Conceptual Article

BEYOND TASK INVENTORIES: A COMPETENCE-IN-NETWORK FRAMEWORK FOR EOP NEEDS ANALYSIS

Sitti Nurpahmi[1*]
[1]*English Education Department, Tarbiyah and Teacher Training Faculty, Universitas Islam Negeri Alauddin Makassar, Makassar, Indonesia*
**Corresponding author: sitti.nurpahmi@uin-alauddin.ac.id*

Abstract

Needs analysis is the foundation of English for Occupational Purposes (EOP), yet many workplace needs analyses still represent needs as lists of tasks and skills rated by a single group of informants, and they rarely ask how tools and policies shape workplace communication. This conceptual article asks what workplace needs analysis research reveals about occupational communicative needs and proposes a framework that responds to it. Using a theory synthesis and model design approach, it integrates foundational needs analysis models, genre and workplace discourse research, English as a business lingua franca, emerging research on generative artificial intelligence (AI) at work, and 16 empirical workplace needs analyses from 1999 to 2025, including seven from Indonesia. All 16 studies relied on informants' perceptions, five also analysed texts or documents, two used observation, and six consulted more than one stakeholder group. The synthesis identifies four blind spots of task-inventory approaches: isolation, surface, mediation and positionality problems. The proposed Competence-in-Network (CiN) framework describes each priority communicative event by its place in a genre network, four operationally defined layers of competence (knowledge, judgement, relational skills and professional values), the channels, tools, AI and policies that mediate it, and the positions of the stakeholders who define it. Compared with existing holistic and competence-based models, CiN adds mediation and stakeholder divergence as explicit dimensions. The framework is operationalised through an event–competence matrix and a six-stage procedure adapted to Indonesian vocational and professional education. It has not yet been validated empirically, so five testable propositions, with indicative measures, and a validation and research agenda are proposed.

Keywords: *Competence-in-Network; English for Occupational Purposes; Generative AI; Needs Analysis; Workplace Communication*

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INTRODUCTION

For a large and growing number of learners, English matters less as an academic subject than as a resource for work. Engineers coordinate with overseas partners through email and teleconferences, accountants answer client queries about financial statements,

nurses explain procedures to patients, and hotel staff handle guests' requests and complaints. English for Occupational Purposes (EOP), the branch of English for Specific Purposes (ESP) that prepares learners for such communication, depends on how accurately courses reflect the language, genres and interactions of the workplaces that learners will enter (Dudley-Evans & St John, 1998; Hyland, 2022). Needs analysis (NA) is the process through which this alignment is sought, and it has long been described as the cornerstone of ESP course design (Brown, 2016; West, 1994).

NA in occupational settings nevertheless faces persistent difficulties. Workplaces are numerous and varied, much workplace communication is spoken, internal or confidential, and access depends on employers whose view of what employees need may differ from that of employees themselves (Jasso-Aguilar, 1999). Many EOP learners, particularly in vocational schools and polytechnics, have not yet entered their target occupations and can say little about the communication their future work will involve (Long, 2005).

The methodological literature has responded to these difficulties. Long (2005) called for multiple sources and methods, Huhta et al. (2013) proposed holistic professional profiles built from qualitative evidence, and Serafini et al. (2015) set out essential methodological improvements, including triangulation and attention to performance. In practice, however, many published workplace NAs still rely on what this article calls *task-inventory approaches*: designs whose main instrument is a list of workplace tasks, skills or communicative events that informants rate for frequency, importance or difficulty, usually from a single group, with the ratings aggregated into a ranking. A systematic review of 133 EOP studies found that many quantitative studies listed workplace tasks, such as writing reports or giving presentations, and asked participants how often they performed them; most studies focused on the tasks rather than on the competences needed to perform them well, and very few triangulated stakeholders' perspectives (Kamil & Muhammad, 2021). The critique developed here is therefore directed at a common practice rather than at the field's best methodological thinking.

