

## The Need Analysis of English for Specific Purposes for The Tenth Grade Computer Engineering and Networking Students at SMKN 3 Takalar

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**Abstract:** This research examines the English language needs of tenth-grade Computer Engineering and Networking students at SMKN 3 Takalar, aiming to design an English for Specific Purposes (ESP) curriculum tailored to their academic and professional requirements. A questionnaire involving 60 students revealed that most are motivated to learn English for career preparation and global communication. Writing and speaking were identified as the most essential skills, though speaking posed the greatest challenge due to limited practice, lack of confidence, and minimal peer interaction. Students preferred interactive learning methods such as group discussions, presentation simulations, project-based learning, and multimedia use. They also favored digital resources like learning apps and videos. Major barriers included limited study time, insufficient speaking practice, and a lack of relevant resources. Thus, an effective ESP curriculum should integrate technology, encourage active learning, and adopt collaborative approaches aligned with students' needs. Additionally, incorporating real-world tasks can help bridge the gap between theoretical knowledge and practical application. This study underscores the importance of ESP in vocational education for enhancing English proficiency, critical thinking, collaboration, and problem-solving skills. With the right approach, ESP can serve as a transformative tool in preparing students to excel academically and professionally. The findings carry direct implications for curriculum developers, English teachers, and educational policymakers in Indonesian vocational schools, underscoring the need for context-sensitive, technology-enhanced ESP programs that bridge disciplinary demands with learner realities.

**Keywords** need analysis; english for specific purposes; vocational high school

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### INTRODUCTION

The increasing globalization of technology and communication has made English proficiency an indispensable skill, especially in technical and vocational fields. English is not just a medium of communication but a gateway to accessing international knowledge, understanding technical concepts, and collaborating in professional environments. For Vocational High Schools (SMKN) 3 Takalar, where students are trained to enter specialized technical careers, the teaching of English must go beyond general language skills to focus on English for Specific Purposes (ESP). As Hyland, (2022) argues, ESP has emerged from decades of research and classroom practice to become a dominant force in vocational and professional language education worldwide, precisely because it responds to the diverse academic and occupational goals of learners. ESP addresses the unique language needs of learners by equipping them with the specific language skills

required in their academic and professional contexts. As noted by Basturkmen, (2015), ESP plays a pivotal role in bridging the gap between language education and professional demands, enabling students to meet global workforce requirements effectively.

Recent studies emphasize the importance of aligning language instruction with the dynamic needs of industries and students. For students in programs like Computer Engineering and Networking, proficiency in English is crucial for accessing international technical resources, understanding programming languages, and collaborating with global IT communities (Alsamadani, 2017). This highlights the urgent need for ESP curricula to adapt to rapidly evolving technological and professional landscapes. In the Indonesian context, Hidayatulloh & Ashoumi, (2022) confirm that vocational school students who develop strong communication and collaboration competencies are significantly better positioned to meet industry expectations, underscoring the strategic importance of integrating English language skills into vocational training. Similarly, Aryawan, (2023) notes that curriculum improvement, enhanced teaching quality, and purposeful English language instruction are among the most pressing challenges facing Indonesian SMKs in their effort to produce globally competitive graduates.

The significance of ESP lies in its ability to cater to the immediate and practical needs of learners. Unlike General English, which aims to provide a broad language foundation, ESP focuses on the language skills relevant to a specific discipline or occupation. This targeted approach ensures that learners can directly apply their language skills to their field of study or work, whether it's understanding technical manuals, troubleshooting systems, or engaging in professional communication. Need analysis is the cornerstone of ESP course development as it provides a detailed understanding of learners' specific language requirements. Kamaruddin & Fitria, (2021) affirm that needs analysis-based ESP course design for vocational students leads to more contextually relevant instruction, ensuring that the English curriculum is closely aligned with students' vocational field and future professional demands.

For the tenth-grade Computer Engineering and Networking students at SMKN 3 Takalar, these dimensions help determine how their English skills align with the demands of their discipline. Through a structured questionnaire, this research gathered data from students to analyze their needs, assess their current abilities, and identify areas where their learning experience can be improved. This approach is consistent with the framework adopted by Hajar & Triastuti, (2021), who similarly utilized questionnaire-based needs analysis at Indonesian vocational schools and found that ESP programs must be designed to cultivate practical communicative competence in students' specific disciplinary contexts. By aligning language instruction with students' real-world needs, this research contributes to enhancing the relevance and effectiveness of English teaching at Vocational High Schools.

