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English Linguistic Competence for the Career of Engineer: the Voice of Students and Employees

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Abstract
English linguistic competence has become increasingly central to engineering career development, particularly in globalized industries where communication, documentation, and cross-functional collaboration occur predominantly in English. In Indonesia, this demand is intensified by the growth of multinational sectors such as electronics, shipbuilding, and oil and gas, yet limited evidence integrates both student and industry viewpoints on how linguistic competence influences workplace readiness, wellbeing, and employability. This qualitative study investigates perceptions of final-semester engineering students and industry employees regarding (1) the importance of English linguistic competence for engineers, (2) the perceived proficiency of Indonesian engineering graduates, and (3) the forms of preparation required for securing employment in multinational companies. Semi-structured interviews were conducted with six engineering students from two private universities and five employees holding managerial or supervisory roles in Batam-based multinational firms. Data were transcribed, cleaned, and coded using iterative thematic analysis. Three themes emerged: English proficiency functions as a hiring gatekeeper that shapes early career mobility; graduates display competence gaps that require compensatory adaptation in the workplace; and limited preparatory pathways in universities and companies result in insufficient engineering-specific English development. Findings reveal a persistent misalignment between academic English instruction and workplace communicative demands. Both groups emphasized the need for domain-specific linguistic preparation to support engineers' performance, wellbeing, and long-term career progression. The study underscores the necessity for coordinated efforts among universities, employers, and policymakers to integrate industry-relevant English communication training into engineering education.

Keywords:
English linguistic competence, Engineering employability, Workplace communication, Qualitative thematic analysis, Multinational engineering workplaces

1. Introduction

Career development in the engineering field is increasingly shaped by the interplay between technical expertise and the broader competencies required in modern workplaces. Among these, English linguistic competence has emerged as a critical factor for professional mobility particularly in globalized industries where engineers must engage in technical

communication, documentation, and cross-functional collaboration (Coffelt et al., 2019; Järvenpää et al., 2021). In Indonesia, where the manufacturing and multinational sectors have expanded rapidly since the late twentieth century, engineers are expected to operate in work environments that rely extensively on English for daily operations.

Although existing studies consistently highlight the centrality of English proficiency in engineering practice that reporting issues such as communication barriers, misalignment between academic training and workplace expectations, and persistent skill gaps among engineering graduates (Alqahtani, 2021; Najwa Azmi et al., 2018; OECD, 2017; Rajprasit et al., 2015). Few studies have examined these challenges from both the learner and industry perspectives simultaneously. Prior research has typically focused either on students' preparedness or on employers' expectations, without integrating both viewpoints in relation to workplace wellbeing, job performance, and employability.

Furthermore, while qualification standards and occupational frameworks articulate the competencies expected of engineers (Greculescu et al., 2014; Kim, 2020), there remains a substantial disconnect between educational learning outcomes and the actual communicative demands engineers face in multinational companies. Employees frequently report that new graduates struggle with English-mediated communication, yet higher education institutions continue to deliver English courses that are not sufficiently tailored to engineering contexts (Poedjiastutie et al., 2018). This structural gap suggests that the development of linguistic competence is not adequately aligned with industry needs.

Despite Indonesia's expanding participation in global engineering industries, no empirical study has examined how linguistic competence is positioned within workplace wellbeing and career readiness from the dual perspectives of engineering students and industry practitioners, particularly in industrial hubs such as Batam, where electronics, shipbuilding, and oil-and-gas sectors dominate foreign investment. As a result, little is known about how well students are preparing for the linguistic demands of engineering workplaces or how employers assess the adequacy of graduates' English proficiency.

1.1 Linguistics Competence

Linguistic competence refers to an individual's internalized knowledge of a language, encompassing the rules, structures, and conventions that enable the production and interpretation of grammatical expressions (Abdulrahman & Ayyash, 2019). In engineering workplaces, English linguistic competence serves as a fundamental qualification that supports accurate documentation, effective communication, and cross-cultural collaboration (Coffelt et al., 2019; Järvenpää et al., 2021). Thus, linguistic competence functions not only as a technical requirement but also as an enabling skill that facilitates successful task performance.

