



ENGLISH EDUCATION GRADUATES CONFRONT ENGINEERING CHALLENGES IN POSTMODERN ENGLISH FOR SPECIFIC PURPOSES ERA

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ABSTRACT

In the postmodern era marked by interdisciplinarity and rapid technological advancement, English for Specific Purposes (ESP) instruction in engineering contexts demands both linguistic competence and disciplinary awareness. English Education graduates appointed as ESP instructors in engineering faculties often face tensions arising from the gap between their pedagogical training and specialized technical knowledge. This qualitative study employs a narrative inquiry approach to explore the lived experiences, professional identity negotiation, and adaptive strategies of an English Education graduate teaching engineering-focused ESP at a private university in Pasuruan, East Java, Indonesia. Data were collected through semi-structured interviews and reflective documentation and analyzed using thematic analysis. The findings reveal three major themes: (1) an epistemic gap between linguistic expertise and engineering content knowledge, particularly in understanding technical terminology and genre conventions; (2) ongoing negotiation of professional identity and epistemic authority within interdisciplinary classrooms where students may possess stronger technical backgrounds; and (3) adaptive strategies and continuous professional development, including self-directed learning, use of authentic engineering materials, collaboration with engineering colleagues, and implementation of genre-based and task-oriented pedagogy. The study indicates that these challenges stem not from individual inadequacy but from structural separation between language education and technical disciplines in higher education. It further highlights a shift in teacher authority from content mastery to communicative mediation, positioning ESP instructors as facilitators who bridge language and disciplinary discourse. The findings suggest the need for greater interdisciplinary integration in teacher education programs to better prepare graduates for specialized academic contexts.

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INTRODUCTION

In the era of globalization and rapid technological advancement, English has become the dominant language of science, technology, and international professional communication, particularly within engineering fields where innovation, research dissemination, and cross-border collaboration are central. The expansion of engineering industries, the acceleration of digital transformation, and the integration of global supply chains have significantly increased the demand for specialized English competence tailored to technical contexts (Hazrat et al., 2023; Szalavetz, 2020). This development has strengthened the role of English for Specific Purposes (ESP), which focuses on equipping

learners with language skills aligned with particular professional domains rather than general communicative ability alone. In contemporary engineering education, ESP extends far beyond vocabulary instruction to encompass genre awareness, technical documentation, research article comprehension, project proposal writing, oral presentations, intercultural negotiation, and multimodal literacy across digital platforms (Aguilar-Pérez et al., 2024; Chen & Yeh, 2025; Munteanu, 2025). Engineering students are now required to interpret complex manuals, produce precise reports, collaborate through virtual communication tools, and engage in international academic and industrial networks where English functions as the primary medium of exchange (Schuster et al., 2016). The emergence of Industry 4.0, artificial intelligence, and globally distributed engineering teams further intensifies the need for clarity, precision, and rhetorical competence in professional communication (Almakaty, 2024; Raman et al., 2025). Consequently, English proficiency in engineering is no longer perceived merely as an academic requirement but as a strategic professional asset that enhances employability, innovation capacity, and global competitiveness. This evolving landscape places increasing pressure on higher education institutions to design ESP programs that are authentic, interdisciplinary, technologically responsive, and closely aligned with real-world engineering discourse practices, highlighting the growing complexity and strategic importance of specialized English instruction in the contemporary global era.

Furthermore, in the postmodern era, marked by interdisciplinarity, hybridity of knowledge, fluid professional identities, and accelerated technological innovation, the once rigid boundaries between language education and technical disciplines have become increasingly porous and dynamic (Kitsiou et al., 2019). Knowledge production is no longer confined within isolated academic silos; instead, it operates through collaboration, integration, and cross-disciplinary negotiation. In this context, engineering education is not solely concerned with technical mastery, mathematical precision, or scientific problem-solving. Engineering students are now required to articulate complex designs, present research findings, draft technical documentation, engage in international teamwork, and participate in global industrial networks where English functions as the primary medium of communication (Hovde, 2014). As industries expand across borders and digital platforms enable transnational collaboration, communicative competence in specialized English becomes inseparable from professional competence itself.

