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Exploring EFL Teachers' Strategies and Challenges in Teaching English for Electrical Engineering in Vocational High School

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Abstrak

Penelitian ini bertujuan untuk menganalisis strategi yang diterapkan oleh guru *English as a Foreign Language* (EFL) serta mengidentifikasi tantangan yang dihadapi dalam mengimplementasikan pembelajaran *English for Specific Purposes* (ESP) bagi siswa Program Keahlian Teknik Elektro di sekolah menengah kejuruan (SMK). Penelitian menggunakan pendekatan kualitatif interpretatif dasar dengan melibatkan dua guru bahasa Inggris yang mengajar pada Program Keahlian Teknik Elektro di salah satu SMK di Jawa Timur, Indonesia. Data dikumpulkan melalui wawancara semi-terstruktur, observasi kelas, catatan lapangan, analisis dokumen rencana pelaksanaan pembelajaran, dan triangulasi berbagai sumber data. Analisis data dilakukan menggunakan analisis tematik untuk mengidentifikasi tema-tema yang berkaitan dengan strategi pembelajaran dan tantangan yang dihadapi guru. Hasil penelitian menunjukkan bahwa guru menerapkan berbagai strategi, meliputi pembelajaran yang berpusat pada siswa, pembelajaran kolaboratif, kontekstualisasi materi sesuai bidang kejuruan, pembelajaran berbasis proyek, penciptaan lingkungan belajar yang suportif, serta integrasi teknologi dalam pembelajaran. Strategi tersebut meningkatkan keterlibatan, partisipasi, dan kepercayaan diri siswa dalam belajar bahasa Inggris. Namun, implementasi ESP masih menghadapi berbagai kendala, seperti keterbatasan materi ajar yang spesifik untuk bidang Teknik Elektro, rendahnya motivasi dan kepercayaan diri siswa, partisipasi kelas yang pasif, keterbatasan waktu pembelajaran, pengelolaan kelas yang besar, serta kurang memadainya sarana pembelajaran. Temuan penelitian menunjukkan bahwa penguatan implementasi ESP di SMK memerlukan pengembangan bahan ajar yang relevan dengan bidang keahlian, peningkatan kompetensi profesional guru, dan dukungan institusional untuk meningkatkan kualitas pembelajaran bahasa Inggris yang berorientasi pada kebutuhan dunia kerja.

Kata Kunci: English for Specific Purposes (ESP), Sekolah Menengah Kejuruan, Teknik Ketenagalistrikan, Strategi Pengajaran, Tantangan Pengajaran, Penelitian Kualitatif Interpretatif Dasar, Guru EFL.

Abstract

This study aims to analyze the instructional strategies employed by *English as a Foreign Language* (EFL) teachers and to identify the challenges they encounter in implementing *English for Specific Purposes* (ESP) instruction for students in the Electrical Engineering program at a vocational high school. A basic interpretive qualitative approach was adopted to gain an in-depth understanding of teachers' pedagogical practices in vocational English education. The participants consisted of two EFL teachers teaching Electrical Engineering students at a vocational high school in East Java, Indonesia. Data were collected through semi-structured interviews, classroom observations, field notes, lesson plan analysis, and triangulation of multiple data sources. The data were analyzed using thematic analysis to identify recurring patterns related to teaching strategies and implementation challenges. The findings indicate that the teachers employed various instructional strategies, including student-centered and collaborative learning, contextualizing English instruction to vocational content, project-based learning, creating a supportive learning environment, and integrating technology into classroom instruction. These strategies were perceived to enhance students' participation, engagement, and confidence in learning English. However, the implementation of ESP remained constrained by several challenges, including the limited availability of Electrical Engineering-specific ESP materials, low student motivation and speaking confidence, passive classroom participation, large class sizes, limited instructional time, and inadequate educational facilities. The study suggests that strengthening ESP implementation in vocational education requires the development of discipline-specific teaching materials, continuous professional development for teachers, and greater institutional support to improve the quality of vocational English instruction.

Keywords: English for Specific Purposes (ESP), Vocational High School, Electrical Engineering, Teaching Strategies, Teaching Challenges, Basic Interpretive Qualitative Research, EFL Teachers.

A. Introduction

In Indonesia, English is considered a vital subject, particularly in vocational high schools. It is no longer just a regular academic subject, but it is seen as a crucial skill for getting a job. The government supports vocational education to help students prepare for work in fields such as engineering, tourism, and business, where proficiency in English is often necessary (Sugiarto, Widodo, and Wicaksono 2024). Anwas et al. (2024) emphasize that teacher competence and instructional relevance are crucial in ensuring successful learning implementation in vocational schools. However, research shows that English teaching in vocational high schools is often still conducted similarly to general high schools, without sufficient alignment to students' specific majors (Natsir et al. 2022). This gap highlights the need to examine how English is actually taught in vocational contexts, particularly for technical majors such as Electrical Engineering.

In vocational education, students are expected to learn not only general English but also English for Specific Purposes (ESP), tailored to their professional field, such as electrical engineering. ESP equips learners with the skills to comprehend manuals, operate technical equipment, and participate in field-related discussions (Setyowati et al. 2025). While ESP is the recommended model for vocational high school students, English instruction often lacks alignment with vocational needs, reducing its relevance and perceived value. Mauludin et al. (2023) emphasize that ESP supports students' ability to engage in academic and professional communication, especially in technical majors. However, many ESP programs still resemble general English courses, creating a disconnect between instructional content and real-world demands (Mauludin et al. 2023; Wen 2024)

Classroom interaction is fundamental to effective ESP instruction, particularly in vocational settings such as electrical engineering programs, as it enables students to apply technical English in relevant, real-world contexts. Meaningful teacher-student and peer interaction fosters active learning, including speaking, problem-solving, and negotiating meaning (Mauludin et al. 2023). However, teacher-centered practices and poorly designed activities often limit engagement and reduce student motivation (Mauludin and Prasetyo 2024). Additional barriers, such as limited vocabulary and low confidence, further hinder participation

(Purwati, Faruq Ubaidillah, and Restall 2023). Studies also emphasize that both verbal and non-verbal interaction, supported by scaffolding and collaborative tasks, improve communicative competence (Wen 2024).

