PERCEPTION OF ENGINEERING UNDERGRADUATES ON THE NEEDS OF ENGLISH LANGUAGE IN THE ENGINEERING FIELD

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Abstract

The need for English language skills has increased across industries and workplaces due to globalisation. The engineering field, for instance, requires a certain level of English proficiency as English is commonly employed for various jobs. The current study is (1) to identify engineering students' perception of the English language's needs in the engineering industry and (2) to identify the most required English language skills by engineering undergraduates. This study's targeted participants were engineering majors at a private university in West Malaysia. To collect the data, a questionnaire was distributed, and 41 participants to the engineering students. Thus, the results of this study revealed that the use of the English language is significant in the engineering field and that English proficiency is essential for students to perform engineering-related tasks. Among the four main skills, listening and writing were rated the most needed skills among engineering students. This study suggests that English for specific purposes (i.e., engineering) should be included in the curriculum of engineering programmes.

Keywords: English Language, Needs Analysis, Engineering, ESP

INTRODUCTION

Mastering English has been necessary for many industries due to globalisation. Especially in engineering, a certain level of English proficiency is required due to English being commonly employed for various jobs. One of the essential recruiting criteria is English communication abilities, which are in high demand (Mohamed et al., 2020). It is also stated that prospective graduates must have adequate English language and communication skills relevant to their particular disciplines (Mohamed et al., 2020).

According to Richard and Schmidt (2010), English for Specific Purposes (ESP) is a language course of study whose aims and content are determined by the specific needs of a certain set of students studying in a particular field of study. Prior to constructing a course, needs analysis seeks to show learners' goals, needs, and deficiencies. Examining learners' requirements or needs analysis has been recognised as an essential element of curriculum design in teaching English for Specific Purposes (ESP) (Brown, 2016). Needs analysis is recognised as a significant phase in curriculum design, with the primary goal of defining what learners would be expected to perform with the foreign language in the target environment and how best to acquire the target language over the training time. Further, Nunan (1999) suggests that new advances in language education have disrupted the traditional method of curriculum construction. Therefore, it is important to consider their requirements, objectives, and preferences to ensure students achieve the desired language level. The curriculum is now created to meet the linguistic demands of the learners rather than the students being expected to fit into it. Accepting that learners should be at the core of all language teaching activities is crucial.

The teachers can learn about the student's knowledge and desires thanks to the needs analysis. Placing the students and evaluating their language abilities simultaneously is a crucial task. It is possible to create relevant teaching materials and choose teaching methods after considering the findings of the requirements analysis. School administrators should understand students' goals for learning a language (Tarone & Yule,1989, p. 33), like determining beforehand if the students are studying the language to have a career in academia, attend international conferences, or for other reasons.

Specific English language abilities are required for engineering students' education in order for them to excel in academic contexts. Little emphasis has been paid to establishing a curriculum to fulfil the English language demands of engineering students in their professional studies. However, English is widely learned in Malaysia and speaking it fluently affords social recognition. This makes it difficult for engineering students to comprehend the content of their main courses in engineering fields. However, as important as the modules are, it is vital to point out learners' perceptions regarding the need to acquire or learn the English Language to fulfil their engineering tasks, whether in written or spoken forms. The perspectives of engineering students will be explored in this study to provide vital data for the framework of an English curriculum for engineering students in Malaysia.

The aims and demands of the learners will be examined in this study to provide crucial information for designing an English syllabus for engineering students. In Malaysia, there are varying social, cultural, socioeconomic, and educational backgrounds for engineering students. Most Malaysian engineers cannot utilise English in possible professional contexts because it is not their first language. Furthermore, the institution failed to utilise a need-based approach to teaching English. Therefore, this study aims to identify engineering students' perception of the

English language's needs in the engineering industry and the most required English language skills by engineering undergraduates. In addition, we make recommendations for how to design an ESP course to meet those needs. It is expected that students would be able to comprehend the specific professional register of technical terminology and phrases used in occupational contexts. The present study raised two specific research questions:

1. What do engineering students think about the need for English language proficiency?

2. Which English language skills are mostly required by engineering undergraduates?

LITERATURE REVIEW

English for Specific Purposes (ESP) is the name for teaching and study of English for academic or professional purposes. In order to address the needs of students in their particular field, job, or profession, ESP courses are created. They aim to support students as they begin or advance in their chosen disciplines and fields. ESP courses provide students with an effective way to accomplish their language learning objectives since they concentrate on skills and languages directly applicable to their day-to-day needs (Byram & Hu, 2017). NA plays a significant part in developing ESP courses as "…evaluating requirements and describing language usage in the relevant sector are two essential components in ESP course preparation", as stated by Byram & Hu (2017). What course material is required is determined by the assessment of the needs. Language materials for the course are included in language usage descriptors, along with information on communication in the target employment area or subject (pp. 223-224). They said that "needs analysis is fundamental to developing an ESP course." A requirements analysis is completed before the start of a course to help course designers choose course material, choose the skill level at which to pitch the course and choose the necessary exit levels. Needs assessments are also completed during a course to improve the curriculum (p.224). This suggests that NA is necessary for ESP classes to recognise students' unique needs and select language resources that meet them.

