



# Addressing Discipline Specific Language Challenges: A Needs Analysis of Tailored Language Instruction at a University in Vietnam

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## Abstract

This study investigates the specific language challenges faced by students in various academic disciplines, using both quantitative and qualitative approaches. The quantitative data, analyzed through ANOVA and Tukey HSD tests, revealed significant differences in perceived language difficulties among students in engineering, healthcare sciences, business, and humanities and languages. Students in technical fields, particularly engineering and healthcare sciences, reported the greatest language challenges, especially with mastering discipline-specific terminology and effectively communicating complex concepts. In contrast, students in humanities and languages faced fewer challenges, while business students experienced moderate difficulties, particularly in business communication tasks. Qualitative data from focus group discussions provided nuanced insights, revealing that students in technical disciplines require more focused instruction on technical language and communication. The findings highlight the need for tailored language instruction that addresses the unique needs of each discipline. This study underscores the importance of adopting discipline-specific language programs to better support students' academic success and professional development.

**Keywords:** *Language challenges, discipline-specific language instruction, needs analysis, academic disciplines.*

## 1. Introduction

### 1.1. Background and Rationale

*The importance of language proficiency in academic success*

Language proficiency is crucial for academic success, influencing students' ability to engage with course materials, discussions, and assignments. It directly affects reading comprehension, writing, and verbal communication.

Proficient language skills are essential for understanding course materials, which are often dense and complex. Students must be able to read and interpret textbooks, research articles, and other academic texts. According to [2], students with higher language proficiency are better equipped to grasp intricate concepts and follow the logical progression of arguments in

scholarly works.

Language proficiency also affects students' ability to participate in class discussions and collaborative activities. Active engagement in these activities requires not only understanding the subject matter but also expressing thoughts clearly and persuasively. [24] notes that students with strong language skills are more likely to contribute to discussions, ask insightful questions, and collaborate effectively with peers.

*The diverse language needs of students across different disciplines.*

Students across different academic disciplines have unique language needs that reflect the specific demands and conventions of their fields of study. These needs arise from the

varying types of texts they must read and produce the genres of writing they engage in, and the particular vocabulary and discourse practices that characterize each discipline.

Humanities students must engage with complex texts, interpret sources, and craft analytical essays that showcase critical thinking. [12] noted that humanities students must master a narrative and argumentative style of writing. They tend to employ a rich vocabulary and nuanced expression to analyze themes, concepts, and historical contexts.

Science students, on the other hand, need to be proficient in technical writing and the precise use of terminology. They must understand and produce lab reports, research papers, and scientific articles that follow specific formats and structures. These texts often require clarity, conciseness, and the ability to describe methods, results, and implications succinctly. [21] highlights that the language of science is characterized by its use of passive voice, nominalizations, and specialized vocabulary that students must learn to navigate and utilize effectively.

Engineering students face similar language challenges, but with a stronger emphasis on technical descriptions, procedural documentation, and design specifications. They must be adept at writing project reports, design briefs, and technical manuals. According to [12], engineering students need to develop skills in technical communication, including the ability to describe complex processes, troubleshoot issues, and propose solutions in a clear and precise manner.

In business disciplines, students must learn the language of commerce, which includes understanding and producing business reports, case studies, and marketing plans. The ability to write persuasively and clearly is crucial, as is the use of industry-specific jargon and concepts. [24] points out that business students often need to master genres such as executive summaries, business proposals, and market analysis reports, which require a balance of conciseness and persuasive argumentation.

Social sciences students, such as those studying sociology, psychology, and political science, must be skilled in both qualitative and quantitative writing. They need to interpret data, construct theoretical arguments, and engage with a variety of research methodologies. This discipline often requires students to write research papers, literature reviews, and theoretical essays that combine empirical data with theoretical insights. [5] emphasizes that social sciences students must navigate complex theoretical frameworks and articulate their findings in a way that integrates data analysis with theoretical discourse.

#### *The gap in tailored language instruction in higher education*

Despite the recognition of diverse language needs among students across different disciplines, there remains a significant gap in tailored language instruction in higher education. This gap can be attributed to several factors, including the predominance of general language courses, a lack of interdisciplinary collaboration, and insufficient resources dedicated to developing specialized language programs.

One of the primary issues is that most language instruction in higher education is designed to be general rather than

discipline-specific. General English courses, for instance, often focus on broad language skills that are not tailored to the specialized vocabulary, genres, and discourse practices required in specific academic fields. [12] argues that while these courses can improve overall language proficiency, they may not adequately prepare students for the specific linguistic demands of their disciplines. As a result, students may struggle to apply general language skills to their specialized academic tasks effectively.

Furthermore, there is a notable lack of interdisciplinary collaboration between language instructors and subject matter experts. Effective tailored language instruction requires input from both linguists and disciplinary experts to create curricula that integrate language learning with subject-specific content. However, as [21] points out, such collaboration is often limited by institutional silos and the traditional separation between language departments and other academic units. This separation hinders the development of comprehensive language programs that address the unique needs of students in different fields.

Resource constraints also play a significant role in perpetuating the gap in tailored language instruction. Developing specialized language programs requires significant investment in terms of time, money, and personnel. Institutions may lack the funding to hire additional faculty with expertise in both language instruction and specific disciplines, or to develop new course materials that cater to various academic fields. [24] notes that many universities face budgetary pressures that prioritize general education requirements over specialized programs, further exacerbating the gap.

The implications of this gap are far-reaching. Students who do not receive adequate language support tailored to their disciplines may experience difficulties in comprehending course materials, participating in class discussions, and producing high-quality written work. This can lead to lower academic performance and decreased confidence, ultimately impacting their overall educational experience and career readiness. [5] emphasizes that tailored language instruction is crucial for helping students navigate the specific linguistic challenges of their fields, thereby enhancing their academic success and professional development.

Addressing this gap requires a concerted effort from educational institutions to prioritize and invest in tailored language instruction. This includes fostering interdisciplinary collaboration, allocating sufficient resources, and designing curricula that integrate language learning with disciplinary content. By doing so, higher education can better support the diverse language needs of its students and prepare them for the specific demands of their academic and professional endeavours.