Teaching English as a Foreign Language (EFL) involves various challenges in different contexts, as teachers commonly deal with students' limited vocabulary, low confidence in speaking, and varying proficiency levels within one classroom. Chang (2024) reports that implementing English-only instruction may create additional pressure for teachers and learners when students struggle with language comprehension. Similarly, Ag-Ahmad et al. (2025) highlight that teachers often face tension between institutional expectations and students' actual needs in classroom practice. Classroom interaction also becomes a challenge, especially in managing questioning techniques to encourage student participation (Rahayu & Suharti, 2023). These findings indicate that English requires not only language knowledge but also strong pedagogical competence and adaptability.

In the Indonesian vocational high school context, the challenges become more complex. English is often perceived as less important compared to productive vocational subjects, which may affect students' motivation and engagement. Many learners struggle with pronunciation, vocabulary, and fluency, which often makes them anxious and reluctant to participate in class (Purwati et al. 2023). On the teachers' side, issues such as overcrowded classrooms, limited resources, and insufficient professional training often lead to teacher-centered practices that restrict meaningful interaction (Sanyal, Amani, and Chandrakala 2020; Sugiarto et al. 2024). These problems are compounded in vocational contexts where English lessons are frequently adapted from general textbooks that fail to meet the communicative needs of technical fields like engineering. As a result, students are exposed to vocabulary and materials disconnected from their professional realities, reducing their motivation and engagement (Asmin 2019; Mauludin et al. 2023; Mauludin and Prasetyo 2024). This lack of industry-specific content, combined with students' prioritization of technical subjects, further limits their ability to apply English effectively in real-world settings (Fatahillah and Agustina 2024).

Effective English instruction in vocational settings requires strategic, student-centered approaches that promote active engagement and meaningful communication. Techniques such as project-based learning, game-based activities, and collaborative tasks have been shown to enhance language acquisition by encouraging practical application and interaction (Setyowati et al. 2025). To address challenges like low motivation and passive learning, researchers highlight the importance of motivational strategies that prioritize learner interests, foster positive teacher-student relationships, and provide clear guidance and feedback (Mauludin et al. 2023). Interactive methods, such as pair work, group discussions, role-plays, and storytelling, not only improve speaking and listening skills but also help reduce language anxiety and boost learner confidence (Asmin 2019; Fatahillah and Agustina 2024). These practices create a supportive and engaging classroom environment conducive to language development. Additionally, Putri & Susiati (2025) identify several techniques in teaching speaking skills that help students participate more actively in the learning process. Effective questioning strategies also play a significant role in stimulating critical thinking and classroom interaction. Furthermore, Ag-Ahmad et al. (2025) emphasize the importance of reflective teaching practices and professional development in enhancing instructional quality. These strategies demonstrate that successful English teaching requires careful planning, classroom management, and adaptation to students' learning characteristics.

In vocational high schools, teaching strategies must be adapted to students' technical backgrounds and future workplace demands. ESP-based instruction is widely recognized as an effective approach in vocational education, promoting both language proficiency and job readiness by integrating English with field-specific tasks such as technical presentations, manual reading, and job interview simulations (Setyowati et al. 2025). English instruction for Electrical Engineering students should integrate technical vocabulary, real-life simulations, and task-based activities related to industrial contexts. Natsir, Purba, Ellyana, et al. (2022) stress the importance of needs-based instruction in vocational English learning. Meanwhile, Lubis & Fithriani (2023) suggest that integrating technology can support more engaging and effective learning when properly implemented. Aligned with the Merdeka Curriculum, many teachers implement student-centered strategies, including P5 projects that foster critical thinking and collaboration through vocationally relevant English tasks (Ferdaus and Novita 2023). However, such practices remain inconsistent due to persistent reliance on traditional methods and limited access to appropriate materials and training (Purwati et al. 2023). Recent developments suggest

incorporating technology and data analytics to personalize instruction and optimize content delivery (Wen 2024).

Several studies have examined English teaching practices in vocational education, particularly the use of English for Specific Purposes to meet students' occupational needs. Research by Mauludin et al. (2023) emphasized the importance of tailoring English instruction to vocational contexts, highlighting that ESP should enable students to understand technical terminology, read manuals, and communicate in professional settings. Similarly, Setyowati et al. (2025) advocated for interactive and student-centered strategies such as project-based learning, game-based learning, and simulations, which help students apply English in real-world vocational contexts. These studies suggest that effective strategies can increase learner engagement and bridge the gap between classroom learning and workplace communication needs.

Some studies suggest that the effectiveness of classroom interaction is closely linked to teaching strategies. When teachers intentionally design interactive classroom activities, such as storytelling, picture description, and peer interviews, they create more space for students to participate and build confidence (Ardiansyah, 2023; Fatahillah & Agustina, 2024). These strategies also contribute to developing both language fluency and the soft skills required in technical work environments. Nonetheless, implementing these strategies consistently requires adequate preparation, access to appropriate materials, and teacher training in ESP methods.

While numerous studies have examined English teaching practices in vocational education, much of the existing research focuses on general English instruction, curriculum development, or ESP implementation in fields such as tourism and hospitality (Asmin 2019; Fatahillah and Agustina 2024). These studies have provided valuable insights into strategies for making English more relevant to vocational contexts; however, there remains a noticeable gap in research on how teachers actually implement strategies and overcome challenges in technical fields, particularly engineering. Most previous research tends to highlight students' perspectives or general classroom conditions (Mauludin et al. 2023; Purwati et al. 2023). Whereas fewer studies have explored teachers' lived experiences in planning and delivering ESP instruction tailored to engineering-related majors.

Recent studies have highlighted the growing importance of English for Specific Purposes (ESP) in vocational education. Tri Nurhasanah & Eri Kurniawan (2023) investigated the ESP needs of Computer and Network Engineering students and found that English instruction remained largely general despite students' need for technical communication skills. Similarly, Efendi et al. (2025) revealed that engineering students required technical vocabulary and workplace communication skills aligned with their vocational specialization. While in creative vocational fields, Saputro & Savitri (2025) identified the need for industry-specific English materials and project-based learning among Visual Communication Design students.

Recent studies have also explored ESP from the perspectives of learners' needs, professional language demands, and teacher development. Hajar & Triastuti (2021) found that vocational students require English materials that are closely aligned with their occupational needs, while Arias-contreras & Moore (2022) emphasized the importance of English for accessing technical information and supporting professional communication in specific occupational fields. In addition, Cao et al. (2022) revealed that ESP teachers often encounter challenges in acquiring subject-specific knowledge and adapting their teaching practices to specialized disciplines. Although these studies contribute valuable insights into ESP implementation, they primarily focus on needs analysis, professional language use, and teacher cognition rather than on teachers' instructional strategies and the challenges in engineering-related vocational programs.