Consequently, English Education graduates are frequently appointed as ESP instructors within engineering faculties to fulfil these communicative demands. Their pedagogical expertise, linguistic knowledge, and classroom management skills position them as key facilitators in preparing engineering students for global participation. However, this professional placement often places them in a paradoxical situation (Ardalan & Molacian, 2025; Richter, 2026). While they possess strong foundations in language teaching methodology, discourse analysis, and general English proficiency, they may lack formal academic training in engineering principles, technical systems, or industry-specific practices. As a result, they are expected to navigate highly specialized terminology, interpret complex technical texts, design authentic materials aligned with engineering contexts, and respond to students' content-related inquiries beyond their disciplinary background. This mismatch generates cognitive pressure, professional insecurity, and a continuous need for self-directed learning (Binnie & Wedlock, 2022). It also raises broader questions about epistemological authority, interdisciplinary collaboration, and the evolving identity of language educators in a postmodern educational landscape where expertise is increasingly hybrid rather than singular (Andreotti, 2009; Baykent, 2025). The specific dilemma of this research lies in the mismatch between pedagogical expertise and domain-specific knowledge. English Education programs primarily prepare graduates in linguistics, literature, pedagogy, and general English proficiency. Meanwhile, engineering ESP courses require familiarity with technical terminology, discourse conventions of engineering genres, such as manuals, reports, feasibility studies, and industry practices (Nguyen, 2017). This tension creates professional insecurity, limited confidence, and sometimes surface-level teaching practices that focus more on general grammar than authentic engineering communication tasks.

Despite decades of ESP development since the 1960s, this issue remains unresolved. Several factors contribute to its persistence (Bhatia et al., 2011; Dou, 2024a;

Hyland & Jiang, 2021). First, curriculum design in teacher education programs often separates language pedagogy from disciplinary collaboration. Second, institutional constraints such as limited training opportunities and lack of interdisciplinary teamwork hinder professional development. Third, the postmodern educational landscape, marked by digitalization, artificial intelligence, and global engineering standards, continuously reshapes communicative demands faster than curriculum reforms can respond. This topic is unique and significant for several reasons. Unlike earlier ESP discussions that focused on needs analysis and material design, the current context demands examination of teacher identity, epistemological positioning, and interdisciplinary negotiation in a postmodern framework. The “postmodern ESP era” challenges traditional assumptions about teacher authority and expertise (Canagarajah, 2016). English educators are no longer mere language instructors but mediators between linguistic competence and technical knowledge systems. Exploring how English Education graduates navigate this hybrid professional space offers a nuanced understanding of contemporary ESP practice.

Previous research in the field of ESP has examined a variety of instructional and contextual issues relevant to specialized language education. Several recent studies have investigated needs analysis in engineering and technical contexts, indicating persistent gaps between ESP curricula and real-world workplace demands, such as engineering students’ vocabulary, speaking profile, and communicative tasks, which emphasize the importance of contextualized and task-based activities for skill development in engineering settings (Efendi et al., 2025). Other research has focused on instructional effectiveness and authentic materials, showing that the use of procedural texts and role-plays significantly improves technical speaking performance in ESP classes for automotive and vocational engineering students, reinforcing calls for curriculum designs that reflect authentic professional contexts (Rahmawati, 2025).

In addition, reviews on ESP practice have highlighted content knowledge gaps and material limitations as major challenges for both teachers and learners, including difficulties in aligning curriculum with workplace requirements, limited access to authentic resources, and inadequate needs analysis practices (Sintia et al., 2025). Studies specifically on ESP teacher challenges have begun to explore the pedagogical, material, and assessment difficulties faced by instructors, such as designing meaningful assessments and adapting pedagogical strategies to diverse learner needs, though these investigations often generalize across disciplines rather than focusing on engineering English (Sukyng et al., 2023). Research into professional development for ESP educators also underscores the need for tailored training to equip teachers with specialized skills and pedagogical tools in higher education, particularly in tertiary contexts where technical demands are high (Averina & Kuswandono, 2023). Despite these contributions, few studies focus specifically on the lived experiences, identity construction, and epistemic struggles of English Education graduates as they navigate the intersection of language pedagogy and engineering-specific communication challenges within the rapidly evolving postmodern educational landscape.

Moreover, existing literature often treats ESP competence as a matter of training adequacy rather than as a complex negotiation of power, knowledge legitimacy, and interdisciplinary boundaries. There is still a research gap in understanding how English Education graduates construct professional credibility, manage knowledge limitations, and adapt pedagogical strategies within engineering environments shaped by technological disruption and global standards. Therefore, this study aims to explore the challenges, adaptive strategies, and professional identity negotiation of English Education graduates teaching engineering-focused ESP courses in the postmodern era. By doing so, it seeks to contribute to theoretical discussions on postmodern education and practical implications for curriculum development and teacher preparation programs. In this research, the three research questions has been arranging which consist of:

1. What challenges do English Education graduates encounter when teaching English for engineering contexts in the postmodern ESP era?
2. How do these graduates negotiate professional identity and knowledge authority within engineering academic environments?
3. What strategies do they employ to bridge the gap between linguistic expertise and engineering-specific knowledge?

