

English Language Needs Analysis of Industrial Engineering Students at the Institute of Technology and Business Riau Pesisir

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A B S T R A C T

English language skills play a vital role in supporting students' academic and professional development, particularly in Industrial Engineering. Therefore, a needs analysis is essential to identify the specific language competencies required in industrial contexts. This study employed a qualitative descriptive design to examine students' English language needs, focusing on four main skills – writing, reading, speaking, and listening – as well as relevant language components. Data were collected through questionnaires distributed to 242 randomly selected from a population of 619 active Industrial Engineering students at the Institute of Technology and Business Riau Pesisir. The findings indicate that reading and writing skills in Occupational Health and Safety (OHS) and environmental contexts considered as primary subject, and office administration, technical production, and logistics are the secondary important subject. Meanwhile, speaking and listening skills are in office and OHS contexts considered as primary subjects, while production and logistics as secondary. Overall, students emphasize mastering language components to support workplace communication.

Keywords: *English For Specific Purposes (ESP), Need Analysis, Industrial Engineering, Language Skills, Language Components*

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INTRODUCTION

Dumai City, situated in Riau Province on the eastern coast of Sumatra, faces the Strait of Malacca. The Strait of Malacca is among the busiest international shipping routes globally, frequently utilized by foreign vessels for transit and docking. Due to its strategic location, Dumai serves a significant function in supporting and facilitating international trade activities, besides that, many national and multinational companies engaged in sectors palm oil processing, petrochemicals, fuel refinery, gas, biodiesel, and other related industries. This situation generates significant job opportunities, particularly for graduates aspiring to work or start a business in the industrial sector. To participate in this activity, expertise in the relevant scientific field is essential, along with strong foreign language skills. (Ariansyah & Caesar, 2024) said that many organizations operate worldwide, and communicating in a language that business partners understand facilitates collaboration and trade success.

The Institute of Technology and Business Riau Pesisir is one of the higher education institutions located in Dumai City. It plays an important role in preparing students to meet the workforce demands of the industrial sectors. However, about a quarter of the students are part-time and work for various industrial companies in Dumai; many attend colleges to further their education and careers. Full-time students aim to secure positions with the industrial companies located in Dumai. In this case, the institution is responsible for equipping these students with certain competencies that augment their knowledge, including English language fluency, which serves as an asset in advancing their professions. (Commons et al., 2023) states that English proficiency is essential for students not only to pursue further education abroad but also to secure employment opportunities.

The importance of English language skills in supporting a career is supported by the following opinions. (Mulyono, 2023) states, English communication skills are one of the basic skills required for those pursuing careers in the industrial sector. Saputra in (Commons et al., 2023), who emphasized that strong English language skills are essential for those looking to engage in international education or enter the global market. Additionally, (Commons et al., 2023) also states that, a JobStreet.com survey of 3,967 members found that 45.7 percent reported that English is used in the office approximately 30 to 70 percent of the time. Additionally, 54.7 percent indicated that employees hired by their companies are required to actively speak English. It can be concluded that English is very important to support someone's career to achieve success.

English courses in the Industrial Engineering study program are offered during the first and second semesters. To date, the instructional materials have generally focused on broad activities and contexts within the industrial sector. However, the course instructor has indicated uncertainty regarding the extent to which these materials align with students' specific needs. For example, some students indicated that speaking skills are not relevant in the production process areas, whereas others considered them important. Similarly, while some students expressed interest in learning about English administrative documents, others did not.

This divergence of opinions, combined with insufficient relevant data, necessitates a careful evaluation of the appropriateness of the instructional materials. This perspective is related to Hutauruk in (Bahasa et al., 2022) who argues that English language instruction should be oriented toward contextual needs, enabling students to apply their language skills more effectively in specific professional or real-world situations. These issues highlight the importance of performing a needs analysis to determine the specific English language requirements and to ascertain the materials that students truly need.

Needs analysis, a term commonly used in English language teaching, involves examining what students already know and identifying what they need to learn. This ensures that the language learning content is relevant to the students (Saifuddin et al., 2021). To determine the appropriate course material, it is essential to understand what information the students require. This understanding allows educators to create a learning design that is effective and tailored to their needs. According to (Basyori, 2024), educators must first analyze the specific needs that will guide the learning design they implement. Mengo, Ndiung, and Midun in (Khasinah, 2022) assert that needs analysis constitutes one of the several educational initiatives implemented by educators in the learning process.

