# A Comparative Analysis of Vocabulary Enrichment Goals in Mechanical Engineering and English Education Programs

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**Abstract**. This study explores the distinction in vocabulary enrichment goals between Mechanical Engineering students and English Education students, using Gardner's socio-educational model, which differentiates between instrumental and integrative motivation. Descriptive quantitative design data were collected by using a 24-item questionnaire among 15 Mechanical Engineering students from Politeknik Pelayaran Sorong and 15 English Education students from UHN I Gusti Bagus Sugriwa Denpasar, through purposive sampling. The findings indicate that Mechanical Engineering students have highly emphasized instrumental motivation in learning vocabulary; it is a useful tool for understanding technical texts, equipment operation, and preparation for industry-related communication. On the other hand, English Education students have higher integrative motivation since, for them, learning vocabulary contributes to the development of better communicative competence, cultural understanding, and professional identity as future educators. These results are consistent with Gardner's (1985) theory, which is further supported by disciplinary literacy perspectives indicating that different fields involve different literacy demands, which become determinants of the learners' interests in vocabulary enrichment. It concludes that academic context and career expectations are strong determinants of learners' goals in vocabulary learning, emphasizing differentiated vocabulary instruction. For this reason, ESP-centered vocabulary teaching will be relevant to the technical students, while the English Education students need to be taught vocabulary in a more communicative way and culturally enriched.

**Keywords:** English Education Program; Instrumental Motivation; Integrative Motivation; Mechanical Engineering Education; Vocabulary Enrichment

## 1. INTRODUCTION

Vocabulary acquisition is widely recognized as a fundamental component of second language proficiency. As noted by Gopi Krishna et al., (2022), vocabulary mastery significantly contributes to learners' overall language performance and academic success. Without adequate vocabulary knowledge, students face difficulties in comprehending complex texts, expressing ideas clearly, and participating effectively in academic or professional communication. Bai (2018) further emphasizes that English—driven by its dominant global status in science, technology, and business—continues to serve as the principal medium of international communication; therefore, vocabulary enrichment becomes indispensable for individuals aiming to engage in these domains meaningfully. In line with this, Yawiloeng (2020) asserts that no language can be learned without the acquisition of vocabulary, reinforcing the notion that vocabulary forms the foundation upon which all other linguistic skills are built. Alqahtani (2015) similarly highlights that despite its historical neglect, vocabulary learning has emerged as an essential aspect of foreign language education due to its central role in communicative competence and second language acquisition.

Although the importance of vocabulary is well established, the reasons students choose to expand their vocabulary vary considerably across educational contexts. Students may learn vocabulary to support academic reading and writing, to enhance communicative fluency, or to meet specific workplace demands. These differing orientations suggest that vocabulary learning is not a homogeneous process but is shaped by learners' disciplinary needs, professional aspirations, and motivational tendencies.

In vocational education settings, several studies have examined students' attitudes toward English learning more broadly. Patria (2022), for example, explored vocational college students' perceptions of English grammar learning and found generally positive attitudes toward grammar as a necessary linguistic foundation. Mutiaraningrum et al. (2024) reported that vocational students' feelings, thoughts, and behaviors toward project-based learning in English significantly influence their perceived improvement and career-oriented motivation. Similarly, Risanti et al. (2025) revealed that vocational high school students view English—both General English (EGP) and English for Specific Purposes (ESP)—as essential for gaining knowledge relevant to their discipline. Their study further shows that while EGP equips learners with general linguistic competence, ESP provides specialized terminology and skills that directly support future occupational needs.

In English education settings, research also highlights strong motivation toward English learning, though for different purposes. Alhaqi & Hartati (2025) found that English department students possess positive perceptions of using social media for autonomous English learning. Rayani Siregar & Siregar (2020) reported that English students generally display moderate-to-high motivation to master English despite facing various challenges. Complementing these findings, Gautam, (2022) observed that English majors at the university level tend to exhibit strong motivation and positive attitudes toward English language learning, reflecting their academic and professional trajectories as future educators or language specialists.

Taken together, these studies demonstrate that students' attitudes, motivation, and perceptions toward English learning, whether in vocational colleges or English education programs, have been widely investigated. However, previous research has primarily focused on learners' motivation toward general English skills, grammar, project-based learning, or broader language attitudes. Little attention has been given to how learners from different academic disciplines articulate their specific goals for vocabulary learning. In particular, comparative studies that investigate vocabulary enrichment goals among students in Mechanical Engineering, who are usually oriented towards technical and occupational English,

and in English Education, who aim for academic, pedagogical, and communicative proficiency, are still scarce.