METHODS

This study employs a qualitative research design (Fossey et al., 2002; Pathak et al., 2013) using a narrative inquiry approach (Savin-Baden & Niekerk, 2007), focusing on exploring the lived experiences, professional stories, and identity construction of participants within the context of teaching ESP in engineering fields. This approach enables the researcher to gain an in-depth understanding of how English Education graduates interpret and make meaning of the challenges, dynamics, and knowledge negotiations they encounter while teaching in engineering academic environments. Data are collected through in-depth interviews, reflective writings, and teaching-related documentation to capture the complexity of participants' subjective experiences. Through this interpretive process, the study seeks to illuminate how these experiences shape their pedagogical practices and professional identities within the interdisciplinary and rapidly evolving postmodern era.

This study involves a lecturer of English Education who teaches an ESP course at a private university in Pasuruan City, East Java, Indonesia. The participant has academic training in English language teaching and is responsible for delivering ESP instruction to students from non-English departments, particularly in technical and professional study programs. Her teaching responsibilities include designing course materials, conducting classroom instruction, assessing students' performance, and adapting the curriculum to align with the communicative demands of students' disciplinary fields. The selection of this participant is based on her direct experience in navigating the pedagogical and epistemological challenges of teaching ESP within a higher education context where interdisciplinary collaboration and specialized knowledge are increasingly required (Butina, 2015).

Furthermore, this study employed a semi-structured interview process with the aim of allowing participants to respond more freely and express their perspectives in depth, while still remaining within the conceptual boundaries of the predetermined topics and thematic focus of the research (Kallio et al., 2016). The semi-structured format was intentionally selected to balance flexibility and direction, enabling the researcher to explore emerging insights, clarify participants' responses, and probe for richer explanations without deviating from the central objectives of the study. This approach ensured both consistency across interviews and openness to nuanced, context-specific experiences shared by the participants. The data collection process was conducted through video calls to facilitate participants in adjusting their schedules and availability. Each interview lasted approximately 30–60 minutes. The data collection period spanned three months, from November 2025 to January 2026. Subsequently, the researcher developed six guiding questions to serve as the interview guideline, consist of:

TABLE 1 / Interview Guideline

No	Questions	Main Themes
1	What specific difficulties do you experience when teaching English to engineering students, particularly related to technical content or terminology?	Teaching Challenges in Engineering ESP Contexts
2	How does your background in English education influence your confidence or limitations when dealing with engineering-related subject matter?	
3	How do you perceive your professional role and credibility when teaching students whose disciplinary knowledge may be more specialized than yours?	Professional Identity and Knowledge Authority
4	In what ways do interactions with engineering students or faculty shape your sense of professional identity as an ESP	

	instructor?	
5	What strategies or learning efforts do you use to bridge the gap between your linguistic expertise and the technical knowledge required in engineering ESP teaching?	Adaptive Strategies and Professional Development
6	How have your teaching strategies or professional practices evolved over time as you gain more experience teaching English in engineering contexts?	

Subsequently, in the process of data analysis, the researcher employed a thematic analysis approach to systematically identify, examine, and interpret the primary patterns and significant themes emerging from the interview data. This method enabled the researcher to organize the qualitative findings into meaningful categories, allowing for an in-depth exploration of participants' experiences, perceptions, and contextual realities related to the research focus. Through careful coding, theme development, and iterative review, thematic analysis facilitated a structured yet flexible analytical process, ensuring that the core insights derived from the interviews were accurately represented and analytically grounded.

TABLE 2 / Example of Thematic Analysis

No.	Interview Excerpt	Initial Code	Category	Emerging Theme
1	"I often struggle to understand technical terminology in mechanical engineering materials."	Difficulty understanding technical terminology	Limited engineering content knowledge	Knowledge Gap Between Language and Engineering
2	"Students sometimes ask about technical concepts that I have never studied before."	Inability to respond to technical inquiries	Content knowledge limitation	Knowledge Gap Between Language and Engineering
3	"I independently study engineering materials through online resources and academic journals to adjust my teaching."	Self-directed professional learning	Adaptive professional development	Professional Adaptation Strategies

RESULTS AND DISCUSSION

This section presents the study's findings based on a thematic analysis of the interview data. Three major themes emerged from the participant's narratives, the knowledge gap between linguistic expertise and engineering content, professional identity negotiation and epistemic authority, and adaptive strategies and professional growth in the postmodern ESP era. Each theme is examined in relation to the participant's lived experience as an English lecturer teaching ESP within an engineering department.