Previous studies have investigated ESP needs in various vocational and technical contexts, offering valuable comparative insights. Poedjiastutie & Oliver, (2017) examined ESP learner needs in Indonesian higher education and found that students consistently prioritized communicative competence for professional settings over general language skills, highlighting the importance of context-specific curriculum design. Alsamadani, (2017) further demonstrated that engineering students in Saudi Arabia exhibited specific needs related to professional writing, technical presentations, and comprehension of technical documentation—needs that closely parallel those of students in Indonesian vocational engineering programs. More recently, a systematic literature review by Musrina, I., & Astika, (2024) mapping trends in ESP needs analysis

for engineering students from 2018 to 2023 found a consistent pattern across studies: oral communication and technical writing dominate learners' perceived needs, while interactive and technology-supported instructional approaches are increasingly emphasized as effective responses to these needs. These prior studies collectively underscore the value of systematic needs analysis as the foundation for effective ESP curriculum development.

Despite this growing body of evidence, a significant research gap persists: empirical ESP needs analyses targeting vocational Computer Engineering and Networking students in Indonesia remain scarce. Most existing studies focus on higher education or general vocational settings, leaving the specific needs of secondary-level technical students inadequately addressed. Basturkmen, (2015), in a comprehensive review of current trends in ESP research across the Asia Pacific region, highlights that Indonesia has seen growing ESP research activity, yet gaps remain particularly for technical vocational contexts at the secondary school level. This gap is particularly consequential given the Indonesian government's strategic emphasis on vocational education (SMK) as a vehicle for producing industry-ready graduates. In this context, there is an urgent need to understand the English language requirements of SMK students in technical fields so that ESP curricula can be tailored to reflect their disciplinary, occupational, and communicative realities. Rachmawati et al., (2022) further document that English teachers at Indonesian vocational high schools encounter persistent challenges in teaching speaking precisely because students' vocabulary, pronunciation, and confidence remain underdeveloped—a finding that calls for targeted, needs-driven ESP intervention at the secondary vocational level.

The novelty of this study lies in its dual focus: it not only identifies the English language needs of vocational Computer Engineering students at SMKN 3 Takalar through systematic needs analysis, but also integrates students' expressed preferences for digital tools, interactive pedagogies, and project-based learning directly into the conceptual framework for ESP curriculum development. This approach distinguishes the present study from prior research that typically confines needs analysis to skills identification without translating findings into actionable curricular recommendations. The present research therefore contributes to both the theoretical understanding of ESP needs in Indonesian vocational education and the practical design of learner-centered ESP programs. Ultimately, this study aims to benefit students by enhancing their English proficiency for technical and professional contexts, equip teachers with evidence-based pedagogical strategies, and provide curriculum designers with a data-driven foundation for developing relevant and effective ESP courses at the secondary vocational level.

## RESEARCH METHOD

This research employed a quantitative research approach to analyze the English language necessities of students at SMKN 3 Takalar. Data collection was conducted using an online questionnaire distributed via Google Forms. The questionnaire was designed to gather information about students' perceived necessities in English language learning, covering various aspects of language skills and usage. The participants in this research of 60 students from grade 10 at SMKN 3 Takalar. The students were drawn from three different classes within the same grade level. The first class contributed 31 participants, while the second and third classes each provided 19 participants. This sample represents the entire population of grade 10 students at the school, ensuring a comprehensive representation of student perspectives across different class compositions.

The questionnaire was structured to elicit specific information about the students' English language necessities. It included questions related to the four main language skills (reading, writing, listening, and speaking). The items in the questionnaire were carefully formulated to capture the students' perceptions of their current language necessities, lacks, and wants. Prior to data collection, the questionnaire underwent a validation process to ensure content validity and reliability. The instrument was reviewed by two expert validators with expertise in ESP curriculum design and language education research, who assessed the relevance, clarity, and appropriateness of each item. Based on their feedback, minor revisions were made to item wording to improve clarity. A pilot test was subsequently administered to a small group of 10 students from a comparable grade level who were not included in the main study. The pilot results were used to verify item comprehensibility and to estimate internal consistency; Cronbach's alpha coefficient for the Likert-scale items was computed and found to be acceptable, confirming the instrument's reliability prior to full deployment.

Data analysis was conducted using descriptive statistics. Responses to the four-point Likert-scale items were scored numerically (1 = least favorable, 4 = most favorable) and analyzed in terms of frequency distribution and percentage for each response category. Scores were interpreted as follows: a mean of 3.50–4.00 indicated high perceived importance or frequency; 2.50–3.49 indicated moderate; 1.50–2.49 indicated low; and below 1.50 indicated very low. Closed-ended (tick-box) items were analyzed using frequency counts and percentages to identify the most commonly endorsed responses across categories including learning goals, preferred methods, learning resources, and difficulty factors.

