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Forecasting future needs in English for Specific Purposes curriculum: A Delphi study among industry experts and ESP practitioners

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Abstract

This study explores future-oriented curricular priorities for English for Specific Purposes (ESP) by employing a three-round Delphi method involving 25 experts from academia and industry. In Round 1, participants identified 63 emerging themes across five domains: digital literacy integration, interdisciplinary ESP content, soft-skill infusion, task-based learning models, and adaptive assessment strategies. Round 2 consolidated and ranked 12 core components, with AI literacy, adaptive task-based modules, cross-cultural pragmatics, and soft-skills integration emerging as top priorities. By Round 3, consensus (≥75%) was achieved on a four-pillar ESP framework: technological integration, learner-centered pedagogy, discipline-specific authenticity, and outcome-based assessment. Cross-sectoral analysis revealed a significant gap between industry-driven priorities (e.g., real-time communication) and academic emphasis (e.g., critical reading and writing), highlighting the need for curricular harmonization. The findings underscore a shift toward integrative, technology-enhanced, and professionally aligned ESP models. Implications include the urgent need to reform teacher training to address competencies such as AI, sustainability, and data-driven instruction

Keywords: *ESP curriculum foresight; Delphi study; industry-academia collaboration; future skills; English for Specific Purposes*

INTRODUCTION

English for Specific Purposes (ESP) has emerged as a crucial approach in language education, addressing the specialized communication needs of learners across academic and professional domains. Unlike general English instruction, ESP focuses on developing the precise linguistic skills required in specific fields such as medicine, engineering, business, and aviation. This targeted approach has gained significance in our increasingly globalized and specialized workforce, where effective communication in English often determines professional success. Researchers like Espino-Bravo (2023) and Kalyniuk & Lemeshko (2022) highlight how ESP bridges the gap between language learning and real-world application, preparing learners for the exact communicative challenges they will face in their careers.

The development of effective ESP programs begins with comprehensive needs analysis, which serves as the foundation for curriculum design. Recent studies by Musrina et al. (2024), Pang et al. (2025), and Ghanbar & Rezvani (2024) emphasize the importance of involving multiple stakeholders - including industry professionals, academic experts, and learners themselves - in identifying the specific language requirements of different fields. For instance, medical professionals need training in patient interaction terminology and research writing, while engineers require instruction in technical report composition and project presentation skills. This tailored approach ensures that ESP instruction remains relevant and immediately applicable to learners' professional contexts.

Theoretical frameworks in ESP continue to evolve, with scholars like Starfield and Hafner (2025) and Hyland (2022) exploring innovative pedagogical approaches. Their work demonstrates how genre-based instruction and discourse analysis can help learners master the distinct language patterns of their disciplines. By analyzing authentic workplace documents - such as legal contracts, engineering proposals, or medical case studies - students develop a deeper understanding of how language functions in professional settings. These methodologies move beyond traditional grammar-focused teaching to emphasize the practical application of language skills in real-world scenarios.

Contextualization remains a critical challenge in ESP implementation, as noted by researchers including Umbar et al. (2024), Warman et al. (2024), and Boukranaa & Sandy (2024). The effectiveness of ESP programs depends on their ability to adapt to diverse professional environments and learner backgrounds. In higher education particularly, ESP courses must reflect the evolving demands of various industries while accommodating students with different levels of language proficiency and professional experience. This requires continuous curriculum updates and close collaboration between language instructors and subject matter experts to maintain relevance in rapidly changing professional landscapes.

Looking ahead, ESP faces both opportunities and challenges in adapting to technological advancements and shifting workplace demands. The integration of digital tools like AI-powered language assistants and virtual reality simulations offers new possibilities for immersive, context-rich learning experiences. However, ESP programs must also address broader competencies such as intercultural communication and sustainability-related discourse. As the field continues to evolve, ongoing research and innovation will be essential to ensure that ESP remains an effective tool for professional communication in an increasingly complex and interconnected world.