The link between linguistic competence, education, and employment is shaped by how qualifications and learning outcomes are defined. Occupational standards outline the communicative abilities expected from engineers, while higher education institutions articulate learning outcomes designed to prepare graduates for these expectations (Clement & Murugavel, 2018; Kim, 2020). When these frameworks are aligned, linguistic competence acts as a bridge that connects academic preparation to real workplace demands by enabling graduates to interpret technical documents, understand instructions, and communicate clearly in professional settings.

Learning outcomes related to communication are increasingly recognized as essential for supporting technological adaptation, validating diverse learning experiences, and fostering lifelong learning (Greculescu et al., 2014; Susanto et al., 2022). In Indonesia's expanding industrial landscape, engineering graduates are expected to meet both technical and communicative requirements to succeed in multinational work environments. English linguistic

competence is therefore indispensable for navigating multicultural teams, interacting with foreign stakeholders, and maintaining workplace wellbeing.

However, prior research repeatedly shows a gap between the communication skills required in engineering workplaces and the English instruction provided in universities (Alhamami, 2014; Tamilarasan et al., 2019). This misalignment highlights the urgency of reassessing how linguistic competence is developed in engineering programs and how effectively these competencies support graduates' professional transitions.

1.2 The Research Gap

Despite this recognized importance, existing evidence shows a persistent mismatch between the English communication skills required in engineering workplaces and the linguistic training provided in Indonesian universities (Alhamami, 2014; Tamilarasan et al., 2019). Studies largely focus on either academic preparation or workplace expectations without integrating both perspectives, leaving unclear how engineering students and industry practitioners jointly perceive the adequacy, relevance, and impact of English linguistic competence. Furthermore, research rarely addresses how these perceptions relate to workplace wellbeing, job readiness, and employability key dimensions in regions like Batam, where English-mediated engineering work is common. This study fills this gap by examining both student and employer perspectives to provide a holistic understanding of the role of linguistic competence in engineering career preparation. To address this, the present study examines the perceptions of final-semester engineering students and industry employees regarding:
(1) the importance of English linguistic competence for engineers;
(2) the current level of linguistic competence demonstrated by Indonesian engineering graduates; and
(3) the forms of preparation needed for securing engineering positions in multinational companies.

2. Methods

The present research employed a qualitative approach to investigate the extent to which the English language learning context, more specifically linguistic knowledge and social demands in the workplace wellbeing in the view of engineering students and employees.

2.1. Participants

The data were performed through semi-structured interview with 6 engineering students at two private universities and 5 employees from electronics and shipyard companies in Batam Indonesia. The students were in their final semester of study. Meanwhile, the 4 employees were those who hold the position of manager or above supervisor level who can determine the recruitment of employee in their department. In the table 1; first two columns on the left show student respondents with pseudonyms and campus names which are not provided to preserve anonymity. Then the next three columns are the pseudonyms of the employee and the nature of the business company.

Tabel 1 Position of participants interviewed

Pseudonym used in the paper	University	Pseudonym used in the paper	Position of employee in the company	Nature of business of the company
Student 1	A	Employee 1	Process engineer manager	Electronic company

Student 2	A	Employee 2	Maintenance/equipment manager	Electronic company
Student 3	A	Employee 3	HRD Manager	Shipyard company
Student 4	B	Employee 4	Chief executive officer	Oil and gas company
Student 5	B			
Student 6	B			

2.2 Qualitative Data Collection and Analysis Procedures

Data Collection

Semi-structured interviews were conducted with two respondent groups engineering students and employees using an appointment-based scheduling approach. Interviews with students took place in informal on-campus settings, while employee interviews were arranged outside regular working hours to prevent disruption to their professional duties. Although the researchers attempted to recruit a wide range of participants, many potential respondents declined due to scheduling constraints. The resulting dataset therefore reflects views from two groups that differ in workplace exposure and experience, enabling a comparative analysis of engineering graduates' English proficiency and workplace communication demands.

All interviews were conducted in Indonesian and audio-recorded with participants' consent. The recordings were transcribed using Salyns.prosa.ai, a cloud-based automatic speech recognition platform optimized for Indonesian linguistic structures. The interview protocol consisted of three core prompts:

1. the importance of English communication skills for engineers,
2. respondents' confidence in the English competence of Indonesian engineering graduates, and
3. recommended preparations for prospective engineers applying to multinational companies.