All data were tabulated and presented through diagrams and figures to facilitate visual interpretation. It is important to acknowledge several limitations regarding the generalizability of this research. The study was conducted at a single vocational school (SMKN 3 Takalar) within one specific program area (Computer Engineering and Networking), which limits the extent to which findings can be generalized to other vocational schools, regions, or disciplines in Indonesia. Additionally, the study relied exclusively on student self-report data via questionnaire, which may be subject to social desirability bias or limited self-awareness regarding language needs. Future research incorporating teacher perspectives, employer input, and document analysis would provide a more comprehensive triangulated understanding of ESP needs in vocational technical education.

## RESULT AND DISCUSSION

This questionnaire was designed to analyze the needs of English for specific purposes in tenth grade students of Network Computer Engineering in Vocational High Schools (SMK), the main skills in learning English in Network Computer Engineering majors, the role of practical activities, difficult skills, and the shortcomings of teaching materials and feedback needs. Based on the data analysis of the questionnaire, the 10 questions included 4-point Likert questions: very helpful, helpful, moderately helpful, and not helpful, 4-point Likert scale: very often, often, sometimes, and rarely, and 4-point Likert scale: very influential, moderately influential, slightly influential, and not influential. In addition, the questionnaire also included some tick-box questions relating to English learning goals, expectations in learning English, expected learning methods, learning resources, factors causing difficulties in learning English and learning methods outside the classroom.

### The Purpose of Studying English

Most respondents viewed English as an important skill to support their future careers. This suggests that English is perceived as a tool that can improve job opportunities and competitiveness in the professional world. English is also learned for its role as an international language. This reflects the need to be able to communicate effectively with people from different countries in an era of globalization. Some respondents learn English as part of their preparation for higher education. This shows that mastery of English is considered important to fulfill academic requirements, such as understanding scientific literature or taking lectures. A small number of respondents studied English with the aim of broadening their horizons and expanding their knowledge. This reason reflects individuals' interest in learning languages as part of personal development. Questions and summary of answers respondents results can be seen in Figure 1.

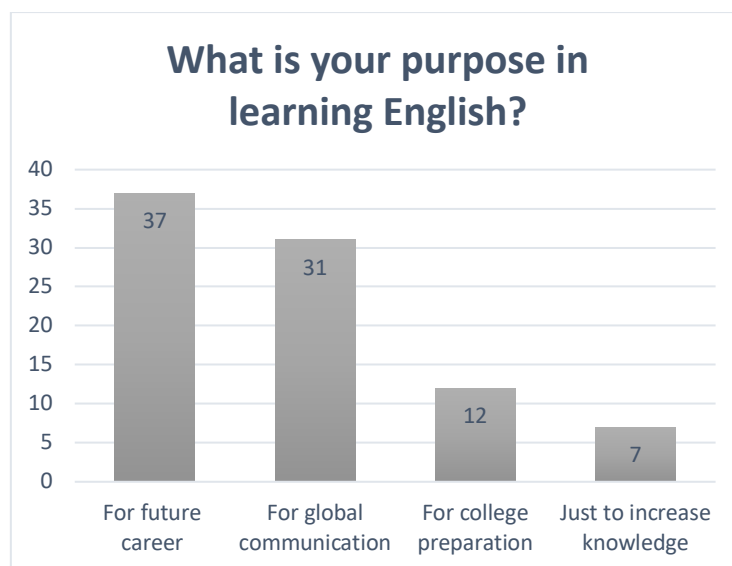


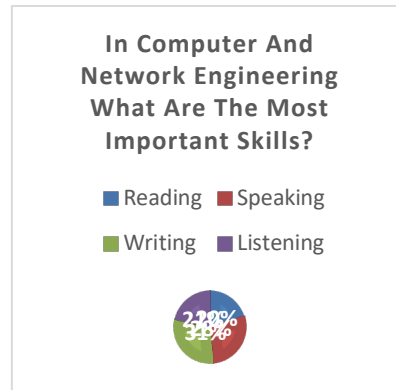
Figure 1. Purpose of Studying English

The data shows that the main motivation for learning English is dominated by practical and strategic reasons, such as career and global communication, but also includes aspects of education and self-development.

