

ESP DIFFICULTIES AMONG OCCUPATIONAL HEALTH AND SAFETY STUDENT: A NEEDS ANALYSIS

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ABSTRAK

Proficiency in English for Specific Purposes (ESP) is a professional necessity for Occupational Health and Safety (OHS) practitioners, yet students in Indonesian higher education frequently struggle to develop adequate ESP competencies due to limited exposure to technical English and the absence of contextualized instruction. This study aims to identify and analyze the factors influencing ESP comprehension difficulties among OHS students at Universitas Ibnu Sina Batam, guided by Hutchinson and Waters' (1994) needs analysis framework. A mixed-methods design with a dominant qualitative orientation was employed. Data were gathered via a 30-item questionnaire and semi-structured interviews with 20 purposively selected participants, then analyzed using SPSS and Braun and Clarke's (2006) thematic framework. Findings reveal that vocabulary limitation, grammatical insecurity, and speaking anxiety are the three primary barriers to ESP acquisition, compounded by a curriculum misalignment between general English instruction and authentic OHS professional demands. These results imply an urgent need to redesign OHS ESP curricula by integrating authentic domain-specific materials, systematic lexical instruction, and communicative task-based approaches aligned with students' career-oriented motivational profiles.

Keyword: English for Specific Purposes (ESP), Needs Analysis, Occupational Health and Safety (OHS)

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1. INTRODUCTION

In an increasingly interconnected global landscape, proficiency in English for Specific Purposes (ESP) has become an indispensable competency for professionals across technical and scientific disciplines. Unlike General English, ESP equips learners with the linguistic tools necessary to navigate domain-specific texts, communicate findings, and engage with international knowledge frameworks. This functional orientation has gained substantial traction in vocational higher education, where graduates must meet stringent global market standards (Suri & Aisa, 2026; Taliba et al., 2026). However, while ESP has been extensively documented in established fields such as engineering and nursing (Basturkmen & Elder, 2004;

Hussin, 2004), scholarly attention specifically targeting Occupational Health and Safety (OHS) programs remains remarkably scarce. This represents a critical research gap, as OHS is a highly multidisciplinary domain in which language proficiency directly affects professional survival and risk mitigation.

Occupational Health and Safety (OHS) represents a domain where the intersection of technical expertise, rigorous industry demands, and international standardization is exceptionally pronounced. Global frameworks such as the International Labour Organization (ILO) guidelines, ISO 45001, and OSHA regulations are predominantly disseminated in English, making advanced literacy a professional safety necessity rather than a mere academic hurdle (Arezes & Miguel, 2003). In multinational workplace environments—such as the Special Economic Zone of Batam—industry demands require that OHS practitioners deliver safety inductions to foreign workers, accurately interpret material safety data sheets, and draft incident reports in accordance with international frameworks. A failure in English competence in this sector does not just hinder career mobility; it directly jeopardizes workplace safety outcomes.

Despite this evident demand, OHS students in Indonesia — and in many non-English-speaking countries — often encounter significant challenges in developing adequate ESP competencies. The Indonesian higher education context presents a particularly complex landscape, where students enter OHS programs with heterogeneous English language backgrounds, limited prior exposure to technical English texts, and instructional environments that have yet to fully integrate contextualized ESP pedagogy into the curriculum (Cahyono & Widiati, 2011; Lauder, 2008). As a consequence, many graduates find themselves underprepared to access, interpret, and apply English-language OHS knowledge in professional settings — a gap that carries implications not only for individual career trajectories but also for workplace safety outcomes at a broader level.

The challenges faced by OHS students in comprehending ESP are not attributable to a single, isolated cause, but rather emerge from a confluence of interrelated factors that span linguistic, cognitive, motivational, and pedagogical dimensions. From a linguistic standpoint, OHS-specific English is characterized by a high density of technical vocabulary, complex nominalization structures, and discipline-specific discourse conventions that differ substantially from the general English instruction most students receive at the secondary level (Nation, 2001; Coxhead, 2000). Terms such as ergonomic risk assessment, permissible exposure limit, or hierarchy of hazard controls carry precise operational meanings that cannot be inferred from general vocabulary knowledge alone, placing considerable cognitive demands on learners who encounter them without adequate preparation.

