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Differentiated Learning in English for Specific Purposes (ESP) Class: A Students' Perception Study

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ABSTRACT

The increasing adoption of the Merdeka Curriculum in Indonesian higher education shows the importance of implementing differentiated learning to meet the different needs of students in English for Specific Purposes (ESP) classrooms. This study aimed to examine Mechanical Engineering students' perceptions of differentiated learning as an instructional approach in an ESP context. The research involved 68 first-year students who had completed one semester of ESP. Data were collected through a researcher-developed a questionnaire with 30 positive statements about themselves on a five-point Likert scale. The analysis revealed that the majority of responses fell in the "Strongly Agree" category with 1,259 answers (61.2%), whereas only 68 responses (3.3%) indicated "Strongly Disagree." These findings demonstrate that students perceive differentiated learning very positively, showing that it can help students with different learning styles and improve language learning. The novelty of this study lies in integrating differentiated learning within tertiary-level ESP instruction, an area with limited empirical evidence. Practically, the results provide insights for ESP lecturers and curriculum developers to incorporate differentiated strategies in higher education, helping students be stronger engagement, improved outcomes, and better professional readiness.

Keywords: Differentiated instruction, English for Specific Purposes (ESP), Students' perceptions, Engineering students.

ABSTRAK

Implementasi Kurikulum Merdeka di perguruan tinggi Indonesia menekankan pentingnya pembelajaran berdiferensiasi untuk mengakomodasi keragaman kebutuhan belajar mahasiswa, terutama dalam kelas *English for Specific Purposes* (ESP). Penelitian ini bertujuan menganalisis persepsi mahasiswa Teknik Mesin terhadap penerapan pembelajaran berdiferensiasi sebagai pendekatan instruksional dalam konteks ESP. Sebanyak 68 mahasiswa tahun pertama yang telah menempuh satu semester mata kuliah ESP berpartisipasi dalam penelitian ini. Data dikumpulkan melalui kuesioner persepsi diri yang dikembangkan peneliti, terdiri atas 30 pernyataan positif menggunakan skala Likert lima poin. Hasil analisis menunjukkan bahwa mayoritas respons berada pada kategori "Sangat Setuju" (1.259 respons atau 61,2%), sementara hanya 68 respons (3,3%) berada pada kategori "Sangat Tidak Setuju." Temuan ini menunjukkan bahwa mahasiswa memberikan persepsi yang sangat positif terhadap pembelajaran berdiferensiasi, khususnya dalam menyesuaikan profil belajar yang beragam dan meningkatkan penguasaan bahasa. Kebaruan penelitian ini

terletak pada integrasi pembelajaran berdiferensiasi dalam pengajaran ESP di tingkat pendidikan tinggi, suatu bidang yang masih minim kajian empiris. Secara praktis, hasil penelitian ini memberikan implikasi bagi dosen ESP dan pengembang kurikulum untuk mengadopsi strategi berdiferensiasi guna memperkuat keterlibatan belajar, meningkatkan capaian akademik, serta mendukung kesiapan profesional mahasiswa.

Kata kunci: Pembelajaran berdiferensiasi, Bahasa Inggris untuk Tujuan Khusus, Persepsi mahasiswa, Mahasiswa teknik

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Copyright Statement

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INTRODUCTION

In Indonesia, the *Merdeka Curriculum* has emphasized the importance of learner-centered approaches, particularly differentiated instruction (DI), to address the increasingly diverse student population in higher education (hidayati & Sujarwati, 2023; Setiawan et al., 2022). Research shows that DI not only promotes inclusivity but also enhances students' motivation and learning achievement in EFL contexts (Mardhatillah & Suharyadi, 2023; Sapan & Mede, 2022).

Conceptually, DI is defined as the systematic adaptation of teaching content, instructional processes, learning products, and classroom environments to accommodate students' readiness, interests, and learning profiles (Gheyssens et al., 2023; Tomlinson, 1999). Its effective implementation depends on careful alignment between curriculum design, instructional goals, and teacher competence (Van Geel et al., 2019). Within *English for Specific Purposes* (ESP), DI is especially relevant, as ESP aims to equip learners not only with linguistic competence but also with professional readiness in their respective fields (Fadlia et al., 2022; Hyland, 2022; Purwanti, 2018).