Knowledge Gap Between Linguistic Expertise and Engineering Content

The first and most dominant theme emerging from the data concerns the epistemic gap between the lecturer's linguistic-pedagogical expertise and the highly specialized knowledge required in engineering contexts. As an English Education graduate, the participant possesses formal training in linguistics, language teaching methodology, curriculum design, and classroom management. However, she does not have academic preparation in engineering principles, mechanical systems, technical calculations, or industrial processes. This disciplinary distance creates recurring instructional challenges when engaging with engineering-specific materials.

The participant explicitly acknowledged her difficulty in interpreting technical

terminology and engineering discourse structures. She stated:

"I often struggle to understand technical terminology in mechanical engineering materials. Sometimes I need to read the text several times before I can explain it to the students."

This statement indicates that comprehension itself becomes a preliminary challenge before pedagogical explanation can even occur. Engineering texts often contain dense nominalizations, formulaic expressions, passive constructions, schematic references, and discipline-bound lexical items that are rarely encountered in general English instruction. Unlike literary or conversational texts, engineering materials demand conceptual understanding of systems, processes, and functions. Consequently, the lecturer must first decode the technical meaning before transforming it into teachable content.

The participant further described moments of uncertainty when students raised content-driven inquiries:

"Students sometimes ask about technical concepts that I have never studied before, and in those moments I feel uncertain about how deep I should go into the explanation."

This quotation reveals a dual-layered tension: cognitive limitation and pedagogical boundary-setting. On one hand, the lecturer recognizes her limited disciplinary knowledge; on the other hand, she must decide how to maintain professional authority without misrepresenting technical information. Such situations may produce what she referred to as *"academic anxiety,"* particularly when discussions extend into areas such as thermodynamic principles, mechanical calculations, or structural analysis. She elaborated further:

"There are times when I worry that my explanation might oversimplify the concept because I am not fully confident about the engineering theory behind it."

This concern reflects a deeper epistemological issue. In ESP classrooms, language is inseparable from content. Teaching technical vocabulary without conceptual clarity risks reducing instruction to surface-level translation rather than meaningful disciplinary communication. The participant indicated that during her early semesters teaching ESP, she tended to focus more on grammar correction and sentence structure because those areas aligned with her formal expertise. However, she gradually realized that such an approach did not fully address students' communicative needs in engineering contexts.

Moreover, the lecturer noted that engineering discourse involves specific genres that require specialized rhetorical awareness:

"Engineering students need to write reports, describe processes, and explain system designs. These are not the same as general essays that I learned to teach during my undergraduate study."

This observation demonstrates that the challenge is not limited to vocabulary but extends to genre conventions. Engineering reports emphasize precision, objectivity, logical sequencing, data presentation, and technical clarity. Without prior exposure to these discourse patterns, the lecturer must independently analyze and internalize them before designing classroom tasks. The knowledge gap also affects lesson preparation time and cognitive workload. The participant explained:

"Preparing ESP materials takes much longer than teaching general English because I have to research the engineering topic first before thinking about the language focus."

This extended preparation time illustrates the invisible labour often experienced by ESP lecturers working outside their disciplinary background. The lecturer must simultaneously function as a language instructor and a novice content learner. Such dual roles can generate professional fatigue but also stimulate intellectual growth.

Importantly, this theme does not merely reflect individual inadequacy; rather, it points to a structural issue within teacher education programs. English Education curricula traditionally emphasize linguistics, literature, and general pedagogy, with limited interdisciplinary integration. As a result, graduates assigned to engineering faculties may experience a transitional shock when confronted with highly technical subject matter. Within the postmodern ESP era, characterized by knowledge hybridity and interdisciplinary negotiation, the lecturer's experience illustrates how disciplinary

boundaries are increasingly blurred. However, institutional structures do not always provide adequate preparation for such hybrid roles. The knowledge gap, therefore, becomes both a professional challenge and a catalyst for adaptive learning. According to this theme of this study indicate that one of the most prominent challenges faced by the participant is the knowledge gap between her linguistic expertise and the specialized engineering content required in ESP instruction. The lecturer's difficulty in understanding technical terminology and responding to engineering-related inquiries reflects a structural tension that has long been discussed in English for Specific Purposes scholarship (De Lucca et al., 2024; Rodrigues & Cicek, 2024).