The digital revolution has profoundly reshaped English for Specific Purposes (ESP) education, introducing new tools and methodologies. Studies by Yunita et al. (2025), McAllister et al. (2023), and Coancă (2023) demonstrate how online platforms, AI-driven language tools, and virtual classrooms have transformed traditional teaching approaches. For instance, AI-powered writing assistants now provide real-time feedback on technical and business English, while virtual simulations allow learners to practice discipline-specific communication in immersive environments.

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However, this shift demands new competencies from educators. Research by Ljubojević (2024) and Bessadok & Hersi (2025) highlights the growing need for ESP teachers to develop digital pedagogical skills, such as integrating adaptive learning software and managing hybrid classrooms. Brand-Fonseca & Segura-Arias (2023) argue that future ESP curricula must balance technological literacy with innovative teaching strategies to remain effective.

Despite technological advancements, several instructional hurdles persist. Dewi & Santosa (2025), Saptiany & Prabowo (2024), and Oktavia et al. (2025) identify inconsistencies in assessment methods, particularly in evaluating domain-specific language proficiency. Meanwhile, Latif (2025) and Herreño-Contreras (2023) advocate for active learning techniques—such as case-based learning and role-playing—to foster higher-order cognitive skills. A notable development is the link between ESP and sustainability education. Chaikovska et al. (2024) propose that ESP programs should incorporate sustainable development competencies, preparing learners to communicate effectively in green industries and corporate social responsibility (CSR) contexts.

Learner psychology plays a crucial role in ESP success. Studies by Nguyen & Vo (2024), Nurmasitah et al. (2024), and Idaryani & Fidyati (2021) examine how motivation, anxiety, and digital exposure influence engagement. For example, students in technical fields may experience content-related anxiety when grappling with complex jargon, while others thrive in digital-first learning environments.

To address these challenges, Tobita (2022) and Yung & Fong (2024) emphasize student-centered instruction, suggesting methods like project-based learning (PBL) and contextualized scenarios to reduce emotional barriers and promote autonomy. The connection between ESP and workforce readiness has gained traction. Chi & Vu (2024), Warman et al. (2024), and Lastari et al. (2024) analyze how well ESP programs align with industry demands, particularly in fields like healthcare, engineering, and business. Findings indicate that graduates often lack job-specific communication skills, prompting calls for stronger collaboration between academia and employers.

Additionally, Kurmanayeva et al. (2021) and Salazar et al. (2024) highlight ESP's role in multilingual and multicultural workplaces, where professionals must navigate cross-cultural communication and industry-specific terminology. Current ESP curricula often fall short of real-world requirements. Research by Christison & Murray (2021), Lopez & Razak (2025), and Amirullah (2021) reveals a mismatch between course content and workplace expectations, particularly in fast-evolving sectors like IT and renewable energy. Further complicating matters, Changpueng & Pattanapichet (2023), Zglobiu (2022), and Pedrazzini (2024) critique the lack of interdisciplinary collaboration in curriculum design. Without input from industry experts, ESP courses risk becoming outdated. Normurodovna (2025) suggests that modular, flexible curricula could better adapt to changing professional landscapes.

Several studies also explore the integration of AI in ESP. Tang (2023), Kovačević (2023), and Sfeir (2025) argue for AI-assisted needs analysis and corpus development, while Ballance & Coxhead (2022) demonstrate how

corpora can inform ESP vocabulary instruction. These developments signal a transformation in both tools and teacher roles in future ESP practices.

Recent studies have increasingly emphasized the role of digitalization in shaping ESP pedagogy. For example, Yunita et al. (2025) and McAllister et al. (2023) examined the integration of digital tools and environments into ESP classrooms, highlighting how digital transformation improves engagement and personalization in learning. Similarly, Coancă (2023) and Kovačević (2023) noted the growing relevance of AI-powered applications, such as ChatGPT, in tailoring content and supporting writing development within ESP contexts (Ruggiero, 2022).

