respect, the science students at the Faculty of Science, University of Aden have been described as poor in English. This view was based on the preliminary meetings conducted by the researchers of this study with some faculty members. They thought that students did not benefit from the offered English courses at the faculty. This is because, according to them, the students still face a lot of difficulties in using English. In Yemeni context, some researchers (e.g. Al-Thawr, 1997, Abdullah, 2005 and Al-Badri, 2013) investigated the language needs of science students in different science contexts and found that the

implemented English courses did not meet the learners' needs and as a result, the students have not got the benefits they need from such courses. This shows that designing a syllabus suitable for the science students at the faculty of Science is an urgent need. In this regard, many researchers (Hutchinson & Waters, 1987; Nunan, 1988; Robinson, 1991; Dudley-Evans & John, 1998; Kavaliauskiene & Užpaliene, 2003; Chen, 2006; Jiajing, 2007; Al Tamimi & Shuib, 2008b) argue that identifying students' needs should be the first step in designing an ESP syllabus. Accordingly, this study uses Need Analysis Approach (NA) as a basis for investigating the present and target English language needs of the science students at the Faculty of Science, University of Aden.

1.1. The Faculty of Science at University of Aden

The Faculty of Science is affiliated to Aden University; it is situated in Khormaksar, Aden governorate. Students are graduated having Bachelor of Science in one of the four science majors: Life Sciences (Biology) which include (Zoology, Botany, Microbiology and Marine Sciences), Chemistry, Mathematics, and Physics. Students are learning scientific courses related to their specializations, courses of faculty requirements and English courses. Regarding the English courses, like all the faculties affiliated to Aden University, science students at the Faculty of Science are learning two English courses as university requirement in their first year of study. The ultimate goal for providing these courses is to help students in their academic studies and future careers through providing them with the essential knowledge and skills of English language. After completing the English courses, students are expected to acquire an acceptable level of proficiency in English. The current study was conducted on the participants in the second semester of the academic year 2022-2023.

1.2. Statement of the Problem: Science students are in need of learning English courses to help them in their studies and future careers. These courses should base on students' needs and wants. To address this problem, there is a need to investigate the English language needs of science students at the Faculty of Science, University of Aden hoping to improve the current English programme at the faculty.

1.3. Objectives of the Study: This study aims at investigating the present and target English language needs of the science students at the Faculty of Science, University of Aden. Specifically, it aims to achieve the following two objectives:

1. To identify the faculty members' perceptions of the science community's present situation (PS) at the Faculty of Science, University of Aden.
2. To identify the faculty members' perceptions of the science community's target situation (TS) at the Faculty of Science, University of Aden

1.4. Study Questions: The study focuses on answering the following two questions:

1. What is the science community's present situation (PS) at the Faculty of Science, University of Aden?
2. What is the science community's target situation (TS) at the Faculty of Science, University of Aden?

1.5. Limitation of the Study: This study is limited to the faculty members of the Faculty of Science, University of Aden, namely, the English teacher, some science subject teachers and academic administrators. In addition, the study investigates the faculty members' perceptions of the present and target language needs of the science students at the Faculty of Science, University of Aden. Thus, the findings are not generalised to other faculties of science.

2. Literature Review: English for Specific Purposes (ESP) is a branch of English Language Teaching (ELT) which focuses on teaching English based on learners' needs and wants. Paltridge & Starfield (2013, p.2) define ESP as the teaching and learning of English as a second or foreign

language where the aim of learning is to use English in a particular domain. Similiary, Basturkmen (2006, p.18) describes ESP as preparing learners to use English within academic, professional or workplace contexts. Richards et al (1992, p.125) describe ESP as the role of English in a language course or programme of instruction in which the content and aims of the course are related and depending on the specific needs of a particular group of learners. They point out courses in English for academic purposes such as English for Science and Technology, and English for Nursing which may be compared with those which aim to teach general English proficiency, English for General Purposes. Similarly, Hutchinson & Waters (1987, p. 19) describe 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". Widdowson (1983, p.6) defines ESP as a training operation which tries to provide learners with a restricted competence to deal with certain defined tasks. These tasks constitute the specific purposes which the ESP course is designed to meet. The more detailed definition of ESP comes from Strevens (1988, pp.1-2) who defines it as a particular case of general category of special purpose language teaching. He further points out that the definition of ESP is needed to distinguish between four absolute characteristics and two variable characteristics. The four absolute characteristics show that ESP is designed to meet specific needs of the learners, related in content (i.e. in its themes and topics) to particular disciplines, occupations and activities, centred on the language appropriate to those activities in syntax, lexis, discourse, semantics, etc. and analysis of this discourse, and differentiated to General English. While, the variable characteristics show that ESP may be, but is not necessarily restricted as to the language skills to be learned (e.g. reading only) and not taught according to any pre-ordained methodology. Robinson (1991, pp. 2-3), points out two key criteria and three characteristics of ESP. The criteria show that the ESP is normally goal-directed and the ESP courses are based on needs analysis which aims to specify as closely as possible exactly what it is that students have to do through medium of English. While the characteristics show that ESP is for a specified period, it is taught to adults in homogeneous classes. Form this definition, it can be seen that ESP courses are given for a limited period of time and to adults in homogenous classes. That means students of different majors have different needs and therefore they are in need to study English courses that are relevant to their specialization.