According to Dickinson in (Mulyono, 2023), Needs Analysis involves identifying and formulating three components: (1) Needs, defined as the knowledge, skills, and character traits that students are required to master; (2) Wants, referring to the knowledge, skills, and character traits that students would prioritize if given the opportunity and time to learn and practice them; and (3) Lacks, which represent the gap between what students have currently acquired and what they have mastered. It can be summarized that need analysis is a process of collecting and examining information that serves as the basis for identifying learners' needs. Moreover, Linguists and practitioners in English language teaching recognize that needs analysis as a central element in the development of English for Specific Purposes (ESP). It functions not only as a foundation for determining learning needs but also as a guide for designing English language programs that are closely aligned with students' actual needs and learning contexts.

English for Specific Purposes (ESP) is an appropriate approach for addressing the needs; according Robinson in (Agustina, 2019) the substance of English for Specific Purposes (ESP) is designed and developed based on the concept of Needs Analysis. This concept seeks to establish a connection between learners' needs in both academic and professional contexts. And Kusumaningputri in (Badu et al., 2020) explains that one of the benefits of English for Specific Purposes is that students can learn to use English directly in the context of their disciplines, both for academic and non-academic purposes. It is expected ESP to be able to

support the development of English learning materials that are more relevant, targeted, and effective for the students.

Mackay & Mountford in (Kausar, 2025) The English for Technical Communication (ESP) program is developed to address the specific language requirements of engineering students, enabling them to perform effectively in academic and professional settings. For instance, ESP includes the development of technical vocabulary and writing skills necessary for producing engineering reports and delivering presentations. In general, ESP refers to the teaching of English tailored to particular purposes or specialized fields. According to Basturkmen in (Kausar, 2025), ESP courses are especially valuable for engineering students because they emphasize discipline-specific technical vocabulary, professional text types, and communication practices relevant to the field of engineering. It may be stated that English course materials for industrial engineering students should be relevant to their scientific fields and needs.

Multiple studies have examined the necessity of English language proficiency. For example, Mamo L. Conducted a qualitative study titled "Analysis of English Language Needs for Informatics Engineering Students," which investigated the specific motivations and needs of students learning English. Similarly, Lapan et al. Reported that students perceive English as integral to their academic disciplines, particularly for mastering programming languages, securing employment that requires English proficiency, and expanding their understanding of information and communication technology. In addition to these professional motivations, students aim to improve their speaking and reading abilities.

Meanwhile, research conducted by Badu H., Ali S.W., and Kau M., entitled "Analysis of English Learning Needs Based on English for Specific Purposes among Students of the Faculty of Engineering, Gorontalo State University," aims to analyze the English learning needs of students in five study programs at the Faculty of Engineering, Gorontalo State University: Electrical Engineering, Architecture, Civil Engineering, Industrial Engineering, and Informatics. The results indicate that students in the Faculty of Engineering have English learning needs that are focused on improving the four language skills: speaking, writing, listening, and reading. Furthermore, students also hope to learn more English vocabulary related to their study programs.

Overall, the results of the study above suggest that English language learning in engineering and technology contexts should be aligned with students' academic and professional needs. Both language skills and domain-specific vocabulary reinforce the use of the English for Specific Purposes (ESP) approach, which aims to improve the effectiveness and relevance of English instruction. However, the study mentioned above did not delve deeply into the subject matter. On the other hand, this study attempted to provide options for job needs specifically in the industrial sectors to identify the specific English language skills needed, such as jobs in office, administration, technical, production, warehouse, logistics, occupational health and safety (OHS), and environment. Based on the problem mentioned above, it is essential to conduct an English needs analysis to identify the specific language skills needed by students in the context of industrial engineering sectors.

Research questions are formulated as follows:

What English language skills are needed by students in writing and reading for industrial engineering job?

What English language skills are needed by students in speaking and listening for industrial engineering job?

What English language components are needed by the students?

METHOD

This study employs a qualitative descriptive design, utilizing a questionnaire as the primary instrument for data collection. The questionnaire was developed based on indicators identifying students' learning needs related to jobs in the Dumai City industry. The research was conducted at the Institute of Technology and Business Riau Pesisir and involved a population of 619 active industrial engineering students enrolled in the even semester of the

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2025/2026 academic year. The sample was selected through a random sampling technique, yielding a total of 242 respondents.