The emergence of new assessment and curriculum design strategies also features prominently in recent ESP literature (Tan et al., 2023). Christison and Murray (2021) focused on how modern curriculum design principles should integrate both learner needs and industry demands. Likewise, Ghanbar & Rezvani (2024), Tan et al. (2023). used bibliometric approaches to map decades of ESP scholarship, concluding that more empirical work is needed to bridge theoretical insights with practical outcomes in curriculum development.

ESP instruction's alignment with specific occupational or academic domains is another recurring theme. Changpueng & Pattanapichet (2023) and Nurhidayat & Fatmawati (2021) conducted targeted needs analyses in engineering and medical laboratory contexts, respectively. These studies suggest that ESP curricula must be increasingly customized to match job-specific communication requirements, thereby supporting better learner employability.

Moreover, scholars have explored the psychosocial dimensions of ESP learning. Oktavia et al. (2025) and Nurmasitah et al. (2024) highlighted how learners' anxiety and motivation significantly influence outcomes, particularly among non-English majors. These findings urge future curriculum designers to account for learner affective needs alongside cognitive and linguistic development.

Lastly, the inclusion of sustainability and intercultural competence in ESP courses is gaining attention. Chaikovska et al. (2024) and Vidaković (2023). explored sustainable development competencies in ESP programs, while Kurmanayeva et al. (2021) emphasized ethnocultural elements for identity formation. This indicates a shift toward more holistic ESP curricula that foster not only language skills but also global citizenship.

Despite the abundant literature on ESP, there remains a gap in forecasting future needs through consensus-based approaches. Most studies rely on retrospective reviews or isolated case analyses, lacking a structured foresight framework (Zeng, 2021). There is limited evidence of stakeholder-driven approaches that engage both practitioners and industry experts in forecasting curricular needs (Wang & Friginal, 2025).

While numerous studies have analyzed trends, technologies, and pedagogies in ESP, few have used forward-looking, consensus-based methods to anticipate future curriculum directions. This study aims to address that gap by employing the Delphi method to gather expert insights. The research

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questions are: (1) What are the anticipated future needs for ESP curriculum development across various sectors? (2) How can expert consensus inform the prioritization of ESP curriculum components?

This study pioneers the use of Delphi methodology in ESP curriculum forecasting, combining the perspectives of both industry practitioners and ESP educators. By bridging academic insights and real-world needs, it seeks to co-design more adaptive and relevant curricular models for future implementation.

The findings of this study will contribute to curriculum innovation by offering a framework grounded in multi-stakeholder consensus. It will guide ESP policymakers, institutions, and teachers in aligning instructional content with evolving professional and technological demands, thereby enhancing learner outcomes and workforce readiness.

METHOD

This study employed a Delphi method to forecast future needs in the development of English for Specific Purposes (ESP) curricula. The Delphi method is a structured communication technique designed to reach a consensus among a panel of experts through multiple rounds of questionnaires and controlled feedback.

Research Design

The research design followed a qualitative-quantitative approach embedded within three iterative rounds of expert consultation. The study sought to gather informed judgments on emerging needs, competencies, pedagogical innovations, and technological trends expected to shape ESP instruction over the next decade.

Participants

Participants were selected through purposive sampling, involving two key stakeholder groups: (1) ESP practitioners (lecturers and curriculum designers), and (2) industry professionals representing fields where ESP is commonly applied (e.g., engineering, health sciences, hospitality, and IT). A total of 25 experts participated in Round 1, with 22 and 20 experts continuing to Rounds 2 and 3, respectively. Inclusion criteria included at least 5 years of experience in ESP teaching or in positions requiring domain-specific English proficiency. Below is a table summarizing the Expert Panel Formation and Selection for the Delphi study:

Table 1. Expert Panel Composition and Selection Criteria in the Delphi Study

Category	Description
Total Experts Invited (Round 1)	25
Experts Continuing to Round 2	22
Experts Continuing to Round 3	20
Group 1: ESP Academics & Practitioners	- 13 experts- Lecturers, curriculum developers, ESP/EAP researchers