As was underlined in the preceding definition, a teacher plays a crucial role in confronting ESP and is responsible for designing an English language curriculum that best suits the needs of students. The development of an ESP course to meet specific learning objectives for students in a certain profession must thus consider the demands of potential learners. ESP strongly emphasises doing an in-depth investigation of students' requirements when creating a course because the learner is the program's primary focus. Songhori (2008) asserts that the importance of needs analysis is undeniable and should take centre stage in all ESP courses. West provides two different interpretations of needs analysis (NA); what learners will be expected to do with the foreign language in the target setting and how to effectively acquire a new language throughout the training term (1994). In former times, language and register analysis were the primary concerns of needs analysis, according to Songhori (2008). As per Dudley Evans and St. John (1998), needs were viewed as distinct language vocabulary and grammatical parts. Later, in Munby's Communicative Syllabus Design (1978), which also strived to tackle the problem of the cloaked General English courses, ESP classes were chosen as a communicative area needing a disciplined approach for generating acceptable syllabus specifications from adequate communication requirements profiles.

Richards & Schmidt's (2002) definition of Needs Analysis is the most accurate. They specify it to be: "The process of comprehending the needs motivates the learner to study the language and organise the requirements according to their preferences. Both objective and subjective data are used in the needs assessment (information from surveys, tests, meetings, and perception). According to Richterich (1983), requirements analysis is a strategy that entails essentially integrating data on the people who are likely to be using a language and on the usage that they are typically going to make of it (referred to in Johnson and Johnson, 1999). On the other hand, Brown (1995) defines NA as "the systematic collection and analysis of all subjective and objective information required to define and validate defensible curriculum purposes that satisfy the language learning requirements of students within the context of particular institutions that influence the language learning and teaching situation" (Brown, 1995, as cited in Brown, 2016). As a result, NA may advise those participating in the course creation process about the necessary components. Brown (2016) clarifies that this word is associated with three concepts: stakeholders, a defensible curriculum, and vital information. Consequently, when performing a NA, the individuals in charge of analysing learners' requirements, referred to as "the needs analyst(s)," should take into consideration the previous NA aspects as much as possible in order to ensure a successful ESP course (Brown, 2016).

Furthermore, the need analyst(s) should have a good understanding of how they will assess needs during the early stages of course development because there are different perspectives such as "(a) the democratic view: whatever the majority of people want, (b) discrepancy view: whatever is missing, (c) analytic view: whatever logically follows, and (d) diagnostic view: whatever will cause the most harm if missing." (Brown, 2016). In the framework of the current study, a democratic perspective of needs, or "whatever the majority of people desire" (Brown, 2016), was used, and classroom-learning analyses, which "examine what the classroom learning environment is or should be" (Brown, 2016), were utilized to explore learners' needs. Learners in the current study had previously completed an ESP course, and it was anticipated that their insights on classroom-learning experiences would be useful in creating future ESP courses. After that, the requirements analysis process changed, putting the learner's priorities at the forefront of its framework.

Chambers first used the word Target Scenario Analysis to refer to communication in the target circumstance in his 1980 study (p. 29). This leads to the basic notion of target requirements, and research has shown that the function and circumstance are critical. This emphasis on communication highlights the difficulty raised by Munby (1978), who says that ESP has lately been a crucial emerging priority in communicative syllabus design. Cooper (1968) and Hymes' conceptions of communicative competence demonstrate that effective communication necessitates more than language proficiency; a speaker must also have a particular set of contextual competencies. To put it another way, speaking the target language fluently is not always necessary for efficient communication. Cooper (1968), for instance, points out that a speaker of a second language may need to use more than one type of language as part of their "linguistic repertoire" in social settings where such communication occurs (Munby, 1978).

