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INVESTIGATION OF ENGLISH LANGUAGE NEEDS FOR OIL AND GAS WORKERS

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ABSTRACT

The study highlights the importance of English proficiency, using English skills in specific situations, and the difficulties in using language skills in the oil and gas industry working environment. The quantitative method in the form of a survey is used to unearth the study's objectives, which are the language skills needed and difficulty in using English in the working environment. There were 125 participants involved in the survey, and they were chosen purposively based on interviews with HR staff. The study emphasizes that the most essential English skill in the oil and gas industry is listening, followed by speaking, reading, and writing. Listening is primarily needed for meetings, speaking for explaining work progress, reading emails, and writing for composing emails. The most challenging situations for using English are listening in meetings, speaking to provide information or during phone conversations, reading emails, and writing emails. The findings suggest a focused approach to English learning, addressing specific challenges such as enhancing listening and speaking skills and improving tasks like explaining work outcomes and writing emails.

Key Words: Batam; ESP; need analysis; oil and gas

ABSTRAK

Studi ini menyoroti pentingnya kemahiran berbahasa Inggris, penggunaan keterampilan bahasa Inggris dalam situasi tertentu, dan kesulitan dalam menggunakan keterampilan bahasa di lingkungan kerja industri minyak dan gas. Metode kuantitatif dalam bentuk survei digunakan untuk mengungkapkan tujuan penelitian ini, yaitu keterampilan bahasa yang dibutuhkan dan kesulitan dalam menggunakan bahasa Inggris di lingkungan kerja. Ada 125 peserta yang terlibat dalam survei ini, dan mereka dipilih secara purposive berdasarkan wawancara dengan staf HR. Studi ini menekankan bahwa keterampilan bahasa Inggris yang paling penting di industri minyak dan gas adalah mendengarkan, diikuti oleh berbicara, membaca, dan menulis. Mendengarkan terutama dibutuhkan untuk rapat, berbicara untuk menjelaskan perkembangan pekerjaan, membaca email, dan menulis untuk menyusun email. Situasi yang paling menantang dalam menggunakan bahasa Inggris adalah mendengarkan dalam rapat, berbicara untuk memberikan informasi atau selama percakapan telepon, membaca email, dan menulis email. Temuan ini menyarankan pendekatan yang terfokus untuk pembelajaran bahasa Inggris, dengan mengatasi tantangan spesifik seperti meningkatkan keterampilan mendengarkan dan berbicara serta memperbaiki tugas-tugas seperti menjelaskan hasil kerja dan menulis email.

Kata Kunci: Batam; ESP; analisis kebutuhan; minyak dan gas

INTRODUCTION

Numerous studies in English for Specific Purposes (ESP) explore diverse fields such as business (Le & Hoang, 2023; Rios & Perez, 2017; Saxon, 2023; Wadsorn, 2019), engineering (Kinnear, 2018), mechanical (Akmal et al., 2020), and computer science (Bessadok & Hersi, 2023; Köprülü et al., 2020). However, most ESP research has concentrated on university and vocational students at higher education levels (Ayuningtyas et al., 2022; Brzoza, 2020; Widodo, 2016). Limited attention has been given to ESP studies addressing current employees' or workers' specific English proficiency requirements.

English for Specific Purposes (ESP) is a specialized method of teaching and learning English designed to cater to individuals' distinct needs and communication demands within a specific field or profession (Flowerdew, 2020). In contrast to general English courses that aim to convey comprehensive language skills, ESP concentrates on cultivating language expertise within a particular context or area of study (Zhang et al., 2023). The primary goal of ESP is to furnish learners with the linguistic tools (Cordeiro, 2017) and communication abilities (Rajprasad et al., 2015) essential for their professional or academic endeavors.