Dudley-Evans & St John (1998, pp.4-5) have improved the definition of ESP offered by Strevens (1988) mentioned above and provided a definition which is more comprehensive and flexible. They removed the absolute characteristic that ESP is *Differentiated to General English* and have revised and increased the number of variable characteristics. For them the ESP is not necessarily related to a specific discipline. Furthermore, ESP is likely to be used with adult learners although it could be used with young adults in secondary school settings. In their absolute characteristics they show that the ESP is designed to meet specific needs of the learners, it makes use of the underlying methodology and activities of the discipline it serves, it is centred on the language appropriate to these activities in terms of grammar, lexis, register, study skills, discourse and genres appropriate to these activities. While in their variable characteristics they show that the ESP may be related or designed for specific discipline, it may use, in specific teaching situations, a different methodology from that of general English, it is likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation, however it could be for learners at secondary school level, it is generally designed for intermediate or advanced students and ESP courses assume some basic knowledge of the language systems, but it can be used with beginners.

Based on the different definitions of ESP mentioned above, it can be concluded that ESP is an English teaching approach which aims to meet the learners' needs.

2.1. Need Analysis: Needs analysis has become the cornerstone in ESP since 1970s. It is regarded as "synonymous with ESP, and it is difficult to think of one without the other comes to mind" (McDonough, 1984, p.9). Needs Analysis is very necessary in designing ESP courses as it defines the aims and objectives of a course, which is the first step in designing and developing appropriate ESP courses. Needs Analysis investigates the learners' needs and aids in providing students with what they actually need to perform in the target situation. This will make students more motivated to learn and therefore be successful learners. In this regard, Hutchinson & Waters (1987, p. 7) point out that the ESP course designers should "determine the features of specific situation and then make these features the basis of learners' course". In ESP literature, Needs Analysis has been defined in many ways. For example, Hyland (2006, p.73) describes it as the techniques used for collecting and assessing information related to course design. Similarly, Brown (2009, p.269) defines Needs Analysis as the systematic collection and analysis of all necessary information for defining a defensible curriculum. Finally, Stojković, (2015, p.152) believes that Needs Analysis should be an on-going process repeated yearly and both at the beginning and during the course. To sum up, NA is the tool which ESP practitioners use to detect the learners' needs in specific disciplines.

2.1.1. Need Analysis Approaches: Needs Analysis has more than one approach by which students' language needs can be determined such as Present Situation Analysis(PSA), Target-Situation Analysis(TSA), Learning Situation Analysis(LSA), Strategy Analysis, etc. The PSA and TSA will be illustrated, as they are the concern of the present study. Firstly, the PSA was proposed by Richterich & Chancerel (1980) and considered as one of two main approaches of Needs Analysis, TSA and PSA (Jordan 1997) which are seen as two sides of the same coin (Basturkmen, 2010). The PSA attempts to discover what the learners are like at the beginning of the course, e.g. their strengths and weaknesses, their skills, perceptions, and familiarity with the subject (Hyland, 2006; Robinson, 1991). The sources of information are the students themselves, teaching establishment and user-institution, e.g. place of study or work. Surveys, questionnaires and interviews are used to collect data from these sources. In the present study, the PSA is investigated through identifying the students' levels of English, their English learning challenges, their motivations and attitudes towards English, English and subject teachers' biography, English course, syllabus, materials, environments and teaching methods. Secondly, the TSA is a form of Needs Analysis, which was first developed by the pioneer in this area, Munby (1978). Based on Munby's model (Communication Needs Processor), TSA provides a comprehensive data profile about the learners and establishes what the learner needs to know in order to function effectively in the target situation. Dudley-Evans & St. John (1998, p.124) and Basturkmen (2010, p.19) refer to this process as tasks and activities for which the learners are/will be using English; what the learners should ideally know and what they should be able to do. Likewise, Hyland (2006) also claims that TSA investigates the learners' future roles and the linguistic skills and knowledge that they need to perform efficiently in their disciplines. TSA, therefore, investigates communication needs rather than learning needs. This involves analysis of mainly objective and product-oriented data, such as identifying the contexts of language use, observing the language events in these contexts, and collecting target genre/skills. Hutchinson & Waters (1987) classified TSA into three types: Lacks, Wants and Necessities. Lacks presents the gap between TSA and PSA (Jordan 1997; Blue 2000), i.e. "what the learner needs to know to operate in the target situation and the learner's present language proficiency" (Basturkmen, 2010, p.18). Wants are what learners desire to learn or