Three developments make this practice more problematic. First, genre and workplace discourse research has shown that workplace communication is embedded in chains of texts and talk, carries interpersonal and institutional meanings, and is often collaborative and multilingual (Bhatia, 2008; Bremner, 2010; Evans, 2012; Holmes & Stubbe, 2015). Second, needs change over careers: senior professionals report that non-technical genres requiring tact and diplomacy become more demanding than technical ones (Chan, 2019). Third, generative artificial intelligence (AI) is changing what workplace communication involves, as

experimental and field studies show shifts in the time, quality and distribution of effort in professional writing and service work (Brynjolfsson et al., 2025; Noy & Zhang, 2023).

These developments matter particularly in Indonesia, where much EOP teaching takes place in vocational and professional education. Indonesian studies in hospitality, nursing, engineering and maritime education report that speaking and workplace-specific communication are under-served (Kailani et al., 2025; Malini et al., 2022; Rahmat et al., 2025; Satrio et al., 2025), and vocational English textbooks have been criticised as too general for specific occupations (Dewi et al., 2024). Course designers in such settings need an approach to NA that is theoretically grounded, sensitive to the complexity of workplace communication, and feasible with limited access and resources. This article is guided by three questions:

RQ1. What does research on workplace needs analysis reveal about the nature of occupational communicative needs?

RQ2. What are the limitations of task-inventory approaches to EOP needs analysis in light of this research?

RQ3. What framework can integrate these insights into a coherent, practicable and testable approach to EOP needs analysis?

The article makes three contributions. It synthesises 16 workplace NA studies into five recurrent patterns and codes their designs; it identifies four blind spots of task-inventory NA; and it proposes the Competence-in-Network (CiN) framework, compares it with existing holistic and competence-based models, and operationalises it through defined competence layers, an event–competence matrix, a six-stage procedure and testable propositions.

LITERATURE REVIEW

From Target Situations to Genres and Practices

The modern tradition of NA in ESP began with target situation analysis. Munby's (1978) Communication Needs Processor specified the participants, settings, purposes and communicative activities of learners' future language use. Hutchinson and Waters (1987) added a learning-centred perspective, distinguishing target needs (necessities, lacks and wants) from learning needs. Dudley-Evans and St John (1998) integrated target, present and learning situation analysis with means analysis, and Long (2005) argued that reliable NA requires multiple sources and methods.

Genre theory gave this tradition a richer object of analysis. Swales (1990) defined genres as classes of communicative events whose shared purposes are recognised by a discourse community. Bhatia (2008) extended this view to professional settings, arguing that professional expertise combines discursive competence, disciplinary knowledge and knowledge of professional practice, and later emphasised the interdiscursive character of professional practice (Bhatia, 2017). From this perspective, occupational needs are better described as participation in the genres through which a profession works than as abstract skills.

Workplace Communication as Networked, Relational and Multilingual

Workplace discourse research adds three insights. First, workplace texts are networked: Evans (2012) showed that emails in Hong Kong's key industries are embedded in chains of telephone calls, meetings and documents, and Bremner (2010) found that workplace writing is frequently collaborative, unlike the individually authored texts of textbooks. Second, workplace communication is relational: small talk, humour and politeness are integral to getting work done and to managing power (Holmes & Stubbe, 2015), and practitioners read workplace texts for interpersonal meanings that teachers may miss (Forey, 2004). Third, workplace communication is often multilingual. Research on English as a business lingua franca (BELF) shows that effectiveness depends more on clarity, shared domain knowledge and relational skills than on native-speaker norms (Kankaanranta & Louhiala-Salminen, 2010). For NA, the implication is that criteria of successful communication must be discovered in the target workplace rather than assumed.

Existing Holistic and Competence-Based Models

These insights converge on a distinction between tasks and competences: a task inventory records what is done, whereas a competence description records what it takes to do it well. Three existing models have moved in this direction. Huhta et al.'s (2013) holistic approach builds professional profiles from qualitative evidence, describing routine and challenging communicative situations, the professional discourse activities they involve, and the perspectives of teachers, learners and employers, and links these to the Common European Framework of Reference. Louhiala-Salminen and Kankaanranta's (2011) model of global communicative competence, derived from a survey of business professionals, comprises multicultural competence, BELF competence and business know-how. Kamil and Muhammad (2021) proposed a professional communication competence framework for EOP

based on Canale's model, comprising grammatical, sociolinguistic, discourse and strategic competence applied to workplace speaking, writing and their overlap.