The research instrument consisted of a questionnaire designed to collect the data on students' needs in learning English. It examined the types of English language skills such as writing and reading skills, Speaking and listening skills and language components, The questions cover the types of jobs available in industrial companies in Dumai City. The data collection and analysis procedures were conducted through the following stages: (1) distributing the questionnaire to students, (2) classifying the collected responses, and (3) identifying the students' learning needs, (3) describing the data. The data were analyzed using a 5-point Likert scale with options ranging from unimportant, moderately important, important and very. This scale was used to identify the types of jobs that students need to improve their understanding of English language skills and components.

FINDINGS AND DISCUSSION

The research is purposed to identify the need of English language skills within the industrial sector across various functional areas, including office and administrative jobs, technical and production, warehouse and logistics, as well as occupational health, safety, and environmental. The research instrument consists of a questionnaire divided into three sections: (1) reading and writing skills, (2) speaking and listening skills, and (3) language components. Respondents were given the flexibility to indicate their perceived needs based on their own experiences and expectations. A five-point Likert scale was employed to measure the level of importance, ranging from "unimportant (UI)," "less important (LI)," "moderately important (MI)," "important (I)," to "very important (VI)."

Writing and Reading

The following section presents students' responses regarding the need for writing and reading skills in the office and administration area; it can be seen in the following table.

Table 1. Writing and reading needs in office and administration

No	Jobs	UI	LI	MI	I	VI	TL
1	Formal e-mail	0%	2.4%	20.2%	43.3%	33.8%	100%
2	Preparing agendas	0%	3.7%	28.5%	48.7%	19%	100%
3	Meeting minutes	0%	3.3%	19.4%	52.4%	24.7%	100%
4	Reports	0%	0.8%	14.4%	50%	33.7%	100%
5	Presentations	0%	2.0%	23.5%	45%	29.3%	100%
6	Duties and administrative responsibilities	0%	1.2%	10.3%	35.5%	52.8%	100%
Average		0%	2.2%	19.2%	46.3%	32.1%	100%

Overall, the data in table 1 indicated that the majority of students considered writing- and reading-related jobs in office and administration as important. This is evident from the average percentages, which show that 46.3% view them as important, while 32.1% view them as very important. Only small proportions consider them less important (2.2%), and none of the respondents perceive these skills as unimportant. This indicates that students have a keen awareness of the importance of writing and reading skills in relation to professional office and administrative work.

In more specific terms, formal email jobs are considered a highly valued skill, with 43.3% of students rating it as important and 33.8% as very important. Similarly, the job of preparing agendas is also considered important, with nearly half of the students (48.7%) categorizing it as important, although a smaller proportion (19%) view it as very important. These findings suggest that, while agenda setting is necessary, the second-largest majority of students regard it as a standard requirement within office and administrative work.

Meeting minutes show a highest value in office and administration job, with 52.4% rating it as important and 24.7% as very important. This shows that writing and reading skills in this section are essential for the majority of students. Report jobs also demonstrate a similar trend, with 50% of the students considering it important and 33.7% very important, further

highlights that this job has a vital role in written communication and structured reading comprehension skills in administrative functions.

Presentation skills are likewise regarded as essential, with 45% rating them as important and 29.3% as very important. This suggests that the ability to communicate ideas effectively in both writing and reading forms is a key requirement in office environments. Furthermore, duties and administrative responsibilities receive the highest “very important” rating (52.8%), indicating that students strongly recognize the importance of handling routine administrative jobs competently.

In conclusion, the data reveals that students perceive writing and reading skills as crucial components of office and administrative work. The dominance of “important” and “very important” responses across all job categories, although some respondents rated it as moderately important or less important, these responses represent only a relatively small proportion. It suggests that these competencies should be prioritized in curriculum design, particularly within English for Specific Purposes (ESP) framework aimed at preparing students for workplace demands. The students’ writing and reading needs in technical and production area can be seen in the following table.