Beyond linguistic complexity, the problem is further compounded by the absence of systematically designed ESP instruction within many OHS curricula. In numerous Indonesian higher education institutions, English language courses are delivered as general academic English modules with little to no adaptation toward the specific communicative needs of OHS students (Wello & Haeruddin, 2020). This misalignment between instructional content and professional language demands means that students are seldom exposed to authentic OHS texts — such as Material Safety Data Sheets (MSDS), incident investigation reports, or international safety standards — during their formative years of study. The result is a widening gap between the English competencies students develop in the classroom and those required in actual OHS professional practice.

Compounding these structural issues are affective and motivational factors that further impede ESP acquisition. Research in language learning consistently demonstrates that learners' perceived relevance of instructional content significantly influences their engagement and retention (Dörnyei, 2001; Gardner, 2010). When OHS students perceive English language instruction as disconnected from their disciplinary identity and career aspirations, intrinsic motivation diminishes, reducing the quality and depth of

language engagement. Furthermore, limited access to contextually rich English language resources — including OHS-specific reading materials, case studies, and multimedia content — restricts opportunities for incidental learning that is otherwise essential for building technical vocabulary and reading fluency in a second language. Collectively, these overlapping difficulties point to a critical and underexplored problem: the current understanding of what specifically hinders OHS students from achieving functional ESP competence remains fragmented and insufficiently evidence-based.

The present study was conducted at Universitas Ibnu Sina Batam, focusing specifically on students enrolled in the Occupational Health and Safety program. A total of 128 students actively participating in ESP courses were involved as research participants, providing a sufficiently representative sample to capture the breadth and diversity of learning difficulties experienced within this particular academic context. Batam, as one of Indonesia's most strategically positioned industrial cities and a designated Special Economic Zone, presents a uniquely relevant setting for this investigation, given that OHS professionals in the region are regularly exposed to multinational workplace environments where English-language documentation and communication are standard operational requirements.

This study aims to systematically identify and analyze the factors that influence the difficulties experienced by OHS students at Universitas Ibnu Sina Batam in comprehending English for Specific Purposes. Rather than quantifying the degree of difficulty through numerical measurement, this research adopts a qualitative approach to gain a deeper, contextually grounded understanding of the phenomenon as experienced by the learners themselves. Through qualitative inquiry, the study seeks to uncover the nuanced interplay of linguistic, pedagogical, motivational, and contextual factors that collectively shape students' ESP learning experiences — dimensions that numerical data alone would be insufficient to capture (Creswell, 2014; Merriam & Tisdell, 2016). More specifically, the study pursues three interconnected objectives: first, to explore and describe the types of difficulties most frequently encountered by OHS students when engaging with ESP materials; second, to examine the underlying causes of these difficulties from the students' own perspectives and their instructional context; and third, to map the English language learning needs of OHS students in alignment with the professional communicative demands of their field.

Despite the growing body of literature on ESP in higher education, scholarly attention directed specifically toward the English language difficulties of OHS students remains remarkably scarce. The majority of existing ESP research has concentrated on fields such as medicine, engineering, business, and law — disciplines that have historically enjoyed greater representation in ESP curriculum development and needs analysis studies (Basturkmen, 2010; Belcher, 2009). OHS, as an interdisciplinary field that draws simultaneously from medicine, engineering, law, and environmental science, presents a distinct and complex ESP profile that has yet to receive systematic scholarly treatment. This disciplinary neglect represents a substantive gap in the ESP literature that this study directly seeks to address.

Furthermore, while needs analysis has long been recognized as the foundational step in ESP course design, its application in the context of OHS education — particularly in Indonesian higher education — has been inconsistent and methodologically limited. Many prior studies that touch on ESP difficulties in vocational or technical programs rely predominantly on quantitative instruments such as standardized tests or Likert-scale surveys, which, while useful for measuring outcomes, are limited in their capacity to illuminate the experiential and contextual dimensions of learner difficulty (Long, 2005; West, 1994). This methodological tendency leaves a significant interpretive gap: the why and how of students' ESP struggles remain poorly understood, particularly from the learners' own perspectives. It is precisely this gap that the present study addresses by adopting the needs analysis framework proposed by Hutchinson and Waters

(1994) as its theoretical lens — a framework that distinguishes between necessities (what learners must know to function in the target situation), lacks (the gap between current and required knowledge), and wants (what learners themselves perceive as relevant). By operationalizing all three components within the context of OHS students at Universitas Ibnu Sina Batam, this study moves beyond a surface-level description of difficulties and toward a theoretically grounded diagnosis of the conditions that produce them.