English for Specific Purposes (ESP) courses are meticulously crafted distinct objectives within professional or academic realms (Chang, 2017). This tailored approach acknowledges the diversity of the audience, encompassing professionals, technicians, academics, and students engaged in specific fields such as business, engineering, medicine, aviation, and beyond. The design of ESP courses is rooted in the understanding that each of these groups possesses unique language needs, terminologies, and communication tasks relevant to their specific disciplines (Skornyakova & Vinogradova, 2021). By addressing these specialized requirements, ESP courses aim to empower learners with language skills that are directly applicable and beneficial in their chosen fields of expertise. Whether facilitating effective business communication, enhancing technical proficiency, or supporting academic pursuits, ESP courses are designed to align with the specific linguistic demands of diverse professional and academic contexts.

Developing English for Specific Purposes (ESP) courses initiates with a comprehensive needs analysis, a crucial step aimed at discerning the specific language requirements and challenges learners face within their designated fields (Dewi et al., 2023). This in-depth examination delves into various facets, including identifying essential language skills, the specialized vocabulary pertinent to the field, and the unique communication tasks that learners are likely to encounter in their professional or academic environments. Thus, the needs analysis serves as a diagnostic tool, allowing educators and curriculum developers to gain a nuanced understanding of the linguistic demands inherent to the targeted field or discipline.

Armed with insights from the needs analysis, the next phase involves tailoring the curriculum to address the identified linguistic needs. This customization ensures that the ESP courses are not generic but instead finely tuned to meet the precise requirements of the learners. By aligning the curriculum with the specific language demands of the field, educators aim to make the learning experience more relevant, practical, and immediately applicable to the learners' professional or academic pursuits (Huang et al.,

2022). In essence, the needs analysis in ESP course design is a strategic and foundational step that enables the development of targeted and effective language instruction, enhancing learners' abilities to navigate and excel in their specialized domains. This study aims to uncover the necessity of English proficiency among employees in the Oil and Gas Industry. Given the multinational workforce composition in this industry, particularly within multinational corporations, the demand for English skills remains paramount. Despite the increasing emphasis on Renewable Energy in developed countries, the oil and gas sector continues to attract significant attention, leading to the recruitment of workers from various parts of the world. The primary focus of this research is to assess the English language requirements for current oil and gas industry workers. Enhancing the need for analysis of English in the field, the study will incorporate challenges faced by oil and gas industry workers in Batam.

Batam stands out as one of Indonesia's largest industrial cities, drawing favor from international investors due to its diverse industries and businesses. It has led to the establishment of numerous international companies in Batam. The Oil and Gas industry is widely recognized in the region. Batam's strategic location near the Singaporean Strait and its proximity to international shipping routes position it as the foremost industrial city in Indonesia for the Oil and Gas sector. Notable companies in this field, such as PT McDermott Indonesia, PT SMOE, PT Profab, and PT Beetle, employ thousands of workers from various parts of the world. Consequently, English has become the common language among these workers. However, it is noteworthy that the English proficiency of Indonesian workers in this industry is often insufficient, as they were primarily recruited based on their skills rather than their proficiency in English.

The urgency of this issue has inspired the researchers to create English learning materials tailored specifically for oil and gas industry workers. The initial phase in developing English for Specific Purposes (ESP) materials for the oil and gas sector involves conducting a target situation analysis or need analysis (Padermprach & Yaemtui, 2023). During this stage, ESP practitioners examine and chart the necessities (needs), preferences (uses), and deficiencies (problems) in the English language. Once the need analysis has been conducted, the subsequent steps include choosing, modifying, or creating appropriate learning materials for this specific purpose (Etfita & Wahyuni, 2020; Urlica et al., 2019). The subsequent phases involve implementing and evaluating the ESP learning materials to enhance quality through a qualitative cycle (Akmal et al., 2020).