Table 2. Writing and reading needs in Technical and Production

No	Jobs	NI	LI	MI	I	VI	TL
1	Production processes	0%	1.2%	15.7%	45%	38%	100%
2	Technical design	0%	1.7%	13.2%	48.8%	36.4%	100%
3	Work instructions	0%	2.9%	12%	47.5%	37.6%	100%
4	Production reports	0%	0.8%	10.3%	44.6%	44.2%	100%
5	Maintenance and repairs reports	0%	0.4%	14.5%	40.5%	44.6%	100%
6	Technical and production presentations	0%	2.1%	16.1%	54.5%	27.3%	100%
7	Roles and responsibilities	0%	2.1%	9.5%	46.7%	41.7%	100%
Average		0	1.6	13.0	46.8	38.5	100%

Based on the data presented in table 2 indicate that writing and reading skills are perceived as highly important in supporting technical and production-related works. This is reflected in the average responses, where 46.8% of students rate these skills as important and 38.5% as very important. Only a small percentage considers them moderately important (13.0%) or less important (1.6%), and none of the students rate them as unimportant. This pattern shows a clear agreement on the necessity of writing and reading skills in technical and industrial work environments.

In more detail, in production processes, 45% of the students rated them as important and 38.8% as very important. This suggests that the writing and reading information related to production workflows is crucial. Similarly, technical design was considered 48.8% important and 36.4% very important, indicating that students regard this work as significant, particularly in the interpretation of documentation and technical requirements.

Work instructions jobs also receive strong emphasis, with 47.5% of the students consider as important and 37.6% as very important. It shows the students need a good understanding of procedural texts to ensure correct and safe operating processes, especially when interpreting documents and technical specifications. Another important element is the production reports, of which 44.6% are considered as important and 44.2% are very important. This indicates that students need to understand how to write and read documentation, particularly for monitoring and evaluating production process and results.

Maintenance and repair reports show a similar trend, with 44.6% rated as very important and 40.5% as important. This indicates that understanding in writing and reading reports related to maintenance activities is an essential competency. Technical and production presentations, while still important, have a slightly higher proportion of moderate importance (16.1%), though the majority still rate them as important (54.5%) and very important (27.3%), suggesting that In technical and operational roles, the ability to deliver presentations is identified as the most valuable skill.

Finally, roles and responsibilities are also perceived as highly important, with 46.7% rating them as important and 41.7% as very important. This reflects the need for a clear understanding of job descriptions and responsibilities through writing and reading materials.

In conclusion, the analysis reveals that students strongly recognize the importance of writing and reading skills across various technical and production activities. The dominance of “important” and “very important” responses across all job categories, although some respondents rated it as moderately important or less important, these responses represent only a relatively small proportion. It indicates that these competencies are indispensable for effective performance in industrial settings. Therefore, these findings support the integration of targeted literacy skills within an English for Specific Purposes (ESP) framework to better prepare students for real-world technical and production environments. The students’ writing and reading needs in warehouse and logistic can be seen in the following table

Table 3. Writing and reading needs in Warehouse and Logistic

No	Jobs	NI	LI	MI	I	VI	TL
1	inventory records, receipt and dispatch documentation	0%	1.2%	12.4%	40.1%	46.3%	100%
2	warehouse and logistics presentations	0%	2.1%	18.2%	51.2%	28.5%	100%
3	roles and responsibilities in warehouse and logistics	0%	1.7%	12.4%	43.8%	42.1%	100%
Average		0%	1.7%	14.3%	45.0%	39.0%	100%

Based on table 3, the data show that writing and reading skills are perceived as highly important for warehouse and logistics activities. This can be seen in the most significant responses of “important” (45.0%) and “very important” (39.0%). Just a small portion of respondents think these skills are moderately important (14.3%) or less important (1.7%), and none of them consider them unimportant. This suggests a high level of agreement among students about the importance of literacy skills for this occupational area.

In more specific terms, inventory records, receipt and dispatch documentation, are identified as the most critical competencies. A significant number of students (46.3%) consider as very important, followed by 40.1% as important. The finding indicates that writing and reading in the jobs of inventory records, receipts, and dispatch documentation are critical to effective inventory control and operational accountability in warehouse management. This will be the primary focus in preparing lecture materials. Warehouse and logistics presentations are also perceived as important, with the majority of students (51.2%) rating them as important and 28.5% as very important. Although fewer students categorize this skill as very important compared to documentation jobs, it still reflects the need for effective preparation in presenting and understanding of operational data, reports, and logistics planning.