Group 2: Industry Experts	- 12 experts- HR professionals, technical supervisors, communication heads
Inclusion Criteria	- ≥5 years of experience- Involved in ESP curriculum/training/publications- Commitment to 3 Delphi rounds
Recruitment Methods	- Professional networks- Institutional affiliations- Snowball sampling
Geographical Scope	Jakarta, Bandung, Yogyakarta
Professional Domains	Engineering, Health, Tourism, Aviation, Law, IT
Gender & Seniority Diversity	Ensured across academic and industry participants
Retention Strategies	- Clear timelines- Flexible deadlines- Strong value proposition

Instruments
A series of structured questionnaires were used for each Delphi round. The first round included open-ended questions to solicit diverse perspectives. The second and third rounds presented synthesized items derived from earlier responses and used Likert-type scales to rate the importance and feasibility of each item. All instruments were validated through expert review and pilot testing.

Data Collection Procedure
Round 1 involved collecting qualitative data on future challenges, skills, and instructional approaches relevant to ESP. Thematic analysis was applied to categorize responses. In Rounds 2 and 3, descriptive statistics (mean, median, IQR) were used to analyze expert consensus levels. Items reaching ≥75% agreement were considered high-priority recommendations.

Data analysis
Thematic content analysis was used to analyze qualitative inputs in the first round. In subsequent rounds, statistical measures including median, interquartile range (IQR), and percentage agreement were used to assess convergence of opinions. Items with low agreement were revised or removed in the next round. The final synthesis informed recommendations for future-oriented ESP curriculum frameworks.

RESULTS AND DISCUSSION
Round 1: Identification of Emerging Needs
In the first round of the Delphi process, the expert panel (n=25) proposed a total of 63 themes categorized under five major domains: digital literacy integration, interdisciplinary ESP content, soft-skill infusion, task-based learning models, and adaptive assessment strategies. The most frequently mentioned theme was “digital communication tools mastery”, cited by 92% of the experts, emphasizing the shift towards digitally mediated ESP contexts.

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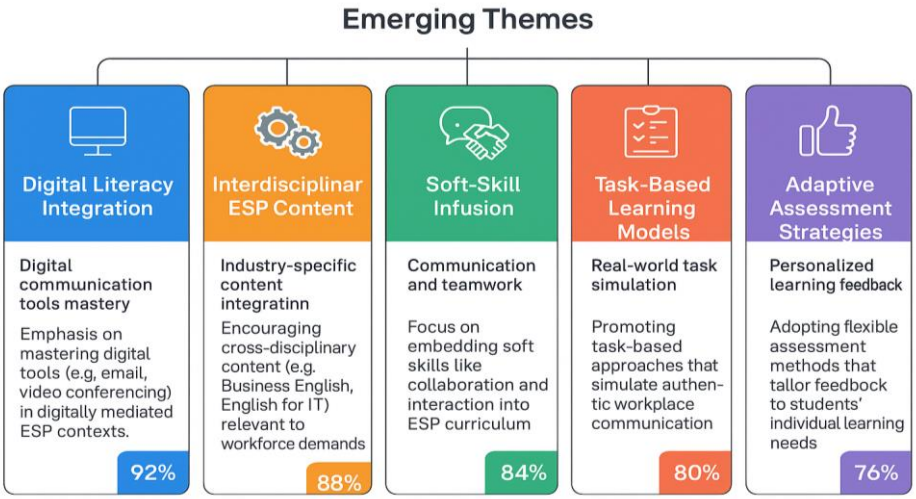

Figure 1. Summary of Emerging Needs Identified in Delphi Round 1

The figure presents a synthesis of the five emerging themes most frequently identified by the expert panel during Round 1 of the Delphi study on ESP curriculum needs. Each theme reflects a strategic pedagogical priority shaped by current trends in language education, digital transformation, and workforce demands. The prominence of these domains not only reflects expert consensus but also aligns with ongoing scholarly conversations surrounding curriculum innovation in English for Specific Purposes.