## **2. Research Objectives**

The primary aim of this study is to identify and understand the specific language needs of students across various academic disciplines, including the humanities, sciences, engineering, and business. By doing so, the study seeks to address the varying requirements that students in different fields have for language

proficiency. Additionally, the research aims to evaluate the effectiveness of current language instruction practices in meeting these discipline-specific needs. This involves assessing the strengths and limitations of existing general language courses and determining how well they support students in their specialized academic pursuits.

Another key purpose of the study is to highlight the challenges faced by both students and faculty regarding language proficiency within their respective disciplines. Understanding these challenges is crucial for developing effective solutions. Based on these insights, the study intends to provide recommendations for creating tailored language instruction programs that are specifically designed to address the unique needs of different disciplines. Ultimately, the study aims to explore how such tailored language instruction can enhance academic performance and overall student success in higher education.

### 3. Significance of the Study

The significance of this study lies in its potential to enhance academic success and professional readiness by addressing the specific language needs of students across different academic disciplines. By tailoring language instruction to meet these diverse needs, the study aims to bridge the gap between general language courses and the specialized demands of various fields, thereby improving educational outcomes and student experiences in higher education.

Firstly, the study contributes to a better understanding of how language proficiency directly affects students' ability to engage with course materials, participate in class discussions, and produce academic work that meets disciplinary standards. According to [12], students who are proficient in the specific language conventions of their disciplines are more likely to succeed academically. This study seeks to identify these conventions and provide concrete recommendations for language instruction that can enhance student learning and performance.

Secondly, by evaluating the current language instruction practices and identifying their strengths and limitations, the study highlights the need for more effective and specialized language education. [21] emphasizes that traditional language instruction often falls short in preparing students for the specific linguistic challenges they face in their academic fields. This study aims to fill this gap by offering insights into how language programs can be tailored to better support students in disciplines such as humanities, sciences, engineering, and business.

Moreover, the study underscores the importance of interdisciplinary collaboration in developing effective language instruction. By fostering partnerships between language instructors and subject matter experts, higher education institutions can create more integrated and relevant language programs. [24] suggests that such collaboration can lead to the development of curricula that are better aligned with the needs of students, thereby enhancing their academic and professional preparedness.

In addition to its academic implications, the study has significant practical implications. Improved language instruction tailored to disciplinary needs can lead to higher levels of student confidence and engagement, as well as better academic performance. [5] argues that when students feel more competent in the language of their discipline, they are more likely to participate actively in their courses and pursue opportunities for professional development. This, in turn, can have long-term benefits for their careers.

Finally, the study contributes to the broader field of language education research by providing a comprehensive analysis of the specific language needs of students across different disciplines. By addressing these needs, the study aims to inform policy and practice in higher education, promoting more effective and equitable language instruction that supports all students in achieving their academic and professional goals.

## 2. Literature Review

### 2.1. Theoretical Framework

The theoretical foundation of this study is based on three key perspectives: English for Specific Purposes (ESP) Theory, Constructivist Learning Theory, and Content and Language Integrated Learning (CLIL).

ESP Theory (Dudley-Evans & St John, 1998) highlights the necessity of tailoring language instruction to meet the needs of specific academic and professional disciplines. This study adopts ESP as the guiding framework for analyzing discipline-specific language needs.

Constructivist Learning Theory [22] emphasizes the role of social interaction in language learning. It supports the argument that language instruction should be discipline-specific to create authentic learning experiences.

CLIL (Coyle, Hood, & Marsh, 2010) integrates content-based instruction with language learning. Studies in ASEAN countries (Phan, 2023) demonstrate its effectiveness in bridging academic and professional communication skills, making it relevant to Vietnam's higher education context.

### 2.2. Previous Studies on ESP Implementation in Vietnam

While global research on ESP has been extensive, limited studies have explored its effectiveness in Vietnamese higher education. Research by Tran & Do (2022) found that ESP courses in Vietnam are often underdeveloped, lacking discipline-specific materials and teacher training programs. Similarly, [18] highlighted that ESP courses in Vietnam tend to be generalized rather than customized for specific academic fields.

This study builds upon these findings by identifying discipline-specific language challenges and proposing data-driven curriculum adaptations to improve ESP implementation in Vietnamese universities.

### 2.3. Challenges in Implementing ESP in Higher Education

Despite MOET's emphasis on English education, several challenges hinder effective ESP implementation in Vietnam:

**Lack of Trained ESP Instructors:** Many teachers have general English training but lack expertise in discipline-specific

instruction [18].

**Resistance to Curriculum Reform:** Universities face administrative barriers when integrating ESP courses due to rigid national curriculum structures (Pham & Le, 2021).

**Limited Resources & Materials:** There is a shortage of authentic, discipline-specific teaching materials, leading to overreliance on generic English textbooks.

Addressing these challenges requires policy interventions and institutional collaboration between universities, policymakers, and industry experts.

#### **2.4.English for Specific Purposes (ESP) and Academic Language Needs**

ESP theory emphasizes the necessity of tailoring language instruction to specific disciplines (Dudley-Evans & St John, 1998). Studies have shown that while business students struggle with professional communication, engineering and healthcare students require mastery of highly specialized terminology (Cargill & O'Connor, 2019). However, recent research suggests that ESP instruction remains underdeveloped in many Vietnamese universities, necessitating targeted curriculum adaptations (Tran & Do, 2022).

Additionally, global ESP models, such as Content and Language Integrated Learning (CLIL), have shown promise in bridging academic and professional language gaps (Coyle, Hood, & Marsh, 2010). A comparative study by Phan (2023) highlights how CLIL-based ESP courses in neighboring ASEAN countries significantly improved student communication skills, indicating potential applications in Vietnam. However, recent research suggests that ESP instruction remains underdeveloped in many Vietnamese universities, necessitating targeted curriculum adaptations (Tran & Do, 2022).