As revealed in the interview, the participant frequently encountered unfamiliar technical concepts in mechanical engineering materials. This situation illustrates what Dudley-Evans and St John (1998) describe as the "*content dilemma*" in ESP teaching, where language instructors must engage with disciplinary knowledge beyond their formal academic preparation. Although ESP does not require teachers to become subject specialists, they are expected to understand enough disciplinary content to design authentic materials and facilitate meaningful communication tasks.

Similarly, Dou (2024b) argue that ESP teaching is fundamentally driven by learners' needs, which are rooted in specific professional or academic contexts. In engineering settings, these needs extend beyond vocabulary acquisition to include genre awareness, technical reporting conventions, procedural explanations, and discipline-specific rhetorical structures. The participant's struggle to interpret mechanical engineering texts before classroom explanation demonstrates how ESP instructors must operate at the intersection of linguistic and technical discourse systems.

Furthermore, Sintia et al. (2025b) emphasizes that ESP teachers often experience insecurity when dealing with specialist subject matter, particularly in tertiary education where students may possess stronger content knowledge. This resonates strongly with the participant's narrative, in which she described feeling uncertain when students asked questions about engineering concepts she had never studied. Such moments highlight the asymmetrical distribution of knowledge in engineering ESP classrooms, students hold disciplinary expertise, while the lecturer holds linguistic and pedagogical expertise (Tymbay, 2022).

The knowledge gap identified in this study can also be interpreted through a postmodern educational lens. In postmodern academic environments, disciplinary boundaries are increasingly fluid, and educators are expected to navigate interdisciplinary spaces. However, teacher education programs in English departments often maintain a modernist structure, separating linguistic pedagogy from technical or scientific domains. This institutional separation reinforces what Jwa (2024) describes as the challenge of acquiring sufficient disciplinary literacy to teach genre effectively within specific academic communities.

Importantly, the findings do not suggest that the lecturer's lack of engineering background constitutes professional inadequacy. Rather, they reveal a systemic gap between curriculum preparation and workplace expectations. ESP scholarship consistently maintains that teachers are not required to become engineers; instead, they must develop what Dudley-Evans and St John term a "*working knowledge*" of the target discipline. The participant's repeated efforts to reread technical texts before teaching indicate her attempt to build this working knowledge independently.

This theme therefore reinforces a long-standing concern in ESP research: the sustainability of subject-specific language instruction when teacher preparation programs do not integrate interdisciplinary collaboration. Without institutional support, ESP lecturers may rely solely on self-directed learning, which can increase cognitive workload and professional pressure (Mulyadi et al., 2023). Consequently, the knowledge gap observed in this study should be understood not merely as an individual limitation but as a structural issue within higher education systems that separate language education from technical disciplines.

Professional Identity Negotiation and Epistemic Authority

The second theme reveals a complex process of professional identity negotiation

and epistemic positioning within the engineering academic environment. The participant described experiencing moments of self-doubt when teaching students whose disciplinary knowledge in engineering often exceeds her own. This situation challenges traditional assumptions about teacher authority, where instructors are typically positioned as primary knowledge holders. She explained:

“Sometimes I feel that students know more about the technical aspects than I do. It makes me question my authority in the classroom, especially when discussions move toward engineering calculations or system design.”

This statement reflects an epistemic tension that emerges in interdisciplinary classrooms. Unlike general English classes, where the lecturer’s expertise is rarely contested, engineering ESP classrooms create a shared knowledge space in which authority is distributed rather than hierarchical. Students possess content-specific expertise, while the lecturer contributes linguistic and communicative competence. The participant acknowledged that this dynamic initially generated insecurity:

“At the beginning, I was afraid that students would think I was not competent because I could not explain detailed engineering formulas.”

This perception demonstrates how disciplinary boundaries influence professional identity construction. The lecturer’s academic background in English Education did not automatically grant epistemological legitimacy in a technically oriented faculty. Instead, she had to reconstruct her professional self-concept to align with the interdisciplinary demands of ESP teaching.

Over time, the participant reframed her understanding of authority. Rather than competing with students’ technical knowledge, she repositioned herself as a communication specialist whose expertise complements engineering competence. She stated:

“I remind myself that my responsibility is not to solve engineering problems, but to ensure that students can explain those problems logically and clearly in English.”