Theoretically, this study is grounded in Gardner R.C. (1985) socio-educational model of language learning motivation, which distinguishes between instrumental motivation (learning a language for utilitarian goals such as employment or academic requirements) and integrative motivation (learning a language for social connection, personal growth, or cultural engagement). Mechanical Engineering students may demonstrate stronger instrumental orientation aligned with ESP demands, while English Education students may exhibit more integrative orientations tied to their academic and communicative needs. Understanding these motivational orientations is crucial for determining why students prioritize vocabulary learning differently. Moreover, identifying these discipline-specific goals helps refine vocabulary pedagogy, ensuring that instruction aligns with learners' real-world needs.

Ahamed (2023) found that English proficiency enables individuals to navigate the globalized professional landscape, communicate effectively with colleagues and clients, and seize international opportunities. Mbuh (2017) investigated the importance of English Language for career opportunities in ASEAN. He found that students who are equipped with the four fundamental English language skills will have greater career opportunities in the ASEAN job market as opposed to those that don't. Butar et al. (2024) explores the crucial role of English-speaking skill in Global bussiness. She found that proficiency in speaking English also opens doors to wider career opportunities, enhances career mobility, and provides confidence in professional situations. All those proficiencies cannot be achieved without a sufficient vocabulary size. A strong vocabulary base allows learners to express ideas more precisely, conduct complex discussions, and understand professional terminologies in use across international workplaces. Moreover, mastery of vocabulary leads to effective negotiation, presentation delivery, and cross-cultural communication—competencies highly valued in global business settings. And Lack of understanding of vocabulary causes students to be less confident and afraid of making mistakes when speaking English Ode et al. (2019). Thus, it is a foundational linguistic component that underpins all aspects of language performance; it follows that any learner without adequate knowledge of vocabulary is not in a position to decode messages, construct meaningful utterances, or effectively engage in spoken and written communication. In other words, vocabulary provides the foundation upon which overall language proficiency is built.

Therefore, the current research tries to fill this empirical gap by exploring and comparing students' vocabulary enrichment goals in both Mechanical Engineering and English Education

programs, while it identifies the main impetus in each discipline for learning vocabulary and underlines differences and convergences between them. By exploring why students study vocabulary (which is different than how they study vocabulary), it furthers the research in applied linguistics and ESP pedagogy. This study emphasizes contextually responsive vocabulary instruction toward different academic and professional pathways in tertiary education.

## 2. THEORETICAL FRAMEWORK

**Vocabulary Learning in Second Language Acquisition**

Vocabulary has long been recognized as a central component of second language proficiency. Scholars such as Alqahtani (2015) emphasize that vocabulary knowledge is foundational to comprehension, production, and communication, as it allows learners to decode messages, construct meaning, and express ideas effectively. Yawiloeng (2020) further asserts that no language learning can occur without vocabulary acquisition, reinforcing the fundamental role vocabulary plays in the development of all linguistic skills.

In the academic context, Gopi Krishna et al. (2022) highlight that vocabulary mastery significantly contributes to learning success, enabling students to engage with complex texts, participate in discussions, and complete academic tasks. Likewise, Bai (2018) notes that English functions as a global medium in science, technology, and business, making vocabulary enrichment indispensable for learners aiming to navigate international academic and professional domains. Given these perspectives, vocabulary learning is not only a cognitive activity but also a strategic effort shaped by learners' needs, goals, and contexts.

**Gardner's Socio-Educational Model of Language Learning Motivation**

The present study is grounded in Gardner's (1985) socio-educational model, a widely used framework for understanding motivation in second language learning. The model distinguishes between two primary motivational orientations:

1. Instrumental motivation – motivation driven by practical benefits such as employment, academic requirements, certification, or career advancement.

2. Integrative motivation – motivation driven by a desire to integrate with the target language community, build relationships, develop cultural understanding, or engage in personal growth.

Gardner argues that motivation is influenced not only by internal factors but also by the social and educational context in which learning takes place. In other words, learners' academic discipline, environment, and future goals shape whether they adopt instrumental or integrative

orientations. This model is particularly relevant for the current study, as students from Mechanical Engineering and English Education programs may experience different motivational pressures based on the nature of their discipline.

**Academic Disciplines and Vocabulary Enrichment Goals**

Studies show that academic contexts shape learners' motivation. Patria (2022) and Mutiaraningrum et al. (2024) found that vocational students are strongly influenced by career-oriented goals. Risanti et al. (2025) further demonstrated that vocational learners value both EGP and ESP but prioritize technical vocabulary for future employment.