Data Cleaning Procedures

The raw transcripts underwent systematic cleaning prior to analysis. Non-semantic verbal fillers (e.g., *lah*, *ehm*, *eee*) were removed and replaced with an ellipsis to preserve conversational flow without altering meaning. Indonesian technical or institutional terms were translated into English and presented in parentheses (e.g., *SMA* as Senior High School; *S1* as Bachelor's degree). Given the researcher's extensive industry experience, terminology that might not be equally familiar to both respondent groups was cross-checked to prevent researcher bias.

Coding and Thematic Analysis

An iterative reading process was applied to identify meaning units and form preliminary codes. Transcripts were revisited multiple times to ensure consistency and accuracy in code assignment. A cautious coding strategy was adopted to avoid imposing interpretations influenced by the researcher's professional background in multinational corporations. Themes were then derived inductively by grouping related codes and verifying alignment across both respondent groups.

Measures were taken to enhance analytic trustworthiness, including repeated transcript review and internal validation of coding decisions. Participants were assured of anonymity, and only de-identified excerpts were integrated into the findings. Translated excerpts appearing in

the article underwent minor grammatical adjustments to ensure clarity without altering respondents' intended meanings.

Structure of Findings

The analysis yielded three thematic clusters: (1) perceived importance of English competence for engineers, (2) comparative confidence levels between students and employees regarding engineers' workplace English proficiency, and (3) perceived competencies required for prospective engineers seeking employment in multinational corporations.

3. Result and Discussion

3.1 Result

The thematic analysis produced three overarching themes explaining how English linguistic competence shapes access, performance, and preparation for engineering roles within multinational workplaces: (1) linguistic competence as a hiring gatekeeper, (2) competence gaps and compensatory adaptation, and (3) limited preparatory pathways and the need for engineering-specific English development. Each theme integrates perspectives from both engineering students and industry employees.

Linguistic Competence as a Hiring Gatekeeper

English proficiency was widely described as a decisive filter in the recruitment of engineers, shaping whether candidates progress beyond initial screening. Hiring personnel emphasized that English is the working language of documentation, reporting, and interdepartmental communication; thus, applicants are expected to demonstrate functional proficiency from the outset.

One HR manager detailed the criteria used during screening:

"We screen their English language skills in speaking, expressing ideas, comprehending texts, and also writing… Speaking ability is one point during the interview for supervisor level, including Engineer." (Employee 3).

Students recognized this gatekeeping function, acknowledging that linguistic competence often determines whether they can enter engineering tracks in multinational firms. One student illustrated how English proficiency becomes a filter over time:

"English for engineer is needed… my friend, senior… his English not so good as start; he was a technician in a small company, after four years he moved to a bigger company as Engineer." (Student 2).

Overall, English linguistic competence operates as a structural access mechanism, enabling or restricting entry into engineering positions and influencing early career mobility.

Competence Gaps and Compensatory Workplace Adaptation

Respondents consistently described a gap between university English preparation and workplace expectations, particularly in technical writing, documentation, and explaining engineering concepts. Students expressed partial confidence in verbal communication but reported struggles with workplace-specific tasks.

For example, one student noted ongoing reliance on technological aids:

"Verbal English I do not have problem… unless the writing; sometimes I refer to Google Translate, AI like ChatGPT, see Google if I have problem in English." (Student 3)

Industry employees confirmed similar patterns, noting that many graduates initially struggle during English-based interviews and assignments, yet develop competency through experiential learning:

"Most engineering graduates experience problems communicating in English… but our Engineers have proven their English skill. They adapt and dare to keep trying." (Employee 1)

This indicates that although linguistic competence may be insufficient at entry, engineers often cultivate situated workplace English through repeated exposure to customer interactions, vendor communication, and technical meetings. However, these adaptive processes do not diminish the disadvantage graduates face during recruitment, where immediate proficiency remains a prerequisite.