### The Most Important Skills

Based on the questionnaire results, writing skills were the top priority for respondents. This shows the importance of being able to create accurate and clear technical documents, reports or other written communications in this field. Meanwhile, speaking skills came in second place. These skills are needed to convey ideas, discuss with a team, or communicate with clients and others in a professional setting. Then, listening skills are also considered important, reflecting the need to understand instructions, follow technical discussions, or catch details when communicating in person. Meanwhile, reading skills remain relevant, especially in understanding

technical documents, user guides, or academic literature often used in this field. Questions and summary of answers respondents results can be seen in Figure 1.

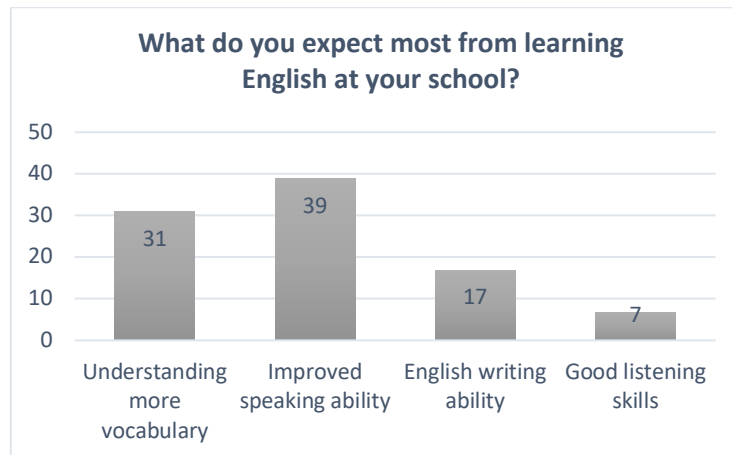


**Figure 2.** Most Important Skills

Overall, this data shows that communication, both written and oral, is an important aspect of the Computer and Network Engineering field, followed by the ability to receive and understand information through listening and reading.

### Expectations in Learning English

Most of the respondents, 39 in total, had expectations of improving their speaking skills. This shows that oral communication is considered a top priority in English language learning. Good speaking skills are essential to support interaction in various contexts, whether academic, professional or social. A total of 31 respondents stated that they would like to expand their vocabulary. This reflects an awareness of the importance of having a rich vocabulary as a basis for improving speaking, writing, reading and listening skills. With a wider vocabulary, learners can understand and express their ideas better. A total of 17 respondents expect to hone their writing skills. This expectation may be related to the need to write in formal situations, such as composing essays, academic reports or other professional documents. This suggests that writing is considered an important skill to support academic and career success. A total of 7 respondents wanted to have better listening skills. This skill is needed to understand conversations, instructions or audio material in English. Although not as much as other skills, listening remains an important part of the language learning process. Questions and summary of answers respondents results can be seen in Figure 3.



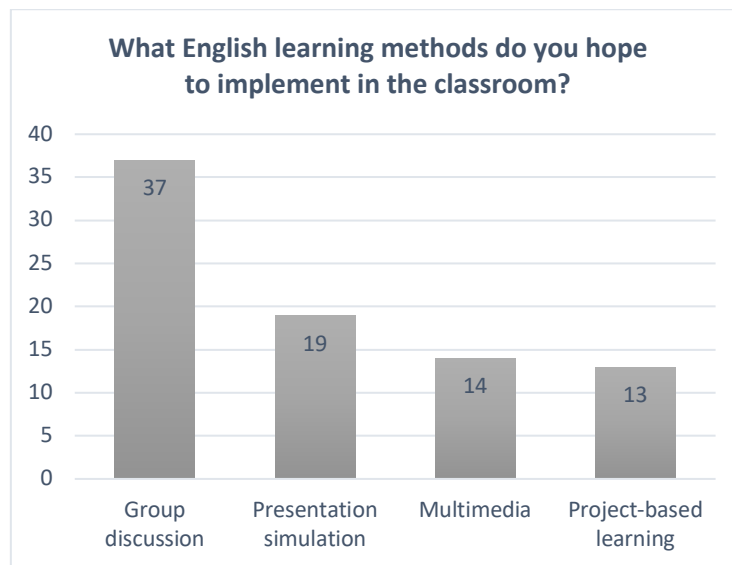
**Figure 3.** Expectations in Learning English

Thus, respondents' expectations highlighted the importance of mastering active communication, especially speaking, as well as vocabulary development that supports all language skills.

#### **Expected English Learning Methods**

A total of 37 respondents preferred the group discussion method in English learning in class. This method is considered effective as it provides opportunities for students to exchange ideas, collaborate and improve their speaking skills in an interactive setting. Group discussion also helps students learn from others' perspectives and experiences. Then, a total of 19 respondents chose presentation simulation as a learning method. This method allows students to practice formal speaking skills, train confidence, and improve skills in conveying information in front of an audience.