Table 1 compares these models with the CiN framework proposed in this article. The comparison shows that existing models already describe communicative situations, competences and, in Huhta et al.'s case, multiple perspectives. None of them, however, treats the links between events, the mediation of communication by tools, AI and organisational policies, or the systematic divergence between stakeholders' accounts as explicit dimensions of analysis. These are the dimensions that CiN adds, together with professional values as a distinct layer of competence.

Table 1. Comparison of the CiN framework with existing holistic and competence-based models

Dimension	**Huhta et al. (2013)**	**Louhiala-Salminen & Kankaanranta (2011)**	**Kamil & Muhammad (2021)**	**CiN (this article)**
Unit of analysis	Communicative situations and professional discourse activities	Global business communication	Workplace speaking, writing and their overlap	Priority communicative event in its genre network
Links between events	Situations described in context; links not modelled	Not addressed	Not addressed	Explicit: preceding and following events, channels, intertextuality
Competence components	Language and discourse skills linked to the CEFR; holistic view of the learner	Multicultural competence, BELF competence, business know-how	Grammatical, sociolinguistic, discourse and strategic competence	Knowledge, judgement, relational skills, professional values
Professional values	Not a separate component	Implicit in business know-how	Not addressed	Separate layer
Mediation (tools, AI, policy)	Not a separate dimension	Not a separate dimension	Not addressed	Explicit, recorded per event
Stakeholders	Teachers, learners and employers; perspectives may conflict	Business professionals	Triangulation recommended, not part of the framework	Stakeholder lens; divergence recorded as data
Link to course design	Professional profiles	Implications for business communication teaching	Proposed for future NA studies	Event–competence matrix and six-stage procedure
Empirical status	Profiles developed from qualitative evidence	Survey of professionals	Proposed; not yet tested	Proposed; not yet validated

Note. Entries summarise each model as described by its authors. BELF = English as a business lingua franca; CEFR = Common European Framework of Reference for Languages.

METHOD

Design. This is a conceptual article. Following Jaakkola (2020), it adopts a combined theory synthesis and model design: it integrates concepts from several bodies of literature into a higher-order account of occupational communicative needs and proposes a model that specifies the components of that account and their relations. Its contribution lies in coherence, explanatory scope and testability rather than in new data. The synthesis draws on an integrative literature review (Snyder, 2019), which suits topics in which evidence is spread across different traditions and methods.

Selection of sources. Sources were selected purposively from five domains, each with its own selection logic (Table 2). For the theoretical domains (a–c), the review included the works most frequently treated as foundational in ESP and professional communication research, together with later works that revised them. For the AI domain (e), it included peer-reviewed or conference studies that measured how generative AI changes professional writing or service work, together with the few studies of second-language professionals that could be found. For the empirical domain (d), workplace NA studies were identified through keyword searches of Google Scholar, the Directory of Open Access Journals and the archives of ESP journals, combining "needs analysis" with "workplace", "occupational", "English for occupational purposes", "vocational" and sector terms such as "nursing", "hospitality", "engineering" and "maritime", and by backward citation tracking. Studies were included if they were empirical, investigated the English communicative needs of a defined occupation or vocational programme, and reported their sources and methods. Selection followed a maximum-variation logic across sectors, regions, decades and designs, and Indonesian studies were deliberately sought because of the article's focus. Sixteen studies published between 1999 and 2025 were included: nine from other countries and seven from Indonesia (Table 3).

Seeking contrasting evidence. To avoid building the argument on confirming cases, the review deliberately included studies that cut against it: studies in which writing, rather than speaking, was central (Chan, 2019; Kim, 2021); studies that triangulated several stakeholder groups (Hoang et al., 2024; Mohammed, 2025); and studies that already went beyond task lists by mapping genres or professional values (Dewi et al., 2024; Octaviano & Aranha, 2022). These cases are used below to qualify the scope of each claim.