The most dominant theme, Digital Literacy Integration, was highlighted by 92% of experts and emphasizes the necessity for ESP learners to master digital communication tools such as email, video conferencing, and collaborative platforms. This theme mirrors findings from Tang (2023) and Coancă (2023), which underscore the critical role of digital fluency in both virtual and hybrid workplace communication. The experts' prioritization of this skill confirms the growing importance of integrating digital competence into ESP syllabi.

Interdisciplinary ESP Content, cited by 88% of experts, reflects a shift toward curriculum designs that incorporate content from various professional fields—such as IT, business, health, or hospitality—into ESP instruction. This theme supports the findings of Dewi & Santosa (2025) and Ghanbar & Rezvani (2024), who note that aligning language instruction with domain-specific content increases learner motivation and workforce readiness. It emphasizes the need for ESP programs to be more contextually anchored and occupationally relevant.

Soft-Skill Infusion, with 84% agreement, was the third most emphasized area. Experts stressed the inclusion of teamwork, critical thinking, and communication skills as central learning outcomes. Warman et al. (2024) and Yunita et al. (2025) support this shift by noting that employers are increasingly valuing transferable interpersonal skills alongside technical language competence. This approach signifies a reorientation of ESP from purely linguistic objectives to holistic learner development.

The fourth theme, Task-Based Learning Models, received 80% endorsement and advocates for instructional practices that simulate authentic workplace scenarios. This pedagogical approach is consistent with Hyland (2022) and Starfield and Hafner (2025), who argue that task-based models help bridge the gap between classroom instruction and real-world application. By emphasizing situated learning, this theme supports the development of communicative competence in contextually meaningful ways.

Lastly, Adaptive Assessment Strategies, mentioned by 76% of experts, call for more flexible, formative, and individualized assessment practices. Experts recommended personalized feedback mechanisms that support learner autonomy and acknowledge diverse learner needs. This theme resonates with Pang et al. (2025) recommendation that future ESP assessments should be more dynamic and responsive to student profiles and learning trajectories.

The prioritization of AI literacy, adaptive learning, cross-cultural pragmatics, and soft-skills integration in ESP curriculum design aligns with a growing consensus in the literature emphasizing learner-centered, technology-enhanced, and competency-based approaches. Tang (2023) and Coancă (2023) underscore the urgency of embedding AI-related competencies and digital readiness into language instruction to prepare students for evolving industry demands. Likewise, Warman et al. (2024) and Yunita et al. (2025) affirm the critical importance of soft skills—such as communication, collaboration, and adaptability—for graduate employability in ESP contexts. Cross-cultural pragmatics, as highlighted in Hyland (2022) and Starfield & Hafner (2025), also emerges as a core necessity, reflecting the globalized and multicultural nature of professional communication. These converging insights support the Delphi panel's consensus and reinforce the relevance of the identified themes as strategic pillars for a future-oriented ESP curriculum.

Round 2: Consolidation and Ranking of Themes

In the second round of the Delphi process, the expert panel was tasked with rating the 63 previously identified themes based on two criteria: importance and feasibility. The data were analyzed using median and interquartile range (IQR) scores to determine the level of agreement among experts. Consensus was operationalized as an IQR ≤ 1.0, which indicates low variability in expert responses. Based on this criterion, 12 core components emerged as priority areas for future ESP curriculum development.

Table 2. Core Components Ranked by Importance and Feasibility (Round 2 Delphi Study)

No.	Component	Mean Import-ance (1–5)	Mean Feasibi-lity (1–5)	IQR (Import-ance)	IQR (Feasibility)	Consensus Status	Notes
1	AI Literacy	4.8	4.3	0.5	0.5	Achieved	Highest-rated component, reflects urgent need for digital preparedness