achieve from the course, which is based on the learners' point of view (e.g. what their needs are; what kind of knowledge/skills they may lack. Necessities are what a learner needs to know in order to be able to function successfully in a target situation. These can be identified by observing the kinds of situations in which they will need to function, and then analysing the type of language used in these situations (Hutchinson & Waters 1987, pp.55-57). In the present study, the TSA is investigated through identifying the reasons for using English, genres and language skills required and where and with whom the language is/will be used.

2.1.2. Previous Studies on Needs Analysis : There is a number of Needs Analysis studies which have been conducted on language programmes in different settings (academic and professional) and areas (e.g. medicine, engineering, computing, etc.) with the aim of investigating the English language needs of ESP students, developing and designing ESP courses or investigating problems. These studies confirm the importance of identifying learners' needs and considered Needs Analysis as a necessity in ESP. The results of these studies vary according to the nature and aims of the study. For example, some studies showed the crucial importance of English to students in their academic and future careers (Pritchard & Nasr, 2004; Al-Tamimi & Shuib, 2010; Abuklaish, 2014, etc.), other studies demonstrated the importance of matching English courses to students' entire needs (Abdullah, 1999; Al-Badri, 2013; Bin Taya'a, 1996; Abdullah, 2005, etc.), other studies assured the importance of ordering the language skills in ESP according to students' needs (Al-Thawr, 1997; Bin Taya'a, 1996; Al-Fadhly, 2004; Haddam, 2015, etc.), some other studies showed the importance of both GE and ESP courses to students (Abdullah, 2005; Al-Badri, 2013, etc.) and finally, some studies showed the importance of dealing with the difficulties the students face with language skills (e.g. Rahman, 2012, etc.).

However in the faculties of science, where there are different departments i.e. Biology, Chemistry, Mathematics and Physics, the Needs Analysis studies are limited. Thus, it is found that the Faculty of Science, University of Aden would benefit from a Needs Analysis study. This lack in the literature, along with the need to design a syllabus, generated a motivation for the researchers to carry out a needs analysis study to investigate the English language needs of the students at the Faculty of Science, University of Aden.

3. Study Methodology

3.1. Study Design: This study followed a qualitative case study design which aims at investigating the faculty members' perceptions of the science community' present and target situations. The researchers collected the required information about the study by conducting semi-structured interviews with some faculty members.

3.2. Participants: The participants of this study were ten faculty members of the Faculty of Science, University of Aden, namely, one English teacher who is currently teaching English at the faculty, seven science subject teachers (i.e. two doctors who are teaching in the department of Biology, two doctors and one lecturer who are teaching at the department of Mathematics, one doctor who is teaching in the department of Physics and one doctor who is teaching in the department of Chemistry) and two academic administrators who are working as vice-deans of Students' Affairs and Higher Studies. These faculty members are selected based on their experience as well as their availability and willingness to participate in the interview.

3.3. Instrument : In this study, the semi-structured interview was used as the only method of data collection. In practice, three semi-structured interviews were conducted which are: English teacher's interview, science subject teachers' interviews and academic administrators' interviews.

These interviews were divided into two phases: the first phase targeted the English teacher and the second phase targeted science subject teachers and academic administrators. Each interview has specific questions developed by the researchers to help in collecting the necessary data for the study which mainly based on Hutchinson & Waters'(1987) learning and target needs. The English teacher's interview consisted of 33 questions and aimed at obtaining information about the English programme in terms of staff, teaching materials, students' language competence, challenges and attitudes and teaching methods. The science subject teachers' interview consisted of 21 questions and aimed at obtaining information about the extent to which the science students require English, skills and sub-skills students are in need in their studies and future careers, science subject teachers and their opinions concerning the students' language competence, challenges and attitudes towards the language. The academic administrators' interview consisted of 13 questions and aimed at obtaining information about the extent to which the Faculty of Science, University of Aden requires English and the present situation of teaching English at the faculty in terms of teachers, materials, students, etc. The researchers translated the interviews of the science subject teachers and academic administrators into Arabic to guarantee the participants' full comprehension of the items included.