Meanwhile, English Education students often future teachers tend to develop broader language awareness, greater cultural interest, and stronger communicative motivation (Siregar, 2020; Gautam, 2022; Alhaqi & Hartati, 2025). Their study program demands high levels of expressive, interpretive, and communicative competence, reinforcing integrative motivation.

Thus, Mechanical Engineering students and English Education students are embedded in different academic cultures, which in turn shape their vocabulary learning goals. These disciplinary differences provide the theoretical justification for conducting a comparative study.


## 3. RESEARCH METHOD

This section contains the research plan, including the research design, population/sample, data collection techniques and instruments, data analysis tools, and the research model used. Common methods do not need to be described in detail; references (e.g., F-test formulas, t-tests, etc.) are sufficient. Validity and reliability testing of the research instrument does not need to be described in detail; the test results and their interpretation are sufficient. Explanations for symbols in the model are written in sentences.

A descriptive quantitative comparative approach was employed in this study to obtain an objective overview of the vocabulary enrichment goals of students from two different academic disciplines. This design was chosen to identify and compare the motivational tendencies of Mechanical Engineering and English Education students without manipulating any variables, but rather by examining their naturally occurring responses to the questionnaire.

The participants consisted of 30 undergraduate students: 15 Mechanical Engineering students from Politeknik Pelayaran Sorong and 15 English Education students from UHN I Gusti Bagus Sugriwa Denpasar. The sample was selected using purposive sampling, a technique in which participants are chosen based on predetermined criteria. In this study, the criterion was fifth-semester students, as they have already taken several English courses and

possess sufficient learning experience to evaluate their vocabulary learning goals meaningfully. This is consistent with Memon et al. (2025), who state that purposive sampling is appropriate in educational research aimed at evaluating learning-related phenomena within a specific, relevant group.

The instrument used in this study was a Google Form-based questionnaire with a 5-point Likert scale, consisting of 24 items. The questionnaire was developed based on Gardner R.C. (1985) socio-educational model of language learning motivation, which distinguishes between two major motivational constructs:

Instrumental motivation, referring to learning a language for utilitarian or practical purposes such as academic achievement, employment, or professional requirements; and Integrative motivation, referring to learning a language for personal growth, social connection, cultural interest, or interaction with members of the target language community.

The use of a Likert scale allowed the responses to be quantified and analyzed statistically, enabling the researcher to identify the degree of students' agreement with each statement. This approach aligns with Joshi et al. (2015) who emphasized that The Likert Scale is the most commonly used measurement tool in educational and social science research for assessing attitudes, perceptions, and opinions. Thus, it can clearly represent students' attitudinal tendencies toward the learning stimulus.

Data collection was conducted by distributing the questionnaire link to students through WhatsApp groups and official class communication channels. Students completed the questionnaire voluntarily and anonymously.

For data analysis, the study employed descriptive statistics, specifically calculating the mean scores of each motivational aspect. The results were then interpreted using the following score categories:

4.21–5.00 (Very High),

3.41–4.20 (High),

2.61–3.40 (Moderate),

1.81–2.60 (Low),

1.00–1.80 (Very Low).

These categories were used to compare levels of instrumental and integrative motivation between the two groups of students. This analysis provided insights into how students from

different academic backgrounds prioritize vocabulary enrichment based on their academic, professional, and personal needs.

## 4. RESULTS AND DISCUSSION

**Findings**

This study investigated differences in vocabulary learning motivation between students in Mechanical Engineering and English Education programs. The questionnaire consisted of six aspects: (1) Academic Requirements, (2) Career & Employment, (3) Exams & Certifications, (4) Social & Communicative Interest, (5) Cultural Interest, and (6) Personal Growth & Identity. Each aspect contained three items. Descriptive statistics for each motivation aspect across the two programs are presented below.

**Table 1.** Descriptive Statistics of Vocabulary Learning Motivation by Aspect

| Motivation Type | Aspect | Mechanical Engineering (n=15)Mean (SD) | English Education (n=15)Mean (SD) | Difference | Interpretation |
|---|---|---|---|---|---|
| Instrumental Motivation | Academic Requirements | 4.12 (0.44) | 4.35 (0.38) | EE > ME | English Education students demonstrate slightly stronger academic vocabulary goals. |
| | Career & Employment | 4.56 (0.40) | 3.89 (0.51) | ME > EE | Mechanical Engineering students show significantly higher career-oriented motivation. |
| | Exams & Certifications | 4.10 (0.48) | 4.28 (0.42) | EE > ME | English Education students report stronger exam-driven motivation. |
| Integrative Motivation | Social & Communicative | 3.70 (0.55) | 4.45 (0.40) | EE > ME | English Education students have far higher communicative motivation. |
| | Cultural Interest | 3.68 (0.50) | 4.40 (0.45) | EE > ME | English Education students possess stronger cultural interest. |
| | Personal Growth & Identity | 3.95 (0.46) | 4.35 (0.30) | EE > ME | English Education students display higher personal growth motivation. |