Table 2. Domains of literature, selection logic and role in the synthesis

Domain	Representative sources	Selection logic	Role in the synthesis

Domain	Representative sources	Selection logic	Role in the synthesis
(a) Needs analysis models	Munby (1978); Hutchinson & Waters (1987); West (1994); Dudley-Evans & St John (1998); Long (2005); Huhta et al. (2013); Serafini et al. (2015); Brown (2016)	Foundational models and later methodological revisions	Core constructs: target and present situation, necessities, lacks, wants, triangulation
(b) Genre and workplace discourse	Swales (1990); Bhatia (2008, 2017); Bremner (2010); Evans (2012); Holmes & Stubbe (2015)	Works defining genre and describing workplace texts and talk	Communicative events as embedded, collaborative and relational
(c) BELF and professional competence	Kankaanranta & Louhiala-Salminen (2010); Louhiala-Salminen & Kankaanranta (2011); Kamil & Muhammad (2021)	Models of competence for multilingual professional communication	Criteria of success located in the workplace; competence components
(d) Workplace NA studies	16 studies, 1999–2025 (Table 3)	Empirical; defined occupation; maximum variation; Indonesian studies sought	Patterns in needs and in NA designs
(e) Generative AI at work	Noy & Zhang (2023); Brynjolfsson et al. (2025); Lee et al. (2025); Dell'Acqua et al. (2026); Zhang-Wu (2026)	Studies measuring AI effects on professional communication; L2 studies where available	Mediation of workplace communication by AI

Note. L2 = second language.

Analysis. The analysis proceeded in three steps. First, each workplace NA study was coded for its unit of analysis (tasks or skills; genres or events; competences or values), the stakeholder groups it consulted, and the type of evidence it used: perceptions (questionnaires or interviews), texts or documents, or observation (Table 4). Second, recurring patterns in findings and recurring features of design were identified and checked against the theoretical literature. Third, the constructs that best accounted for these patterns were integrated into the framework and translated into analytic and procedural tools. Because the review is integrative rather than systematic, the number of records screened was not logged, and the review does not claim exhaustive coverage; the full list of included studies and their coding are reported instead so that readers can judge the basis of each claim. Because no human participants were involved, ethical approval was not required.

FINDINGS AND DISCUSSION

What Workplace Needs Analysis Research Reveals

The 16 studies span hospitality, nursing, engineering, maritime, business, accounting, corporate work, office management, public health and information technology in nine countries and territories (Table 3). Read together, they reveal five recurrent patterns in

occupational communicative needs. The patterns are stated with their scope, because the studies differ in sector and design.

Table 3. Workplace needs analysis studies included in the synthesis (n = 16)

Study	Sector and context	Sources and methods	Selected findings
Jasso-Aguilar (1999)	Hotel housekeeping, USA	Participant observation; interviews with managers and workers; documents	Managers and workers described the job differently; observation revealed practices absent from questionnaires
Crosling & Ward (2002)	Business graduates, Australia	Survey of graduate employees	Informal oral communication and meetings more frequent than formal presentations
Forey (2004)	Business texts, Hong Kong	Practitioners' and teachers' readings of workplace texts	Practitioners and teachers interpreted the same texts differently
Kassim & Ali (2010)	Engineering, Malaysia	Questionnaire to engineers in multinational companies	Oral communication, including teleconferencing and presenting ideas, emphasised over writing
Chan (2019)	Business, Hong Kong	Career narratives of three senior executives	Roles in technical genres changed over careers; non-technical genres requiring tact were most challenging
Kim (2021)	Corporate employees, South Korea	Survey (n = 51); interviews (n = 8)	Email the most frequent written genre; messengers and conference calls used more in finance; non-transactional talk difficult
Octaviano & Aranha (2022)	Systems development, Brazil	Course plan analysis; nine professionals	Web pages, tutorials and code instructions used at work absent from the curriculum
Malini et al. (2022)	Small hotels and restaurants, Bali, Indonesia	Questionnaire (n = 36); observation; interviews with employees and administrators	Speaking most important; difficulties with accents and appropriate expressions
Fikria et al. (2023)	Railway engineering polytechnic, Indonesia	Student survey (n = 85) on knowledge, skills and attitudes	Technical communication skills rated lowest yet important for careers
Dewi et al. (2024)	Accounting, Indonesia	Published research; practitioner validation	Four communication events; values of accuracy, prudence and straightforwardness
Hoang et al. (2024)	Engineering, Vietnam	Questionnaires to 291 engineers and 40 employers; interviews with 39 engineers	Thirty frequent workplace tasks in English; mismatch with university training
Handayani et al. (2024)	Nursing, Indonesia	Questionnaire to nurses (n = 60); interviews (n = 5)	Content tied to clinical tasks such as medication administration and patient education requested