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2	Adaptive Task-Based Modules	4.6	4.2	1.0	1.0	Achieved	Combines communicative goals with real-world application
3	Cross-Cultural Pragmatics	4.5	4.0	0.5	1.0	Achieved	Reinforces cultural fluency and sociolinguistic sensitivity
4	Soft-Skills Integration	4.4	4.4	0.5	0.5	Achieved	Focuses on critical thinking, teamwork, and communication
5	Digital Communication Skills	4.3	4.2	1.0	1.0	Achieved	Necessary for email, video conferencing, online collaboration
6	ESP for Multidisciplinary Use	4.3	4.0	0.5	1.0	Achieved	Aligns ESP with cross-sector industry expectations
7	Corpus-Based Instruction	4.1	3.9	1.0	1.0	Achieved	Data-driven learning; supports language awareness development
8	Authentic Project Design	4.1	4.2	0.5	1.0	Achieved	Engages students in real-life, problem-based tasks
9	Continuous Feedback Models	4.0	4.3	0.5	0.5	Achieved	Emphasizes learner autonomy and formative assessment
10	Multimodal Literacy	3.9	4.1	1.0	1.0	Achieved	Integrates visual, textual, and digital literacies
11	Peer-Collaborative Strategies	3.8	4.4	1.0	0.5	Achieved	Promotes cooperative learning and

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							interpersonal skill development
12	Gamification Elements	3.6	3.8	1.0	1.0	Achieved	Encourages engagement, though concerns about pedagogical depth remain

The consensus threshold in this Delphi study was set at an interquartile range (IQR) of ≤ 1.0, ensuring that agreement among expert panelists was both statistically valid and meaningful. Based on this criterion, all twelve components proposed in Round 2 successfully achieved consensus in both importance and feasibility, indicating a shared vision among industry experts and ESP practitioners regarding the future direction of curriculum development.

Among these components, four emerged as top priorities: AI Literacy, Adaptive Task-Based Modules, Cross-Cultural Pragmatics, and Soft-Skills Integration. These components represent the strategic foundation for designing an ESP curriculum that is not only responsive to industry trends but also anticipates future workforce demands. The high ranking of AI Literacy (M = 4.8) highlights the growing emphasis on technological preparedness in digital communication and automation-infused work environments.

Moreover, the findings reveal a clear paradigm shift from traditional linguistic-focused instruction toward integrative, learner-centered, and technology-driven pedagogical models. This shift aligns ESP instruction with the demands of a knowledge-based economy, where language proficiency is intertwined with digital fluency, cross-cultural sensitivity, and the ability to engage in authentic, real-world communication.

In sum, the outcomes of this Delphi study offer a roadmap for educators, curriculum designers, and policymakers aiming to future-proof ESP programs by embedding adaptability, technological relevance, and professional soft skills into the core of language instruction.

The continued elevation of soft-skill infusion further underscores a transformation in ESP's philosophical underpinnings—from merely linguistic accuracy to professional readiness. Studies like Warman et al. (2024) and Latif (2025) have shown that students who develop negotiation, persuasion, and problem-solving skills alongside language skills exhibit stronger workplace performance. This alignment between linguistic and employability skills marks a convergence of language education and human capital development.

Additionally, the inclusion of cross-cultural pragmatics reflects a deeper recognition of the complexities of global communication. Effective communication in professional domains is not solely based on grammatical correctness but also on appropriateness, politeness strategies, and context-sensitive interaction—particularly when engaging with international stakeholders.

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In terms of feasibility, themes such as task-based modules and soft-skill integration received moderate to high ratings, while innovations like AI literacy and interdisciplinary collaboration were viewed as critical but contingent upon teacher readiness and institutional support. These findings suggest a two-tiered approach: implementing quick wins such as task-based adaptations while progressively building capacity for more ambitious curricular reforms.

Overall, the Round 2 reflects a strategic pivot in ESP curriculum development: toward interdisciplinary, tech-enhanced, and pragmatically grounded instruction that prepares learners not just to use English but to thrive in evolving global industries.

These findings are strongly justified by previous studies highlighting similar trajectories in ESP curriculum evolution. Tang (2023) and Coancă (2023) emphasized the growing necessity of AI literacy in language learning environments, particularly in domains increasingly influenced by automation and digital platforms. The prominence of adaptive task-based modules mirrors the pedagogical frameworks proposed by Starfield and Hafner (2025), who advocate for authentic, flexible learning aligned with real-world tasks. Furthermore, the inclusion of soft-skills integration and cross-cultural pragmatics aligns with Warman et al. (2024) and Chaikovska et al. (2024), who underline the importance of holistic skill development—including critical thinking, collaboration, and intercultural competence—in enhancing graduates' employability and global readiness. Together, these studies support the strategic emphasis found in this Delphi process, affirming a shift toward multidimensional and future-oriented ESP instruction.