**Discussion**

The results of this study show clear differences in why students from different majors choose to enrich their English vocabulary. These differences closely follow (Gardner R.C., 1985) distinction between instrumental and integrative motivation. While both groups

recognize the importance of vocabulary, the reasons behind their learning priorities appear to be shaped strongly by the nature of their study programs and the demands they expect to face in the future.

For Mechanical Engineering students, vocabulary learning is mostly tied to practical and professional needs. Their high instrumental motivation suggests that they see English as something that must be mastered to support their work and academic tasks. This is consistent with the idea of English for Specific Purposes (ESP), where learning is driven by immediate and concrete goals. Learners in technical fields usually view English not as a cultural tool, but as a means to complete tasks such as reading manuals, interpreting safety instructions, or understanding machine specifications. Earlier studies support this interpretation. Mbuh (2017) found that English proficiency contributes to better job opportunities in technical fields, while Butar et al. (2024) emphasizes how English communication skills play a key role in the global industrial environment. Ode et al. (2019) also highlight how limited vocabulary can reduce confidence in professional interactions. Considering these points, it is not surprising that Mechanical Engineering students place strong emphasis on vocabulary that helps them operate equipment safely, handle technical documentation, or stay updated with industry developments. Their vocabulary goals are therefore strongly utilitarian, reflecting the real-world demands of engineering work.

On the other hand, English Education students showed a stronger integrative motivation, meaning that they tend to learn vocabulary for reasons related to communication, culture, and personal or professional identity. This is understandable because students in this program are expected to work with language intensively—whether through reading academic texts, preparing teaching materials, delivering presentations, or developing their own English proficiency. Several studies support this tendency. Rayani Siregar & Siregar (2020) reported that English Education students often show high motivation to improve their communicative ability. Similarly, Gautam (2022) found that English majors generally have positive attitudes toward cultural learning and linguistic development. Alhaqi & Hartati (2025) also noted that English Education students benefit from social and independent learning environments that encourage them to use English more actively. Their strong integrative motivation also echoes Yawiloeng (2020) argument that vocabulary mastery is essential for meaningful communication and participation in English-speaking academic or cultural communities. For many English Education students, vocabulary learning is also tied to their identity as future teachers or language practitioners, which naturally leads them to value communication and cultural engagement.

Taken together, these results align well with Gardner R.C. (1985) socio-educational model. Mechanical Engineering students strengthen the instrumental side of motivation because their academic and professional environments require highly specific vocabulary. In contrast, English Education students lean toward integrative motivation as their studies push them toward communication, cultural understanding, and personal growth as language users. This suggests that motivation is not only an internal factor but also something influenced by the characteristics and expectations of the discipline.

The findings can also be understood through the lens of disciplinary literacy, as explained by (Shanahan & Shanahan, 2012). Each academic discipline develops its own way of using language. Engineering literacy is built around precision, procedures, and problem-solving, which naturally requires mastery of technical vocabulary. Meanwhile, language education literacy focuses on interaction, interpretation, and cultural awareness. These contrasting forms of literacy help explain why students in the two programs prioritize vocabulary differently.

In short, the study highlights how academic context shapes vocabulary learning goals. Mechanical Engineering students learn vocabulary mainly to complete tasks and meet technical standards, while English Education students focus on communication, culture, and academic development. These differences have important implications for teaching. Vocabulary instruction should be adjusted according to students' fields of study technical students may benefit more from ESP-based approaches, while English Education students need broader vocabulary instruction that supports communication, literature, and teaching practice.

## 5. CONCLUSION

Students' motives for learning English vocabulary. While the Mechanical Engineering students were instrumentally motivated, viewing vocabulary more as a pragmatic need to understand technical matter and prepare for professional work, English Education students showed stronger integrative motivation to learn vocabulary to support communication, cultural contact, and even identification with their future professional roles. Such differences underpin the view that processes of learning vocabulary are far from uniform across fields but, instead, are closely intertwined with discipline and future career expectations. For this reason, vocabulary instruction should be tailored according to the specific goals and needs of each group; therefore, technical learners should receive ESP-focused vocabulary support, while language education students should engage in broader, communication-oriented vocabulary learning.

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