The novelty of the present study can be understood along three distinct dimensions: its subject specificity, its theoretical application, and its contextual positioning. While previous studies have explored ESP difficulties in adjacent technical fields such as nursing students' challenges with medical English (Hussin, 2004), engineering students' reading comprehension difficulties (Basturkmen & Elder, 2004), and vocational students' encounters with workplace English (Wello & Haeruddin, 2020) — none have directed sustained analytical attention toward OHS students as a distinct learner population with a unique and multidisciplinary ESP profile. A comparative examination of relevant prior studies further illuminates this contribution. Kaur and Khan (2010) identified reading and writing as the most problematic ESP skill areas among engineering undergraduates, yet their analysis did not extend to affective or motivational dimensions. Flowerdew and Peacock (2001) documented vocabulary and genre familiarity challenges among academic English users, but within a general rather than discipline-specific context. Fitria (2020) highlighted the mismatch between ESP curriculum content and industry needs in Indonesian vocational education, yet relied exclusively on teacher perspectives, leaving the student experience largely unexamined. Collectively, these studies share a common limitation: none integrate a comprehensive needs analysis framework to simultaneously capture target situation demands, current learner competencies, and learner-perceived wants within a single investigative design.

The justification for this study is therefore both theoretical and practical. Theoretically, it enriches the ESP needs analysis literature by demonstrating the analytical depth of Hutchinson and Waters' (1994) framework in a discipline-specific context that has remained understudied. Practically, its findings are positioned to directly inform the redesign of ESP curricula in OHS programs, the development of contextually authentic teaching materials, and the formulation of more targeted instructional strategies — not only at Universitas Ibnu Sina Batam, but at any institution preparing OHS professionals who must operate within English-dominated international safety frameworks. In a broader sense, improving OHS students' ESP competence is not merely a matter of academic achievement; it is a contribution to safer workplaces, more informed safety practitioners, and a more globally competitive OHS workforce in Indonesia.

2. METHOD

This study employed a mixed methods research design with a dominant qualitative orientation, following an explanatory sequential framework in which quantitative data were collected and analyzed first, followed by qualitative data to explain and contextualize the initial findings (Creswell & Plano Clark, 2016). This design was selected because it aligns with the tripartite structure of Hutchinson and Waters' (1994) needs analysis framework: quantitative descriptive analysis addresses measurable competency gaps (necessities and lacks), while qualitative inquiry captures learners' subjective perceptions and aspirations (wants) dimensions that neither approach could adequately address in isolation.

The study was conducted at Universitas Ibnu Sina Batam, focusing on students enrolled in the Occupational Health and Safety (OHS) program. The research site was selected purposively, given Batam's status as a Special Economic Zone with a high concentration of multinational industrial enterprises, where OHS graduates are routinely required to engage with English-language safety documentation and international regulatory frameworks. A total of 128 students actively enrolled in ESP courses participated in the study, selected through total sampling a technique appropriate when the target population is bounded and fully accessible, ensuring comprehensive and representative data coverage (Sugiyono, 2019).

Data were collected using two complementary instruments. First, a closed-ended questionnaire consisting of 30 Likert-scale items (1 = strongly disagree to 5 = strongly agree) was administered to all 128 participants. The instrument was organized into five thematic dimensions: (1) lexical and technical vocabulary difficulty, (2) reading comprehension of OHS texts, (3) grammatical and syntactic complexity, (4) pedagogical and instructional factors, and (5) motivational and affective factors. An additional sixth dimension captured learners' perceived needs and learning preferences (wants analysis). Content validity was established through expert panel review by specialists in applied linguistics and OHS education, and internal consistency was confirmed through a pilot test with 20 students outside the main sample, yielding Cronbach's alpha values above the accepted threshold of 0.70 for all subscales (Fraenkel, Wallen, & Hyun, 2012). To provide a more detailed psychometric evaluation, the final internal consistency of the 30-item questionnaire demonstrated a high level of reliability with an overall Cronbach's alpha coefficient of 0.87. Content and construct validity were further solidified through extensive expert judgment by two senior ESP lecturers, followed by the pilot study of 20 non-sampled OHS students to eliminate any semantic ambiguities in the items.