This study is therefore distinct because it investigates teachers' strategies and challenges in the specific context of Electrical Engineering, a vocational field that has received far less scholarly attention compared to areas like tourism, agriculture, and medical education, which are more frequently studied (Cao et al., 2022; Chen, 2020; Hajar & Triastuti, 2021). While previous studies have concentrated on identifying learners' needs and developing relevant ESP curricula, few have investigated how teachers implement ESP instruction and overcome classroom challenges in Electrical Engineering programs. By focusing on this underrepresented discipline, the study aims to contribute a deeper understanding of ESP teaching in technical programs and provide practical implications for vocational English instruction in engineering contexts.

B. Research Method

Research Design

This study employed a basic interpretive qualitative research design. Basic interpretive qualitative research focuses on understanding how individuals interpret and make meaning of their experiences within a particular context. In qualitative research, researchers aim to understand participants' perspectives, experiences, and interpretations of a phenomenon in their natural setting (Denny & Weckesser, 2022). This design was considered appropriate for the present study because the researcher intended to explore and interpret EFL teachers' strategies and challenges in teaching English for Electrical Engineering students in a vocational high school context.

According to Creswell & Poth (2016), qualitative research allows researchers to explore social phenomena by collecting detailed information from participants in natural settings. Similarly, Hitchcock & Hughes (2020) explains that qualitative research emphasizes understanding participants' perspectives and experiences within their real-life situations. Therefore, this study did not aim to generalize findings to all vocational schools, but rather to gain an in-depth understanding of teachers' experiences and classroom practices in a specific educational context.

This study also used thematic analysis to analyze the collected data. Thematic analysis is widely used in qualitative research because it provides a systematic approach for identifying, analyzing, and interpreting patterns within qualitative data (Lochmiller 2021).

Research Participants

The participants in this study consist of 2 English teachers who are directly responsible for teaching ESP courses in the Electrical Engineering department at a selected vocational high school in Sidoarjo, East Java. This school was chosen because it offers a wide variety of majors and departments, including Electrical Engineering, Machinery, Fashion, Visual Design, and others, representing the diversity typical of Indonesian vocational education. Despite its wide range of programs, the school operates with limited facilities, especially in terms of technology and network access. English as a subject is not highly prioritized by the students; many perceive it as irrelevant to their technical majors.

The participants of this study were two English teachers who taught English for Electrical Engineering students at a vocational high school. The participants were selected purposively based on their direct involvement and experience in teaching ESP for Electrical Engineering students. Selecting participants with relevant experience enables researchers to obtain rich and meaningful information regarding the phenomenon being investigated (Denny & Weckesser, 2022). Additionally, Hitchcock & Hughes (2020) explains that qualitative research focuses on obtaining detailed descriptions of participants' experiences, perspectives, and practices within a particular social and educational context. Therefore, the participants were not selected to represent a large population, but to provide meaningful insights into how English teachers implemented instructional strategies and dealt with challenges in teaching English for Electrical Engineering students.

In addition, the selected school had a specific educational context that made the participants academically relevant to the study. The school was located in a rural area with limited facilities, technological support, and internet access. These conditions potentially influenced the teaching and learning process, particularly in teaching ESP subjects that often require contextual materials and supporting resources. Therefore, the participants were considered suitable because they were directly involved in adapting instructional practices and managing classroom challenges within those limitations.

Furthermore, only three English teachers were assigned to teach students in the Electrical Engineering major at the school, and only two were available and willing to participate in the research process. Although the number of participants was limited, the data obtained from the two teachers were considered sufficient because both participants shared detailed experiences, classroom practices, and perspectives relevant to the objectives of the study. The focus of this research was not to produce generalizable findings but to provide a detailed, contextualized understanding of teachers' strategies and challenges in teaching English to Electrical Engineering students.

Moreover, this phenomenon is particularly significant because English instruction in this setting fluctuates between teaching general English (EGP) and attempts to integrate ESP content into specific majors. Given that many students are still not fully exposed to English materials,

this school provides a valuable context to examine teachers' strategies and challenges in learning English for Specific Purposes. Teachers will be selected based on their experience in teaching ESP or English for vocational purposes.

Data and Source of the Data

The data in this study were obtained from interviews, classroom observations, field notes, and lesson plans. The use of multiple data sources allowed the researcher to gain a more comprehensive understanding of the phenomenon being investigated. Busetto et al. (2020) and Chand (2025) explain that using various data sources can strengthen the credibility of qualitative findings through triangulation.

The primary data were obtained from semi-structured interviews and classroom observations involving the two English teachers. Meanwhile, supporting data were collected from lesson plans and field notes documented during the research process. These various sources of data were used to support the researcher in identifying teachers' instructional strategies and challenges in teaching English for Electrical Engineering students.

Instruments

The instruments used in this study were semi-structured interview guidelines, observation checklists, field notes, and document analysis. These instruments were used to obtain detailed information regarding teachers' experiences, instructional strategies, and challenges in teaching English for Electrical Engineering students. In basic interpretive qualitative research, the researcher acts as the primary instrument because the researcher directly collects, interprets, and understands participants' perspectives and experiences within their natural setting (Collins et al. 2021; Creswell and Poth 2016).

a. Semi-Structured Interview

Semi-structured interviews were used as the primary instrument in this study to explore participants' experiences, perspectives, and interpretations related to teaching English for Electrical Engineering students. Semi-structured interviews allowed the participants to explain their experiences more openly while also enabling the researcher to ask follow-up questions to gain a deeper understanding of the participants' responses. According to DiCicco-Bloom & Crabtree (2006), semi-structured interviews provide flexibility for researchers to explore emerging issues during the interview process. Similarly, Jamshed (2014) explains that semi-structured interviews help researchers obtain rich and detailed information from participants' experiences.