Preparation Gaps and the Need for Engineering-Oriented English

Both groups described minimal structured preparation for engineering-related linguistic demands. English courses at university were seen as generic, grammar-oriented, and disconnected from engineering practice, leaving graduates to fill the gap independently.
One student highlighted the absence of intentional preparation:
"I have never specifically prepared my language skill, but engineering yes… About reading and writing, I really lack experience." (Student 4)

Employees similarly emphasized the lack of corporate training opportunities, explaining that engineers must acquire English competence largely through personal initiative:
"Companies rarely provide English language training… being able to explain technical products is part of professional work. Linguistic ability is not only speaking, but explaining technically." (Employee 4)

Another employee attributed systemic weaknesses to university-level instruction:
"There is a weakness in our learning process in university… we study grammar, reading not about our field; English should be more specific." (Employee 3)

These perspectives reveal a structural deficiency in domain-specific English preparation, resulting in fragmented learning pathways where competence is accumulated informally rather than through coordinated educational or organizational support. The structured thematic analysis produced three principal themes, each outlining a distinct dimension of respondents' perspectives on English communication in engineering in table 2.

Table 2 Summary of thematic structure

Theme	Core interpretation	Illustrative direct quote
Linguistic Competence as a Hiring Gatekeeper	English proficiency determines entry into engineering roles and early career mobility.	"We screen their English… speaking, expressing ideas…" (Employee 3)
Competence Gaps and Compensatory Adaptation	Students and employees identify gaps between academic English and workplace demands; adaptation occurs on the job.	"I refer to Google Translate… AI like ChatGPT…" (Student 3) "Most engineering graduates experience problems communicating in English… but our Engineers have proven their English skill. They adapt and dare to keep trying." (Employee 1)
Limited Preparatory Pathways	Universities and companies provide insufficient engineering-specific English training.	"English should be more specific to our field." (Employee 3)

3.2 Discussion

This research has collected data from interviews with 6 engineering students in the last semester at two different campuses in Batam and 4 employees from 3 companies operating in the fields of electronics, oil and gas, and shipbuilding. Some points that have been obtained from the interview results are explained in the following paragraphs explaining the objectives of the present research.

Either employees or students understand the importance of linguistic competence for the engineer which is almost the same as the professional competence, nevertheles it cannot be equal for all parts of the engineering field. This seems to be in line with the opinion that English linguistic competence does not override an engineer's professional competence. (Ting et al., 2017). This expression has a slight difference with what was expressed by (Çal et al., 2022; Setiawan, 2022) that linguistic competence is sometimes hold more weight than their Engineering professional skills. In essence, each profession has a different domain of expertise and different functions in the work environment and type of company business field (Chafi et al., 2022; Susanto & Et, 2024; Susanto, 2024) Therefore, if unsifficient linguistic competence hinder an engineer to express new opinions, ideas and innovations that he should have more control over, then this can be said to be that the linguistic abilities of an engineer or prospective engineer are as important or even more important than their engineering abilities. Another research claimed that engineers had been equipped with the necessary technical skills but lack non-technical or ‘soft’ skills such as linguistic competence that identified as a highly important non-technical skill (OECD, 2017). It can be concluded in this part that the importance of English linguistic competence for engineers is as important as their engineering competence, and the balance of these competence seen as a unified engineering competence.

The analysis of the interview results revealed that some students admit that their English was weak. However, students do not fully see this as a deficiency that limits their future careers and confident that they can overcome this deficiency if they work in a country that does not fully use English as a measure of engineering ability. Meanwhile, employees see that lack of linguistic competence is mandatory if you want to work as an engineer in a multinational company. This is because from the interview step has been carried out for English language skills. As several studies have conducted, it is stated that engineering candidates' inability to speak English has caused them not to be accepted from the start of the interview. This seems to be in line with research conducted by (Clement & Murugavel, 2018; Tamilarasan et al., 2019) stated that poor linguistic competence can hamper the attempts of finding a good engineer job.