Despite its potential, ESP in Indonesia faces ongoing challenges. Teachers frequently report limited authentic materials relevant to industry, inadequate preparation for differentiated methods, and significant variations in students' English proficiency (Fitria, 2023; L. Safira & Azzahra, 2022; Supunya, 2023; Yuana & Kurniasih, 2013). Similar concerns are evident in India, including Vellore, where large classes, heterogeneous learning needs, and employability demands create comparable barriers. Addressing these shared challenges calls for innovative and adaptable approaches such as DI within ESP contexts.

Globally, differentiated instruction has gained recognition as a powerful approach in higher education. In Europe, DI has been shown to enhance inclusivity in multilingual classrooms (Gheyssens et al., 2023), while research in the Middle East demonstrated its potential to improve both academic performance and self-efficacy (Saykova, 2025) Studies in China and Central Asia likewise reveal its growing relevance for ESP programs in design, vocational, and engineering contexts (Agzamovna, 2024; Mao & Zhou, 2024). Collectively, these findings illustrate that DI is no longer confined to K–12 education but is increasingly recognized as a global strategy in tertiary education. To better illustrate the state of the art, **Table 1** summary key studies on DI and ESP, outlining their contexts, research focus, findings, and relevance to the present research.

Table 1. Key studies on differentiated instruction (DI) and English for Specific Purposes (ESP)

Author(s) & Year	Context / Method	Research Focus	Key Findings	Relevance to This Study
hidayati & Sujarwati (2023)	Indonesia, classroom-based	DI in Merdeka Curriculum	Improved English outcomes in schools	Demonstrates DI's alignment with national reform
Setiawan et al. (2022)	Indonesia, curriculum dev.	Merdeka Curriculum modules	Supported student-centered learning	Shows DI requires structured materials
Tomlinson (1999)	Theoretical	Foundations of DI	Defines DI as adaptation of content, process, product, environment	Conceptual framework for this study

Author(s) & Year	Context / Method	Research Focus	Key Findings	Relevance to This Study
Gheyssens et al. (2023)	Europe, multilingual HE	DI in inclusive settings	Increased inclusivity and motivation	Provides global empirical support
Van Geel et al. (2019)	Netherlands, effectiveness study	DI & teaching quality	Success depends on curriculum & teacher competence	Highlights structural conditions
Hyland (2022)	Global ESP	ESP and employability	ESP links language with workplace readiness	Core ESP framework reference
Fadlia et al. (2022)	Indonesia, vocational	ESP digital materials	Addressed learners' needs	Evidence for ESP adaptation
Purwanti (2018)	Indonesia, VHS	ESP in vocational HS	Gaps in ESP implementation	Context for Indonesian ESP
Fitria (2023)	Indonesia, qualitative	ESP teaching challenges	Lack of authentic materials & prep	Validates ESP teaching obstacles
L. Safira & Azzahra (2022)	Indonesia, policy	Employability of graduates	English curriculum insufficient	Shows employability gap
Sapan & Mede (2022)	Thailand, review	ESP teachers & DI	Lecturers lack DI training	Explains weak DI practice
Yuana & Kurniasih (2013)	Indonesia, needs analysis	ESP student needs	Wide variation in proficiency	Supports need for DI
Saykova (2025)	Middle East, survey	DI in higher education	Improved outcomes & self-efficacy	Regional support for DI
Mao & Zhou (2024)	China, art & design	ESP needs analysis	Divergent course designs	Expands DI–ESP discussion
Agzamovna (2024)	Central Asia	ESP pedagogy	Bridged language & professional skills	Parallels employability focus
Lindner & Schwab (2020)	Europe, systematic review	DI in general education	Improved inclusivity, little ESP focus	Identifies research gap
Kien et al. (2024)	Vietnam, engineering	Soft skills & English	English builds employability	Reinforces ESP importance
Salainti & Fansury (2024)	Indonesia, survey	Student perceptions	Perceptions shaped engagement	Validates perception as variable
Verma (2022)	India, conceptual	Learning perceptions	Perceptions as indicators of effectiveness	Supports evaluation approach

As the literature mapping indicates, previous studies have made significant contributions to understanding DI and ESP separately, as well as in specific regional contexts. However, limited research has addressed how DI can be meaningfully integrated into ESP classrooms in higher education, particularly in engineering faculties. This gap is especially relevant for Indonesia and India, where graduates face increasing demand to combine technical expertise with communicative English skills for employability (Kien & Nghia, 2024).