This simulation is also beneficial to prepare students for future professional situations. In addition, a total of 14 respondents indicated a preference for the use of multimedia. Media such as video, audio and digital applications are considered to make learning more interesting and interactive. In addition, multimedia can help students understand the material better through visualization and authentic listening experience. Finally, 13 respondents preferred project-based learning. This method allows students to learn through hands-on experience by working on specific projects. Besides improving language skills, this method also trains critical thinking, problem-solving and teamwork skills. Questions and summary of answers respondents results can be seen in Figure 4.



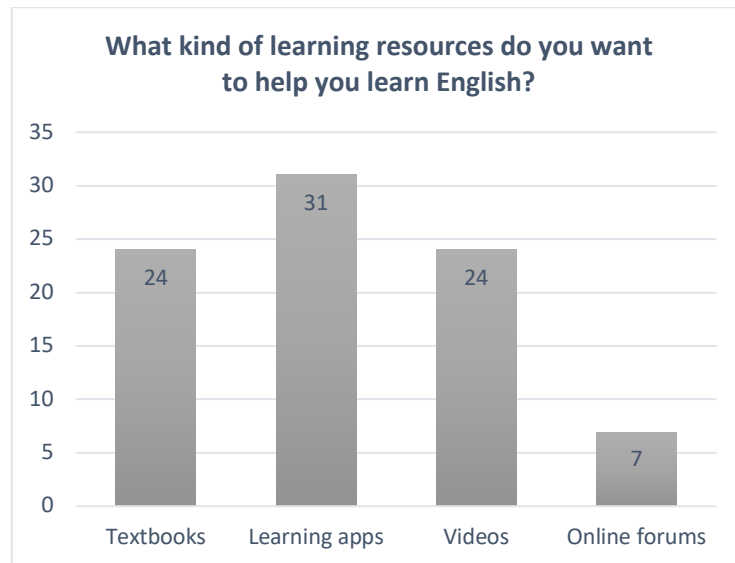
**Figure 4.** Expected English Learning Methods

Overall, this data shows that respondents tend to prefer interactive and practical learning methods, with a focus on collaboration, simulation of real situations, and utilization of technology and projects as learning tools.

#### **Learning Resources Needed to Help Learn English**

A total of 31 respondents chose learning apps as the main source to help them learn English. Learning apps are considered practical, flexible and interactive, giving students access to materials anytime and anywhere. Features such as practice questions, educational games and other technology-based learning make apps an engaging and effective tool. Then, 24 respondents stated that textbooks remain an important source of learning. Textbooks provide a clear learning structure and contain systematically designed material. In addition, textbooks often include in-depth theories, exercises and explanations that help students understand concepts in more detail. In addition, 24 respondents also favored the use of videos as an English learning resource.

Videos offer a more dynamic learning experience, combining audio and visual elements that help students understand English in a real context. Videos, such as tutorials, movies, or learning clips, also provide examples of pronunciation and intonation that students can imitate. Questions and summary of answers respondents results can be seen in Figure 5.



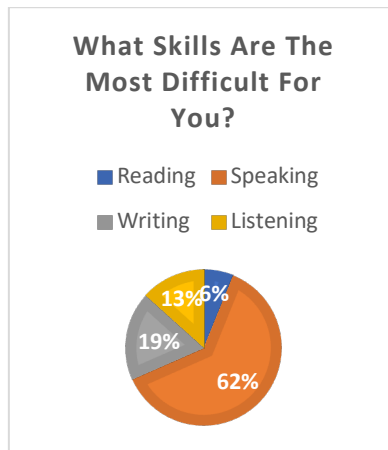
**Figure 5.** Learning Resources Needed to Help Learn English

From this data, it appears that respondents need a combination of modern and traditional learning resources. Learning apps and videos provide flexibility and interactivity, while textbooks provide a strong and structured knowledge base.

### **The Most Difficult Skills**

A total of 37 respondents stated that speaking is the most difficult skill in learning English. This difficulty may be due to challenges in pronunciation, intonation, as well as a lack of confidence to speak in front of others. In addition, speaking requires quick responses and the ability to construct sentences spontaneously, making it a big challenge for many learners. Then, 11 respondents considered writing as a difficult skill. This could be due to the demand for understanding complex grammar, the use of appropriate vocabulary, and the ability to organize ideas in a structured manner. Writing also requires intensive practice in order to produce results that meet the standards of formal English.