The interviews were conducted with the participants on 12-19.3.2023. The English teacher's interview took about 30 minutes, the interview of each science subject teacher took nearly 25 minutes and the interview of each academic administrator took about 15 minutes. In analysing the interviews data, the interpretive approach suggested by Miles and Huberman (1994) was followed. Miles and Huberman (ibid, p.10) suggest three steps for data analysis: data reduction, data display and conclusion drawing/verification, which can either be carried out by using a *case study* or by *cross-case* analysis. A case study is written for each individual and it is "valuable when the evaluation aims to capture individual differences or unique variations from one programme setting to another, or from one programme to another" (Patton, 1990, p.54), whereas a cross-case analysis means grouping together answers from different people to common questions or analysing different perspectives on central issues (Patton, 2002, p.440). In this study, a cross-case study which aims to enhance the ability to gain deeper understanding and careful analysis was used. The cross-case study also helps answer some questions relating to issues beyond the specific case study (Miles and Huberman, 1994).

4. Results: The findings of the study are divided into two parts: part one and part two. Part one concerns the category of the present situation analysis (PSA) and part two concerns the category of the target situation analysis (TSA). These parts will be presented in the following lines.

4.1. The Science Community' Present Situation Analysis

This section aims at identifying the faculty members' perceptions of the science community' present situation. This will be examined within the following sub-categories:

1. Students' Language Competence: All faculty members interviewed (English and science subject lecturers and academic administrators) pointed out that the majority of the science students were poor in English. They had inadequate language competence. These students joined the faculty with a limited knowledge of English in terms of skills and language rules. They attributed this weakness to the nature of the previous study in basic and secondary education. There was no difference among the four departments regarding language competence.

2. Students' English Language Learning Challenges: All the faculty members interviewed pointed out that students who joined the faculty encountered many problems. These problems were in all language skills (reading, listening, writing, speaking, general vocabulary and grammar). However reading, listening and scientific vocabulary were of less challenge in comparison to

speaking, writing and grammar. Students were unable to speak the language or communicate effectively with their lecturers and writing correctly. It seemed that students did not face major difficulties with scientific terminologies rather they faced major difficulties with general words.

3. Students' Attitudes towards the Language: The results of the interviews revealed that the students generally had positive views to using English regardless of difficulties they encountered with the language. All the interviewees pointed out that students of all departments showed interest in using English.

4. Subject Teachers' Biography: The results of the science subject lecturers' interviews revealed that all the interviewed lecturers were Yemenis and holders of PhD degrees except one of them who had MSc in Mathematics. Two of them have graduated from India, one from Chequslavia, one from Morocco, one from Iraq and two from Yemen. They have been teaching English at the Faculty of Science since the establishment of the faculty in 2016 except two of them who have been teaching English for only two and six years.

5. English Teachers' Biography: The results of the English lecturer's interview revealed that the English courses I and II were taught by a Yemeni lecturer who had MA in Applied linguistics. He did not receive any kind of training in the ESP field. He has been teaching English at the Faculty of Science for only two years. He was more interested in teaching reading and writing than teaching listening and speaking. Besides, he had some experience in computer. Moreover, the English lecturer complained about the students' weak language competence and their big number in the classes, the unavailability of English syllabus and the lack of appropriate teaching environment, the difficulty of teaching and selecting English topics and the absence of coordination between him and science subject teachers regarding teaching English.

6. English Course Aims and Objectives:

The findings of the English lecturer's interview showed that there were no obvious aims/ objectives or specific syllabus for the English course. The English lecturer used his general knowledge in deciding the aims and objectives of the courses without identifying the students' real needs. He only conducted brief discussions about the topics his students prefer. Besides, he selected same teaching texts for both Biology and Chemistry students.

7. English Course Physical Teaching Environment: The English lecturer revealed that the English classes were heterogeneous. In each class, there were students from Biology and Chemistry departments who all came with nearly similar levels of English proficiency. Previously, students of four departments were gathered in one classroom. According to the lecturer, the teaching environment was not appropriate as the classrooms were congested with students as well as lacking modern aids.

8. English Course Teaching Materials: The results of the English lecturer's interview showed that the English teaching materials were a collection of separate lectures selected by the English lecturer from the library and other sources. These materials were collected basing on the English lecturer's teaching experience where he chose to hold a conversation with the students to assess their level of proficiency and specify their needs. These materials included a mix of grammatical aspects and few chosen reading texts with comprehension activities. Besides, these materials gave limited focus on writing and complete ignorance of speaking and listening skills. The results revealed that such materials were not based on the authenticity or relevance.