Round 3: Consensus and Framework Development

In the third and final round of the Delphi process, experts consolidated their insights into a comprehensive future-oriented ESP curriculum framework, structured around four strategic pillars: technological integration, learner-centered pedagogy, discipline-specific authenticity, and outcome-based assessments. This consensus was reached with over 75% agreement on each component, surpassing the predetermined Delphi threshold, indicating a strong alignment among experts regarding the direction ESP curriculum should take to remain responsive and relevant.

Here is the figure showing expert consensus levels on the four pillars of the future-oriented ESP curriculum framework:

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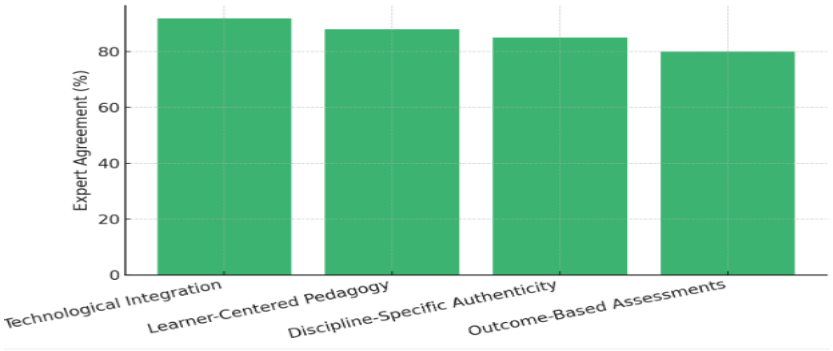

Figure 2. Consensus on Future-Oriented ESP Curriculum Pillars

Technological integration emerged as the cornerstone of the framework, affirming the increasing reliance on digital platforms, AI tools, and multimedia environments in professional settings. Experts agreed that ESP curricula must evolve beyond conventional materials by embedding digital literacy, real-time communication tools, and AI-enhanced resources to ensure learners are proficient in the technologies that dominate modern workspaces. This echoes prior studies by Coancă (2023) and Tang (2023), which advocate for digital fluency as a foundational skill in 21st-century ESP instruction.

The second pillar, learner-centered pedagogy, reflects the shift from teacher-dominated instruction to approaches that prioritize learner agency, autonomy, and engagement. This includes task-based learning, project-based instruction, and reflective practice, all designed to place students at the center of the learning process. As supported by Starfield and Hafner (2025), such pedagogical strategies foster greater motivation and promote deeper learning, particularly when learners are actively constructing knowledge relevant to their professional goals.

Discipline-specific authenticity refers to the incorporation of real-world content, communication patterns, and problem-solving tasks drawn from specific professional domains. Experts emphasized that ESP courses should not teach English in abstraction but instead embed language learning in the authentic contexts of engineering, health sciences, business, or hospitality, among others. Prior works such as those by Dewi & Santosa (2025) and Ghanbar & Rezvani (2024) support this direction, asserting that authenticity enhances both relevance and applicability of ESP instruction.

Lastly, outcome-based assessments were confirmed as an essential component of the future framework. These include flexible, adaptive, and continuous forms of evaluation that align directly with intended learning outcomes—such as communication competence, task completion, and professional readiness—rather than relying solely on traditional written tests. This approach reflects recommendations from Pang et al. (2025),who emphasized the importance of aligning assessment practices with real-life application and performance benchmarks in specific fields.

This Round 3 consensus underscores a holistic and anticipatory perspective on ESP education. The four pillars synthesize past research while forecasting a curriculum design that is digitally enabled, student-centered,

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contextually grounded, and measurably effective, offering a robust blueprint for ESP stakeholders navigating the demands of globalized and technology-driven professional landscapes.