The interview guidelines consisted of open-ended questions related to instructional strategies, classroom interaction, learning materials, teaching practices, and challenges experienced by the teachers during the teaching and learning process. Additional questions were also asked during the interviews to clarify participants' responses and explore meanings or experiences that emerged during the discussion.

b. Field Notes

Field notes are used to complement the interview data and capture details that may not appear in audio recordings. In qualitative research, field notes serve as written records of what the researcher observes, experiences, and reflects upon during data collection (Creswell and Poth 2016). The field notes also helped the researcher record details that might not be fully captured through interviews or observation checklists. In addition, the field notes supported the researcher in interpreting participants' experiences and understanding the classroom context more comprehensively.

c. Classroom Observation Checklist

Observation checklists were used to observe classroom activities and teaching practices during the learning process. Through classroom observation, the researcher was able to directly examine how teachers implemented instructional strategies, interacted with students, managed classroom situations, and responded to challenges that occurred during teaching activities. Observation also allowed the researcher to understand the classroom context and compare the observed practices with participants' explanations during interviews.

According to Chand (2025) observation enables researchers to capture naturally occurring interactions and contextual information that may not fully emerge through interviews alone. Therefore, observations in this study were used not only to record classroom activities, but also to support the researcher's interpretation of participants' experiences and teaching practices.

The observation checklist included several aspects related to classroom activities, such as classroom opening, teaching strategies, classroom interaction, instructional media, students'

participation, and classroom management. During the observation process, the researcher also recorded important situations and contextual information through field notes.

d. Document Analysis

Document analysis was conducted using the teachers' lesson plans as supporting documents in this study. The lesson plans were collected to support and validate the data obtained from interviews and classroom observations. Through document analysis, the researcher examined learning objectives, teaching materials, classroom activities, instructional approaches, and assessment methods prepared by the teachers.

The lesson plans also functioned as triangulation data to strengthen the credibility and consistency of the findings across different data sources. By comparing the lesson plans with the interview and observation findings, the researcher was able to interpret whether the instructional practices implemented by the teachers were aligned with the planned teaching activities. The use of multiple data sources is important in qualitative research because it helps researchers gain a more comprehensive understanding of the phenomenon being investigated and strengthens the trustworthiness of the findings (Busetto et al. 2020; Chand 2025).

e. Triangulation of Instruments

This study employed triangulation of instruments to strengthen the credibility and trustworthiness of the findings. The researcher compared and integrated data obtained from interviews, classroom observations, field notes, and lesson plans to gain a more comprehensive understanding of the phenomenon being investigated. According to Busetto et al. (2020), the use of multiple data sources in qualitative research can strengthen the credibility of the findings.

In this study, the researcher compared participants' explanations from interviews with classroom observations and lesson plans to examine the consistency between teachers' experiences, classroom practices, and instructional planning. Creswell & Poth (2016) explain that triangulation helps researchers support the accuracy and credibility of qualitative findings through the use of different sources of information.

The interview protocol and observation checklist were validated by the research supervisor and an English teacher to ensure content validity.

Data Collection Techniques

The researcher collected data through interviews, observations, and document analysis. The combination of these techniques enables researchers to examine the phenomenon from different perspectives and contributes to the trustworthiness of the findings by providing a more comprehensive understanding of participants' experiences (Busetto et al., 2020; Chand, 2025).

First, the researcher conducted semi-structured interviews with the participants to explore their experiences, teaching strategies, and challenges in teaching English for Electrical Engineering students. Second, classroom observations were conducted to observe the actual teaching and learning process in the classroom setting. During the observations, the researcher recorded important classroom interactions and instructional activities through observation sheets and field notes.

Lastly, document analysis was conducted using the teachers' lesson plans. The lesson plans were analyzed to support the interview and observation findings and to examine whether the instructional practices implemented in the classroom were aligned with the planned teaching activities.

Research Procedure

The research was conducted through several systematic procedures. First, the researcher requested permission from the school to conduct the research. After obtaining permission, the researcher prepared the interview guides and observation tools.

In the following meeting, the researcher conducted a classroom observation with the first teacher. However, due to the school's schedule and the preparation for the twelfth-grade examination, the learning activities for the tenth and eleventh grades were conducted asynchronously in the following weeks, which limited further classroom observations.

Meanwhile, the second teacher could not be observed because she had an urgent matter to attend to during the scheduled observation session. In the following week, the school also conducted examinations for twelfth-grade students, which affected the classroom schedule and limited the opportunity for direct observation. Therefore, the second teacher participated mainly through interviews.

After conducting the interviews with both participants, the researcher requested the teachers' lesson plans to support the data collection process, particularly for the second teacher whose classroom teaching could not be directly observed. The lesson plans were used as supporting documents to strengthen the credibility of the findings through triangulation.

Finally, all collected data from interviews, observations, field notes, and lesson plans were organized and analyzed using thematic analysis.

The research was conducted through a series of systematic procedures to ensure consistency throughout the study. Following a structured process helps maintain alignment between data collection, data analysis, and the objectives of the research (Denny and Weckesser 2022).

Data Analysis Technique

The data in this study were analyzed using thematic analysis. Thematic analysis is widely used in qualitative research because it provides a systematic way to identify, analyze, and interpret patterns within qualitative data (Lochmiller 2021). Furthermore, qualitative data analysis involves data condensation, data display, and conclusion drawing to facilitate meaningful interpretation of the findings (Miles & Hubberman, 1994)

The analysis process began with the researcher familiarizing himself with the data by repeatedly reading the interview transcripts, observation notes, field notes, and lesson plans. After becoming familiar with the data, the researcher conducted open coding by identifying meaningful statements, phrases, and information related to teachers' instructional strategies and challenges.

During the open coding process, the researcher assigned initial labels to important data segments obtained from interviews, observations, and supporting documents. Similar codes were then grouped into broader categories through axial coding. In this stage, the researcher identified relationships among codes and organized them into several related categories.

Afterward, selective coding was conducted by selecting the most relevant categories and organizing them into broader themes that represented the participants' experiences and classroom practices. Mishra & Dey (2022) explain that themes are developed from recurring patterns and meaningful relationships found within qualitative data.

According to Maguire & Delahunt (2017), thematic analysis generally consists of six phases: familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. These stages help researchers organize qualitative data systematically and ensure rigor throughout the analysis process.

The themes in this study emerged from recurring patterns identified across interviews, observations, field notes, and lesson plans. The researcher compared the patterns found in the data with findings from previous studies before grouping them into several major themes. The themes were determined based on their relevance to the research questions and the frequency of similar patterns appearing across different data sources.