9. English Teaching Methods: The results of the English lecturer's interview demonstrated that the English lecturer did not receive any kind of training in the ESP field. He used the *Grammar-*

Translation-Method, etc. most frequently in the classroom rather than communicative ones (e.g. Communicative Language Teaching approach (CLT), etc). Moreover, the English teacher used a mix of English and Arabic in his teaching. He believed that the English teacher's job is to be helper for the students and sometimes as a controller of the class. In relation to the assessment, the English lecturer used class participation, home assignments and written tests which were conducted once or twice in each semester as well as a final exam. In these tests reading comprehension, vocabulary and grammar were tested. However, oral/aural tests and examinations were excluded.

The results of the interviews demonstrated the agreement of the faculty members about the absence of coordination between the English lecturer and the science subject lecturers regarding teaching English and extending the period of teaching English into two years, namely, in the first and the second year of study with focusing on teaching both GE and ESP courses. The faculty members showed that the English courses should be taught by a specialized ESP teacher. They assured the importance of teaching students relevant topics to their specializations. With regard to the required number of English teachers, it was reported that the Faculty of Science requires at least four English teachers trained in ESP teaching. Moreover, it was demonstrated that the existing English teaching materials are relevant to some extent to students' majors as well as the activities such as role play, solve problems, pair and group work are important and should be included in the English courses.

The results of the interviews demonstrated the following:

- The current situation of teaching English at the Faculty of Science encountered many challenges such as the lack of English teachers, classrooms, language laboratories, library, teaching and learning facilities, etc.
- The English and science subject teachers did not coordinate in terms of teaching English which makes the situation of teaching English ineffective.
- The students had weak levels in all language skills, especially, in writing and speaking which affect their science studies.

4.2. The Target Situation Analysis (TSA)

This section aims at identifying the science students' target situation. It aims to discover the tasks/activities in which the students are expected to participate as users of English. The students' target situation will be examined within the following three themes:

1. Reasons for Using English: The results of the interviews revealed that all the departments i.e. Biology, Chemistry, Mathematics and Physics used English largely as the teaching materials, hand-outs, textbooks and references were written in English and the teaching medium was mostly English. Science subject teachers used English in teaching the language of science (i.e. pronouncing the scientific language, terminologies, symbols, etc.) and a mix of English and Arabic was used in explanations, discussions and communications with their students in order to help the students understand lectures. It was also revealed that although English was needed for both study and future career purposes, it was needed more in study contexts than future career contexts.

2. Genres and Language Skills: The results of the interviews demonstrated a number of activities which students were required to perform in English such as understanding and reading lecture hand-outs; taking notes, writing relevant and accurate exam answers, following and understanding lectures; communicating and speaking with lecturers. In future careers, it was showed that students need English in their postgraduate studies, in participating, speaking and communicating with English in laboratories, companies and organisations, working as teachers in foreign schools and in listening to foreigner speakers who speak English, specialists in science, etc. Table 1 below shows

the skills and tasks students are in need to perform in lecture, exam/test and future career contexts. Moreover, results revealed that all skills i.e. reading, writing, listening and speaking are needed with more focus on reading and writing.

Table 1: Skills and tasks needed in all departments at the Faculty of Science

Skills	Tasks	Sitting
Reading	reading and understanding lecture hand-outs-texts-topics, definitions, symbols, equations, etc.	Lecture
Writing	taking notes, writing summaries, writing answers for questions in class	
Listening	following and listening to lectures, following instructions, following question/answer sessions in class	
Speaking	speaking and communicating with teachers, asking/answering questions, participating in discussions, asking for clarification	
Reading	reading and understanding exam/test/ assignment questions	Exam/ Test
Writing	writing relevant and correct exam/test answers	
Listening	listening to instructions	
Speaking	asking for clarification	
Reading	reading and understanding reports/books/references, research papers, consulting academic journals	Future Careers
Writing	writing scientific language/texts, reports, lab experiments, summaries, graduation project reports, note taking	
Listening	listening to oral presentation, listening to foreigner speakers, specialists in science, etc.	
Speaking	presenting and discussing scientific/lab and graduation project reports; participating, speaking and communicating in scientific work places	

3. Where and with whom the Language is/will be Used: The results of the interviews revealed that English is needed in study contexts and future careers. In study contexts, English is needed for reading and understanding science materials and references, for communications between students and their teachers and partners, during students' postgraduate studies, going online or to library and reading references in English. In future careers, English is needed for speaking, communicating and writing for those students who will work in companies and organisations or be in contact with science people or foreigners who speak English.