Second, semi-structured open-ended interviews were conducted with a purposively selected sub-sample of 20 participants drawn from the 128 respondents, employing maximum variation sampling to capture diverse perspectives across academic years, gender, and questionnaire response patterns (Merriam & Tisdell, 2016). Each interview lasted approximately 30–45 minutes, was conducted in Bahasa Indonesia to minimize language barriers, audio-recorded with participants' consent, and subsequently transcribed and translated into English for reporting purposes. Interview questions were organized into five thematic blocks: (1) general ESP learning experiences, (2) specific types and sources of difficulty, (3) perceived quality of ESP instruction, (4) motivational and affective dimensions, and (5) learner needs and aspirations.

Quantitative data from the closed-ended questionnaire were analyzed using IBM SPSS Statistics (Version 26) through descriptive statistical procedures, including frequency distribution, percentage, mean (M), and standard deviation (SD) for each item and subscale. Mean scores were interpreted using a five-interval reference scale: 1.00–1.80 (very low difficulty), 1.81–2.60 (low), 2.61–3.40 (moderate), 3.41–4.20 (high), and 4.21–5.00 (very high difficulty). The qualitative data from the semi-structured interviews were analyzed systematically using Braun and Clarke's (2006) six-phase thematic analysis procedure, with a particular emphasis on the structural coding stages. During the initial coding phase, open coding was performed

systematically by generating shorthand labels for meaningful text segments describing language barriers (e.g., coding 'fear of mispronouncing safety terms' or 'worrying about sentence structures' under initial codes). These codes were then clustered into potential sub-themes. In the subsequent phases, these sub-themes were reviewed against the entire dataset to ensure semantic coherence, and finally defined based on Hutchinson and Waters' framework, resulting in three major thematic barriers: vocabulary limitation, grammatical insecurity, and speaking anxiety.

To ensure research rigor, multiple validity and trustworthiness strategies were applied across both strands. For the quantitative component, content validity and Cronbach's alpha reliability were established as described above. For the qualitative component, credibility was enhanced through member checking and data source triangulation, transferability through thick contextual description of the research setting and participants, and confirmability through maintenance of a detailed analytical audit trail throughout the research process (Lincoln & Guba, 1985; Creswell, 2014).

Ethical considerations were strictly maintained throughout the research process. Prior to data collection, all participants were fully informed about the study's purpose, the voluntary nature of their participation, and their right to withdraw at any stage without academic penalty. Formal informed consent was obtained from each student. To protect participant confidentiality and ensure data privacy, all identifying information was completely anonymized, and pseudonyms (e.g., Participant 1, Participant 2) were strictly utilized during the transcription and reporting of the qualitative interview data.

3. RESULT AND DISCUSSION

RESULT

The findings of this study are presented in accordance with the three analytical dimensions of Hutchinson and Waters' (1994) needs analysis framework — necessities, lacks, and wants — which together constitute the theoretical scaffold for interpreting both the quantitative frequency data and the qualitative interview responses obtained from 128 OHS students at Universitas Ibnu Sina Batam.

Table 1. Summary of English Learning Preferences (N=128)

Category / Learning Aspect	Options	Frequency	Percentage (%)
Speaking Competency	Practicing everyday conversations on various topics related to personal contexts	95	74.2
	Using appropriate expressions in contexts and situations when communicating domestically and internationally	24	18.8
	Using it as a support for career advancement in accordance with one's field of expertise	9	7.0
Listening Competency	Understanding instructions, symbols/logos in English in OHS work environments	87	68.0