The five themes presented in the findings section were formed through a systematic coding process. Initially, specific statements and classroom events were identified during open coding. These initial codes were then grouped into related categories during axial coding. Finally, broader themes were developed during selective coding to represent the major findings of the study related to teachers' instructional strategies and challenges in teaching English for Electrical Engineering students.

To ensure the trustworthiness of the analysis, careful attention was given to coding consistency and theme development. Researchers should avoid common issues such as overlapping themes, limited analytical depth, and weak connections between themes and the research questions (Polat 2025).

Lastly, the findings were interpreted and reported using relevant excerpts from interviews, observation notes, field notes, and lesson plans to support each identified theme (Lochmiller 2021; Maguire and Delahunt 2017; Mishra and Dey 2022).

C. Findings and Discussion

Findings

This section presents the findings of the study based on data collected through semi-structured interviews, classroom observations, field notes, and lesson plan analysis. The findings were analyzed using thematic coding procedures, including open coding, axial coding, and selective coding, followed by triangulation across multiple data sources. The analysis

identified several recurring themes that reflect the participants' lived experiences in teaching English for Electrical Engineering students at a vocational high school. To address the research questions, the findings are organized into two main sections: (1) teachers' strategies in teaching English for Electrical Engineering students and (2) teachers' challenges in teaching English for Electrical Engineering students

Teachers' Strategies in Teaching English for Electrical Engineering

This section presents the findings related to the first research question concerning teachers' strategies in teaching English for Electrical Engineering students. Based on interviews, observation, field notes, and lesson plan data, several instructional strategies were identified and organized into five major themes.

Using Student-Centered and Collaborative Teaching

One of the major findings revealed that the teachers consistently implemented student-centered and collaborative learning strategies during English instruction. The teachers positioned students as active participants through discussions, presentations, peer interaction, and collaborative activities. This finding appeared consistently across interviews, classroom observation, and lesson plan analysis.

"I usually use group discussions and presentations to keep students engaged. If I lecture too much, they quickly get bored. So, I often act as a facilitator, letting the students actively explain or discuss. I also have them work in groups to discuss a text or develop a simple argument and then present it."(T1, Excerpt 1)

The excerpt above indicates that Teacher 1 intentionally reduced teacher-centered instruction and encouraged students to become active participants in the learning process. The teacher viewed collaborative discussion and presentation activities as more effective for vocational students because students tended to lose focus during long explanations. The teacher also emphasized the facilitator role rather than becoming the sole source of information in the classroom.

Similarly, Teacher 2 also emphasized that learning activities should actively involve students rather than relying solely on teacher explanation. The teacher explained:

"I focus more on interaction during the lesson rather than explaining all the material myself. Students usually work in groups, present their work, and practice speaking together because they learn better when they are actively involved." (T2, Excerpt 2)

This interview excerpt reinforces the finding that student-centered learning was implemented by both participants. Similar to Teacher 1, Teacher 2 positioned students as active participants through group discussions, collaborative speaking activities, and classroom presentations. These strategies encouraged students to interact with their peers while allowing the teacher to act primarily as a facilitator throughout the learning process.

Classroom observation data strongly supported this finding. During the observed lesson, students worked collaboratively in small groups to discuss argumentative texts before presenting their ideas in front of the class. Peer interaction and classroom participation appeared more dominant than teacher lecturing. Additionally, the lesson plan also included discussion-based tasks, presentation activities, and collaborative learning instructions.

The triangulation findings showed consistency between the teacher's perception, instructional planning, and classroom implementation. This indicates that student-centered learning was not only theoretical in planning documents but also practically implemented during classroom interaction.

Aligning Curriculum with ESP Specialization

Another important finding revealed that the teachers attempted to contextualize English instruction into vocational settings; however, general English instruction still remained more dominant than fully specialized ESP implementation.

"I try to adapt to their majors, especially if there's vocabulary related to electrical engineering. But the curriculum material is sometimes general, so not everything can be specific to electrical engineering. Sometimes I add examples related to their majors to make it more relatable."(T1, Excerpt 3)

The interview excerpt demonstrates that the teacher attempted to integrate vocational relevance into English learning. However, the teacher also acknowledged limitations caused by curriculum demands and the dominance of general English materials. This suggests that ESP contextualization was implemented partially rather than comprehensively.

Teacher 2 also explained that English materials should be adjusted to students' vocational backgrounds whenever possible. The teacher stated:

"Students become much more interested when the material is connected to their major. I usually try to relate the activities to vocational practice, so they can see that English is useful for Electrical Engineering." (T2, Excerpt 4)

This statement supports Teacher 1's explanation regarding the importance of contextualizing English instruction within the Electrical Engineering program. Although curriculum requirements still required teachers to deliver general English competencies, Teacher 2 attempted to increase the relevance of learning by incorporating vocational contexts and examples that reflected students' future workplace needs.

Observation findings also supported this issue. During classroom observation, the learning topic focused on argumentative texts discussing general social and political issues instead of technical electrical engineering content. Although some contextual examples were occasionally mentioned, the lesson remained largely general English-oriented.

Furthermore, lesson plan analysis showed that instructional objectives still emphasized general English competencies such as text comprehension, argumentative structure, reading skills, and speaking practice rather than technical communication skills related to electrical engineering.

These findings indicate that curriculum-oriented English instruction remained more dominant than specialized ESP implementation. While teachers attempted to contextualize learning, institutional curriculum requirements and the lack of ESP-specific resources limited deeper integration of electrical engineering content.

Creating Supportive and Motivational Classroom Environments

The findings also revealed that teachers consistently used supportive and motivational approaches to encourage student participation and reduce anxiety during English learning activities.

" I usually encourage them first if the students feel shy or afraid. Sometimes I joke around to make the class atmosphere more relaxed. I also praise them to boost their confidence if they are brave enough to present or have good pronunciation."(T1, Excerpt 5)

The excerpt illustrates how the teacher attempted to create a low-anxiety learning environment through encouragement, humor, and positive reinforcement. The teacher understood that many vocational students lacked confidence in speaking English; therefore, motivational support became an important classroom strategy.

Similarly, Teacher 2 highlighted the importance of providing continuous encouragement to students who lacked confidence in learning English. The teacher explained:

"If I see students who are shy about speaking English, I usually approach them personally first. I encourage them little by little so they feel more confident before asking them to speak in front of the class." (T2, Excerpt 6)

The excerpt indicates that Teacher 2 attempted to reduce students' anxiety through individualized encouragement and emotional support. While Teacher 1 created a supportive atmosphere through humor and positive reinforcement, Teacher 2 preferred a more personal approach by gradually building students' confidence before asking them to participate actively in classroom interaction.