There are some researches conducted in ESP, especially for existing workers such as (Mohammadzadeh et al., 2015) in banking workers, Baturkmen and Bocanegra (Baštürkmen & Bocanegra-Valle, 2018) (2019) in university lecturer, Al-Malki (AbdulRaheem Al-Malki et al., 2022) in tourism workforce, Park (Park et al., 2022) in cabin crews, Castro (de Castro, 2021) in ships, and Chiablaem (Chiablaem, 2020) in massage workers. However, none of this research explores the oil and gas industry, especially for the existing workers. The writer will fill this gap by researching the need for an analysis of English for oil and gas industry workers in Batam. This research investigates the need for English in Oil and Gas Industry workers. The focus will be field officers, craftsmen, and maintenance workers who usually get in touch through multilingual conversations with expatriate workers from around the world stationed in the oil and gas industry. There are some craftsmen positions that will be investigated, such as welding, rigging, structural fitter, pipe fitter, and facilities and maintenance department. The writer expected a representative result of the need for English in Oil

and Gas Industry workers from these various fields.

The study was guided by these questions:

1. How do oil and gas workers perceive language needed for their working activity, and how do they perceive difficulty for each language skill?
2. How do oil and gas workers use English in daily working activity, and what is the prominent context for each the use of each language skill?

METHODS

This study employs quantitative methods to assess the frequency of needs and challenges related to the use of English among oil and gas workers. Interviews with Human Resource Development (HRD) personnel were carried out to identify suitable participants for the research and to gain insights into the context of English usage in the workplace. Furthermore, a survey was conducted to gauge the extent of needs and difficulties experienced by oil and gas workers when using English.

Research Design

Engaging in a needs analysis for English for Specific Purposes (ESP) entails a methodical approach to comprehending learners' linguistic requisites and obstacles within their distinct professional or academic domains (AbdulRaheem Al-Malki et al., 2022). In the initial phase of this research, the primary step involves acquiring foundational information regarding the use of English in the oil and gas industry, particularly in the fabrication sector. It involves delving into the roles, responsibilities, and specific language-related obligations learners encounter in their professional spheres. Subsequently, surveys are conducted through questionnaires, aiming to directly glean insights from learners regarding their language requirements, communication barriers, and the specific tasks demanding proficiency in English.

The outcomes from the interviews and the examination of materials were transformed into a questionnaire. This questionnaire was structured into four distinct sections, encompassing participants' profiles, the necessity for English, the application of English in everyday work, and the challenges encountered in using English. The sections related to usage and challenges were further segmented into the four language skills, which are listening, speaking, reading, and writing, with the aim of exploring the specific applications and difficulties associated with each skill.

After gathering survey responses, the researcher analyzed the data, pinpointing the necessary language skills. These skills encompass reading, writing, listening, and speaking, with the aim of ascertaining the proficiency levels essential for successful communication in diverse scenarios like meetings, briefings, and report writing. The survey was also conducted to organize the collected data and uncover prevalent themes, patterns, and priorities. Following the data analysis, the researcher compiled a comprehensive report that succinctly encapsulates the needs analysis outcomes.

Population and Sample

This research employed purposive sampling, which is frequently used in qualitative research. In contrast to random sampling, where every population member has an equal likelihood of selection, purposive sampling deliberately chooses participants based on specific criteria aligned with the research question and objectives. This approach is especially beneficial when the researcher aims to include individuals possessing distinct characteristics, experiences, or knowledge crucial to the study.

As per discussions with HRD staff of some oil and gas companies in Batam, everyday communication in English is prevalent among foremen, supervisors, and

superintendents. The research will specifically focus on foremen and supervisors in Batam's crafting department of oil and gas companies who commonly interact with expatriates. From the pool of 700 employees in foreman and supervisor roles, the researcher selected a sample of 125 individuals for the study.