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#### **2.5.Vietnam's Higher Education Policies on Language Instruction**

Vietnam's Ministry of Education and Training (MOET) has recognized significant gaps in English education, leading to initiatives such as the National Foreign Language Project 2025 [18]. While these policies emphasize English proficiency, they lack clear guidelines for integrating discipline-specific language instruction, making it challenging for universities to implement effective ESP curricula. This project aims to improve English proficiency across all educational levels, yet challenges persist in aligning language instruction with discipline-specific requirements. Recent policy discussions emphasize the necessity of revising curricula to incorporate English for Specific Purposes (ESP), but there is limited empirical research on how these policies are effectively implemented in different academic disciplines. The current study seeks to bridge this gap by providing data-driven insights into how universities can tailor English instruction to better serve students in technical and professional fields. gaps in English education, leading to initiatives such as the National Foreign Language Project 2025 [18]. However, limited research has examined how these policies translate into discipline-specific curriculum adjustments.

#### **2.6.Gaps and limitations in the existing research.**

##### *Limited focus on interdisciplinary needs*

One significant gap in the existing research on language for specific purposes (LSP) and language learning theories is the limited focus on interdisciplinary needs. Most studies concentrate on the linguistic requirements of students within single disciplines, such as engineering or business (Hyland, 2016; [19]). However, in today's increasingly interdisciplinary academic and professional environments, there is a pressing need to understand how language instruction can be tailored to meet the diverse needs of students engaging in interdisciplinary studies. This lack of focus limits the applicability of current research findings to real-world educational settings, where students often cross disciplinary boundaries.

##### *Insufficient longitudinal studies*

Another notable limitation is the scarcity of longitudinal studies that track language development over extended periods. Most research in this field tends to be cross-sectional, providing a snapshot of language proficiency at a single point in time (Basturkmen, 2021). Longitudinal studies are crucial for understanding how language skills develop and change over time, particularly in response to specific instructional interventions. Without this long-term perspective, it is challenging to assess the sustained impact of tailored language instruction on students' academic and professional success.

##### *Inadequate consideration of individual differences*

Current research often inadequately considers individual differences among learners, such as their prior knowledge, learning styles, and motivational factors. While cognitive and social constructivist theories emphasize the importance of individual cognitive processes and social interactions in learning ([20]; [22]), many studies on LSP and language instruction do not fully integrate these individual differences into their frameworks. This oversight can lead to one-size-fits-all instructional strategies that may not be

effective for all learners (Dörnyei, 2020).

#### *Limited integration of technology*

Despite the increasing integration of technology in education, there is a limited exploration of how digital tools and resources can enhance tailored language instruction. Studies have shown that technology can support language learning through interactive and engaging methods (Chapelle, 2018). However, there is still a lack of comprehensive research on how specific technological interventions can be designed to meet the unique needs of students across different disciplines. This gap hinders the development of innovative instructional strategies that leverage technology to enhance language learning.

#### *Insufficient focus on real-world application*

Many existing studies do not adequately address the real-world application of language skills learned through tailored instruction. While the theoretical frameworks and instructional strategies discussed in the literature are valuable, there is a need for more research on how these strategies translate to practical, real-world contexts. Studies that focus on the practical application of language skills in professional and academic settings can provide more actionable insights for educators and policymakers (Hyland, 2018).

Addressing these gaps and limitations is essential for advancing the field of language instruction and ensuring that educational practices are aligned with the evolving needs of students. Future research should adopt a more interdisciplinary approach, incorporate longitudinal studies, consider individual learner differences, integrate technological advancements, and focus on real-world applications of language skills.

### **3. Research Questions**

To bridge the specified gaps, the study will be guided by several research questions. First, the study seeks to identify the specific language needs of students in different academic disciplines. This includes examining how these needs vary across fields such as humanities, sciences, engineering, and business. Understanding these differences is essential for developing targeted language instruction strategies. Secondly, the study aims to evaluate the effectiveness of current language instruction practices. It will investigate how well general language courses meet the specific needs of students in various disciplines, identifying both their strengths and limitations. This assessment will provide a foundation for recommending improvements. Thirdly, the research will explore the challenges faced by students in mastering the language skills required for their disciplines and by faculty members in teaching these skills. Identifying these challenges will help in developing practical solutions to enhance language proficiency among students. The specific research questions are as followed;

*What are the specific language needs of students in different academic disciplines?*

*How effective are current language instruction practices in meeting the specific needs of students in various disciplines?*

*How do students' perceptions of language challenges vary between disciplines?*

## **4. Methodology**

### **4.1. Participants**

The participants for this study were drawn from a range of academic disciplines, ensuring a diverse representation of students with varying language needs. The focus group discussions (FGDs) involved 8 students from engineering, 12 students from business, 8 students from healthcare, and 8 students from humanities and language study, for a total of 36 participants. These students were selected to provide in-depth qualitative insights into the specific language challenges they face within their respective fields, allowing for a rich exploration of discipline-specific language needs.

In addition to the FGDs, a survey was administered to a larger sample of 216 students from the same academic disciplines. This broader participant pool included students from engineering, business, healthcare, and humanities & language study, enabling the collection of quantitative data to identify trends and commonalities in language needs across disciplines. The combination of focus group discussions and the survey ensures a comprehensive understanding of both the unique and shared language challenges faced by students in different fields.

### **4.2. Data Collection Instruments**

In this study, two primary research instruments will be used to gather comprehensive data on the specific language needs of students across different academic disciplines: focus group discussions (FGDs) and a survey. These complementary methods will provide both qualitative and quantitative insights, allowing for a more nuanced understanding of the language challenges students face and the effectiveness of current language instruction practices.

#### *4.2.1 Focus Group Discussions (FGDs)*

Focus group discussions will be conducted to gather in-depth qualitative data from students representing various academic disciplines, including engineering, business, healthcare, and humanities & language studies. Each focus group will consist of 6-8 students, with a total of 4 to 5 groups depending on the diversity of participants. The FGDs will be moderated in a semi-structured format, encouraging students to openly discuss their experiences with language learning, the specific challenges they face in mastering discipline-specific language, and their views on the effectiveness of current language instruction.