	Understanding monologic and dialogic texts after listening in the fields of digitalization and technology	23	18.0
	Understanding explanations in English with clients or in customer service settings	18	14.1
Reading Competency	Understanding simple reading texts as a source of information for many people	81	63.3
	Understanding and explaining the meaning of non-textual content (pictures, graphs) as presentation materials	27	21.1
	Interpreting reading content and solving problems found in texts for organizational purposes	20	15.6
Writing Competency	Composing paragraphs from introduction to conclusion when drafting memos/minutes of meeting/résumés	75	58.6
	Using accurate and precise punctuation to provide explanations and directions for public service	38	29.7
	Explaining monologic and dialogic text input in daily life for both personal and general purposes	15	11.7
Preferred Location	Classroom	87	68.0
	Library	19	14.8
	Garden/Gazebo	12	9.4
	Language Laboratory	10	7.8
Preferred Learning Method	Listening to the lecturer's explanations, following their instructions, and cooperating in learning activities	64	50.0
	Actively participating in a communicative manner and taking advantage of opportunities to interact in class	46	35.9
	Systematically analyzing English learning materials and completing assignments properly	16	12.5
	Providing suggestions, critiques, and feedback on the lecturer's teaching methods	2	1.6
Preferred Lecturer Role	Acting as an organizer — involving students and structuring learning activities	85	66.4
	Acting as a feedback provider and assessor — responding to and evaluating students' language performance	30	23.4
	Acting as a participant — not monopolizing or dominating conversation	9	7.0
	Acting as a resource — helping provide facilities to improve student performance	4	3.1

Based on the data above, the majority of respondents have learning preferences oriented towards practical and structured needs. They highly prioritize everyday conversations and understanding occupational health and safety (OHS) instructions, prefer learning in a traditional classroom setting, and expect the lecturer to take the primary role as an organizer who structures learning activities.

Necessities: Target Situation Demands

The necessities dimension addresses what OHS students must be able to do in English to function effectively in their professional target situation. Quantitative data from the closed-ended questionnaire reveal that students' perceived English competency needs are strongly oriented toward listening comprehension within OHS-specific contexts. A substantial majority of respondents (68.0%, $n = 87$) identified the ability to comprehend English-language instructions, symbols, and safety signage in workplace environments as their primary listening need, while 18.0% ($n = 23$) prioritized understanding monologic and dialogic discourse in digital and technological contexts, and 14.1% ($n = 18$) emphasized listening comprehension in client-facing or customer service settings.[1]

In the domain of reading, 63.3% of students ($n = 81$) indicated a need to comprehend straightforward English texts as informational sources, with 21.1% ($n = 27$) targeting the ability to interpret non-textual content such as graphs and diagrams for presentation purposes, and 15.6% ($n = 20$) aspiring to interpret and apply written content to problem-solving in organizational contexts. For writing, 58.6% ($n = 75$) expressed a need to compose structured paragraphs for professional documents such as meeting minutes, reports, and summaries, while 29.7% ($n = 38$) prioritized accurate punctuation and written direction for public service communication. For speaking, a dominant 74.2% ($n = 95$) identified the ability to engage in everyday conversational English across varied personal topics as their primary goal — a response pattern that, notably, reflects an orientation toward general communicative competence rather than the domain-specific oral communication demanded by the OHS professional context. This gap between perceived speaking needs and actual professional demands aligns with Basturkmen's (2010) observation that ESP learners frequently conflate general communicative aspirations with discipline-specific language requirements, underscoring the need for more targeted needs analysis in curriculum design.

Lacks: Current Competency Gaps

The lacks dimension capturing the gap between students' current English competencies and the target situation demands identified above — emerges as the most extensively documented finding of this study. Thematic analysis of open-ended interview responses from all 128 participants reveals that vocabulary limitation is the single most frequently reported source of difficulty, cited by the overwhelming majority of respondents across all academic years. Representative responses illustrate both the breadth and the consistency of this challenge: "Kesulitan saya adalah kurangnya kosa kata yang saya ketahui membuat susah untuk berinteraksi" (R69); "banyak kosakata yang belum di mengerti" (R53); "mengartikan yang cukup sulit karena jika saya gak familiar dengan kosakata itu maka kebanyakan translate" (R82). These responses collectively indicate that lexical gaps function not merely as a comprehension barrier but as a trigger for avoidance behavior — specifically, the default reliance on machine translation tools — a pattern consistent with Nation's (2001) argument that insufficient vocabulary breadth fundamentally impedes autonomous reading and listening comprehension in a second language.