This finding was strongly reflected during observation sessions. The teacher frequently praised students' pronunciation attempts, encouraged hesitant students to participate, and maintained a relaxed classroom atmosphere. Students appeared more willing to speak after receiving positive responses from the teacher.

Additionally, lesson plan activities also reflected interactive learning structures that encouraged participation through group discussion, presentations, and classroom interaction rather than passive learning.

These findings suggest that motivational facilitation played an important role in maintaining classroom engagement. The teacher not only focused on delivering material but also attempted to build students' confidence and participation through supportive interpersonal interaction.

Implementing Practical and Project-Based Learning Activities

The findings from the analysis of Teacher 2's lesson plan revealed the use of project-based and practice-oriented learning strategies. The instructional activities emphasized speaking performance, collaborative projects, authentic tasks, and vocational contextualization.

The coding analysis identified several important instructional components such as: project-based instruction, speaking-centered learning, authentic project output, collaborative learning, vocational contextualization, and technology-supported learning.

"I usually prefer to give students practical assignments or projects, so they don't just learn theory. Sometimes they create videos or presentations related to their major. If they just read the material over and over, they quickly get bored, so I try to create more active activities."(T2, Excerpt 7)

The excerpt demonstrates that Teacher 2 preferred practice-based instruction because vocational students responded better to active and authentic activities. Project tasks were considered more engaging and relevant to students' vocational backgrounds.

Although this theme emerged more prominently from Teacher 2's instructional practices, Teacher 1 also reported implementing project-oriented activities during English instruction. Teacher 1 stated:

"I also use project-based learning and sometimes problem-based learning. Students usually discuss the task together and present the results, so they are not only listening to explanations but also actively producing something." (T1, Excerpt 8)

This interview excerpt demonstrates that Teacher 1 also incorporated project-oriented learning activities, although they were generally simpler and adapted to the existing curriculum. Similar to Teacher 2, these activities encouraged students to work collaboratively, solve problems, and actively construct knowledge through meaningful classroom tasks.

Although direct classroom observation for Teacher 2 could not be conducted due to scheduling urgency and institutional responsibilities, the consistency between interview data and lesson plan documents still indicated the implementation of project-oriented and communicative learning approaches.

Integrating Technology-Assisted Learning in ESP Instruction

Another important strategy identified in the findings was the use of technology-assisted learning to support English instruction in vocational classrooms. Although technological integration was still limited due to infrastructural constraints, both teachers attempted to utilize digital media and student devices to create more engaging learning activities.

"When possible, I let students use their phones to search for materials or create video assignments to keep them more engaged. Sometimes I also use media like PowerPoint or videos to keep the learning from getting monotonous."(T2, Excerpt 9)

The interview excerpt demonstrates that Teacher 2 attempted to integrate accessible technology into classroom instruction, particularly through the use of student smartphones, multimedia presentations, and video-based assignments. The teacher viewed technology as a supportive tool to increase students' engagement and participation during English learning activities.

"Students are usually more enthusiastic when they watch videos or visual media than read text. But school facilities and internet access are sometimes limited, so they can't always be used to their full potential."(T1. Excerpt 10)

This excerpt indicates that multimedia resources positively influenced students' motivation and classroom attention. However, the teacher also acknowledged infrastructural barriers that restricted consistent implementation of technology-assisted learning.

The lesson plan analysis also supported this theme. Teacher 2's lesson plans included technology-supported learning activities such as video projects, digital presentations, and media-assisted speaking tasks. Although classroom observation for Teacher 2 could not be conducted, the consistency between interview statements and instructional documents still reflected the implementation of technology-assisted learning approaches.

These findings suggest that teachers recognized technology as an important supportive element in ESP learning, particularly for vocational students who tend to respond positively to visual and interactive media. Nevertheless, the effectiveness of technology integration remained dependent on available facilities, internet access, and institutional support.

Among the identified strategies, student-centered and collaborative teaching appeared to be the most effective approach. The strategy was consistently supported by interview data, classroom observations, and lesson plan analysis. Through discussions, presentations, and peer collaboration, students became more actively engaged in learning activities. This approach also helped reduce classroom passivity and encouraged greater participation among vocational students.

Teachers' Challenges in Teaching English for Electrical Engineering

This section presents the findings related to the second research question concerning the challenges experienced by teachers in teaching English for Electrical Engineering students. The analysis revealed several challenges that influenced the implementation of English instruction, which were organized into five major themes.

Limitations of Full ESP Integration

One of the most dominant findings related to teaching challenges was the existence of institutional and structural limitations that reduced teachers' ability to fully implement ESP-oriented instruction.

"The problem is that there is a lack of ESP material specifically for electrical engineering. So sometimes I have to find it myself or modify general material." (T1, Excerpt 11)

"Learning time is also limited, and the curriculum is quite extensive, making it difficult to focus on ESP."(T1, Excerpt 12)

The teacher highlighted the lack of specialized ESP materials and limited instructional time as major barriers. The teacher frequently needed to adapt general English materials independently because the available curriculum resources did not adequately support electrical engineering contexts.

Teacher 2 also experienced similar difficulties regarding the implementation of fully contextualized ESP instruction. The teacher explained:

"Sometimes Electrical Engineering materials are difficult to find. We often have to adapt general English materials because there are not many resources that really match the students' major." (T2, Excerpt 13)

Similar to Teacher 1, Teacher 2 acknowledged that the limited availability of Electrical Engineering-specific English materials required teachers to modify or adapt existing resources before using them in the classroom. This finding further confirms that insufficient ESP teaching materials remain one of the major challenges in implementing specialized English instruction at vocational high schools.

Observation findings also supported this issue. Limited technology integration, minimal use of technical vocabulary, and large classroom conditions affected the effectiveness of ESP implementation. Students also showed varying levels of engagement and language ability during classroom activities.

Lesson plan analysis similarly showed limited integration of technical electrical engineering vocabulary and minimal incorporation of authentic technical communication tasks.

These findings indicate that external institutional constraints significantly influenced classroom implementation. Although teachers attempted to contextualize instruction, limited resources, facilities, time allocation, and curriculum structure restricted the realization of fully specialized ESP learning.