Needs Analysis Approach: A Learning-Centred Approach

Robinson (1980, 1991) and Hutchinson and Waters (1987) claim that the term "need" is frequently used as a catch-all term to refer to two distinct sorts of, specifically "Target Needs" and "Learning Needs." According to Robinson (1991:7), learning requirements are "what the student has to do to master the language.". In a related subject matter, Hutchinson and Waters

(1987) contend that instead of concentrating just on the requirements of the area to determine, a meaningful needs analysis should pay attention to "just what students have to understand." They further clarified it by saying, "Tell me what English you need, and I will provide it to you". The methodology divides requirements analysis into learning needs and needs related to the target environment. Needs such as "necessities," "lacks," and "wants" are included. The requirement of the intended circumstance determines what constitutes a "necessity." They are the requirements that are required for the learner to function well in goal setting. The difference between "necessities" and what the learner already knows, or their level of skill at the time, is what is known as a "lack." In contrast to the objective needs seen by teachers and course designers, learners' "wants" are their subjective needs.

Needs analysis may be created by combining Target Situation Analysis (TSA) with Present Situation Analysis (PSA). As was already said, neither the TSA nor the PSA is accurate indicators of what is required to encourage learning and achieve desired results in ESP. Additional needs analysis techniques, including Pedagogic Needs Analysis, have also been proposed.

In order to incorporate the following three needs analysis components, West (1998) proposed the term "pedagogic needs analysis." He contends that learner and learning environment data gathering should be used to make up for the shortcomings of target requirements analysis. Under the general heading of "pedagogic needs analysis," deficit analysis, strategy analysis, learning requirements analysis, and means analysis are all covered.

The "lacks" that Hutchinson and Waters (1987) refer to can be matched by a deficiency analysis. According to Allwright, analyses of learners' shortfalls or lacks may also be used to refer to need analysis methods that have been developed to take into consideration learners' present requirements or wishes (1982, cited in West, 1994). Deficit analysis, as is evident from the previous discussion, is a method for moving from point A (the present situation) to point B (the desired scenario), constantly bearing in account the demands of the students. Deficit analysis can therefore serve as the foundation of a language curriculum (Jordan, 1997) as it should include information on the gaps between current and desired extralinguistic knowledge and general English proficiency, language abilities, and learning techniques.

Target Needs

The context in which language learners will use the language they are learning is known as the target circumstance (Hutchinson & Waters, 1987). The demands of students after a language course are the primary focus of the needs analysis method known as Target Situation Analysis (TSA) (Robinson, 1991). The "output" of a target situation analysis is the "target needs." For the creators of the Engineering English course, identifying the intended circumstance is a need. Then, a thorough examination of the selected situation's linguistic characteristics should be done. Accordingly, the Engineering English course syllabus will be based on the highlighted traits. Language application data, communicative abilities, and knowledge of the instructional goals of the students, working institutions, and societies are among the data gathered in the target environment.

Learning Needs

According to Hutchinson and Waters (1987), it is impractical to construct a course only based on the desired objectives, just as it is unreasonable to plan a trip (the ESP course) solely

based on the beginning point (lacks) and the destination (necessities). The requirements, potentials, and constraints of the learning situation's trajectory should be taken into account. Learning requirements demonstrate how students may go from a starting point of deficiencies to their goal (necessities). For example, learners may be very engaged in the topic because they like the subject instructor or because an examination session is approaching, but their enthusiasm to participate in classroom activities may be entirely lost when they are assigned long and dull texts. Learning needs might include things like the learners' motivation to study the language, their chosen learning style, the materials that are accessible, the date, time, and site of the program, as well as the learners' individual data. The Business English course is compared as a voyage by Hutchinson and Waters (Figure 2). The "lacks" are the beginning point of the voyage, and the "necessities" are the final goal. The learners' transportation needs are how they go from one place to another. Because the sponsors' perceptions of the "necessities" may differ from what the students desire or believe they need, the "destination" may occasionally veer off course.
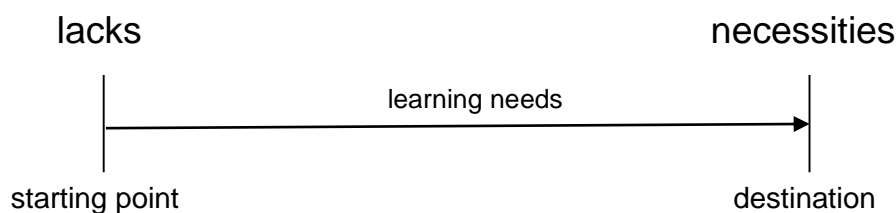

Figure 1. Business English Course "Route" (Wang, 2007)

English Language in the Engineering Field

The needs of English language skills have been increased across the industries and workplaces as we are entering the 21st Century. Especially in the engineering field, a certain level of English proficiency is required due to English being commonly employed for a variety of jobs. Another factor to take into account is the fact that many L2 students, regardless of their academic interests or linguistic backgrounds, desire to study English in order to approach NSs as closely as possible in terms of communication and fluency in speaking and listening. The demands of our engineering students seem to be best served by English, which is a term for communication between speakers of various first languages. Incorporating certain kinds from the engineering students' curricula is therefore a potential solution, which may be accomplished in line with the results of needs analysis studies and degrees of exposure to various varieties (Habbash & Albakrawi, 2014).