The discussions will explore key areas such as the most important language skills in each discipline, difficulties encountered in understanding technical vocabulary and academic texts, and the types of language support that students feel would be most beneficial. The data collected from these discussions will be transcribed and analyzed thematically to identify common patterns and unique challenges faced by students in different fields.

#### *4.2.2 Survey*

To complement the qualitative insights from the FGDs, a structured survey will be administered to a larger sample of students across the same academic disciplines. The survey will collect quantitative data on students' perceptions of the importance of different language skills (listening, speaking, reading, writing), their confidence in performing academic tasks in English, and the specific challenges they face in mastering discipline-specific language. The survey will use a combination of Likert scale questions, multiple-choice questions, and open-ended responses.

In addition, the survey will gather data on students' views regarding the effectiveness of current language instruction practices, their perceived gaps in the curriculum, and their suggestions for improvement. This instrument will enable the researcher to quantify trends in language needs across disciplines, while also collecting qualitative data to explore individual experiences in more depth. Descriptive statistics will be used to analyze the quantitative data, while open-ended responses will undergo thematic analysis to identify additional insights.

Together, the focus group discussions and survey will provide a well-rounded understanding of the specific language needs of students, the challenges they encounter, and the effectiveness of current instructional practices in meeting their academic requirements. This mixed-methods approach ensures that both the depth and breadth of the issue are captured, enhancing the validity and reliability of the findings.

## 4.2. Data Analysis

### 4.2.1 Quantitative Data Analysis

Within the context of the quantitative phase of the study comparatist research serves, various comparative statistical methods were utilized in order to reveal the patterns and explore the differences in language needs in various disciplines. In the first stage, basic statistics -- means, standard deviations and frequency distributions -- were used to make a more general evaluation of multilingualism problems within the studied group - students from different fields, including but not limited to business, engineering, healthcare, and humanities.

A one-way ANOVA was conducted to analyze differences in students' language needs across disciplines and test the hypothesis. Post-hoc tests were undertaken to understand the differences across the factors.

In addition to ANOVA, correlation analysis was conducted to examine the relationship between students' language needs, academic achievement, discipline, and English proficiency. This analysis was valuable in terms of understanding how other factors, such as requirements from a specific discipline, influenced the students' demand for certain language skills (e.g., technical language, writing, speaking).

Finally, a factor analysis was conducted to investigate the reasons behind the variation in the language needs of the students. This method also helped in clustering similar language requirements as well as defining the major focuses for each discipline, which made the teaching process more efficient.

### 4.2.2 Qualitative Data Analysis: Focus Group Discussion

In the qualitative phase, focus group discussions were employed to study in detail the language learning requirements of the students. Thematic analysis was used to find the key issues that surfaced in the discussions. First the data of the focus group discussions were transcribed verbatim so that the interactions in the course of the discussions were taken into account.

After transcription, a first cycle of open coding was done with the aim of verifying the rate of recurrence of ideas and patterns of thoughts. Some of the key codes developed were those related to language needs, challenges in specific disciplines, and ways in which the language could be learnt. Some wider themes started looking for example 'language needs for different disciplines', 'language used in oral professional interactions'; 'working in teams as a preferred mode of learning, etc.

During the study, particular emphasis was placed on the group behavior of the participants and their reactions to the ideas of their colleagues. These additional exchanges made it easier to understand the experiences common to the representatives of each field. For instance, the overwhelming need among engineering students to acquire technical terms, and the focus of the business students on verbal communication and presentations.

It was demonstrated that the comparison of the themes within focus groups and across different subject areas made it possible to identify both aspects found among all the exposed groups and those unique to only one linguistically oriented group. This form of analysis greatly emphasized the overall language problems of students in the various colleges as well as helping to understand the varying aspects as caused by the students' fields of literacy and professional practices. Such a rich and contextual understanding of data adds to the quantitative data already collected.

## 5. Findings

### 5.1. What are the specific language needs of students in different academic disciplines?

#### 5.1.1 Qualitative Data Analysis

The focus group discussions provided in-depth insights into the specific language needs and challenges faced by students across various academic disciplines. A common theme across all disciplines was the difficulty students encountered with discipline-specific vocabulary. Engineering students, in particular, expressed challenges in understanding technical terms used in lectures and academic readings. One participant noted, "*The vocabulary we encounter in our textbooks is very technical. Sometimes, it feels like we're learning two new languages at the same time; English and the language of engineering*" (Student 4, Engineering FGD). This sentiment was echoed by students from the healthcare field, who highlighted similar struggles with medical terminology, which they described as overwhelming and difficult to master within the limited time available (Student 7, Healthcare FGD).

In contrast, business students placed greater emphasis on oral communication skills. Several participants discussed the need to engage in presentations, negotiations, and discussions

in English, noting that their current language instruction did not provide enough opportunities to practice these skills. As one business student explained, *"We are expected to be able to present business strategies and communicate with potential partners in English, but most of our language classes focus on writing, not speaking"* (Student 11, Business FGD). This gap between the language skills emphasized in the classroom and the skills required in professional settings was a recurring theme in the focus group discussions.

Humanities and language study students highlighted the importance of critical reading and writing skills. These students expressed that while they were confident in their general English abilities, they struggled with academic writing, especially when it came to crafting arguments and analyzing complex texts. *"Writing essays is hard because it's not just about knowing the vocabulary; it's about structuring arguments and being precise with language"* (Student 5, Humanities FGD). This points to a need for more targeted support in developing students' academic writing skills, particularly in disciplines that require analytical and interpretative abilities.

Across all groups, participants consistently mentioned a lack of tailored language instruction that addresses the specific needs of their disciplines. While general English proficiency was acknowledged as important, students felt that their courses did not adequately prepare them for the linguistic demands of their fields. One healthcare student stated, *"Our English classes are very general. We need more focus on medical language, like how to communicate with patients or read medical journals"* (Student 8, Healthcare FGD). Similarly, an engineering student added, *"We spend too much time on basic grammar when we should be focusing on understanding technical reports and research papers"* (Student 3, Engineering FGD).