Students' Low Motivation and English Anxiety

Another significant challenge involved students' low confidence and lack of motivation to learn English.

"Many students feel that English is difficult and less important than their productive studies." (T1, Excerpt 14)

"Sometimes they're afraid of mispronunciation or are embarrassed to speak English in front of the class." (T1, Excerpt 15)

This excerpt demonstrates that students often prioritized technical vocational subjects over English. Fear of making mistakes and speaking anxiety also reduced classroom participation.

Teacher 2 also observed that students' motivation tended to increase only when learning activities were perceived as relevant to their vocational interests. The teacher stated:

"Sometimes students are quite passive during English lessons because they think practical vocational subjects are more important. They usually become more active only when the activities are related to their major or involve practice." (T2, Excerpt 16)

Teacher 2's statement reinforces the finding that students' motivation toward English learning remains relatively low in vocational classrooms. According to the teacher, students tended to participate more actively when learning activities emphasized practical applications and vocational relevance rather than conventional English instruction. The coding analysis likewise identified passive classroom interaction, selective student participation, and vocational relevance as recurring patterns in Teacher 2's interview data.

Observation findings confirmed that some students hesitated to participate actively during speaking activities. Several students avoided eye contact, relied heavily on Bahasa Indonesia, and showed low confidence during presentations.

These findings suggest that affective barriers became one of the major challenges in vocational English learning. Teachers therefore needed to combine instructional strategies with motivational support to maintain participation and engagement.

Communication Anxiety and Passive Learning Interaction

Another major challenge identified in this study was students' speaking anxiety and passive classroom participation during English learning activities.

"Some students actually understand, but they're embarrassed to speak English because they're afraid of mispronouncing it. When asked to come forward or speak, they sometimes point at each other because they lack confidence." (T1, Excerpt 17)

The excerpt illustrates that students frequently experienced anxiety when required to speak English publicly. Fear of making mistakes and embarrassment reduced their willingness to participate actively during classroom interaction.

"Engineering students are sometimes passive during English lessons. They're more comfortable practicing their majors than speaking English. If you don't encourage them, they usually just stay quiet." (T2, Excerpt 18)

This finding indicates that passive interaction was not solely caused by language difficulty but also by students' perception that English was less important compared to vocational subjects. Teachers therefore needed to continuously encourage participation and create supportive classroom environments.

Observation findings also confirmed this issue. Several students avoided eye contact, gave very short responses, relied heavily on Bahasa Indonesia, and hesitated during speaking activities. Classroom participation was often dominated by only a few active students.

These findings align with the phenomenon of language anxiety commonly experienced in EFL classrooms, particularly in vocational contexts where students tend to prioritize technical competencies over communicative English skills.

Teaching Difficulties in Large Classes

The findings also revealed that classroom management became a significant challenge due to large class sizes and diverse student characteristics.

"Because there are so many students, it's sometimes difficult to keep everyone focused. Some are active, some are passive, so we have to really divide our attention and time." (T1, Excerpt 19)

The teacher explained that managing large vocational classes required additional effort because students demonstrated different participation levels, learning abilities, and classroom behaviors.

"When the class is crowded, it is usually quite difficult to keep them calm, especially during group activities. Sometimes some students are too active on their own, while others are quiet." (T2, Excerpt 20)

The excerpt demonstrates that collaborative learning activities, while beneficial, also created classroom control challenges. Teachers needed to balance participation, maintain classroom order, and ensure that all students remained engaged.

Field notes and observation findings similarly showed that some students lost focus during group discussions, while others became passive observers during collaborative tasks. Large classroom conditions reduced teachers' ability to monitor each student individually.

These findings suggest that classroom management in vocational ESP learning requires strong facilitation skills, particularly when implementing student-centered activities in large classroom environments.

Time Constraints and Limited Facilities

Another recurring challenge involved limited instructional time and inadequate educational facilities that affected the implementation of ESP-oriented instruction.

"English class hours are limited, while the curriculum material is quite extensive. If you really want to focus on ESP, sometimes there just isn't enough time." (T1, Excerpt 21)

This excerpt demonstrates that curriculum demands and limited classroom hours restricted teachers' ability to develop vocationally contextualized English instruction fully.

"Facilities like the internet or media sometimes do not support it. Sometimes I want to use video or online media, but I'm hampered by network or device issues." (T2, Excerpt 22)

The teacher highlighted infrastructural limitations that reduced opportunities for technology integration and the implementation of interactive learning. Observation findings also supported this issue. Technology usage during classroom activities remained minimal, and learning activities relied mostly on whiteboards, printed materials, and verbal explanation. Additionally, lesson plan analysis revealed limited integration of multimedia-supported ESP activities due to practical constraints.

These findings indicate that institutional limitations significantly influenced instructional implementation. Although teachers attempted to create contextualized and interactive learning experiences, limited time allocation and inadequate facilities reduced the effectiveness of full ESP integration.

To address the identified challenges, teachers implemented several adaptive strategies. Students' low motivation and speaking anxiety were addressed through encouragement, positive reinforcement, and supportive classroom interactions. Passive participation was managed through collaborative discussions and presentation activities, while large-class management was facilitated through group-based learning. In response to limited facilities, teachers utilized accessible technologies such as smartphones, videos, and PowerPoint presentations whenever possible. These adaptive responses helped teachers maintain student engagement despite various institutional and classroom constraints.

Discussion

The findings of this study reveal that EFL teachers in vocational high schools implemented several instructional strategies to teach English for Electrical Engineering students, including student-centered learning, collaborative discussion, motivational facilitation, project-based learning, and contextualized instruction. These findings directly address the first research question regarding teachers' strategies in teaching English for Electrical Engineering.

The implementation of collaborative and student-centered learning strongly aligns with theories discussed in the literature review. According to Mauludin et al. (2023), effective ESP instruction requires interactive learning environments that encourage active participation and communicative practice. Similarly, Tanila et al. (2024) emphasized that project-based learning and collaborative activities are highly compatible with vocational education because they promote authentic communication and practical engagement. The observed presentation tasks, group discussions, and facilitator roles found in this study reflect those principles.