With regard to the engineering industry, Mohamed et al. (2014) conducted an interesting study on conceptualising and underlining the communicative occasions in which engineers require a set of relevant English communication abilities to perform efficiently in their professions. Based on his study, demonstrates that graduate engineers must be able to communicate effectively not just for the performance of their everyday work, but also for career progression. This situation has resulted in the emergence of new techniques and practises in developing English language training and curriculums that are in accordance with the future workplace communication demands of engineering students. The need of the English language in the Engineering field has been well-researched. Though there were some research findings focused on the importance of developing a new learning module and ESP courses (Kim, 2013;

Isnin et al., 2018), there were a number of studies that revealed the perceptions of students and workers on the needs of the English language. For example, a study on the current need in the civil engineering field for the usage of English in the workplace found that among the four English language skills, speaking skills are the most required compared to listening (Saleh & Murtaza, 2018).

Furthermore, another study that should be noted as well was conducted to assess final-year chemical engineering students' fear of spoken speaking in English at Universiti Malaysia (Radzuan & Kaur, 2010). According to Radzuan and Kaur (2018), the study found that communication fear appears to be present among the students, although only at a moderate level. The study indicates that educators must be aware of specific skill-deficit concerns in order to educate graduates in the profession of engineering. Similarly, Subramaniam, Abdullah and Portorajo (2020), concluded that written and oral communication are both crucially important when participating in the engineering task at engineering industries. In addition, Indra Devi and Raus (2011) studied both Professional Undergraduates' communication demands and opinions of the necessity of professional communication abilities. The study revealed that grammar skills, responding to and engaging in interviews, conducting and attending meetings, writing resumes and cover letters for job applications, report writing, oral presentations, participating in group discussions, and reading ability are among the most important professional communication needs of undergraduates.

Another study was published by Ayoub and Khan (2017), who used a quantitative technique to conduct their research. The goal of their research was to look at the English language requirements of undergraduate engineering students in Multan, as well as the frequency of English usage, its importance for engineering students, their current level of English proficiency, and their English language requirements. Ayoub and Khan (2018) distributed their questionnaire to 120 students from ISP (Institute of Southern Punjab) and BZU (Bahauddin Zakaria University), specifically from the 3rd and 4th year of engineering, with 60 from each university. Based on Ayoub and Khan's study, the findings revealed that these pupils have a favourable attitude toward studying English. Furthermore, engineering students have selected productive skills (speaking and writing) as the most desirable. All things considered, these recent studies have provided insights and understanding towards the demands or needs for both workers and students to possess a certain level of English language proficiency in the engineering   industries.

THEORETICAL FRAMEWORK

Hutchinson and Waters (1987) developed the NA method, which was used in this study. According to Hutchinson and Waters (1987), the greatest way to bring learners from where they are to where they need to be is by using a learning needs approach. Target needs and learning needs are the two angles through which learner needs are approached. What the learner must perform in the goal setting is referred to as the "target needs" (Hutchinson & Waters, 1987, p. 54). They are divided into three groups: necessities, lacks, and wants. The definition of a necessity is "what the learner needs to know to perform successfully in the target setting" (p. 55). Lacks are described as the discrepancies between the learner's knowledge and the requirements (p. 56). The definition of wants is "what the learners believe they need" (Nation, 2000, p. 2). The second area of emphasis in this strategy is learning needs, which encompasses a wide range of issues, such as the learners' identities, sociocultural backgrounds, educational backgrounds, ages, genders, background knowledge of specialized subjects, background