Regarding the readiness of campus alumni to face the demands of future work in the engineering field, from the results of interviews, all students felt that they had not made measurable preparation in terms of English linguistic competence. However, during their time as students they have taken English courses and also English language subjects on campus. However, from everything they have experienced, there is nothing that makes them feel superior in this field. Meanwhile, comments from entrepreneurs reveal that they admit that engineers in Indonesia have not learned English optimally. They have experienced themselves starting their careers as engineers/staff to become department heads today. As long as they have been with the company, no one has seen any efforts made by the company to specifically train its employees' English language skills. Employees also suggest that someone who may not have been able to reach the certain level expected for an engineer position, can work in a lower position such as a technician, while learning while working and one day, if they are deemed capable, they can be promoted to engineer or a higher position.

Meanwhile, what was expressed by (Poedjiastutie et al., 2018) stated that the government has done several efforts to improve the quality of education in Indonesia. One of the efforts is the shift of curriculum. However, changes do not always guarantee that it will meet expectations due to many factors such as programs, processes, and people. This should be used to inform the

Ministry of Education about the complexity and the difficulties associated with the implementation of the current centralized and top-down curriculum (Poedjiastutie et al., 2018).

4. Conclusion

This study highlights that English linguistic competence plays a crucial role in shaping the employability and career progression of engineers in Indonesia, particularly within multinational work environments. Both students and employees recognize the importance of English proficiency not only as a complementary skill but also as a requirement comparable in significance to technical engineering competence. While students tend to view their linguistic limitations as manageable and secondary to technical expertise, employees consistently emphasize that insufficient linguistic competence can hinder opportunities, beginning as early as the recruitment stage. Findings further suggest that despite exposure to English courses during university, most engineering students do not feel adequately prepared to meet the communicative demands of globalized workplaces. Employees, on the other hand, observe a persistent gap in graduates' readiness, noting that companies rarely provide systematic English training due to cost and efficiency concerns. This reinforces the idea that higher education institutions bear a central responsibility to integrate more context-specific and industry-relevant English instruction into engineering programs. In line with earlier studies, the results underline that linguistic competence cannot be treated merely as a supportive skill but must be viewed as an integral part of professional engineering competence. Therefore, preparing future engineers requires a balanced approach strengthening both technical expertise and English communication skills to ensure graduates are competitive in the international labor market. Bridging this gap will demand collaborative efforts between universities, employers, and policymakers to design curricula and workplace practices that respond more effectively to the realities of globalization and industry needs.

Reference

Abdulrahman, N. C., & Ayyash, E. A. S. A.-. (2019). Linguistic competence, Communicative Competence and Interactional Competence. *JOURNAL OF ADVANCES IN LINGUISTICS*, *10*. https://doi.org/10.24297/jal.v10i0.8530

Alhamami, M. (2014). Implementing ESP Lessons for Engineers: Research and Practices. *English for Specific Purposes World*, *15*(43).

Alqahtani, A. Y. (2021). Employment Expectations of New Engineering Graduates and the Demands of Labor Market: A Case Study. *International Journal of Engineering Education*, *37*(2).

Bahasa, P. (2008). *Buku Praktis Bahasa Indonesia*.

Baker, D. B. (2009). Choosing a vocation at 100: Time, change, and context. *Career Development Quarterly*, *57*(3). https://doi.org/10.1002/j.2161-0045.2009.tb00105.x

Çal, A., Admiraal, W., & Mearns, T. (2022). The what–how–why of English in the workplace: perspectives from Turkish engineers. *European Journal of Engineering Education*, *47*(2). https://doi.org/10.1080/03043797.2021.1946014

Chafi, M. B., Hultberg, A., & Yams, N. B. (2022). Post-pandemic office work: Perceived challenges and opportunities for a sustainable work environment. *Sustainability (Switzerland)*, *14*(1). https://doi.org/10.3390/su14010294

Clement, A., & Murugavel, T. (2018). English for the workplace: The importance of English language skills for effective performance. *The English Classroom*, *20*(1).