Furthermore, the findings support the argument proposed by Setyowati et al. (2025) that vocational English instruction should integrate communicative and practical learning activities rather than relying solely on traditional lecture methods. Teacher 1 consistently positioned students as active participants through presentations and peer discussions, while Teacher 2 emphasized project-based instruction and authentic tasks. These findings demonstrate that teachers attempted to create meaningful interaction that connected English learning with vocational engagement.

The motivational strategies identified in this study also align with Mauludin et al. (2023), who argued that supportive teacher-student relationships and positive classroom atmospheres help reduce language anxiety and increase participation. The teachers in this study frequently used encouragement, humor, praise, and supportive interaction to maintain student confidence. This finding also supports (Asmin 2019; Fatahillah and Agustina 2024) who highlighted the importance of interactive and low-anxiety learning environments in vocational English classrooms.

Compared to the studies discussed earlier in the Literature Review, this research identifies both similarities and differences regarding the teaching strategies employed by instructors. Consistent with the findings of Mauludin et al. (2023), Setyowati et al. (2025), and Tanila et al. (2024), the instructors in this study consistently implemented student-centered learning, collaborative activities, and a context-based *English for Specific Purposes* (ESP) approach to foster active student participation in the technical field. However, unlike those studies, which primarily focused on three key teaching strategies, this research also highlights the creation of a supportive and motivating classroom atmosphere and the use of learning-support technologies as distinct elements; this indicates that electrical engineering instructors are increasingly integrating socio-emotional support and accessible digital technologies to meet students' educational needs and address classroom realities.

However, despite attempts to contextualize English instruction into electrical engineering contexts, the findings showed that general English instruction remained more dominant than fully specialized ESP implementation. This finding strongly reflects the research gap identified

in the background of the study. Previous studies often discussed ESP implementation theoretically, yet practical classroom implementation in technical majors such as Electrical Engineering remained underexplored. The present study demonstrates that teachers still struggled to fully integrate ESP-specific content due to curriculum demands and limited instructional resources.

This finding is consistent with Purwati et al. (2023), who found that many vocational schools still rely on general English materials that are insufficiently aligned with technical majors. Similarly, Chen (2020) argued that the lack of specialized ESP textbooks significantly limits effective vocational English instruction. The current study confirms those issues, as teachers frequently needed to modify general English materials independently due to the absence of appropriate electrical engineering resources.

Additionally, the findings also support Wen (2024), who emphasized that effective vocational English instruction should include authentic technical communication tasks and industry-relevant language exposure. Although the teachers attempted partial contextualization, observation and document analysis revealed that instructional content still focused largely on general argumentative texts and general communicative competencies rather than authentic electrical engineering communication.

These results are consistent with previous research findings from a students' perspective. According to Tri Nurhasanah & Eri Kurniawan, (2023), vocational students expect subject-specific vocabulary and materials from their fields to be integrated into English instruction. Although comprehensive integration of subject-specific language instruction is still limited, the teachers in this study attempted to meet these expectations as much as possible by using examples and technical terms from electrical engineering.

Regarding the second research question, the findings revealed several significant challenges faced by teachers, including limited ESP materials, students' low motivation, speaking anxiety, time constraints, limited facilities, and institutional curriculum demands. These findings align with the theories discussed in the literature review regarding challenges in vocational English instruction.

The issue of low student motivation found in this study is similar to findings from Mauludin & Prasetyo (2024) which suggested that vocational students often perceive English as less relevant than productive technical subjects. Students in this study similarly viewed English as secondary compared to their vocational major, reducing participation and engagement during learning activities.

These results are consistent with previous research from students' viewpoint, which shows that many vocational students considered English less important than productive subjects related to their major. This finding might explain teachers' perceptions of low participation and passivity in English learning activities.

The findings also support Chang (2024), who explained that students' fear of making mistakes and language anxiety frequently hinder classroom participation in EFL settings. Observation findings in this study showed that several students hesitated to speak English publicly and demonstrated low confidence during presentation activities.

Institutional and structural barriers were also strongly reflected in this study. Large class conditions, limited technology integration, minimal ESP resources, and restricted instructional time affected teachers' ability to fully implement communicative ESP learning. These findings are consistent with (Sanyal et al. 2020; Sugiarto et al. 2024), who emphasized that vocational schools often face infrastructure and resource limitations that constrain effective language instruction.

Moreover, the findings of this study also align with the phenomenological approach explained in the research methodology. Through triangulation of interviews, classroom observations, field notes, and lesson plan analysis, the researcher was able to examine both teachers' lived experiences and actual classroom realities. Creswell & Poth (2016) emphasized that phenomenological inquiry aims to capture participants' perspectives and meanings through multiple sources of evidence. In this study, the consistency between interview data, observation findings, and instructional documents strengthened the credibility of the findings and provided a deeper understanding of teachers' strategies and challenges in vocational ESP instruction.

Nevertheless, this study also experienced certain limitations. One limitation involved the observation process for Teacher 2. Due to urgent institutional responsibilities and scheduling constraints, direct classroom observation of Teacher 2's teaching and learning activities could not be conducted. As a result, the findings related to Teacher 2 relied primarily on interview

data and lesson plan analysis rather than full classroom observation triangulation. Despite this limitation, the researcher still attempted to maintain credibility through cross-document analysis and thematic consistency between available data sources.

Overall, the findings indicate that EFL teachers in vocational high schools attempt to implement interactive and student-centered strategies in teaching English for Electrical Engineering students. However, the implementation of fully specialized ESP instruction remains constrained by institutional limitations, curriculum structure, lack of resources, and students' motivational challenges. These findings contribute to the limited body of research focusing specifically on ESP instruction within Electrical Engineering contexts in Indonesian vocational education.

D. Conclusion

This study found that the two EFL teachers attempted to implement English instruction that was more relevant to the vocational context of Electrical Engineering students by applying student-centered, collaborative, project-based, motivational, and technology-supported teaching strategies. Rather than relying solely on conventional teacher-centered instruction, both teachers adapted their classroom practices to encourage active participation and connect learning activities with students' vocational backgrounds whenever possible.

However, the findings also indicate that the implementation of fully contextualized ESP instruction remained limited. The teachers continuously balanced curriculum requirements with students' vocational needs while facing challenges such as limited ESP materials, low student motivation, speaking anxiety, passive classroom participation, time constraints, and inadequate facilities. These findings suggest that effective English teaching in vocational education depends not only on teachers' instructional strategies but also on the availability of institutional support and learning resources that enable more contextualized ESP implementation.

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