5. Discussion

This section will discuss the findings of the study as follows:

5.1. The Science Community's Present Situation:

Regarding the students' present needs, the findings revealed that students join the Faculty of Science with poor levels of English, especially, in writing and speaking skills which effect their study at the faculty. Therefore, these two skills should be given more focus by English teachers through giving students real chances to practice and use these skills in the classroom. With respect to the science subject teachers, the findings revealed that the majority of them have PhD degrees in science and are graduated from different foreign countries which means that they are highly educated. Therefore, the teaching process at the faculty is more advanced and complicated which requires students joining it to be qualified enough in English. Regarding the English teachers, although all the faculty members agreed that English courses should be taught by a specialized ESP teacher and suggested four teachers for teaching English at the faculty, the results showed that there is only one English teacher who has MA in Applied linguistics and does not receive any

kind of training in the ESP field. Moreover, although as it was revealed by the findings of the study the importance of teaching students relevant topic/texts to their specializations, the current English teacher teaches two departments i.e. biology and chemistry in same classroom with same English teaching materials. This means that achieving this relevance cannot be achieved which makes English teaching process ineffective. Besides, it was shown that the current English teacher is more interested in teaching reading and writing than teaching listening and speaking. This illustrates the lack of focus on speaking and listening skills in the English course. It was revealed that the English teacher has short experience in teaching English at the faculty of science i.e. just two years which demonstrates the temporary situation of teaching English at the faculty. As a result, the English teaching materials are also temporary i.e. each new teacher teaches varied teaching materials according to his own experience and what is available. It was revealed that the used English materials have very little focus on writing skill and do not pay any attention to listening and speaking skills which illustrates the weakness in students' language proficiency in the speaking and writing skills. Regarding listening, although there was no focus on it, students' levels in this skill are perceived by the faculty members as to somewhat good which can be attributed to the nature of teaching science subjects at the faculty which is English. Moreover, it was shown that there are no specific syllabus and obvious aims/objectives of teaching English which make the selection of teaching materials random so that students will learn irrelevant and unbeneficial materials. With respect to the teaching methods and classroom environment, the findings revealed that the traditional methods of teaching are used more frequently by the English teacher and the teaching environment is not appropriate as it lacks many things e.g. teaching and learning facilities, language laboratories, etc. This situation surely affects negatively the teaching of English at the faculty.

The findings showed that the English lecturer uses a mix of English and Arabic in his teaching which means that students do not benefit largely from their English teacher's speech in the classroom. In assessment, it was revealed that the English teacher tests the reading comprehension, vocabulary and grammar without any test of oral/aural abilities. This makes students focus on reading and grammar rather than speaking and listening. Moreover, it was demonstrated the absence of any coordination between the English lecturer and science subject lecturers regarding teaching English which makes the teaching of English ineffective. It was revealed that one year is not enough for teaching English which demonstrates the participants' awareness of the importance of giving students sufficient time to use and practice the language. Besides, it was demonstrated that students were in need to learn both ESP and GE which illustrates the participants' awareness of the importance of ESP courses to science students in facilitating their academic studies as well as future careers and GE courses in improving students' proficiency of English.

5.2. The Science Community's Target Situation

Regarding the science community' target situation, the findings demonstrated that English is important for science students at the Faculty of Science, Aden University of Aden in their study and future career contexts as it is the language of teaching materials, textbooks and references, it is also the medium of teaching and the language of communication in scientific work places. Students need English to communicate with lecturers and among others. Students who join the faculty are required to have at least an intermediate level in English to cope with the new situation of teaching at the faculty. This proves the inadequate current situation of teaching at the Faculty of Science, University of Aden where new students join the faculty with weak levels in English. The findings of the study demonstrated that all language skills are important to acquire for science students with the priority of reading, writing, listening and speaking. Given this, when designing

English courses these skills should be treated as this priority. With respect to the sub-skills, the findings revealed that there are many sub-skills and activities which students are required to perform in English such as understanding and reading and lecture hand-outs, taking notes, writing relevant and accurate exam answers, following and understanding lectures, communicating and speaking with lecturers, communicating with English in laboratories, companies and organisation, etc. which confirm the importance of English for students and their need to deal with this type of language function in their learning situations.

6. Recommendations and Suggestions

From the study findings, the following set of recommendations has emerged:

1. University of Aden should hold workshops to specify, design, revise and develop the current situation of English courses in its affiliated faculties.
2. English teachers should take into consideration learners' needs by focusing on all language skills, with greater emphasis on reading and writing.
3. English teachers should focus on the difficulties encounter the students in speaking, writing, general vocabulary and grammar.
4. English teachers should improve their teaching methods by using communicative methods instead of old ones and in terms of testing students, teachers should use various ways of assessing students' work with focusing on testing all language aspects and skills.
5. English teachers should be specialized ESP teachers or should be given intensive and direct strategy training in ESP.
6. The English teaching materials should be specific, relevant, interesting, authentic and up-to-date.
7. The Faculty of Science should have entrance exams where English proficiency is considered a priority for acceptance.
8. The Faculty of Science should teach English courses for two years with focusing on both ESP and GE and should train four teachers at least in ESP.
9. The teaching and learning facilities should be used for better and successful learning.
10. The Faculty of Science should encourage the English and science subject teachers to collaborate in terms of English teaching.
11. The University of Aden should have a vision about ESP teaching courses.