Furthermore, roles and responsibilities in warehouse and logistics are considered highly significant, with 43.8% of students rating them as important and 42.1% as very important. This indicates that understanding writing and reading job descriptions, procedures, and task allocations is essential for efficient performance in logistics operations. Overall the analysis shows that students consider writing and reading skills to be very important for the warehouse and logistics context, particularly for documentation, reporting and understanding operational responsibilities. The large amount of responses rated “important” and “very important”, although some respondents rated it as moderately important or less important, these responses represent only a relatively small proportion. It indicates that instructional design should focus on these competencies. Therefore, it is important to include these skills in an English for Specific Purposes (ESP) course to better prepare students for the real world demands in the warehouse and logistics fields.

The students’ writing and reading needs in Occupational Health and Safety (OHS) and environment, can be seen in the following table,

Table 4. Writing and reading needs in Occupational Health and Safety (OHS) and environment

No	Jobs	NI	LI	MI	I	VI	TL
1	Warning signs	0%	0%	9.9%	32.6%	57.4%	100%
2	Occupational Health and Safety (OHS) procedures	0%	0%	9.5%	30.6%	59.9%	100%

		0	1.2		35.1	53.7	100
3	Incident/accident reports	%	%	9.9%	%	%	%
		0	2.9	16.1	46.3	34.7	100
4	Occupational Health and Safety (OHS) presentations	%	%	%	%	%	%
		0	0.4	10.3	35.5	53.7	100
5	Environmental safety materials	%	%	%	%	%	%
		0		13.2	30.6	56.2	100
6	Occupational Health and Safety (OHS) roles and responsibilities	%	0%	%	%	%	%
		0	0.8	11.5	35.1	52.6	100
	Average	%	%	%	%	%	%

The data in Table 4 indicates that the writing and reading skills are perceived as very important in the Occupational Health and Safety (OHS) and environmental contexts. This is shown by the average responses, where 52.6% of the respondents rated these skills as very important and 35.1% as important. A small number of respondents regard them as moderate (11.5%) and less important (0.8%), while none of the respondents regard them as unimportant. This trend indicates that students require strong writing skills and a solid understanding, particularly in the fields of Occupational Health and Safety (OHS) and environment. In more specific terms, the jobs of warning signs are considered highly important, where 57.4% of the students consider them very important and 32.6% important. Likewise, Occupational Health and Safety (OHS) procedures are considered extremely important, where 59.9% of the students rate them as very important and 30.6% important. It can be interpreted that the knowledge of writing and interpreting warning signs is very important in order to avoid any workplace hazards.

Incidents and accidents records are also viewed to be highly important with 53.7% of the students viewing them as very important while 35.1% viewed them as important. Environmental safety information materials have also been rated as very important and important with 53.7% and 35.5%, respectively. This is an indication that the students realize the important of document and any incident reports that occurs at the workplace for assessment and preventive measures. In the case of OHS presentations, however, although they remain crucial, there is some variance in the responses, with 46.3% of the students rating them important and 34.7% rating them as very important, whereas the remaining respondents (16.1%) find them moderately important. This indicates that even though presentation skills are essential, they may not be as vital as reading and writing about safety issues. Finally, OHS roles and responsibilities are also highly valued, with 56.2% rated as very important and 30.6% as important. This indicates that understanding written job roles, duties and responsibilities related to occupational safety: the majority of students believe that having skills in writing and reading in this field is very important. In conclusion, the analysis shows that students see writing and reading skills as essential in OHS and environmental settings. The majority of students rated these skills as "very important," or "important" this trend indicates that writing skills and comprehension of texts in the Occupational Health and Safety (OHS) and environmental fields as highly important, as well as applicable across all job types. Ultimately, the subject matter of English for Specific Purposes (ESP) within this field will be the primary focus.

Speaking and Listening

The following section presents students' responses regarding the need for speaking and listening skills in the office and administration area; it can be seen in the following table.