Study	Sector and context	Sources and methods	Selected findings
Kailani et al. (2025)	Nursing education, Indonesia	Curriculum documents; interviews with seven alumni and three nurse managers	Speaking most essential; gaps in authenticity, task-based learning and stakeholder input
Mohammed (2025)	Public and environmental health, Sudan	Questionnaire and interviews with employees and heads of department	Employees rated their proficiency more highly than heads of department did
Nurhidaya et al. (2025)	Office management, Indonesian vocational high school	Student questionnaire (n = 75); interviews	Speaking and listening rated most critical; preference for role plays and simulations
Rahmat et al. (2025)	Merchant marine polytechnic, Indonesia	Questionnaire to cadets (n = 100)	English valued for careers but marginalised as a supplementary subject

Note. Studies are listed by year of publication.

Spoken and informal communication often matters more than courses assume. Engineers in multinational companies emphasised oral communication over writing (Kassim & Ali, 2010), business graduates reported that informal oral communication was more frequent than formal presentations (Crosling & Ward, 2002), and Indonesian hotel and restaurant employees, nurses and vocational students rated speaking as the most important skill (Kailani et al., 2025; Malini et al., 2022; Nurhidaya et al., 2025). This pattern is strongest in service and clinical work. In corporate settings, email remained the most frequent written genre (Kim, 2021), and senior professionals' needs shifted towards demanding written and non-technical genres over time (Chan, 2019).

Written communication is digital and networked. Email is embedded in chains of calls, meetings and documents (Evans, 2012), and employees in finance used messengers and conference calls for real-time coordination far more than those in manufacturing (Kim, 2021). In technical fields, professionals use genres such as web pages, tutorials and code instructions that curricula rarely mention (Octaviano & Aranha, 2022).

Curricula and textbooks lag behind practice. Studies in Brazil, Indonesia and Vietnam report gaps between what courses provide and what workplaces require (Dewi et al., 2024; Hoang et al., 2024; Octaviano & Aranha, 2022). In Indonesia, nursing curricula lacked authentic materials and stakeholder input (Kailani et al., 2025), nurses asked for coursebook content tied to clinical tasks such as medication administration and patient education (Handayani et al., 2024), and Maritime English was marginalised as a supplementary subject (Rahmat et al., 2025).

The communicative environment is multilingual and mediated. Much workplace English is used among speakers for whom it is not a first language, and practitioners value

clarity and relational skills above native-like accuracy (Kankaanranta & Louhiala-Salminen, 2010). Indonesian hotel staff dealing with varied accents reported using translation apps, switching to Indonesian and simplifying their speech (Satrio et al., 2025), and non-transactional talk was among the most difficult areas for Korean employees (Kim, 2021).

Occupational communication carries professional values and judgement. Accounting communication privileges accuracy, prudence and straightforwardness (Dewi et al., 2024), practitioners read texts for their interpersonal and organisational meanings (Forey, 2004), and senior executives described the tact and diplomacy that non-technical genres require (Chan, 2019). Such values are rarely captured by skill-based instruments.

The coding in Table 4 also shows methodological patterns. All 16 studies relied on informants' perceptions, only five also analysed texts or documents, and only two observed communication directly, which supports long-standing methodological critiques (Long, 2005; Serafini et al., 2015). Six studies consulted two or more stakeholder groups, and where they did, accounts diverged: managers and workers described the same job differently (Jasso-Aguilar, 1999), and employees rated their proficiency more highly than their heads of department did (Mohammed, 2025). The triangulated designs of Hoang et al. (2024), Mohammed (2025) and Kailani et al. (2025) show that richer designs are feasible; they are, however, still the minority in this sample.