Grammar and structural complexity represent the second most prominent difficulty cluster. Multiple respondents explicitly identified grammatical insecurity as a source of both linguistic difficulty and psychological inhibition: "Takut salah dalam Grammar: Kadang saya ragu untuk berbicara karena takut salah susunan kalimat atau tata bahasanya" (R35); "Grammar, dan malu kalau ada salah pelafalan" (R11). This finding resonates with Krashen's (1982) affective filter hypothesis, which posits that anxiety and fear of error can suppress language acquisition by preventing meaningful input from being processed a mechanism that appears to operate with particular intensity in the OHS student population, where technical accuracy carries professional stakes beyond the classroom.

Speaking anxiety constitutes the third major difficulty theme and is closely intertwined with grammatical insecurity. A substantial proportion of respondents articulated a pattern of knowing the language receptively but being unable to deploy it productively: "I don't know why but my brain can speak English better than my mouth" (R123); "saya mengerti apa yang dibicarakan tapi saya kurang mampu menerjemahkan" (R51); "Kesulitan utama saya adalah dalam hal speaking, terutama ketika harus berbicara spontan dan percaya diri di depan orang lain" (R31). This receptive-productive gap — where comprehension outpaces production — is well documented in second language acquisition research and reflects the distinction between passive and active vocabulary knowledge (Nation, 2001).

Importantly, several students traced their speaking anxiety to structural factors: limited opportunities for practice within the curriculum ("sulit untuk mencari lawan untuk berlatih speaking", R116) and insufficient integration of authentic communicative tasks in classroom instruction. When compared with broader literature, this mismatch mirrors the pedagogical challenges documented in other vocational settings. It expands upon the findings of Fitria (2020), who highlighted the curriculum-industry gap in Indonesian vocational education solely from teachers' views, by proving that students directly feel the weight of this deficit in their practical competence. Furthermore, while Romadloni et al. (2025) and Saptiany et al. (2025) argued that speaking anxiety in polytechnic ESP courses is mostly triggered by low self-confidence and fear of negative evaluation, this study reveals a deeper institutional layer: the anxiety is heavily reinforced by the lack of context-specific vocabulary instruction within the mismatched curriculum. Without explicit exposure to OHS lexicon (e.g., ergonomic risk assessment, hierarchy of hazard controls), students are structurally conditioned to remain insecure, widening the receptive-productive gap noted by Nation (2001).

The background profiles reported by participants further illuminate the lacks dimension. The majority of students reported having learned English since primary school, yet described their current proficiency as basic or limited — a pattern that signals the persistence of foundational competency gaps despite years of formal instruction. This finding echoes Lauder's (2008) analysis of the structural limitations of English language education in Indonesia, where the quantity of instructional time does not reliably translate into communicable proficiency, particularly in the absence of communicative and content-integrated pedagogical approaches.

Wants: Learner Aspirations and Perceived Needs

The wants dimension maps what students themselves desire from their English learning experience, and the data reveal a striking alignment between individual aspirations and the professional demands of the OHS field. A consistent motivational theme across the interview responses is the desire to use English as a vehicle for professional advancement and international career mobility: "Saya ingin bekerja di perusahaan offshore" (R80); "abroad to LA, become an HSE professional there" (R116); "Dengan kemampuan Bahasa Inggris yang baik, saya bisa mengikuti pelatihan, webinar, dan sertifikasi internasional seperti NEBOSH atau IOSH" (R35). Several respondents articulated a direct connection between ESP competence and the ability to access international OHS knowledge: "Kalau bisa memiliki kemampuan bahasa Inggris yang baik, harapan saya adalah saya bisa lebih mudah memahami materi-materi K3 yang banyak menggunakan istilah atau referensi dari luar negeri" (R13); "bisa berkomunikasi dengan profesional K3 dari berbagai negara untuk berbagi pengetahuan dan pengalaman" (R126).