This redefinition represents a shift from content-based authority to functional authority. In other words, her legitimacy derives not from mastering engineering calculations but from facilitating accurate, coherent, and professional communication. This perspective aligns with the evolving nature of ESP instruction in which the lecturer serves as a mediator between disciplinary knowledge and global communication practices.

Furthermore, the participant described how classroom interactions gradually transformed her perception of professional credibility. She reported that when students recognized improvements in their presentation skills and technical writing clarity, her confidence increased:

“When I see students presenting their project designs more confidently in English, I feel reassured that my role is meaningful, even if I am not an engineer.”

This illustrates how professional identity is relationally constructed through pedagogical outcomes rather than disciplinary dominance. Authority becomes validated through communicative impact rather than technical expertise.

Institutional and collegial interactions also shaped her identity negotiation. The participant highlighted the importance of informal collaboration with engineering lecturers:

“Discussing lesson topics with engineering colleagues helps me understand which terminology is essential and which tasks reflect real industrial practices.”

Through such collaboration, she felt a stronger sense of belonging within the faculty. This interdisciplinary dialogue functioned as epistemic support, reducing feelings of marginalization and strengthening her professional legitimacy. It also demonstrates that identity formation in ESP contexts is socially mediated and institutionally situated. Importantly, the participant described her identity as evolving rather than fixed:

“Over time, I stopped seeing myself as an outsider in the

engineering department. I see myself as part of the system, contributing from a different expertise.”

This statement reflects the fluid and hybrid nature of professional identity in the postmodern educational era. In contrast to traditional models of teacher authority rooted in singular disciplinary mastery, ESP instructors operate within overlapping knowledge systems. Their expertise lies in negotiating meaning, clarifying discourse conventions, and bridging communicative gaps across disciplines.

Thus, this theme demonstrates that teaching engineering ESP is not merely a pedagogical task but also an ongoing process of identity construction and epistemological negotiation. The lecturer’s experience highlights that professional credibility in interdisciplinary contexts emerges through reflective repositioning, collaborative engagement, and recognition of complementary expertise. Rather than diminishing her authority, the distributed knowledge structure ultimately reshaped it into a more dialogic and facilitative form, consistent with contemporary perspectives on postmodern education.

The findings under the theme indicate that the lecturer experiences an ongoing process of professional identity negotiation when teaching English for Specific Purposes (ESP) in an engineering context. The participant’s reflections reveal a dynamic tension between linguistic authority and technical expertise, particularly when interacting with students whose disciplinary knowledge surpasses her own. This situation illustrates what she described as a shift from being a “*knowledge transmitter*” to becoming a “*communication facilitator*.” Her statement, “*Sometimes I feel that students know more about the technical aspects than I do,*” reflects a perceived imbalance of epistemic authority in the classroom (Nieminen & Ketonen, 2024). In traditional educational paradigms, teachers are positioned as primary knowledge holders. However, in ESP contexts, especially within engineering disciplines, knowledge becomes distributed. Students possess technical expertise, while the lecturer contributes linguistic and rhetorical competence. This redistribution of authority requires the lecturer to redefine her professional identity.

This finding resonates with the argument of Reswari et al. (2025), who emphasize that ESP practitioners are not necessarily subject-matter experts but should function as language specialists who collaborate with disciplinary communities. Similarly, Meristo and Heero (2026) conceptualize ESP teachers as learning facilitators who adapt their linguistic knowledge to specific professional contexts rather than mastering the entire disciplinary field. The participant’s experience also aligns with Nigar and Kostogriz (2025), who argues that contemporary ESP teachers operate in increasingly interdisciplinary and hybrid spaces, where professional legitimacy emerges from negotiation rather than fixed expertise. In this study, the lecturer reconstructed her authority by emphasizing her role in enhancing clarity, coherence, and professional communication rather than technical accuracy alone.

Furthermore, her collaborative engagement with engineering lecturers reflects the concept of “*communities of practice*” proposed by Adler et al. (2024). Through informal discussions and material verification, she participates in a shared professional ecosystem, gradually gaining confidence and contextual understanding.