From the data gathered it was observed that the entire group of 125 participants consisted exclusively of males. Among them, 55 participants fell within the age range of 41-50 years, 50 were aged between 51-60, 19 were in the 31-40 age group, and one participant was in the 21-30 age. In terms of education, the majority, comprising 116 participants, had completed high school, while 3 participants held undergraduate degrees, and 6 participants had education levels below high school. An examination of the participants' work experience in the oil and gas industry revealed that 70 individuals had been employed for more than 15 years, 31 participants had 10-15 years of experience, 17 participants had 6-10 years, and only 7 participants had less than 5 years of experience in the field. Out of the total participants, 56 individuals assessed their English proficiency as at the beginner level, 60 participants considered themselves at the elementary level, and the remaining 9 participants perceived their proficiency to be at a good level. Examining the occupational roles of the respondents, 37 individuals serve as welders, 33 as structure fitters, 13 as pipe fitters, 10 are engaged in painting and blasting, 10 work as scaffolders, 2 as riggers, 5 as technicians, and 15 others hold diverse job positions.

Data Collection and Analysis

A survey comprises structured questions designed to elicit comprehensive information and insights from participants regarding the need for English, its application in daily work, and challenges faced in using English. The questions within the survey are meticulously crafted to align with the specific research objectives, ensuring that each question contributes to a holistic understanding of the research topic or phenomenon, which are language needs, language use, and language challenges pertinent to this research.

The survey is divided into four sections. The initial section captures the personal profile of respondents. The second section assesses the significance of English in their respective lines of work and the difficulties associated with each language skill. The third section gauges the utilization of each English skill in their daily work. The fourth section evaluates challenges in using English skills in specific activities such as meetings, briefings, and training sessions.

The questionnaire incorporated Likert scales due to their adaptability to research goals, making them a flexible instrument for gauging attitudes and opinions. The Likert scale employed in this study ranged from 1 to 5, with "Strongly Agree" assigned to 5 and "Strongly Disagree" to 1. The tailored questions are presented in the table below for reference. The questionnaire was then distributed to respondents in Bahasa Indonesia to help them express their opinions on the researched topic. There were 125 respondents who were oil and gas workers in fabrication company positions as foremen, supervisors, and superintendents who successfully participated in the survey.

Table 1. List of Questions

Needs	Language Needs	How important are English skills in your job?
	Skills required	Reading
		Writing
		Speaking

Difficulties	Language Skills difficulties	Listening	
		Reading	
		Writing	
		Speaking	
Use	Language Use in Listening Skill	Listening	
		attending a meeting?	
		getting instructions?	
		in a training session?	
	Language Use in Speaking Skills	in explaining work?	
		giving briefings and instruction?	
		asking questions or providing information via telephone conversation?	
		reading emails/letters/messages?	
	Language Use in Reading Skill	reading manuals or work instructions?	
		reading work reports?	
		writing emails/letters/messages]	
	Language Use in Writing Skill	writing manuals or work instructions?	
		writing a work report?	
		in a meeting?	
		in following instructions?	
	Difficulties	Listening Difficulties	in training session?
Speaking Difficulties			to explain work?
			in giving briefings and work instructions?
Reading Difficulties		in asking questions or giving information via telephone conversation?	
	in reading emails/letters/messages?		
	in reading manuals or work instructions?		
Writing Difficulties	in reading work reports?		
	writing emails/letters/messages?		
	in writing manual or work instruction?		
		in writing work reports?	

The gathered data underwent analysis through frequency and distribution techniques, and the information was organized and summarized by enumerating the occurrences for each value or category within the dataset. This method offers a clear and concise depiction of the data's arrangement of values and patterns. The analysis outcomes were showcased in the format of frequency tables, presenting values or categories alongside their respective frequencies for a straightforward interpretation of the distribution. Additionally, visual representations in the form of bar charts were employed to provide a graphical overview of the data distribution. Aside from frequency, this research also measured means in language skills needed and use since the functions of means in quantitative research encompass describing central tendency, summarizing data, facilitating group comparisons, supporting hypothesis testing, gauging stability or change, acting as a parameter estimator, and providing input for subsequent statistical analyses.