A total of 8 respondents felt that listening was a difficult skill. Challenges in listening usually involve the speed at which native speakers speak, different accents, and lack of familiarity with idiomatic expressions. This makes understanding conversations or audio material difficult for some learners. And reading as the easiest skill, only 4 respondents considered reading as a difficult skill. This may be because reading allows learners to comprehend the text slowly and allows more time to analyze sentence structure and vocabulary. Questions and summary of answers respondents results can be seen in Figure 6.

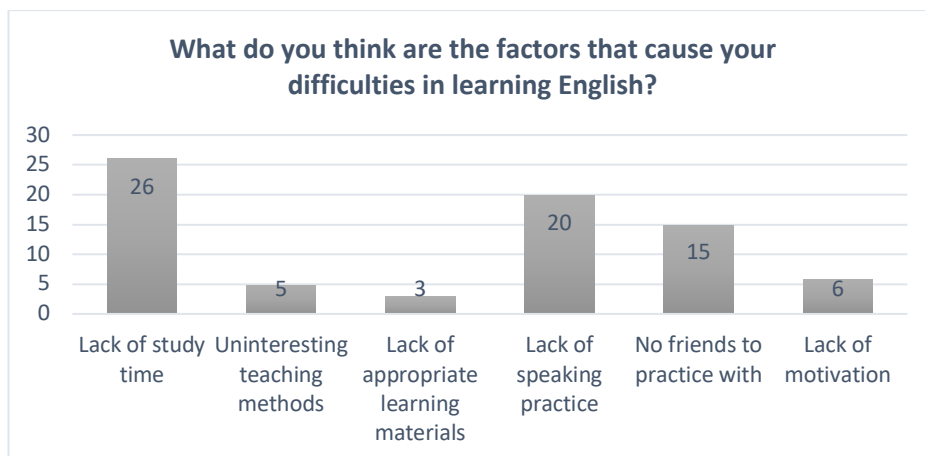


**Figure 6.** The Most Difficult Skills

Overall, this data shows that language production skills (speaking and writing) are considered more challenging than receptive skills (listening and reading). This reflects the importance of active practice to improve speaking and writing skills.

#### Factors that Cause difficulties in Learning English

A total of 26 respondents considered lack of study time as the main factor causing difficulties in learning English. This may be due to a busy schedule, whether at school, work, or other activities, so there is not enough time available to explore the material or practice independently. A total of 20 respondents cited lack of speaking practice as a cause of difficulty. Without consistent practice, speaking skills are difficult to develop. This can hinder mastery of pronunciation, confidence, and fluency in using English in real situations. Then, 15 respondents identified lack of friends to practice with as one of the obstacles. Interaction with others is essential for practicing speaking and listening skills. The absence of practice partners deprives students of the opportunity to improve their communication skills in a practical way. Questions and summary of answers respondents results can be seen in Diagram 5.



**Figure 7.** Factors that Cause difficulties in Learning English

Overall, these factors show the importance of time management, more speaking practice opportunities, and a supportive social environment in the process of learning English.

### How to learn English Outside of Class

A total of 24 respondents use the method of watching movies or videos to learn English outside of class. This activity helps learners understand vocabulary, pronunciation, and language expressions that are often used in everyday life. In addition, watching also provides a visual context that facilitates understanding. A total of 17 respondents chose reading books or articles as a way to improve their English skills. Reading helps learners expand their vocabulary, understand sentence structure, and hone critical thinking skills through more complex texts. A total of 17 respondents also learned English through music or podcasts. This method is considered fun and useful for practicing listening skills, recognizing accents, and understanding intonation. Songs and podcasts also provide valuable cultural insights. In addition, 15 respondents use language learning apps as a tool for learning. These apps offer various features such as quizzes, interactive exercises and games that make the learning process more interesting and flexible. Questions and summary of answers respondents results can be seen in Figure 8.