Table 5. Speaking and listening needs in office and administration

No	Jobs	NI	LI	MI	I	VI	TL
1	Welcoming guests	0%	0.4%	15.3%	38%	46.3%	100%
2	Explaining company-related information	0%	0%	9.5%	42.6%	47.9%	100%
3	Presentations	0%	0%	10.3%	49.2%	40.5%	100%
4	Reporting	0%	0.4%	10.7%	49.6%	39.3%	100%
5	Office and administrative responsibilities	0%	0.8%	6.6%	40.1%	52.5%	100%
	Average	0%	0.3%	10.5%	43.9%	45.3%	100%

Table 5 indicates that speaking and listening proficiencies in office and administration area are held in high value. It shows that the majority of students rates them 45.3% as very important, 43.9% as important, 10.5% as moderate important, 0.3% as less important while, none of students considered them as unimportant. It suggests that lecturers should focus on developing students' speaking and listening skills, especially in the context of office and administrative work as part of their curriculum.

Welcoming guests is considered an essential communicative job, the majority of students with 46.3% of students considering it as very important and 38% as important. However, there are 0.4% of students considered this less important. These findings indicate that students aim to develop communication skills for welcoming guests using appropriate language and professional etiquette. Such competencies are essential for fostering effective interpersonal relationships within a professional environment. Explaining company-related information is also highly valued, with 47.9% rating it as very important and 42.6% as important. The findings indicate that most students expressed a strong need to develop the ability to describe their respective workplaces, suggesting that this material should be considered for inclusion as a core component of the ESP curriculum.

Presentations emerge as another key area, with nearly half of the students (49.2%) considering them as important and 40.5% as very important. This shows that students need good presentation skills in conveying ideas, views, findings and opinions effectively in workplace contexts. Similarly, reporting activities are perceived as important, with 49.6% of respondents categorizing them as important and 39.3% as very important, this demonstrates the necessity for students to develop oral reporting skills, enabling them to present activities accurately, in a structured format, and with effective communication.

Finally, office and administrative responsibilities receive the highest proportion of "very important" responses (52.5%), followed by 40.1% who rate them as important. This indicates that the ability to understand and execute routine administrative communication jobs is regarded as a vital competency to develop.

In conclusion, the findings indicate that speaking and listening skills are regarded as key components of administrative work. The predominance of "important" and "very important" responses across all indicators, although some respondents rated it as moderately important or less important, these responses represent only a relatively small proportion. It suggests that English instructors recognize the need to integrate oral communication skills into classroom instruction. Therefore, incorporating oral communication as a core element of ESP curricula is essential to better prepare students for the demands of modern office and administrative roles.

The students' speaking and listening needs in technical and production area can be seen in the following table.

Table 6. Speaking and listening needs in technical and operations

No	Jobs	NI	LI	MI	I	VI	TL
1	Production processes	0%	0.8%	12.4%	49.2%	37.6%	100%
2	Designs	0%	0.4%	13.2%	47.1%	39.3%	100%
3	Work instructions	0%	0.4%	7.9%	42.6%	49.2%	100%
4	Production reports	0%	0.4%	12%	43.8%	43.8%	100%
5	Maintenance and repair report	0%	2.1%	17.4%	44.6%	36%	100%
6	Presentation	0%	1.7%	14.9%	57.4%	26%	100%
7	Job responsibility	0%	1.7%	10.3%	43.8%	44.2%	100%
Average		0%	1.1%	12.6%	46.9%	39.4%	100%

Based on Table 6, the results indicate that speaking and listening skills are considered highly important in technical and production contexts. It shows in the average responses 46.9% of students consider these skills as important, and 39.4% as very important. Only a small proportion consider them moderately important (12.6%) or less important (1.1%), and none of the respondents rate them as unimportant. This suggests a strong recognition of the importance of oral communication in supporting technical and production activities.

More specifically, communication related to production processes is considered essential, with 49.2% of students rating it as important and 37.6% as very important. However, 12.4% consider them important and 0.8% unimportant. Similarly, design-related communication is highly valued, with 47.1% categorized as important and 39.3% as very important, even though the students who consider moderate important and less important still exist, but their amount is relatively small. indicating the need to clearly explain and discuss technical design courses in speaking and listening skills.

Work instructions are considered as essential areas, with 46.2% of students considering them as very important and 42.6% as important, only a small number in moderate and less important. This highlights that students feel that the ability to understand job instructions verbally is crucial in improving their oral skills. Production reports are also considered highly significant, with equal proportions (43.8%) rating them as important and very important. This indicates, emphasizing the ability of oral reporting in monitoring production process and outcomes.