Coffelt, T. A., Grauman, D., & Smith, F. L. M. (2019). Employers' Perspectives on

Workplace Communication Skills: The Meaning of Communication Skills. *Business and Professional Communication Quarterly*, *82*(4). https://doi.org/10.1177/2329490619851119

Dahbi, M. (2017). Towards an ESP Course for Engineering Students in Vocational Schools in Morocco: The Case of the National School of Applied Sciences. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2895541

Greculescu, A., Todorescu, L.-L., & Popescu-Mitroi, M.-M. (2014). The Career Choice and the Study of English in Higher Technical Education. *Procedia - Social and Behavioral Sciences*, *128*. https://doi.org/10.1016/j.sbspro.2014.03.133

Järvenpää, A. T., Pavlik, A., & Karrbom Gustavsson, T. (2021). Contextual communicative competence in multinational infrastructure projects. *Buildings*, *11*(9). https://doi.org/10.3390/buildings11090403

Júnior, N. E. S., & Borges, L. F. F. (2021). Curriculum policies for vocational education and teaching work*. *Educacao e Pesquisa*, *47*. https://doi.org/10.1590/S1678-4634202147222664

Khamis, N., & Ho-Abdullah, I. (2015). Exploring word associations in academic engineering texts. *3L: Language, Linguistics, Literature*, *21*(1). https://doi.org/10.17576/3L-2015-2101-11

Kim, S.-H. (2020). Analyzing Workplace English Communication Use and Needs: Insights from Korean Corporate Employees. *Journal of Pan-Pacific Association of Applied Linguistics*, *25*(1). https://doi.org/10.25256/paal.25.1.1

Najwa Azmi, A., Kamin, Y., & Khair Noordin, M. (2018). Competencies of Engineering Graduates: What are the Employer's Expectations? *International Journal of Engineering & Technology*, *7*(2.29). https://doi.org/10.14419/ijet.v7i2.29.13811

Nguyen Ngoc, T., Viet Dung, M., Rowley, C., & Pejić Bach, M. (2022). Generation Z job seekers' expectations and their job pursuit intention: Evidence from transition and emerging economy. *International Journal of Engineering Business Management*, *14*. https://doi.org/10.1177/18479790221112548

OECD. (2017). Getting Skills Right: Skills for Jobs Indicators. In *Oecd* (Issue June).

Poedjiastutie, D., Akhyar, F., Hidayati, D., & Nurul Gasmi, F. (2018). Does Curriculum Help Students to Develop Their English Competence? A Case in Indonesia. *Arab World English Journal*, *9*(2). https://doi.org/10.24093/awej/vol9no2.12

Rajprasit, K., Pratoomrat, P., & Wang, T. (2015). Perceptions and problems of english language and communication abilities: A final check on Thai engineering undergraduates. *English Language Teaching*, *8*(3). https://doi.org/10.5539/elt.v8n3p111

Setiawan, D. (2022). Survey for workplace English in Indonesia. *European Journal of English Language and Literature Studies*, *10*(5). https://doi.org/10.37745/ejells.2013/vo10.n5pp3649

Siddiky, M. R., & Akter, S. (2021). The students' career choice and job preparedness strategies: A social environmental perspective. *International Journal of Evaluation and Research in Education*, *10*(2). https://doi.org/10.11591/ijere.v10i2.21086

Susanto, A., & Et, A. (2024). *Boosting Students ' Self-development though Learning Community Tubagus ABSTRAK Learning is a social process that thrives in collaborative , inclusive , and supportive*. *1*(1), 279–288.

Susanto, A., Nuwrun, S., Tegor, Azhari, W., Megah, & Yuliani, S. (2022). Busuu as Online Learning Platform on Vocabulary Learning Motivation and Vocabulary Achievement among Students. *AL-ISHLAH: Jurnal Pendidikan*, *14*(1), 249–260. https://doi.org/10.35445/alishlah.v14i1.1295

Susanto, A. et. al. (2024). *English Language Learning among Indonesian Engineers : a*

Bourdieu's theory Analysis. 638–648.

Tamilarasan, P., Anitha, D., & Karthik, S. (2019). Significance of communication for engineering students from rural areas and its remedies. *Journal of Advanced Research in Dynamical and Control Systems*, *11*(6 Special Issue).

Ting, S. H., Marzuki, E., Chuah, K. M., Misieng, J., & Jerome, C. (2017). Employers' views on the importance of english proficiency and communication skill for employability in Malaysia. *Indonesian Journal of Applied Linguistics*, *7*(2). https://doi.org/10.17509/ijal.v7i2.8132