Such interaction strengthens her epistemic positioning within the engineering faculty while maintaining her disciplinary identity as a language educator. From a postmodern educational perspective, this identity negotiation illustrates the erosion of rigid disciplinary boundaries. Knowledge is no longer monopolized by singular authorities but co-constructed across domains. The lecturer’s redefinition of her role, “*I remind myself that my role is not to be an engineer, but to help them communicate their engineering ideas clearly*”, demonstrates an adaptive reframing of professional legitimacy. Rather than perceiving her limitations as deficits, she transforms them into a specialized contribution within interdisciplinary collaboration. In addition, research on teacher identity by Toubassi et al. (2023) suggests that professional identity is continuously constructed through interaction, reflection, and contextual demands. The lecturer’s experience reflects this dynamic process, as her sense of authority evolves through classroom encounters and cross-disciplinary communication.

Adaptive Strategies and Continuous Professional Development

The third theme reveals that adaptive strategies and continuous professional development play a central role in enabling the lecturer to navigate the interdisciplinary demands of engineering ESP instruction. Faced with limitations in formal engineering training, the participant does not remain passive; instead, she actively constructs new knowledge and refines her pedagogical approaches to ensure instructional relevance and professional credibility.

One of the most prominent strategies identified is self-directed learning. The participant emphasized that preparation for each class often requires additional independent study of engineering concepts before addressing them in the classroom. She explained:

"I independently study engineering materials through online resources, academic journals, and even YouTube explanations before preparing my lesson plans."

This statement reflects a strong sense of professional responsibility and intellectual commitment. Rather than avoiding unfamiliar topics, she engages in systematic exploration of technical texts to develop sufficient conceptual understanding. This process illustrates what can be described as situated professional learning, where knowledge acquisition is directly linked to immediate pedagogical needs. She further elaborated:

"Sometimes I read the same technical article that students use in their major courses, so I can at least understand the context before teaching the language aspects."

This practice demonstrates her effort to reduce epistemic distance between herself and her students. By familiarizing herself with disciplinary discourse, she increases her confidence and enhances the authenticity of classroom explanations.

Beyond individual learning, the participant also integrates authentic materials to align language instruction with real-world engineering communication. She stated:

"I use real manuals, technical reports, project proposals, and presentation slides as teaching materials so students feel that the tasks are relevant to their future careers."

The use of authentic documents shifts the focus from isolated grammar exercises toward genre-based competence. Instead of teaching vocabulary lists in isolation, she embeds language learning within meaningful professional tasks, such as writing feasibility reports, describing mechanical processes, or presenting prototype designs. This reflects an evolution from traditional general English pedagogy toward task-based and discourse-oriented ESP instruction. She acknowledged this pedagogical transformation:

"At the beginning, I focused more on grammar correction because that was my comfort zone. But now I prioritize communication tasks like writing project proposals, presenting prototypes, or explaining procedures clearly."

This quotation illustrates a reflective shift in teaching philosophy. Initially, her reliance on grammar instruction represented a form of professional safety rooted in her academic training. However, as she gained experience, she recognized that engineering students require communicative precision rather than abstract grammatical mastery.

Thus, her teaching evolved toward functional language use in professional contexts.

Another important adaptive strategy involves collaborative knowledge construction within the classroom. Recognizing that students possess stronger technical backgrounds, she transforms this potential imbalance into a pedagogical resource. She described:

"Sometimes I ask students to explain the technical concept first in Indonesian, then we work together to construct the explanation in English."

This approach positions students as content contributors while she guides linguistic structuring and rhetorical clarity. Rather than perceiving students' technical expertise as a threat to her authority, she leverages it to foster cooperative learning. This strategy reduces hierarchical tension and redefines the classroom as a shared intellectual space.

In addition, the participant mentioned informal interdisciplinary consultation:

"If I feel unsure about the accuracy of a technical term, I

sometimes ask engineering colleagues for clarification before finalizing my teaching materials.”

Such collaboration enhances both accuracy and confidence. It also reflects a broader movement toward interdisciplinary engagement in higher education, where knowledge boundaries are increasingly fluid.

Over time, these adaptive practices contribute to professional growth and identity stabilization. The participant noted:

“After several semesters, I feel more confident because I realize that I don’t need to master engineering completely. I just need to understand enough to support their communication.”

This reflection indicates an important cognitive shift, from striving for total disciplinary mastery to recognizing the legitimacy of partial yet functional knowledge. In this sense, professional development becomes not only a matter of acquiring technical familiarity but also of redefining realistic expectations of expertise. Furthermore, the findings demonstrate that adaptive strategies and continuous professional development are central to sustaining effective ESP instruction in engineering contexts. The participant’s narrative illustrates how self-directed learning, authentic material integration, and pedagogical transformation function as mechanisms for bridging the gap between linguistic expertise and technical knowledge.