7. Conclusion: To conclude, the current study used Need Analysis Approach (NA) to investigate the science community' present and target situations at the Faculty of Science, University of Aden as identifying learners' needs is the first step in the course design. The findings of the study stressed the significance of English for students' academic studies and future careers. However, English is more important in academic studies than future careers. Moreover, the findings demonstrated that the current situation of teaching English at the Faculty of Science, University of Aden is not appropriate and must be improved. Based on the findings of this study, it is hoped that the Faculty of Science and English teachers can benefit from such findings to develop the current situation of teaching English at the faculty.

References

- [1] Abdullah, G. (1999). *A study of the Learner Needs of Would-be Medical Students*. MA Dissertation, Department of English, University of Aden, Yemen.
- [2] Abdullah, G (2005). *Needs of ESP Learners for Practical English Communication: A Case Study of First Year Students at the Medical College, University of Aden*. PhD Thesis, University of Pune, India.

- [3] Abuklaish, A. (2014). *Investigating the Language Needs of Undergraduate Science Students in Libya*. PhD Thesis, University of Southampton. UK.
- [4] Al-Badri M. (2013). *Bridging the Gap between Academic English and ESP: A Case Study of Engineering Students at the College of Engineering, University of Aden, Yemen*. PhD Thesis. Institute of Advanced Studies in English. Pune, India.
- [5] Al-Fadhly, H. (2004). *The English Language Needs of Medical Undergraduates at Hahdrumout University*. MA Dissertation. University of Saint, Malaysia.
- [6] Al-Tamimi, A. & Shuib, M. (2008b). The Importance of Applying Needs Analysis in Designing ESP Courses: Theoretical and Empirical Basis. The Proceedings of the National Conference on Skills and Competencies in Education, Universiti Sains Malaysia, Penang, Malaysia.
- [7] Al-Tamimi, A. & Shuib, M. (2010). Investigating the English Language Needs of Petroleum Engineering Students at Hadhramout University of Science and Technology. A Paper. *The Asian ESP Journal*, Vol. 6 (1), 6-34.
- [8] Al-Thawr, S. (1997). *An Investigation of the EAP of the Undergraduates at the Faculty of Science, Sana'a University with Reference to the Present English Programme*. MA Dissertation, University of Sana'a, Sana'a. Yemen.
- [9] Anthony, L. (1999). Defining English for Specific Purpose and the Role of the ESP Practitioner. *Journal papers* 15 January 2024. <http://ifeslj.org/articles/gatehouse.esp.html>
- [10] Basturkmen, H. (2006). *Ideas and Options in English for Specific Purposes*. New Jersey: Lawrence Erlbaum Associates, Inc.
- [11] Basturkmen, H. (2010). *Developing Courses in English for Specific Purposes*. New Zealand: Macmillan.
- [12] Bin Taya'a, N. (1996). *An Investigation of the Language Needs of the Students of General Medicine Department, Faculty of Medicine, Sana'a University*. MA Dissertation, Sana'a University, Yemen.
- [13] Blue, G. M. (2000). *The Specificity of English for Academic Purposes: EGAP/ESAP Revisited*. Southampton: University of Southampton.
- [14] Brown, H. D. (2009). *Teaching by Principles: An Integrative Approach to Language Pedagogy*. US: Pearson Education.
- [15] Chen, Y. (2006). From Common Core to Specific. *The Asian ESP Journal*, 1 (3). Retrieved January 6 2024 from <http://www.asian-esp->
- [16] Dudley-Evan, T. & St. M. John. (1998). *Development in English for Specific Purposes: A Multi Disciplinary Approach*. Cambridge: Cambridge University Press.
- [17] Haddam, F. (2015). *A Course Design in ESP: The Case of Master's Students in the Department of Biology University of Tlemcen*. (Doctoral Thesis). University of Tlemcen. Algeria.
- [18] Hutchinson, T. & Waters, A. (1987). *English for Specific Purpose: A Learning- Centred Approach*. Cambridge: Cambridge University Press.
- [19] Hyland, K. (2006). *English for Academic Purposes*. UK: Rutledge.
- [20] Jiajing, G. (2007). Designing an ESP Course for Chinese University Students of Business. *The Asian ESP Journal*, 3(1). Retrieved February 23, 2024 from <http://www.asian-esp-journal.com/gj.php>.
- [21] Jordon, R. (1997). *Purposes A Guide and Resource Book for Teachers*. U.K: CUP.
- [22] Kavaliauskiene, G. & D. Uzpalienė. (2003). Ongoing Needs Analysis as a Factor to Successful Language Learning. *Journal of Language and Learning*, 1/1:4-11.
- [23] McDonough, J. (1984). *ESP in Perspective: A Practical Guide*. London: Collins.
- [24] Miles, M. & Huberman, A. (1994). *Qualitative Data Analysis: an Expanded Sourcebook* (2nd ed.). California: Sage Publications, Inc.
- [25] Munby, J. (1978). *Communicative Syllabus Design*. Cambridge: Cambridge University Press.
- [26] Nunan, D. (1988). *Syllabus Design*. Oxford: Oxford University Press.