Maintenance and repair communication is similarly important, with 44.6% rating it as important and 36% as very important, reflecting the need to convey technical issues effectively. Presentations receive the highest "important" rating (57.4%), although a smaller proportion (26%) rate them as very important, suggesting that while presentations are necessary, they may be seen as less critical than operational communication. Finally, job responsibilities are also highly valued, with 43.8% rating them as important and 44.2% as very important, indicating the need of oral skills in understanding and clearly communicating roles in the workplace.

In conclusion, the analysis demonstrates that speaking and listening skills are essential in technical and production areas, particularly for conveying instructions, reporting, and discussing technical processes. The dominance of "important" and "very important", although some respondents rated it as moderately important or less important, these responses represent only a relatively small proportion. These responses highlight the need to integrate oral communication skills into English for Specific Purposes (ESP) instruction to better prepare students for real-world industrial environments.

The students' speaking and listening needs in warehouse and logistic can be seen in the following table

Table 7. Speaking and listening needs in Warehouse and Logistic

No	Jobs	NI	LI	MI	I	VI	TL
1	Inventory records, receipt and dispatch documentation	0 %	0.8 %	14% %	45.9 %	39.3 %	100 %
2	Warehouse and logistics presentations	0 %	2.5 %	18.2 %	46.3 %	33.1 %	100 %
3	Roles and responsibilities in warehouse and logistics operations	0 %	2.1 %	10.3 %	45.9 %	41.7 %	100 %
Average		0 %	1.8 %	14.2 %	46% %	38% %	100 %

Based on Table 7, the data indicate that speaking and listening skills are considered as highly important in warehouse and logistics operations. It showed in the average, 46% of students considered these skills as important, and 38% as very important. Meanwhile, 14.2% consider them moderately important and only 1.8% less important, with none rating them as unimportant. The highlights indicate that majority of the students express a strong interest in developing proficiency in speaking and listening skills, particularly in the context of warehouse and logistics operations.

More specifically, communication related to inventory records, receipt, and dispatch documentation is considered essential, with 45.9% of students rating it as important and 39.3% as very important. This highlights majority of the students need for clear verbal coordination in handling inventory and shipment processes, while minority considered moderate important and less important.

Warehouse and logistics presentations are also perceived as important, with 46.3% rating them as important and 33.1% as very important. Although a slightly higher proportion

(18.2%) considers this skill moderately important, it still indicates presentation skill is crucial for the students.

Furthermore, roles and responsibilities in warehouse and logistics operations are regarded as highly significant, with 45.9% of respondents rating them as important and 41.7% as very important. This suggests that clear communication of job duties and operational procedures is essential for the student to ensure efficiency and coordination in the workplace.

In conclusion, the analysis reveals that speaking and listening skills are essential competencies in warehouse and logistics contexts. The dominance of “important” and “very important” responses across all categories, although some respondents rated it as moderately important or less important, these responses represent only a relatively small proportion. It underscored the need to integrate oral communication skills in warehousing and logistics work into English for Specific Purposes (ESP) instruction to better prepare students for real-world industrial environments.

The students’ speaking and listening needs in Occupational Health and Safety (OHS) and environment can be seen in the following table,

Table 8. Speaking and listening needs in Occupational Health and Safety (OHS) and environment

No	Job types	NI	LI	MI	I	VI	TL
1	Warning signs	0%	0%	9.1%	30.6%	60.3%	100%
2	Personal protective equipment	0%	0.4%	7.4%	30.6%	61.6%	100%
3	Occupational Health and Safety (OHS) procedures	0%	0%	7.4%	29.3%	63.2%	100%
4	Incident/accident investigations	0%	0.4%	8.3%	34.7%	56.6%	100%
5	Incident/accident reports	0%	0%	9.5%	37.2%	53.3%	100%
6	Occupational Health and Safety (OHS) presentation	0%	1.2%	13.2%	40.5%	45%	100%
7	Environmental safety materials	0%	0%	8.7%	31.8%	59.5%	100%
8	Occupational Health and Safety (OHS) roles and responsibility	0%	0%	8.7%	28.5%	62.8%	100%
	Average	0%	0.3%	9%	32.9%	57.8%	100.0%

Table 8 shows that speaking and listening skills in OHS and environmental are viewed as very important skills, where 57.8% of the students consider them very important, and 32.9% important. In contrast, only 9% of students considered these skills as moderately important, and 0.3% views them as less important, while no student views them as unimportant. The findings suggest that students prioritize oral communication skills within the workplace, particularly in the context of Occupational Health and Safety (OHS) and environmental practices, as these competencies are essential for maintaining both workplace and environmental safety.