Finally, students across all disciplines expressed a desire for more practical, real-world applications in their language instruction. Business students, in particular, emphasized the need for role-playing activities, mock negotiations, and case studies to better simulate the professional environments they are preparing for (Student 9, Business FGD). In response to these needs, it is evident that language instruction must be more discipline-specific, with a stronger focus on practical skills relevant to students' future careers.

These findings highlight the necessity of tailoring language education to meet the specific demands of different academic disciplines, particularly in terms of vocabulary, oral communication, and academic writing. The disparity between students' language needs and the current focus of their instruction underscores the importance of refining language programs to better align with the professional and academic requirements of each discipline.

5.1.2 Quantitative Data Analysis

The quantitative analysis aimed to identify patterns and differences in language needs across four academic disciplines: engineering, business, healthcare, and humanities and language studies. A total of 216 students participated in the study, and the descriptive statistics showed variability in language needs

across these disciplines (see Table 1).

**Table1:** Descriptive Statistics of Language Needs across Disciplines

|       | Frequency               | Percent | Mean (language need) | S.D |     |
|-------|-------------------------|---------|----------------------|-----|-----|
| Valid | Humanities and Language | 54      | 34.9                 | 3.9 | 0.7 |
|       | Business                | 60      | 36.2                 | 3.6 | 0.5 |
|       | Engineering             | 54      | 18.8                 | 4.1 | 0.6 |
|       | Healthcare              | 48      | 10.1                 | 3.7 | 0.6 |
|       | Total                   | 216     |                      |     |     |

As shown in Table 1, engineering students reported the highest language needs (M = 4.1, SD = 0.6), particularly in areas such as technical vocabulary and reading comprehension of subject-specific materials. In contrast, business students reported relatively lower language needs (M = 3.6, SD = 0.5), with their primary focus being on oral communication and presentation skills.

To further investigate whether these differences were statistically significant, a one-way Analysis of Variance (ANOVA) was performed. The results indicated a significant difference in language needs across the four disciplines,  $F(3, 212) = 6.54, p < .001$  (see Table 2). This suggests that students' language needs vary significantly depending on their academic discipline.

**Table2:** ANOVA Results

| Source of Variation | Sum of Squares (SS) | Degrees of Freedom (df) | Mean Square (MS) | F    | p-value |
|---------------------|---------------------|-------------------------|------------------|------|---------|
| Between Groups      | 8.53                | 3                       | 2.84             | 6.54 | < .001  |
| Within Groups       | 27.53               | 212                     | 0.13             |      |         |
| Total               | 36.06               | 215                     |                  |      |         |

Post-hoc Tukey's HSD tests revealed that engineering students had significantly higher language needs compared to business students ( $p = .001$ ) and healthcare students ( $p = .05$ ). However, no significant difference was found between the language needs of engineering and humanities students, indicating that both groups face considerable language challenges in their respective fields.

In addition to ANOVA, a correlation analysis was conducted to explore the relationship between language needs and English proficiency. The results revealed a moderate negative correlation ( $r = -0.45, p < .01$ ) between language needs and English proficiency, suggesting that students with lower English proficiency reported higher language needs, especially in the engineering and healthcare groups (see Table 3).

**Table3:** Correlation between Language Needs and English Proficiency

| Correlation Type                     | Correlation Coefficient (r) | p-value |
|--------------------------------------|-----------------------------|---------|
| Language Needs & English Proficiency | -0.45                       | < .01   |

This correlation indicates that as English proficiency decreases, students' language needs increase, particularly in technical and academic areas. This finding is crucial for developing tailored language instruction programs that address the specific needs of lower-proficiency students in technical disciplines.

Finally, a factor analysis was conducted to identify underlying dimensions of language needs across disciplines. Two primary factors were identified: (1) Technical and discipline-specific vocabulary and (2) Oral communication and presentation skills. Engineering and healthcare students showed a higher emphasis on the first factor, while business and humanities students prioritized the second.

### 5.2 How effective are current language instruction practices in meeting the specific needs of students in various disciplines?

The data (Table 4) provides valuable insights into how students from different academic disciplines perceive the effectiveness of current language instruction. Across all 216 participants, the overall mean score for effectiveness is 3.12 (SD = 0.86), indicating that students generally find the language instruction to be slightly above moderately effective in addressing their needs. However, there are notable variations in how students from different fields evaluate this effectiveness.

Among the academic disciplines, healthcare sciences students reported the highest mean score of 3.63 (SD = 0.69), suggesting that they view the language instruction as effective in meeting their specific language needs. The relatively low standard deviation indicates that students in this group have a consistent perception of the instruction's effectiveness. This could imply that the current language instruction is well-aligned with the technical and communication skills required in healthcare education.

In contrast, engineering students rated the effectiveness of language instruction the lowest, with a mean score of 2.90 (SD = 1.03). This score suggests that students in engineering are less satisfied with the current language instruction, possibly due to a lack of focus on the technical language skills necessary for their field. The high standard deviation also highlights significant variability in their responses, indicating that some students may find the instruction more useful than others, but overall, the instruction is perceived as less effective in this discipline.

Students in humanities and languages and business fall somewhere in between, with mean scores of 3.19 (SD = 0.92) and 3.04 (SD = 0.68), respectively. These scores suggest a generally moderate perception of effectiveness, with business students showing more consistency in their responses, as indicated by the lower standard deviation. Humanities and languages students, on the other hand, demonstrate a broader range of opinions, which may reflect the varying demands of different language-related disciplines.

In summary, the data reveals that perceptions of the effectiveness of language instruction vary across disciplines, with healthcare sciences students being the most satisfied, and engineering students expressing the most dissatisfaction. These results highlight the need for more discipline-specific language instruction to address the diverse needs of students, particularly in technical fields like engineering.