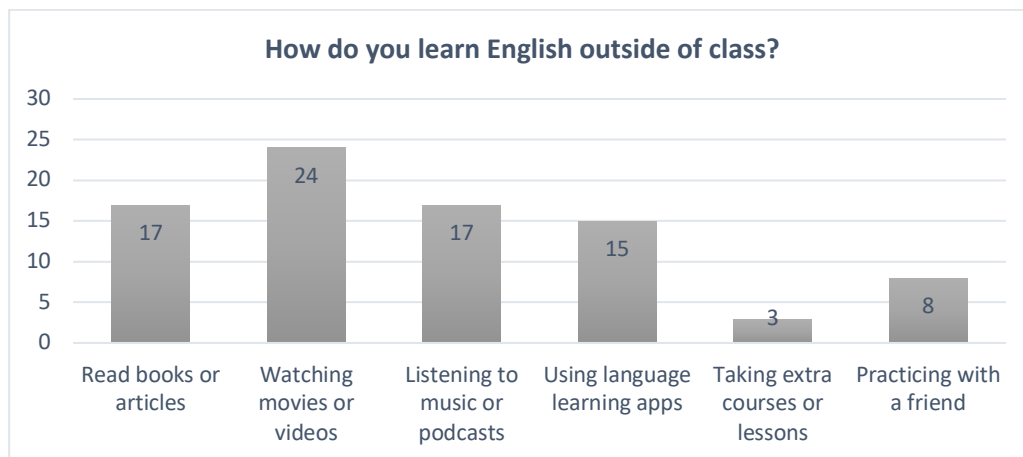


Figure 8. How to learn English Outside of Class

Overall, they show that learners use a combination of fun and effective methods to practice English outside of class, with a focus on listening, reading and vocabulary acquisition skills.

### Discussion

This research provides valuable insights into the English language needs of tenth-grade Computer Engineering and Networking students at SMKN 3 Takalar. These insights are pivotal for developing an English for Specific Purposes (ESP) curriculum that is aligned with the students' academic and professional requirements. The responses from the questionnaire reveal that the students have diverse motivations for learning English, significant skill gaps, and specific preferences for learning methods and resources, all of which reflect the complexities of their learning context.

### Purpose of Learning English

The main reasons for learning English are to support future careers and global communication. A minority learn English for higher education preparation and self-development.

These findings reflect the importance of English as a strategic skill in various aspects of life. This career-oriented motivation is consistent with the broader pattern identified by Hyland, (2022), who notes that ESP instruction is most effective when it is anchored in learners' real goals, enabling them to use language authentically in their target professional domains.

#### **Most Important Skill**

Writing skills are top of mind due to relevance to technical documents and professional communication. Hyland, (2022) emphasizes that writing is a critical skill for conveying ideas effectively in professional and academic settings. Speaking is also considered important for team discussions and communication with clients.

#### **Expectations in Learning English**

Respondents' main focus was on improving speaking skills and expanding vocabulary. Writing and listening skills are also prioritized although the level of demand is lower. Nation (2013) states that vocabulary is the foundation for language use and communication. Writing and listening skills are also prioritized, although the level of demand is lower, consistent with Ur's (2012) view that language skills development varies based on learners' needs and priorities. These findings indicate the need for mastery of active communication and vocabulary development to succeed in various contexts. These findings indicate the need for mastery of active communication and vocabulary development.

#### **Expected Learning Methods**

Group discussions are most desirable as they encourage collaboration and improve speaking skills. Simulated presentations, multimedia and project-based learning are also preferred due to their practical relevance. Respondents tend to favor methods that are interactive, collaborative and use technology. This preference aligns with Zhang & Ma, (2023) meta-analysis, which demonstrates that project-based learning yields significantly positive effects on student learning outcomes across educational settings, particularly when tasks are grounded in authentic, real-world contexts that mirror professional situations students are likely to encounter in their chosen field.

#### **Required Learning Resources**

Learning apps are the main source due to their flexibility and interactivity. According Warschauer (1996) provides that technology like a platform for autonomous and engaging learning experiences. This is further supported by contemporary evidence: Purwati & Ubaidillah, (2023) found that technology-integrated approaches in ESP contexts facilitate more autonomous and engaging learning experiences, particularly for vocational learners who benefit from flexible, self-directed study modes enabled by digital tools. Textbooks and videos are also considered important to provide a theoretical basis and dynamic learning experience. A combination of modern and traditional sources is required to support a variety of learning needs.

#### **Most Difficult Skill**

Speaking is the most difficult skill, followed by writing and listening. Reading was considered the easiest due to its more passive and structured nature. Speaking is challenging due to its spontaneous and interactive nature. This finding resonates with Purwati & Ubaidillah, (2023), who document that students in Indonesian vocational high schools consistently struggle with speaking due to limited vocabulary, weak pronunciation, and low confidence—factors that cumulatively inhibit communicative performance in classroom and professional settings. Writing difficulties can be attributed to the complexity of grammar and organization. Listening is

challenging because of the speed and variability of spoken language. Reading was considered the easiest due to its more passive and structured nature, Grabe and Stoller's (2013) view of reading as a controlled skill requiring less immediate processing. These results show the challenges in language production skills versus receptive skills.