knowledge of English, attitudes toward English, attitudes toward English-speaking cultures, and English-language learning.
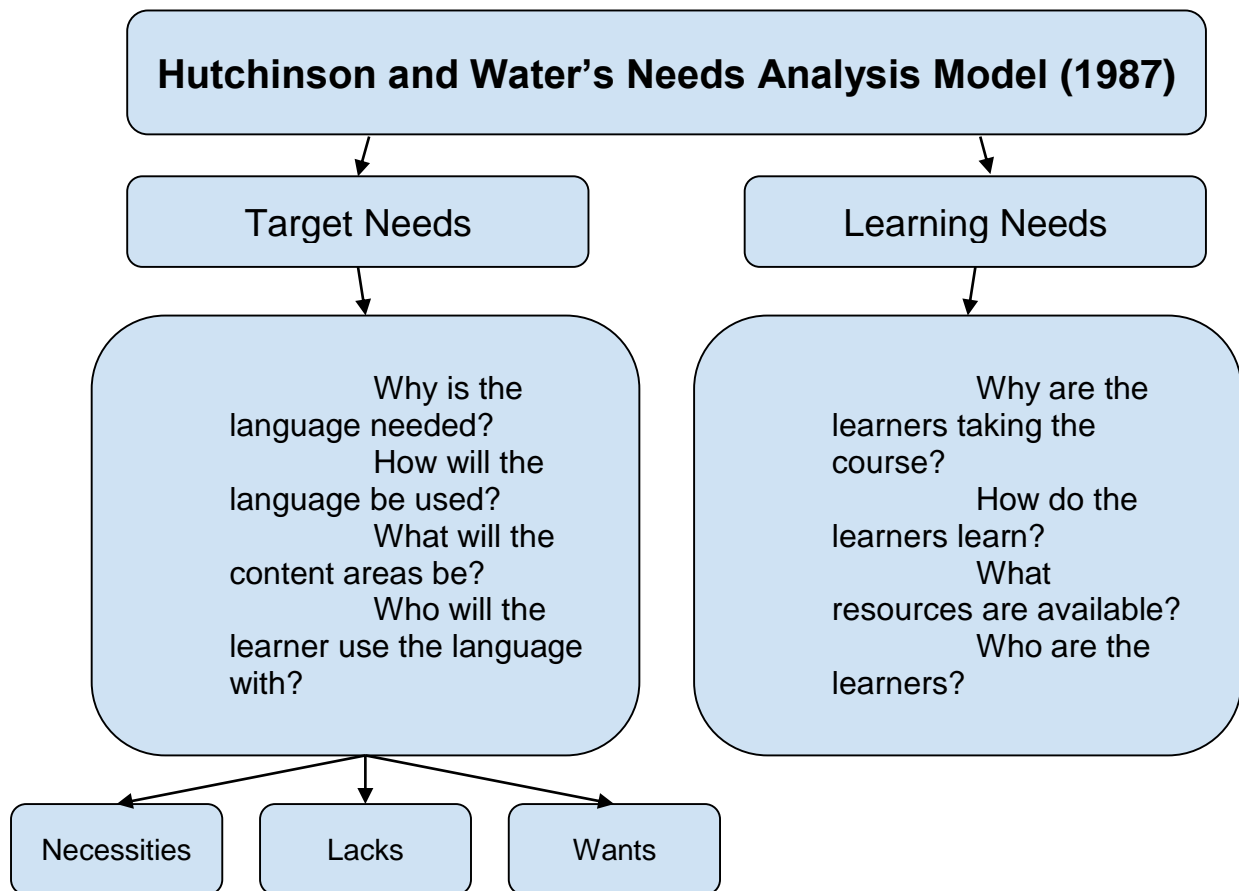

Figure 2. Hutchinson and Water's Needs Analysis Model (1987)

METHODS

This study employs a quantitative research design to examine the needs of the engineering students with regards to ESP. Specifically, the quantitative component of this study covers strategies for obtaining numerical data from engineering students using an ESP Needs Analysis questionnaire. To analyse the data, we use the descriptive analysis. Descriptive analysis is suitable to capture the information gathered from the students. Importantly, the research questions of this study were both targeted at identifying students' perspectives, not investigating relationships. Therefore, presenting descriptive results is justifiable, and that the objectives   can   be   achieved.

Sampling

This study was presented using purposeful sampling. Purposive sampling, according to Palys (2008), is a set of strategic decisions concerning who, where, and how to conduct research (p.697). The targeted students are from various departments in the Engineering faculty in a private university in Malaysia which encompass 41 students from Diploma and Bachelor's degree programmes in the faculty. Due to Malaysia's unified educational system, it is considered that they have had comparable opportunities to study English. The purpose of selecting undergraduate students is that, through out their engineering study, the students are

exposed to numerous engineering tasks, machineries, and lab works where English language is likely to be implemented in such settings.

Instruments

This study utilised a questionnaire to gather the data. The questionnaire development was guided following the recommendation by Jazib Saleem (2017). The questionnaire is broken down into seven sections, including (A) demographic data about the respondents, (B) participants' attitudes toward learning English, (C) learners' English language proficiency in various language skills, (D) questions about the English language needs of engineering students, (E) participants' preferred teaching methods, (F) questions about the participants' attitudes toward learning foreign languages and (G) what kind of English language element should be introduced to their existing module is up for debate among the students.