Communication regarding warning signs is considered essential, with 60.3% of students rating it as very important, and personal protective equipment (PPE) communication skills are highly prioritized, with 61.6% considered it very important. This indicates that students need to be able to speak and listen about this topic, follow clear instructions, and comply with safety practices. Job in OHS procedures receive the highest level of importance, with 63.2% of students rating them as very important, It indicates the need to emphasize the importance of effective speaking and listening skills regarding safety protocols in the work field.

Incident and accident investigations (56.6%) and reporting (53.3%) are also perceived as highly important. This reflects the need for students to be able to communicate accurately and in a timely in handling incidents in the workplace. OHS presentations, while still very important (45%) and important (40.5%), show a slightly more balanced distribution. This suggests that presentation skills are important but may be considered secondary to operational safety communication

Environmental safety materials are widely perceived as essential, with 59.5% of respondents categorizing them as very important. Furthermore, occupational health and safety (OHS) roles and responsibilities receive the highest proportion of “very important” ratings (62.8%). This finding suggests that students recognize the importance of being able to communicate environmental safety practices as well as clearly understand and convey their duties and responsibilities, both of which are crucial for promoting environmental care and maintaining established safety standards.

In conclusion, the analysis indicates that speaking and listening skills are highly essential in occupational health and safety (OHS) and environmental contexts, particularly for communicating procedures, reporting incidents, and ensuring compliance with safety regulations. The predominance of “very important” responses underscores the need to prioritize oral communication skills. Although a small proportion of respondents rated these skills as moderately or less important, their number remains minimal. These findings strongly emphasize the importance of integrating OHS content within an English for Specific Purposes (ESP) framework to better equip students for safe and effective performance in industrial workplace settings.

Language Components

The students’ speaking and listening needs in the language components can be seen in the following table,

Table 9. Language components needs

No	Language components	NI	LI	MI	I	VI	TL
1	Grammar	0%	0%	6.6%	26.4%	66.9%	100%
2	Vocabulary	0%	0%	5.8%	28.9%	65.3%	100%
3	Pronunciation	0%	0%	8.3%	26.9%	64.9%	100%
4	Spelling and Punctuation	0%	0%	7.9%	31.8%	60.3%	100%
	Average	0%	0%	7.1%	28.5%	64.4%	100%

Table 9 shows the language components Grammar, Vocabulary, Pronunciation, Spelling and Punctuation, a significant majority of students rated them 64.4% as Very Important and 28.5% Important. This suggests that all these components are largely considered essential for speaking and listening skills in all various industrial jobs.

A small percentage, averaging 7.1% the students considered the components as "Moderately Important". This suggests that while some might see these aspects as not critically essential, they still hold some value.

The research shows a strong indication that grammar, vocabulary, pronunciation, and spelling/punctuation are all considered as highly important aspects for developing speaking and listening skills. The overwhelming consensus places these components in the "Important" to "Very Important" categories, with almost no one considering them unimportant. This suggests that comprehensive language components should be prioritized in the development of all teaching material to support students' languages skills in the industrial engineering working area.

CONCLUSIONS

Based on students’ self-assessments, English language skills and components are considered important to very important in supporting industrial workplace communication, particularly for Industrial Engineering students at the Institute of Technology and Business Riau Pesisir. Writing and reading skills are rated as very important in Occupational Health and Safety (OHS) and environmental contexts, while also remaining important across office administration, technical operations, and warehouse logistics areas. Similarly, speaking and listening skills are viewed as highly important, especially in office administration and OHS-related work environments, highlighting the need for effective oral communication in professional settings. Furthermore, language components such as grammar, vocabulary, pronunciation, spelling, and punctuation are perceived as essential in supporting overall English proficiency. These findings indicate a consistent demand for English for Specific

Purposes (ESP) instruction across various occupational domains. Therefore, the results can serve as a foundation for developing ESP-oriented syllabi, instructional materials, and learning activities that align with workplace communication needs in industrial engineering contexts.

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