FINDINGS AND DISCUSSION

Findings

Regarding the perceived importance of the English language in their work generally, 87 participants regarded it as very important, 34 participants considered it important, and the remaining 4 participants believed it was not necessarily required. According to the survey, the crucial language skill identified is the ability to listen, with

an average score of 4.256, while the most challenging skill is also listening, rated at 3.528. Writing is ranked as the least important skill, receiving an average score of 4.04, and the least difficult skill is reading, with a mean of 2.968.

Table 2. Language Skills Needed and Difficulties in Using English

Language Skill Needed	Difficulty in Using Language Skill	
	Mean	Mean
Listening	4.256	3.528
Speaking	4.24	3.288
Reading	4.056	2.968
Writing	4.04	3.088

English language skills measured are listening, speaking, reading, and writing. The interviews with HRD staff and recruiters revealed various contexts for using English daily. Listening skills are particularly important in settings such as meetings, briefings, and training sessions. The survey results indicate that listening skills are prominently employed during briefings, with an average score of 3.504, while the most challenging application of listening skills is observed in meetings, with a mean score of 3.432.

Table 3. Listening Skills for Oil and Gas Workers

Listening	Language Use (mean)	Difficulties (mean)
Participating in a meeting	3.44	3.432
Participating in briefing	3.504	3.034
Participating in training	3.328	3.232

Speaking skills involve scenarios such as elucidating work progress, providing work instructions, and exchanging information through questions and responses. The results pertaining to speaking skills highlight a notable emphasis on explaining work progress, garnering a mean score of 3.36. Conversely, the most challenging application of speaking skills is also observed in explaining work progress, with a mean score of 3.392.

Table 4. Speaking Skills for Oil and Gas Workers

Speaking	Language Use (mean)	Difficulties (mean)
Explaining Working Progress	3.36	3.392
Giving Working Instruction	2.976	3.32
Asking and Giving Information	3.088	3.352

The contexts of the utilization of reading skills are reading emails, reading manuals or working instruction, and reading reports. The finding related to reading skills indicates a predominant use in perusing manuals or working instructions, registering a mean score of 3.656. On the other hand, the most challenging application of reading skills is found in comprehending emails, with a mean score of 3.24.

Table 5. Reading Skills for Oil and Gas Workers

	Listening	Language Use (mean)	Difficulties (mean)
Reading Emails		3.616	3.24
Reading Manual or Working Instruction		3.656	3.16
Reading Report		3.576	3.128

The practical application of writing skills involves tasks such as composing emails, drafting manuals or working instructions, and generating reports. The results for writing skills demonstrate a notable emphasis on crafting reports, receiving a mean score of 3.576. Conversely, the most challenging application of writing skills is observed in composing emails, with a mean score of 3.36.

Table 6. Writing Skills for Oil and Gas Workers

	Writing	Language Use (mean)	Difficulties (mean)
Writing Emails		3.472	3.36
Writing Manual or Working Instruction		3.344	3.304
Writing Report		3.576	3.28

Discussion

The findings indicate the significance of utilizing English in the context of oil and gas employment. Out of the 125 participants, 87 affirmed the indispensability of English in their professional roles. The overall rating for English language proficiency was notably high, registering at 4.256 on a 5-point scale. This observation is supported by respondents' self-assessment, with 44.8% acknowledging a beginner-level proficiency, 45% expressing basic competence, and 7.2% recognizing themselves as possessing proficient English skills. It underscores a substantial disparity, underscoring the necessity for the establishment of a well-organized English language training or educational initiative tailored specifically for individuals working in the oil and gas sector.

The primary concern among language skills needed by workers in the oil and gas sector is proficiency in listening, scoring an average of 4.256. Following closely, the second most crucial language skill identified by respondents is speaking, garnering an average score of 4.24. Reading and writing skills, while still significant, received lower rankings with averages of 4.056 and 4.04, respectively. It's important to highlight that all these skills obtained an average score of 4 on a scale of 5, underscoring the overall necessity of these language skills in the context of oil and gas employment.