The questionnaire had a variety of questions on the framing that were intended to elicit certain responses from the respondents. The questionnaire asked questions on engineering students' linguistic requirements, linguistic proficiency, and linguistic learning attitude. Before giving out the questionnaire, the participants were briefed about the goals and importance of the study. They were also requested to provide honest and appropriate replies. They were also free to ask for whatever assistance they needed. After noting these, participants were instructed to review their responses for errors or missing information.

Data Collection

For the data collection, the researchers have used a survey questionnaire to identify the needs of the English language of the undergraduate engineering students as it is the most suitable and efficient in collecting the data of the respondents through the online method. The questionnaire was disseminated to the intended demographic through Google Forms, an online platform. For data analysis, the researcher skimmed and scanned the acquired data from participants before evaluating it using the chosen approach, descriptive analysis. Descriptive is a method for objectively characterising the kind and quantity of sensory qualities. It was a game-changing innovation for its time, and it was a big step forward in providing a scientific foundation for sensory evaluation by creating objective, trustworthy, and statistically analysable data (Kemp et al., 2018). Since descriptive analysis allows for the collection of accurate and comprehensive data it serves as a mixed source of product data in business, government, and research settings. The goal of descriptive analysis is to provide a constructive summary of the data points.

RESULTS

Demographic Information

The first section of the questionnaire was designed to ask for the demographic information of the respondents. The majority of the respondents, 31.7% (n=13) belonged to the age group of 21-24 years and the highest number of respondents 58.5% (n=24) were male. There was 78% (n=32) number of respondents who were currently doing their Bachelor's degrees and 22% (n=9) were undertaking their diplomas.

Attitudes Toward English Language Learning

In the second section of the questionnaire, the questions given were based on the questions regarding the respondents' attitudes toward English language learning. The second section includes four questions asking about their perception of the importance of the English language in the engineering field. Focusing on the first question of the second section, the majority of the respondents 53.7% (*n* = 22) believed that the English language is indeed "very important" in facilitating studies in the engineering field.

4. How important is English language to facilitate studies in Engineering field?
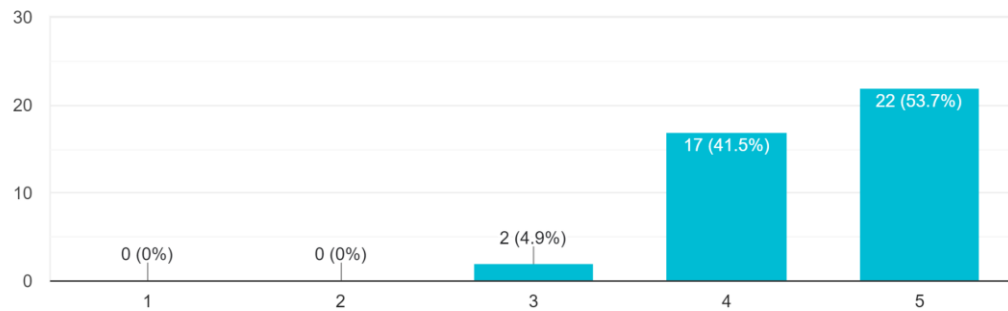41 responses

Figure 3. Attitudes toward English Language Learning

Following that, in the fourth question from the second section where the respondents about were asked the importance of the English language in the engineering field, 56.1% (n=23) believed that the English language is "very important." In addition, 41.5% (n=17) also agreed that the English language is "important" in the field.

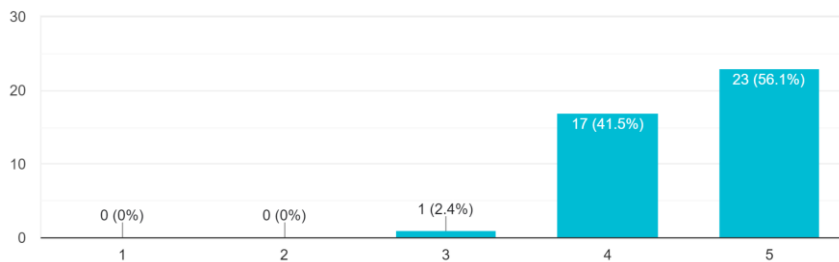7. How important is the English language in the Engineering field?
41 responses

Figure 4. Attitudes toward English Language Learning

Perception of English Language Proficiency

Next, the third section of the questionnaire was based on the respondents' perception of their English language proficiency in different skills. In this section, the respondents answered by selecting between six levels of language proficiency (Beginner, Elementary, Pre-Intermediate, Intermediate, Upper Intermediate and Advanced). The table shown below shows the results from the questionnaire. Based on Table 1, the majority of the respondents viewed that they were intermediate in speaking, pronunciation and communication, 36.6% respectively.