**Table 4:** Effectiveness of current language instructions

| Academic disciplines | Mean   | N   | Std. Deviation |
|----------------------|--------|-----|----------------|
| Humanity & languages | 3.1895 | 76  | .92081         |
| Business             | 3.0354 | 79  | .67918         |
| Engineering          | 2.8976 | 41  | 1.02968        |
| Health care sciences | 3.6300 | 20  | .69366         |
| Total                | 3.1185 | 216 | .86074         |

### 5.3 How do students' perceptions of language challenges vary between disciplines?

The ANOVA table (Table 5) provides information about the comparison of language challenges between students from different academic disciplines. The Tukey HSD multiple comparisons (Table 6) provide a detailed analysis of the differences in perceived language challenges between students from various academic disciplines, following the significant ANOVA results. The comparisons reveal significant variations in how students from different fields experience language challenges.

Humanities and Languages students face fewer language challenges compared to all other disciplines. Specifically, the mean difference between Humanities and Business students is -0.557, which is statistically significant ( $p < 0.001$ ). This indicates that Humanities and Languages students perceive language challenges as less difficult than Business students. Similarly, the comparison with Engineering students shows a significant mean difference of -1.934 ( $p < 0.001$ ), highlighting that Engineering students face substantially more challenges. Likewise, Humanities students also report significantly fewer challenges compared to Healthcare Sciences students, with a mean difference of -1.582 ( $p < 0.001$ ).

On the other hand, Business students perceive more challenges than Humanities and Languages students, as indicated by a mean difference of 0.557 ( $p < 0.001$ ). However, when compared to Engineering students, Business students experience fewer challenges, with a significant mean difference of -1.377 ( $p < 0.001$ ). This suggests that although Business students face some challenges, Engineering students experience significantly greater difficulties. In addition, Business students face fewer challenges than Healthcare Sciences students, with a significant mean difference of -1.025 ( $p < 0.001$ ).

Engineering students consistently report the highest levels of language challenges. They perceive significantly more challenges compared to both Humanities and Languages (mean difference = 1.934,  $p < 0.001$ ) and Business students (mean difference = 1.377,  $p < 0.001$ ). However, the comparison

between Engineering and Healthcare Sciences students shows no statistically significant difference ( $p = 0.267$ ), suggesting that these two groups face similar levels of language difficulty.

Finally, Healthcare Sciences students report significantly more language challenges than Humanities and Languages students (mean difference = 1.582,  $p < 0.001$ ) and Business students (mean difference = 1.025,  $p < 0.001$ ). However, like Engineering students, their language challenges are not significantly different from those experienced by Engineering students.

In summary, Engineering and Healthcare Sciences students face the highest language challenges, while Humanities and Languages students experience the fewest. Business students fall in between, facing more challenges than Humanities students but fewer than those in Engineering and Healthcare Sciences. These findings underscore the importance of tailoring language instruction to meet the specific needs of students in more technically demanding fields such as Engineering and Healthcare Sciences.

**Table5:** ANOVA Language challenges

|                | Sum of Squares | df  | Mean Square | F      | Sig. |
|----------------|----------------|-----|-------------|--------|------|
| Between Groups | 116.751        | 3   | 38.917      | 77.663 | .000 |
| Within Groups  | 106.234        | 212 | .501        |        |      |
| Total          | 222.985        | 215 |             |        |      |

**Table6:** Multiple Comparisons

| Dependent Variable: Language challenges Tukey HSD | (J) Academic disciplines | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | Lower Bound | Upper Bound |
|---|--------------------------|-----------------------|------------|------|-------------------------|-------------|-------------|
| Humanity & languages                              | Business                 | -.557*                | .114       | .000 |                         | -.85        | -.26        |
|   | Engineering              | -1.934*               | .137       | .000 |                         | -2.29       | -1.58       |
| Healthcare sciences                               | Business                 | 1.582*                | .178       | .000 |                         | 1.23        | 2.04        |
|   | Engineering              | -.351                 | .193       | .267 |                         | -.85        | .15         |
| Business  | Humanity & languages     | .557*                 | .114       | .000 |                         | .26         | .85         |
|   | Engineering              | -1.377*               | .136       | .000 |                         | -1.73       | -1.02       |

| Dependent Variable: Language challenges Tukey HSD |                      |         |      |      |  |       |      |
|---|----------------------|---------|------|------|--|-------|------|
| Engineering                                       | Healthcare sciences  | -1.025* | .177 | .000 |  | -1.48 | -.57 |
|   | Business             | 1.377*  | .136 | .000 |  | 1.02  | 1.73 |
| Healthcare sciences                               | Humanity & languages | 1.582*  | .178 | .000 |  | 1.12  | 2.04 |
|   | Business             | 1.025*  | .177 | .000 |  | .57   | 1.48 |
| Business  | Healthcare sciences  | .351    | .193 | .267 |  | -.15  | .85  |
|   | Engineering          | -.351   | .193 | .267 |  | -.85  | .15  |

\*. The mean difference is significant at the 0.05 level.

## 6. Discussion

This study aimed to explore the language challenges faced by students across different academic disciplines, combining both quantitative and qualitative findings to provide a comprehensive understanding of the issue. The results from the quantitative data (ANOVA and Tukey HSD tests) revealed significant differences in the perceived language challenges between disciplines, while the qualitative insights from focus group discussions shed light on the specific nature of these challenges.

### 6.1. Quantitative Findings

The quantitative analysis revealed that students in engineering and healthcare sciences face significantly more language challenges than those in humanities and languages and business. The ANOVA results showed statistically significant differences in perceived language difficulties across disciplines, with the highest challenges reported by students in technical fields. The Tukey HSD post-hoc test confirmed that engineering students perceive the greatest language challenges, particularly in mastering technical terminology and communicating complex ideas, while healthcare sciences students also report facing substantial difficulties, especially when dealing with medical jargon and technical reports.

The high standard deviation in business students' responses suggests varying levels of difficulty with business communication tasks such as report writing and presentations. This finding underscores the need for targeted language instruction that addresses the diverse needs within disciplines.