- [27] Paltridge, B. & Starfield, S. (2013). *The Handbook of English for Specific Purposes*. Malden, Mass: Wiley-Blackwel.
- [28] Patton, M. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). Newbury Park: Sage Publications.
- [29] Patton, M. (2002). *Qualitative Research and Evaluation Methods* (3rd ed.). Thousand Oaks. CA: Sage.
- [30] Pritchard, M., & Nasr, A. (2004). *Improving Reading Performance Among Egyptian Engineering Students: Principles and Practices. English for Specific Purposes*, 23,425-445. <https://doi.org/10.1016/j.esp>.
- [31] Rahman, M. (2012). *The English Language Needs of Computer Science Undergraduate Students at Putara University, Malaysia: A Focus on Reading Skills*. Retrieved January 20, 2024 www.esp-word.info/articles_34/DOC/ESP_Rahman.
- [32] Richards, J. C. , Platt, J. & Platt, H. (1992). *Longman Dictionary of Language Teaching and Applied Linguistics*. England: Longman.
- [33] Richterich, R & Chancerel, J. (1980). *Identifying the Needs of Adult Learning a Foreign Language*. Strasbourg: Council of Europe/Oxford: Pergamon.
- [34] Robinson, P. (1991). *ESP Today: A Practitioner's Guide*. New York: Prentice Hall.
- [35] Stojkovic', N. (2015). *Vistas of ESP*. Cambridge: Scalars Publishing.
- [36] Strevens, P. (1988). ESP After Twenty Years: A re-Appraisal. In M. Tikoo (Ed), *ESP: State of the Art*, 1-13. Singapore SEAMEO Regional Centre .
- [37] Widdowson, H. (1983). *Learning Purpose and Language Use*. Oxfords: Oxford University Press.

الاحتياجات الغرضية والحالية للغة الإنجليزية:

دراسة لطلاب المرحلة الجامعية في كلية العلوم، جامعة عدن، اليمن

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المخلص: تهدف هذه الدراسة إلى بحث الاحتياجات الغرضية والحالية للغة الإنجليزية لدى طلاب العلوم في كلية العلوم، جامعة عدن. واسترشاداً بهيكل الاحتياجات الغرضية و التعليمية لهاتشينسون ووترز (1987)، فإن الدراسة الحالية تعتمد بشكل رئيسي على منهجين: منهج تحليل الحالة الحالية، ومنهج تحليل الحالة الغرضية. تم تجميع بيانات الدراسة من خلال إجراء مقابلة شبه منظمة مع عشرة أفراد من أعضاء الكلية، وهم، واحد مدرس لغة إنجليزية، و سبعة مدرسين لمساقات العلوم، و اثنين إداريين أكاديميين. تكتشف الدراسة عدداً من النتائج، منها أنه بالرغم من أن اللغة الإنجليزية تغلب دوراً مهماً في دراسات الطلاب الجامعية وفي وظائفهم المستقبلية، إلا أنها أكثر أهمية في الدراسات الجامعية من الوظائف المستقبلية، وأن مهارتي القراءة والكتابة تأتي في مقدمة الاحتياجات، يتبعهما مهارتي السماع والتحدث، وأهم من هذا، فإن الدراسة أظهرت أن الحالة الحالية لتدريس اللغة الإنجليزية في كلية العلوم، جامعة عدن، ليست بالشكل السليم، لذلك يجب أن تحسن. تتضمن الدراسة عدداً من الاقتراحات والتضمينات التي يؤمل منها أن تساهم في تطوير برنامج اللغة الإنجليزية في كلية العلوم، جامعة عدن.

الكلمات المفتاحية: تحليل الاحتياجات، الإنجليزية للأغراض الخاصة، الإنجليزية للأغراض الأكاديمية، الإنجليزية للعلوم والتكنولوجيا.