The lecturer reported engaging in independent study through online engineering resources, academic journals, and multimedia explanations prior to lesson preparation. This practice reflects what Donald Schön conceptualizes as the *reflective practitioner* model, in which professionals continuously construct knowledge through reflection-in-action and reflection-on-action. Rather than relying solely on formal training, the lecturer actively reconstructs her pedagogical knowledge in response to contextual demands. This aligns with Yu et al. (2026) argument that professional competence in complex environments develops through iterative reflection and experiential learning. Furthermore, the participant’s shift from grammar-focused instruction to task-based and genre-oriented activities corresponds with core principles of ESP theory articulated by Belcher (2009), who emphasize that ESP should be grounded in learners’ specific communicative needs rather than general language structures. By incorporating project proposals, technical presentations, and procedural explanations, the lecturer reorients instruction toward authentic disciplinary discourse. This pedagogical shift also resonates with Yasuda (2023), whose genre analysis framework highlights the importance of teaching rhetorical structures that are socially situated within academic and professional communities. The integration of authentic materials, such as engineering manuals, technical reports, and real-world project documentation, reflects a needs-based and discourse-informed approach. According to Bui (2022), effective ESP instruction requires close alignment between classroom tasks and target professional situations. The lecturer’s strategy of utilizing authentic texts supports the development of pragmatic competence, genre awareness, and discipline-specific communicative conventions. It also strengthens students’ perceived relevance of English learning, which is a crucial motivational factor in technical education contexts.

Another significant strategy identified in the findings is collaborative knowledge construction. The participant described encouraging students to explain technical concepts first in Indonesian before co-constructing English explanations. This approach reflects socio-constructivist learning principles associated with Vygotsky et al. (1978), particularly the concept of scaffolding within the Zone of Proximal Development (ZPD). By positioning students as contributors of technical knowledge and herself as a linguistic facilitator, the lecturer transforms the classroom into a dialogic space where expertise is distributed rather than hierarchical. Such a strategy not only reduces epistemic tension but also reinforces mutual respect between language and content knowledge domains.

From a professional development perspective, the participant’s self-initiated learning efforts demonstrate what Rahimi and Oh (2024) describes as practitioner inquiry, where teachers systematically evaluate and refine their instructional practices. In the postmodern educational landscape, characterized by rapid technological advancement and evolving communicative demands, formal training alone is insufficient. Instead, sustainable ESP teaching requires adaptive expertise, interdisciplinary curiosity, and

ongoing engagement with disciplinary discourse.

Importantly, these adaptive strategies reflect a broader transformation of teacher identity in ESP contexts. As previously discussed, the lecturer does not attempt to replace engineering expertise but instead redefines her professional role as a mediator of communication. This aligns with Reswari et al. (2025), who argue that ESP practitioners function as discourse specialists who facilitate access to disciplinary communities rather than as subject-matter authorities.

CONCLUSION

This study concludes that English Education graduates teaching engineering-focused ESP courses in the postmodern era encounter interconnected challenges related to disciplinary knowledge gaps, professional identity negotiation, and the need for adaptive pedagogical strategies. The findings show that the most prominent difficulty lies in the epistemic gap between linguistic expertise and specialized engineering content, particularly in understanding technical terminology, interpreting discipline-specific genres, and responding to content-driven student inquiries; however, this challenge reflects a structural limitation in teacher preparation programs rather than individual inadequacy. In negotiating professional identity, the participant initially experienced insecurity due to students' stronger technical knowledge but gradually reconstructed her authority by repositioning herself as a communication specialist whose legitimacy derives from facilitating clarity, coherence, and professional expression in English rather than mastering engineering calculations. This shift illustrates a postmodern reconfiguration of teacher authority in which expertise is distributed and interdisciplinary. Furthermore, the study demonstrates that adaptive strategies—such as self-directed learning, integration of authentic engineering materials, informal collaboration with engineering colleagues, and the implementation of genre-based and task-oriented instruction—play a crucial role in bridging the gap between linguistic and technical knowledge. Therefore, it is suggested that English Education programs incorporate interdisciplinary exposure and ESP-oriented training, higher education institutions provide structured professional development and cross-departmental collaboration, and ESP instructors continue engaging in reflective, needs-based, and discourse-informed pedagogical practices to sustain effective teaching in technically specialized academic environments.

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