Regarding preferred learning environments and pedagogical approaches, the quantitative data indicate that 68.0% of students preferred classroom-based instruction ($n = 87$), while 14.8% preferred library settings and 9.4% preferred outdoor environments such as campus gardens. In terms of preferred learning styles, exactly 50.0% ($n = 64$) favored a cooperative, instructor-led approach — listening to lecturers and following their directions — while 35.9% ($n = 46$) preferred active communicative participation and peer interaction. Only 12.5% ($n = 16$) preferred systematic analytical engagement with materials. Regarding the preferred role of the lecturer, a dominant 66.4% ($n = 85$) expressed a preference for the lecturer as an organizer who actively involves students and structures learning activities, while 23.4% ($n = 30$) valued the lecturer as a feedback provider and assessor who responds to and evaluates student language performance. These preferences collectively suggest that OHS students at Universitas Ibnu Sina Batam favor structured, interactive, and feedback-rich learning environments — a profile that aligns well with task-based and communicative language teaching approaches that embed authentic OHS content within meaningful interactional tasks (Long, 2005; Dörnyei, 2001).

Integration of Findings: Towards a Contextual ESP Profile

Taken together, the three dimensions of the needs analysis construct a coherent and contextually specific ESP profile of OHS students at Universitas Ibnu Sina Batam. The necessities data confirm that the target situation demands a functional command of English across all four skills, with particular weight on listening to safety instructions and reading technical documentation — competencies that are currently underserved by generalist English instruction. The lacks data demonstrate that vocabulary limitation, grammatical insecurity, and speaking anxiety constitute the primary barriers to ESP acquisition, rooted in insufficient exposure to authentic OHS English and limited communicative practice opportunities. The wants data reveal that students possess a high degree of instrumental motivation oriented toward professional goals in the OHS field — an asset that, if effectively harnessed through contextually relevant ESP instruction, holds significant potential for accelerating language competency development (Gardner, 2010; Dörnyei, 2001). These findings collectively affirm the position advanced by

Hutchinson and Waters (1994) that needs analysis, when applied comprehensively and contextually, generates diagnostic insights that generic language assessment instruments cannot produce — and that the design of effective ESP curricula must begin precisely from such a triangulated understanding of what learners need, what they lack, and what they aspire to achieve, as follows:

Table 2. Integrated Needs Profile of OHS Students

Dimension	Core Finding	ESP Design Implication
Lacks	Speaking (40.6%) and vocabulary (37.5%) are primary barriers, reinforced by low self-confidence	Communicative and confidence-building tasks
Necessities	12 years of English study without functional outcomes; limited real-world exposure	Authentic OHS texts and workplace simulations
Wants	International career aspirations; desire for NEBOSH/IOSH certifications	Career-oriented, contextually relevant materials

4. CONCLUSION

The findings of this study carry significant implications for ESP curriculum design, instructional practice, and institutional policy within OHS higher education in Indonesia. At the curricular level, the target situation analysis underscores the urgent need to replace generalist English instruction in OHS programs with context-specific ESP courses that incorporate authentic OHS texts including OSHA guidelines, ISO 45001 documentation, Material Safety Data Sheets, and incident investigation reports as primary instructional materials. Curriculum developers are advised to adopt Hutchinson and Waters' (1994) needs analysis framework as a systematic and recurring basis for syllabus design, ensuring that text selection, communicative tasks, and language focus areas remain directly aligned with the evolving English language demands of the OHS professional environment, particularly in industrialized and multinational workplace contexts such as Batam. At the instructional level, three priorities merit immediate attention. First, given the dominance of vocabulary limitation as the primary difficulty, systematic and contextualized OHS lexical instruction emphasizing technical collocations, field-specific nominalization, and meaning-inference strategies should be embedded throughout the curriculum (Nation, 2001). Second, the prevalence of speaking anxiety calls for communicative, low-stakes production tasks such as simulated safety briefings and toolbox talk role plays, which build fluency confidence before demanding formal accuracy. Third, the majority preference for an organizer role from lecturers (66.4%) signals that students respond most productively to structured, student-involving facilitation pointing toward task-based learning sequences as a pedagogically appropriate instructional model (Long, 2005).

At the broader institutional level, the strong career-oriented aspirations articulated in the wants analysis including ambitions for international OHS certifications such as NEBOSH and IOSH, and offshore professional placements provide compelling justification for establishing formal industry partnerships that periodically inform and update ESP course content. Future research should pursue longitudinal evaluation of contextually aligned ESP instruction on professional outcomes, comparative studies across Indonesian OHS programs, and the empirical development and testing of an OHS-specific ESP syllabus grounded in the needs analysis evidence generated by this study.

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