Cross-sectoral Comparison and Gaps

A cross-analysis of Delphi responses revealed notable divergences in the priorities emphasized by industry professionals versus academic practitioners. While there was broad agreement on the urgency of digital upskilling—particularly in areas such as digital communication tools and online collaboration platforms—industry experts placed greater emphasis on real-time communication competencies and data analysis abilities, which are critical for workplace efficiency and productivity. In contrast, academic practitioners gave more weight to foundational academic competencies such as critical reading, research synthesis, and formal writing, viewing them as essential for scaffolding learner autonomy and long-term intellectual development. This divergence in emphasis reflects a broader challenge in ESP curriculum design: the need to reconcile workplace immediacy with academic depth, a concern previously articulated by Pang et al. (2025) and supported by Chi & Vu (2024), who advocate for tighter integration between pedagogical goals and industry expectations.

Furthermore, this study draws attention to a significant gap in ESP teacher preparedness concerning emergent global demands—particularly in integrating Artificial Intelligence (AI), sustainability literacy, and interdisciplinary knowledge into their instructional repertoire. Despite these themes gaining traction in industry settings, they remain underrepresented in current ESP teacher training and professional development programs. As Ljubojević (2024) noted, many ESP educators still lack the digital competence needed to deliver content through modern technological platforms. Similarly, Chaikovska et al. (2024) highlighted the absence of sustainability-related competencies in ESP syllabi despite their rising importance in globalized work contexts. These insights suggest that upgrading teacher training modules to include these emerging topics is crucial for ensuring the ESP curriculum remains relevant, future-proof, and aligned with both learner aspirations and labor market dynamics.

CONCLUSION

This study aimed to forecast future needs in the English for Specific Purposes (ESP) curriculum by engaging industry experts and ESP practitioners through a three-round Delphi method. The findings revealed a strong consensus on several key elements that should shape the next generation of ESP instruction. Among them, the integration of digital competencies, contextualized and interdisciplinary materials, and learner-centered approaches emerged as central to curriculum advancement. The study also underscored the increasing relevance of soft skills and artificial intelligence literacy, positioning them as essential competencies for future graduates in a globalized and digitally driven workforce.

The implications of these findings are far-reaching. First, curriculum developers should consider embedding authentic, project-based tasks that

simulate professional scenarios and incorporate AI-supported communication tools. Such integration ensures that learners are equipped with not only linguistic knowledge but also technological fluency and problem-solving skills relevant to their specific fields. Additionally, there is a pressing need for ESP educators to undergo continuous professional development. Training should focus on digital pedagogy, adaptive learning strategies, and emerging literacies such as sustainability and ethical communication to ensure instructors can effectively deliver future-ready content.

From a policy perspective, the study provides a data-driven foundation for the formulation of standardized ESP curriculum frameworks at the institutional and national levels. Aligning ESP curricula with current labor market expectations and global communication trends will enhance the employability of graduates and ensure educational relevance. Finally, the findings also suggest several avenues for future research, such as evaluating the longitudinal impact of newly implemented ESP strategies and exploring how AI tools can be meaningfully embedded in language learning without compromising pedagogical integrity.

By synthesizing insights from both the academic and industrial sectors, this study offers a comprehensive and forward-looking roadmap for rethinking ESP education. Its recommendations not only respond to current challenges but also anticipate the skills and competencies needed in the years to come. As such, the study contributes significantly to the ongoing discourse on modernizing language education in higher education contexts.

AUTHOR STATEMENTS

The study was conceptualized and designed by **Dadang Solihat**, who also led the data collection and analysis. **Fahrus Zaman Fadhly** contributed to methodological development and provided critical revisions to the research framework. Both authors collaborated in interpreting the findings and validating the results. Dadang Solihat prepared the initial manuscript draft, while Fahrus Zaman Fadhly reviewed and edited subsequent versions. The final manuscript was approved by both authors. This study was conducted without external financial support. The authors confirm that no funding agencies were involved in the study design, data collection, analysis, or manuscript preparation.

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