### 6.2 Qualitative Findings

The qualitative findings from focus group discussions provided richer insights into the specific nature of the language challenges students face. Students in engineering reported that their primary struggles lie in understanding and applying discipline-specific technical terminology, both in reading academic materials and in writing assignments. Many engineering students expressed frustration at the lack of focus on technical language in their current language instruction, which they felt did not sufficiently prepare them for their academic and professional tasks. Additionally, they highlighted the difficulty of communicating complex ideas concisely and clearly in their field.

In healthcare sciences, students echoed similar concerns about the specialized language used in medical and clinical contexts. They emphasized the challenge of mastering medical terminology, which is crucial for understanding research papers, clinical reports, and patient interactions. Healthcare students also pointed to the need for better preparation in oral communication, particularly in conveying complex medical information to patients or colleagues.

Conversely, humanities and languages students reported fewer language challenges overall, consistent with the quantitative findings. These students noted that language instruction in their field tends to be more aligned with their academic tasks, as the focus is often on critical reading, writing, and communication skills. Business students, while facing fewer challenges than those in technical disciplines, reported difficulty in mastering the specific communication skills needed for business environments, such as persuasive writing and presentation skills. The qualitative data suggested that business students' language challenges are more focused on practical, real-world communication scenarios rather than academic language per se.

### 6.3 Integration of Findings

The combination of quantitative and qualitative findings paints a comprehensive picture of the language challenges students face across disciplines. The quantitative data clearly shows that students in technical fields, such as engineering and healthcare sciences, experience significantly more language-related difficulties than those in humanities or business. These results are supported by the qualitative insights, which provide deeper explanations for these challenges, particularly in terms of the specialized and technical nature of the language required in these fields.

The qualitative findings highlight that students in technical disciplines feel their language instruction is not adequately tailored to meet the demands of their field. This is particularly evident in engineering, where students repeatedly expressed the need for more focused instruction on technical writing and oral communication. Similarly, healthcare sciences students

emphasized the importance of mastering medical terminology, a challenge that is not sufficiently addressed in general language courses. These qualitative insights help explain the significant differences found in the quantitative data, suggesting that current language instruction practices are not effectively meeting the specific needs of students in technical fields.

In contrast, the qualitative data from humanities and languages students supports the quantitative findings that they face fewer challenges. Their language instruction is more aligned with the demands of their discipline, focusing on critical thinking, academic writing, and general communication skills. Business students, while reporting moderate challenges, highlighted in the qualitative discussions that they require more emphasis on business communication tasks such as writing reports and delivering professional presentations.

### 6.4 Implications for Practice

The combined findings suggest that a one-size-fits-all approach to language instruction is not sufficient to address the diverse needs of students across disciplines. The significant differences in language challenges between disciplines underscore the importance of adopting a discipline-specific approach to language teaching. For students in technical fields like engineering and healthcare, language instruction must focus more on technical vocabulary, precise communication, and the ability to convey complex ideas clearly and efficiently. In contrast, students in business may benefit from instruction that emphasizes professional communication and practical application of language skills in real-world scenarios.

The qualitative insights also highlight the need for more specialized resources and instructional methods that address the unique language demands of each discipline. Tailored language instruction that incorporates discipline-specific terminology, communication practices, and writing conventions is essential for helping students succeed academically and professionally.

## 7. Conclusion

This study explored the language challenges faced by students across various academic disciplines, using both quantitative and qualitative methods to provide a holistic understanding of the issue. The findings revealed significant differences in the language challenges experienced by students in engineering, healthcare sciences, business, and humanities and languages, with students in technical disciplines reporting the greatest difficulties.

The quantitative results demonstrated that engineering and healthcare sciences students face the most substantial language challenges, particularly with discipline-specific terminology and the ability to communicate complex concepts. In contrast, humanities and languages students reported fewer challenges, while business students fell somewhere in between, facing moderate but diverse language difficulties. These results were further supported by the qualitative findings, which provided detailed insights into the specific nature of these challenges, such as the need for more technical writing support in engineering and more focus on professional communication skills in business.

The findings show the need for discipline-specific language instruction tailored to each field. A one-size-fits-all approach does not adequately support students in technical disciplines, where mastering specialized vocabulary and communication skills is essential.

This study highlights the need for educational institutions to adopt more targeted language instruction strategies, focusing on the specific challenges of each discipline. Future research should further explore how tailored language programs can enhance students' proficiency and better equip them for the demands of their respective fields. Additionally, there is a need to assess how improvements in language instruction can contribute to overall academic performance and career readiness across disciplines.

In conclusion, addressing the discipline-specific language needs of students is essential for ensuring their success both academically and professionally. Institutions must consider adopting more specialized language instruction to meet the diverse challenges students face, particularly in technical and professional fields. References

**APPENDICES**

**Appendix A: Survey: Measuring Specific Language Needs of Students in Different Academic Disciplines**

Dear Participant,

We are conducting a survey to understand the specific language needs of students in different academic disciplines. Your participation is valuable in helping us tailor language instruction to better meet these needs. This survey will take approximately 10-15 minutes to complete, and your responses will be kept confidential.