Building on this gap, the present study investigates Mechanical Engineering students' perceptions of DI in ESP courses at a private Islamic university in Jakarta. By drawing attention to learners' perceptions, this study aims to bridge DI and ESP pedagogy, providing insights for curriculum developers, instructors, and policymakers to enhance engagement, improve learning outcomes, and strengthen professional readiness in global higher education.

RESEARCH METHODOLOGY

This study employed a quantitative descriptive survey design to examine students' perceptions of differentiated learning in an English for Specific Purposes (ESP) context. The design was selected because it allows systematic description of learners' responses and is widely used in ESP research to represent perceptions across student populations (Basturkmen, 2019; Hyland, 2022). The participants were 68 first-year Mechanical Engineering students from two classes, selected through cluster random sampling to ensure representativeness within the program.

Data were collected using a researcher-developed questionnaire consisting of 30 statements written in a positive way related to differentiated instruction and ESP learning activities. The items were developed based on previous literature in differentiated instruction and ESP pedagogy (Gheyssens et al., 2023; Tomlinson, 1999). Each statement was rated on a five-point Likert scale ranging from strongly agree to strongly disagree. To ensure validity and reliability, the questionnaire was reviewed by two experts in language education and piloted with non-participant students. The pilot test produced a a reliability score higher than 0.70, indicating acceptable internal consistency (Basturkmen, 2019).

The responses were tabulated, summed, and analyzed through descriptive statistics, including frequencies, percentages, and mean scores, to identify patterns in students' perceptions. The findings were presented in both tables and graphical diagrams for clarity and ease of interpretation. While this approach provided valuable insights into general trends, the study relied on self-reported data, was limited to a single institution, and did not employ inferential analysis. These limitations may restrict the ability to apply the results to other cases, but also highlight opportunities for future research to involve larger samples, multiple institutions, and mixed-method designs to deepen the understanding of differentiated learning in ESP contexts.

FINDINGS AND DISCUSSION

In line with the research design, this section presents the results of the students' perception survey on differentiated learning in an ESP classroom. A total of 68 Mechanical Engineering students participated, and their responses were tabulated into frequencies and percentages to represent general trends.

The analysis showed that the Strongly Agree option received 1,259 responses (61.2%), followed by Agree with 326 (16.8%). Neutral responses totaled 219 (10.8%), while Disagree and Strongly Disagree were relatively low at 168 (7.9%) and 68 (3.3%), respectively. The reliability of the 30-item questionnaire (Cronbach's $\alpha \geq 0.70$) supports the consistency of these findings (Basturkmen, 2019).

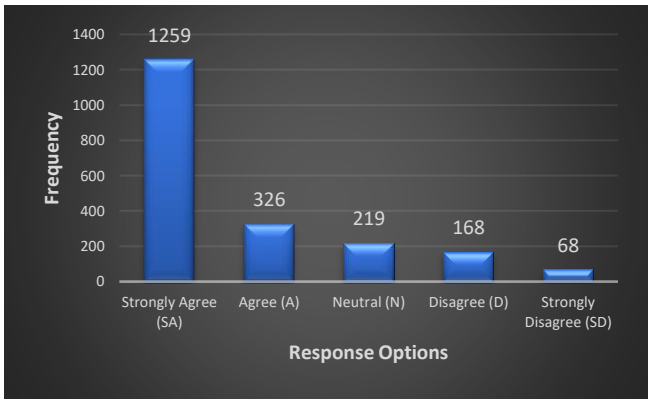

Figure 1. Frequency of Students' Responses

Figure 1 illustrates the frequency distribution of responses across the five Likert-scale options. The majority of students selected Strongly Agree and Agree, confirming that differentiated learning was positively perceived. The relatively small frequencies in the Disagree and Strongly Disagree categories indicate that negative perceptions were minimal among respondents.