### **Factors Causing Difficulties**

Lack of study time is the main obstacle in learning English. Lack of speaking practice and lack of practice partners are also obstacles. Time constraints are a common barrier in language learning. Lack of speaking practice and practice partners are also obstacles, Swain's (1985) output hypothesis that emphasizes the importance of practice and interaction in language acquisition. Hajar & Triastuti, (2021) similarly observed that students at Indonesian vocational schools frequently cited insufficient speaking practice opportunities and limited peer interaction as the most significant barriers to developing functional English communication skills. This emphasizes the importance of time management and a supportive social environment.

### **How to Learn English Outside the Classroom**

Watching movies or videos is the most popular method for learning outside the classroom. Reading books or articles, listening to music or podcasts, and using learning apps are also popular. This aligns with Krashen's (1985) theory that authentic input improves language proficiency. Reading books or articles, listening to music or podcasts, and using learning apps are also popular, consistent with Gardner's (1983) theory of multiple intelligences, which highlights diverse learning preferences. The use of mobile-assisted and digital learning tools outside the classroom is also consistent with contemporary research: Kamaruddin & Fitria, (2021) note that ESP learners at Indonesian vocational schools who are exposed to technology-integrated activities outside formal class hours demonstrate greater gains in vocabulary and communicative fluency. This combination of methods shows learners' efforts to improve skills in a fun and effective way, as supported by Tomlinson's (2011) emphasis on learner-centered resources. This combination of methods shows learners' efforts to improve skills in a fun and effective way. Comparative analysis with prior ESP needs studies in vocational and technical contexts reveals noteworthy parallels and distinctions. Poedjiastutie & Oliver, (2017), in their study of Indonesian ESP learners, similarly found that oral communication and professional writing were prioritized needs, and emphasized that contextual factors such as learners' field of study and professional aspirations must drive curriculum decisions.

The present findings are consistent with this conclusion, as SMKN 3 Takalar students demonstrated strong career-oriented motivation and a clear preference for communicative skills directly applicable to their technical field. Similarly, Alsamadani, (2017) reported that engineering students require English primarily for reading technical documentation, writing professional reports, and engaging in oral communication with international clients and colleagues a pattern mirrored in the present study's findings regarding writing and speaking as the most important skills. These cross-contextual consistencies lend further validity to the current data and reinforce the argument that ESP curricula for technical vocational students must be profession-specific rather than generic.

Based on the aggregated findings, several concrete curriculum recommendations can be advanced. First, speaking proficiency should be prioritized in the ESP curriculum through structured oral communication activities such as technical presentations, role-plays simulating workplace dialogues, and peer-led discussion sessions. To address the key barrier of limited

speaking confidence, instructors are advised to implement low-stakes speaking practices—such as pair work and small group discussions before progressing to larger audience presentations, consistent communicative approach. Second, digital tools and multimedia should be formally integrated into ESP instruction. Given students' strong preference for learning apps and video-based content, instructors can incorporate platforms such as Duolingo, YouTube tutorials, or discipline-specific e-learning modules to supplement classroom activities.

Third, vocabulary instruction with a technical focus should be embedded across all skill areas. Fourth, project-based learning tasks that simulate real-world professional scenarios such as preparing technical documentation, designing a network configuration report, or conducting a client presentation in English should be incorporated to bridge theoretical knowledge and practical application. These recommendations collectively support the design of an ESP curriculum that is responsive, interactive, technology-enhanced, and aligned with both learner needs and professional demands.

## CONCLUSIONS

This research demonstrates that tenth-grade Computer Engineering and Networking students at SMKN 3 Takalar exhibit well-defined English language needs rooted in their professional aspirations and disciplinary demands. The findings indicate that students are highly motivated to acquire English for career advancement and global communication, with writing and speaking identified as the most critical skills, speaking also presenting the greatest pedagogical challenge due to limited practice opportunities and low confidence. Students strongly favor interactive, technology-mediated, and collaborative learning approaches, particularly group discussions, presentation simulations, project-based tasks, and digital learning platforms. For future empirical research, it is recommended that similar studies be replicated in other vocational schools across different provinces in Indonesia to broaden the evidence base and facilitate comparative analysis; that mixed-methods approaches incorporating teacher and employer perspectives be employed for triangulated needs assessment; and that longitudinal studies be conducted to evaluate the effectiveness of ESP curricula designed on the basis of needs analysis findings. Such directions would substantially advance both the theoretical understanding and practical application of ESP in Indonesian vocational education contexts.

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