Overall, the greatest challenge in applying language skills is associated with listening skills, evidenced by an average score of 3.528. This discrepancy is notably higher compared to reading skills, which have an average of 2.968, indicating a substantial difference. The second most challenging language skill is speaking, with an average of 3.288, followed by writing skills, with an average of 3.088. These findings suggest that, aside from being highly essential, listening skills pose considerable difficulty for workers in the oil and gas sector. Consequently, these professionals' primary focus on learning English should be enhancing their listening abilities (Milliner & Dimoski, 2019). Furthermore, speaking skills also assume a significant role in the respondents' field-intensive work, where oral communication tends to outweigh written communication (Mohamed et al., 2020).

Effective communication skills, particularly speaking, are essential for workers in the oil and gas industry. These speaking skills are categorized into three main areas: elucidating work outcomes, issuing work directives, and seeking or supplying

information. Among these, elucidating work outcomes emerges as the predominant speaking skill, with an average score of 3.36. Following is the function of asking and providing information, garnering a score of 3.088 while giving work instructions lags with an average score of 2.967.

However, diverging from emphasizing speaking skills, the study reveals that elucidating work outcomes is the most challenging aspect for respondents, scoring 3.392. Asking questions and providing information follow closely, with an average score of 3.52. It underscores the importance of addressing specific challenges, especially in learning English for speaking purposes, focusing on elucidating work outcomes. Additionally, the study indicates that giving work instructions is not the most prominent context, as English is not predominantly used for communication with Indonesian subordinates in this capacity.

Reading skills rank as the third most essential requirement for individuals working in the oil and gas sector. Respondents were presented with three reading contexts: reading emails, perusing manuals or work instructions, and reviewing reports. The preeminent function of reading skills is apparent in the comprehension of manuals or work instructions, achieving an average rating of 3.656. The following closely follows the task of reading emails, with an average score of 3.616, and lastly, the function of reading reports, attaining an average score of 3.576. Conversely, respondents identified reading emails as the most challenging reading function, earning an average difficulty score of 3.24. It is trailed by the task of reading manuals or work instructions, with an average difficulty score of 3.16, and lastly, the function of reading reports, presenting an average difficulty score of 3.128.

Writing skills constitute the fourth essential proficiency for oil and gas industry individuals. Within the realm of writing, there are distinct contexts, such as composing emails, crafting manuals or work instructions, and generating reports. Writing skills' predominant function is creating reports, garnering an average score of 3.504. Following is the task of writing emails, with an average score of 3.472, concluding with the function of writing manuals or work instructions, averaging 3.344.

In contrast to the usage of writing skills, the challenges in writing are most pronounced in composing emails, with an average difficulty score of 3.36. It is followed by writing manuals or work instructions, with an average difficulty score of 3.304, and concluding with the task of writing reports, which presents a difficulty score of 3.28. This expertise underscores the significance of writing skills, particularly in the compilation of work reports. However, it is noteworthy that workers encounter the greatest difficulty in the composition of emails. Hence, in honing writing skills, it is crucial to consider the diverse types of texts actively produced by respondents, namely emails and work reports (Shikoh, 2021).

CONCLUSIONS AND SUGGESTION

The study underscores the significance of English proficiency within the oil and gas industry. The grading of language skills places listening at the forefront, followed by speaking, reading, and writing. Notably, listening skills pose the most significant challenge, especially in comparison to reading and writing abilities. The study advocates for a concentrated effort to enhance listening skills among oil and gas professionals. Effective communication, especially speaking, is crucial in the industry. Elucidating work outcomes is identified as the primary speaking skill, though it is also reported to

be challenging. Reading skills, ranking as the third essential requirement, face their primary challenge in reading emails. In terms of writing skills, the most notable difficulty lies in composing emails. The findings suggest a targeted approach to English language learning, aiming to address specific challenges encountered by oil and gas workers, including improving listening and speaking skills for field-intensive roles and overcoming obstacles in tasks such as elucidating work outcomes and composing emails.

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