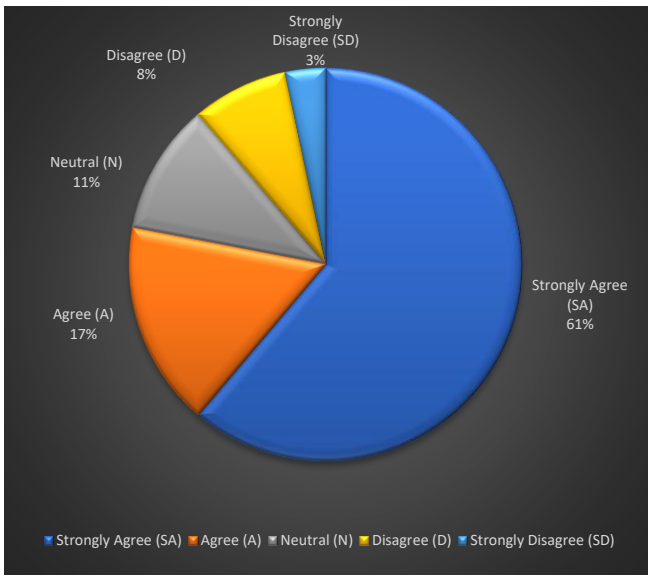

Figure 2. Percentage of Students' Responses

Figure 2 presents the same distribution in percentage terms. It shows that 61.2% of all responses fell into Strongly Agree, and when combined with Agree (16.8%), nearly four out of five students (78%) demonstrated favorable perceptions of differentiated learning. This high proportion underscores the strong acceptance of differentiated instruction as an effective approach in ESP classrooms.

Positive Perceptions and Student Engagement

The predominance of positive responses suggests that students valued the adaptability of differentiated learning to their varied backgrounds and proficiency levels. Many students strongly agreed with the statement that differentiated learning "fits the ESP class since it adjusts to the various backgrounds of the students," emphasizing the inclusivity of this approach. These findings are similar to Xolmaxmatovna (2025) who reported that differentiated instruction in ESP promotes professional relevance through diverse strategies and authentic tasks. Students also expressed appreciation for autonomy, particularly the freedom to apply learning strategies that fit their preferences. This reflects hidayati & Sujarwati's (2023) argument that differentiated learning empowers students to learn in their own styles, resulting in higher engagement and achievement. Similar associations between autonomy, self-regulation, and student motivation were observed in other studies (Gheyssens et al., 2023; Lindner & Schwab, 2020; Sapan & Mede, 2022)

Neutral and Negative Responses: Challenges and Considerations

Although the majority of responses were positive, about 22% of students gave neutral or negative responses. These views reflect continuing challenges in ESP implementation. Previous studies have highlighted obstacles such as limited authentic materials aligned with industry demands (L. Safira & Azzahra, 2022; Yuana & Kurniasih, 2013), wide variations in student proficiency (Fitria, 2023), and inconsistent teaching practices (Nur et al., 2024). Supunya (2023) further noted that many ESP lecturers struggle to implement differentiated instruction effectively due to insufficient pedagogical training. These problems in the learning environment help explain why a small proportion of students did not fully perceive differentiated learning as beneficial, pointing to the need for stronger curriculum support and teacher preparation.

Overall, the findings confirm that differentiated learning is both accepted and considered important by engineering students in ESP courses. The strong dominance of positive perceptions, supported by reliability measures, validates differentiated learning as an inclusive instructional model. At the same time, the presence of neutral and negative perceptions highlights areas that require improvement, particularly in material development and lecturer training. These results contribute to bridging differentiated instruction and ESP pedagogy (Hyland, 2022; Salmani-Nodoushan, 2020), while also offering practical implications for developing discipline-specific ESP materials

(Gabdullina et al., 2024; Mao & Zhou, 2024) and preparing students with linguistic and professional competencies for the ability to work internationally (M. D. Kawsar, 2023; Kien et al., 2024).

CONCLUSION

This study confirmed that differentiated learning was positively perceived by Mechanical Engineering students in an ESP classroom, with the majority expressing strong agreement on its relevance and effectiveness. The findings show the importance of adapting instruction to accommodate students' diverse backgrounds and proficiency levels, showing that differentiated learning can support both inclusivity and meaningful engagement in ESP contexts.

The results suggest practical implications for ESP lecturers, including the adoption of different ways of learning, discipline-based authentic materials, and varied assessment strategies to enhance learning outcomes and professional readiness. Theoretically, the study contributes to linking differentiated instruction with ESP pedagogy, highlighting that student perceptions can serve as a valuable way to measure instructional innovation.

However, the study was limited to a single institution and relied solely on self-perception questionnaires, without triangulation from classroom observations. Future research should involve multiple universities, apply longitudinal or mixed-method designs, and explore how differentiated learning influences not only perceptions but also measurable outcomes such as engagement, achievement, and employability.

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