*Thank you for your time and participation.*

Section 1: Demographic Information

1. What is your academic discipline? (Select one)

- Engineering
- Business
- Healthcare
- Humanities and Language Studies

2. What year of study are you in?

- First year
- Second year
- Third year
- Fourth year or above

3. Have you taken any language courses specific to your academic discipline?

- Yes
- No

Section 2: Importance of Language Skills in Your Discipline

4. How important are the following language skills for success in your discipline? (Rate each on a scale of 1-5, where 1 = Not Important, 5 = Very Important)

**Table.**

| # | Statements  | Ratings |  |  |  |  |
|---|---|---------|--|--|--|--|
|   | Listening (understanding lectures, presentations, etc.)             |         |  |  |  |  |
|   | Speaking (giving presentations, participating in discussions, etc.) |         |  |  |  |  |
|   | Reading (understanding academic texts, research papers, etc.)       |         |  |  |  |  |
|   | Writing (writing reports, essays, or other academic papers)         |         |  |  |  |  |
|   | Technical/Field-Specific Vocabulary                                 |         |  |  |  |  |

Section 3: Language Proficiency and Challenges

5. How confident are you in your ability to perform the following tasks in your academic discipline? (Rate each on a scale of 1-5, where 1 = Not Confident, 5 = Very Confident)

**Table.**

| # | Statements   | Ratings |   |   |   |   |
|---|--|---------|---|---|---|---|
| 1 | Understand academic lectures and presentations           | 1       | 2 | 3 | 4 | 5 |
| 2 | Deliver oral presentations or participate in discussions | 1       | 2 | 3 | 4 | 5 |

| # | Statements   | Ratings |   |   |   |   |
|---|--|---------|---|---|---|---|
| 3 | Read and understand academic or field-specific texts and research papers | 1       | 2 | 3 | 4 | 5 |
| 4 | Write academic reports, essays, or research papers in your discipline    | 1       | 2 | 3 | 4 | 5 |
| 5 | Use technical or discipline-specific vocabulary accurately               | 1       | 2 | 3 | 4 | 5 |

5. What are the biggest challenges you face when using English in your discipline? (Select all that apply)

Understanding technical or field-specific vocabulary

Writing reports, essays, or academic papers

Giving oral presentations or participating in class discussions

Reading and understanding academic texts or research papers

Communicating with professors or peers in academic settings

Other (please specify)

Section 4: Effectiveness of Language Instruction

7. To what extent do you agree with the following statements about language instruction in your academic discipline? (Rate each on a scale of 1-5, where 1 = Strongly Disagree, 5 = Strongly Agree)

Table.

| # | Statements  | Ratings |   |   |   |   |
|---|---|---------|---|---|---|---|
| 1 | The language courses I've taken have helped me understand the vocabulary specific to my discipline. | 1       | 2 | 3 | 4 | 5 |

| # | Statements  | Ratings |   |   |   |   |
|---|---|---------|---|---|---|---|
| 2 | I receive enough support in improving my academic writing skills.               | 1       | 2 | 3 | 4 | 5 |
| 3 | There are enough opportunities to practice oral communication in my discipline. | 1       | 2 | 3 | 4 | 5 |
| 4 | I feel prepared to handle the language requirements in my field of study.       | 1       | 2 | 3 | 4 | 5 |
| 5 | The current language instruction meets the academic needs of my discipline.     | 1       | 2 | 3 | 4 | 5 |

7. Which aspects of your language instruction have been the most helpful for your academic development? (Select all that apply)

Learning technical or field-specific vocabulary

Academic writing practice (e.g., reports, essays)

Oral presentations and discussion opportunities

Reading and understanding academic texts

Feedback on written or spoken work

Other (please specify)

Section 5: Suggestions for Improving Language Instruction

9. What additional support would help you improve your language skills in your discipline? (Select all that apply)

More instruction on technical or field-specific vocabulary

Additional writing practice specific to my field

More opportunities for oral presentations and public speaking

Enhanced feedback on writing or speaking

Workshops or tutoring for academic writing

Other (please specify)

Closing

Thank you for completing this survey. Your feedback will be instrumental in helping us improve language instruction to better suit the needs of students in different academic disciplines.

Appendix B: A Survey for Measuring the Effectiveness of Language Instruction Practices

*Introduction: Thank you for taking the time to participate in this survey. The purpose of this survey is to understand how effective the current language instruction practices are in meeting the specific language needs of students across various academic disciplines. Your responses will help us improve language teaching methods to better support your learning. The survey should take about 10 minutes to complete.*

Section 1: Background Information

1. What is your academic discipline?

Social Sciences

Economics

Engineering

Healthcare

Humanities and Languages

2. What year of study are you currently in?

First year

Second year

Third year

Section 2: Self-Perception of Language Instruction Effectiveness

*Instructions: Please indicate your level of agreement with the following statements using the scale provided.*

| 1 = Strongly Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Strongly Agree |

Table.

| # | Statements   | Ratings |   |   |   |   |
|---|--|---------|---|---|---|---|
| 1 | The language instruction I receive meets the specific language needs of my discipline. | 1       | 2 | 3 | 4 | 5 |

| # | Statements   | Ratings |   |   |   |   |
|---|--|---------|---|---|---|---|
| 2 | The teaching materials used in my language classes are relevant to my academic field.              | 1       | 2 | 3 | 4 | 5 |
| 3 | The language instruction effectively improves my ability to use discipline-specific vocabulary.    | 1       | 2 | 3 | 4 | 5 |
| 4 | The language instruction enhances my ability to understand technical texts in my field of study.   | 1       | 2 | 3 | 4 | 5 |
| 5 | The language instruction helps me improve my writing skills for academic or professional purposes. | 1       | 2 | 3 | 4 | 5 |
| 6 | The language instruction helps me improve my oral communication skills for my future career.       | 1       | 2 | 3 | 4 | 5 |

| #  | Statements   | Ratings |   |   |   |   |
|----|--|---------|---|---|---|---|
| 7  | The language instruction has improved my overall confidence in using English in my discipline.                                   | 1       | 2 | 3 | 4 | 5 |
| 8  | The teaching methods (e.g., lectures, discussions, group work) used in language instruction are effective for my learning style. | 1       | 2 | 3 | 4 | 5 |
| 9  | The language instruction helps me understand and express complex ideas relevant to my discipline.                                | 1       | 2 | 3 | 4 | 5 |
| 10 | The language instruction has helped me prepare for real-world applications, such as internships or professional settings.        | 1       | 2 | 3 | 4 | 5 |

Section 3: Overall Satisfaction

| 1 = Very dissatisfied | 2 = Dissatisfied | 3 = Neutral | 4 = Satisfied | 5 = Very Satisfied |

Table.

|   |  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| Overall, how satisfied are you with the language instruction you have received? |  |  |  |  |  |  |
|---|--|--|--|--|--|--|

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