Furthermore, the majority of the respondents also viewed that they were intermediate in writing (31.7%), reading (31.7%), listening (31.7%), vocabulary (34.1%), and grammar (34.1%). It can also be noted that among the eight listed skills, reading skills (31.7%) had the highest number of respondents who viewed that they were advanced.

Table 1. Perception of English Language Proficiency

No.	Skill	Beginner	Elementary	Pre-Intermediate	Intermediate	Upper Intermediate	Advanced
1	Speaking	2.4%(1)	7.3%(3)	12.2%(5)	36.6%(15)	26.8%(11)	14.6%(6)
2	Writing	2.4%(1)	9.7%(4)	12.2%(5)	31.7%(13)	29.3%(12)	14.6%(6)
3	Reading	2.4%(1)	9.7%(4)	9.7%(4)	31.7%(13)	14.6%(6)	31.7%(13)
4	Listening	0	7.3%(3)	9.7%(4)	31.7%(13)	29.3%(12)	22%(9)
5	Vocabulary	4.9%(2)	4.9%(2)	12.2%(5)	34.1%(14)	26.8%(11)	17.1%(7)
6	Grammar	2.4%(1)	7.3%(3)	12.2%(5)	34.1%(14)	29.3%(12)	14.6%(6)
7	Pronunciation	2.4%(1)	9.7%(4)	9.7%(4)	36.6%(15)	22%(9)	19.5%(9)
8	Communication	4.9%(2)	7.3%(3)	9.7%(4)	36.6%(15)	26.8%(11)	14.6%(6)

Perception of English Language Needs by Skills

Next, respondents were questioned about their opinions of the demands of English language skills in the fourth section of the questionnaire. The four English language abilities (listening, speaking, reading, and writing) were subdivided into 20 language components and sub-skills. The respondents rated each of the sub-skill based on a scale of 1 to 5, with 1 being less important and 5 being more important. The results of the fourth section are shown in the table below.

Table 2. Perception of English Language Needs by Skills

Language Components/Subskills	1	2	3	4	5
Listening					
Listen to understand questions	0%	2.4%	2.4%	29.3%	85.9%
Listen to carry out instructions	0%	2.4%	2.4%	34.1%	61%
Listen to the presentations	0%	4.9%	4.9%	34.1%	56.1%
Listen to answer questions	0%	2.4%	4.9%	31.7%	61%
Listen to understand accents	2.4%	2.4%	14.6%	34.1%	46.3%
Speaking					
Asking and answering questions	0%	2.4%	4.9%	29.3%	63.4%

Participating in class discussions	0%	2.4%	4.9%	39%	53.7%
Speaking fluently with speakers	0%	4.9%	9.8%	36.6%	48.8%
Expressing ideas and opinions	0%	2.4%	2.4%	41.5%	53.7%
Giving oral presentations	0%	2.4%	4.9%	36.6%	56.1%
Reading					
Reading books	0%	2.4%	4.9%	41.5%	51.2%
Reading course handouts	0%	2.4%	12.2%	39%	46.3%
Reading articles in journals	0%	2.4%	2.4%	34.1%	51.%
Reading instructions for projects	0%	2.4%	2.4%	34.1%	61%
Interpreting tables in texts	0%	2.4%	2.4%	43.9%	51.2%
Writing					
Writing assignments	0%	2.4%	0%	31.7%	65.9%
Writing projects and reports	0%	2.4%	2.4%	31.7%	63.4%
Taking notes in lectures	0%	2.4%	14.6%	36.6%	46.3%
Writing exams answers	0%	2.4%	4.9%	26.8%	65.9%
Writing application, CV, e-mails	0%	2.4%	4.9%	31.7%	61%

According to the results in Table 2, reading and speaking skills are given the least significance in English language classes, and respondents may practice less exercises for these two skills in comparison to the other skills (listening and writing). On the other hand, the majority of responders (85.9%) chose scale 5 for the semi "listen to comprehend questions.". Additionally, it is indicated that three sub-skills (writing assignments: 65.9%, writing projects and reports: 63.4%, writing application, CV, e-mails: 65.9%) from writing skill have been given the most importance by the majority of the respondents. Hence, it is evident that the respondents have shown that listening and writing skills are significant in the engineering field.

Preferred Teaching Style

The fifth item on the survey asked about the respondents' favourite strategies for teaching English. There were 10 ELT methods listed in the questionnaire and Table 3 below presents the results of the question. Based on the results, *Direct Method* (24.4%) and *Grammar Translation Method* (22%) were the most preferred language learning style by the respondents. There were also two methods that could be noted which were *Community Language Learning* and *Communicative Approach* which had the same percentage of respondents (14.6%). However, it can be seen that *Suggestopedia* and *Total Physical Response* were not preferred by the respondents. This could be due to the focus of *Suggestopedia* being more on the physical surroundings and atmosphere of the classroom and *Total Physical Response* is based on the

coordination of speech and action will boost language learning, which may not be best to be used for engineering students.

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Table 3. Preferred ELT Methods

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English Learning Teaching Methods	%
Grammar Translation Method	22%(9)
Direct Method	24.4%(10)
Audiolingual Method	12.2%(5)
Community Language Learning	14.6%(6)
Silent Way	0%
Suggestopedia	2.4%(1)
Total Physical Response	0%
Communicative Approach	14.6%(6)
Cooperative Learning	2.4%(1)
Task-Based Approach	7.3%(3)

DISCUSSIONS

The discussions for the results of this study are presented based on research questions. We deemed such organisation can guide the flow and provide suitable justification. Importantly, referring to the research questions can provide a richer discussion.

RQ 1: What are the perceptions of engineering undergraduates on the necessity of English language skills?

Based on the study results, it is apparent that the English language is significant in the engineering field. From the results shown in table 1, it can be inferred that the majority of the engineering students perceived that their level of proficiency in the English language is "intermediate" whereby the perceived level can also be related with the concept of self-efficacy which refers to "a judgement of one's ability to organise and given types of performances" (Bandura, 1997:21). This concept of self-efficacy holds a significant role in the individual's performance and also correlates with the student's achievement.

Furthermore, the results indicate that the English language is practised frequently in the classroom as shown in Table 2. It can be noted that for speaking skills, the majority of the students have rated asking and answering questions in English as the most important sub-skill that they need in the classroom. Subsequently, it is revealed that the students perceived that understanding accents nor being fluent in English is deemed important, this could mean that their focus on learning English is not based on accents or fluency but more on grasping the appropriate skills for them to be able to practice and utilize the English language properly.

RQ 2: Which English language skills are most required by engineering undergraduates?

The results of the study reveal that listening and writing skills were shown to be the most crucial skills that are needed by engineering students. As shown in Table 2, 85.9% of the respondents rated the scale of 5 for the sub-skill "listen to understand questions. This could mean that the engineering students perceive that having good listening skills is significant where their lecturers may have frequently utilised question and answer exercises in the class which can be linked with the sub-skill "listen to answer questions" that had 61% of the respondents rated it the scale of 5. Correspondingly, the study demonstrates that three specific sub-skill of writing had been given a lot of importance by engineering students. The sub-skills mentioned are writing assignments, writing projects and reports and writing applications, CVs, and emails. This shows that engineering students require a lot of English writing, which can also be beneficial for them in their career path.

Limitations

The results may not be applicable to students outside the targeted field due to the nature of the research topic and questions being created exclusively for engineering undergraduates. Despite receiving a sizable number of comments from the students, it is clear to us that the demands of the English language in the engineering profession are not receiving much attention. The absence of prior research on the subject did affect our capacity to understand the area we needed to concentrate on, which also prevented us from connecting the appropriate theoretical framework to our study.

Careful planning goes into a quantitative study to guarantee perfect randomization and accurate designation of control groups (Morgan, 1980). We only received 41 replies from the whole engineering faculty as a result of the short time allotted, which is rather disappointing because we believed that basing our study on a bigger sample size may have produced more accurate results.

Conclusion and Recommendations

There can be no doubt that so many references, engineering-related books, and source code explanations are available in English and learning English itself is crucial for engineering students. In addition to being able to comprehend what they read and hear, engineering students need to be proficient in speaking and writing English in order to interact with individuals from all over the world and establish relationships.

Last but not least, engineering makes technologies accessible in English so that users throughout the world may utilize them. Additionally, English is crucial for eventual job hunting. This occurs as a result of the fact that having English can help job seekers compete. With the sophistication of current technology, we can also study English anywhere, at any time. It has been seen that responders pick up the language quickly via practising speaking, reading, listening, singing, practising some test-taking procedures, and practise completing various test questions in English.

When the study's total findings are taken into account, it becomes clear that English language proficiency is crucial to both these engineering undergraduates and the sector as a whole. The pupils thought they were classified as "beginners" in communication and

vocabulary but "advanced" readers. As a result, speaking abilities may be given more weight in the courses or modules offered at the institution. This conclusion has pedagogical implications since reading and speaking activities may be given greater weight since they are not given much weight in the engineering curriculum currently being used in the university. These findings can be shared with the lecturers in charge and taken into account in regard to the activities that students participate in during language sessions. Only by taking departmental requirements into account and restructuring the curriculum to meet the unique requirements of the engineering department will it be possible to enhance the English classes that students use as a bridge to go from them to the topic area courses.

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