Table 4. Coding of the included studies by unit of analysis, stakeholders and type of evidence

Study	Unit of analysis	Groups	Perception	Texts	Observation
Jasso-Aguilar (1999)	Tasks and work practices	2+	✓	✓	✓
Crosling & Ward (2002)	Tasks and skills	1	✓		
Forey (2004)	Genres and their meanings	2+	✓	✓	
Kassim & Ali (2010)	Events and skills	1	✓		
Chan (2019)	Genres over careers	1	✓		
Kim (2021)	Genres and tasks	1	✓		
Octaviano & Aranha (2022)	Genres	1	✓	✓	
Malini et al. (2022)	Skills and functions	2+	✓		✓
Fikria et al. (2023)	Knowledge, skills and attitudes	1	✓		
Dewi et al. (2024)	Events and values	1	✓	✓	
Hoang et al. (2024)	Tasks	2+	✓		
Handayani et al. (2024)	Topics and skills	1	✓		
Kailani et al. (2025)	Skills and curriculum alignment	2+	✓	✓	

Study	Unit of analysis	Groups	Perception	Texts	Observation
Mohammed (2025)	Skills and proficiency	2+	✓		
Nurhidaya et al. (2025)	Skills and activities	1	✓		
Rahmat et al. (2025)	Attitudes and curriculum status	1	✓		
Total	–	2+: 6	16	5	2

Note. Coding by the authors from each study's reported design. Groups = number of human informant groups consulted (e.g., employees and employers = 2+). Perception = questionnaires or interviews; Texts = analysis of texts or documents.

Four Blind Spots of Task-Inventory Needs Analysis

Read against the literature reviewed above, these patterns point to four blind spots in approaches to NA that represent occupational needs primarily as inventories of tasks and skills. They are tendencies of task-inventory designs, which better designs can and sometimes do avoid, rather than defects of NA as such.

The isolation problem. Task inventories treat communicative events as separate units. In practice, events are linked in sequences: an email may follow a call, prepare for a meeting or respond to a report (Evans, 2012), and texts are often produced collaboratively (Bremner, 2010). Frequency and importance ratings of isolated tasks cannot capture these links, yet the links shape what learners must do, for example summarising a telephone agreement in a follow-up email.

The surface problem. Task inventories describe what is done but not what it takes to do it well. Two employees may both "write emails to clients", yet only one does so with an accurate grasp of the domain, sound judgement about what to disclose, sensitivity to the relationship and adherence to professional values. These competences are what practitioners value (Bhatia, 2008; Chan, 2019; Kamil & Muhammad, 2021), but they remain invisible in task lists.

The mediation problem. Task inventories rarely ask through which channels, with which tools and under which rules communication takes place. Generative AI makes this omission consequential. Field and experimental studies show that AI assistance can raise productivity and quality in professional writing (Noy & Zhang, 2023), that it improves performance on tasks within its capabilities while reducing accuracy on tasks outside them (Dell'Acqua et al., 2026), that its benefits are greatest for less experienced workers (Brynjolfsson et al., 2025), and that knowledge workers shift their effort from producing text to verifying and integrating AI output (Lee et al., 2025). These studies come from economics and human–computer interaction and were not designed around second-language (L2) users,

so their transfer to EOP must be argued rather than assumed. The limited L2 evidence suggests that the transfer is plausible but not straightforward. A multilingual intern found AI tools helpful for emails, reports and meeting summaries but faced practical, ethical and legal concerns (Zhang-Wu, 2026), and Indonesian hotel staff already rely on translation apps as a coping strategy (Satrio et al., 2025). L2 employees may gain more from AI drafting than first-language employees but may also find it harder to detect errors in AI output, which would make verification a larger part of their needs. This is a hypothesis for EOP research rather than an established finding. Organisational policies on confidentiality may also restrict AI use in some sectors, so an NA that does not ask about mediation may prepare learners for workplaces that no longer exist, or that never allowed such tools.

The positionality problem. Task inventories typically present needs as facts about the target situation, but needs are defined from particular positions. Employers may define them in terms of productivity, employees in terms of confidence and career progression, and teachers in terms of linguistic accuracy (Forey, 2004; Jasso-Aguilar, 1999; Mohammed, 2025). Critical perspectives in ESP have long asked whose interests shape the definition of needs, and ESP serves learners' imagined futures as well as employers' present demands (Belcher, 2006). When divergent accounts are averaged into a single ranking, the choices that course designers must make are hidden rather than made explicit.

The Competence-in-Network Framework

` The CiN framework addresses the four blind spots by describing each priority communicative event along four dimensions (Figure 1). Each dimension is linked to the blind spot it addresses.

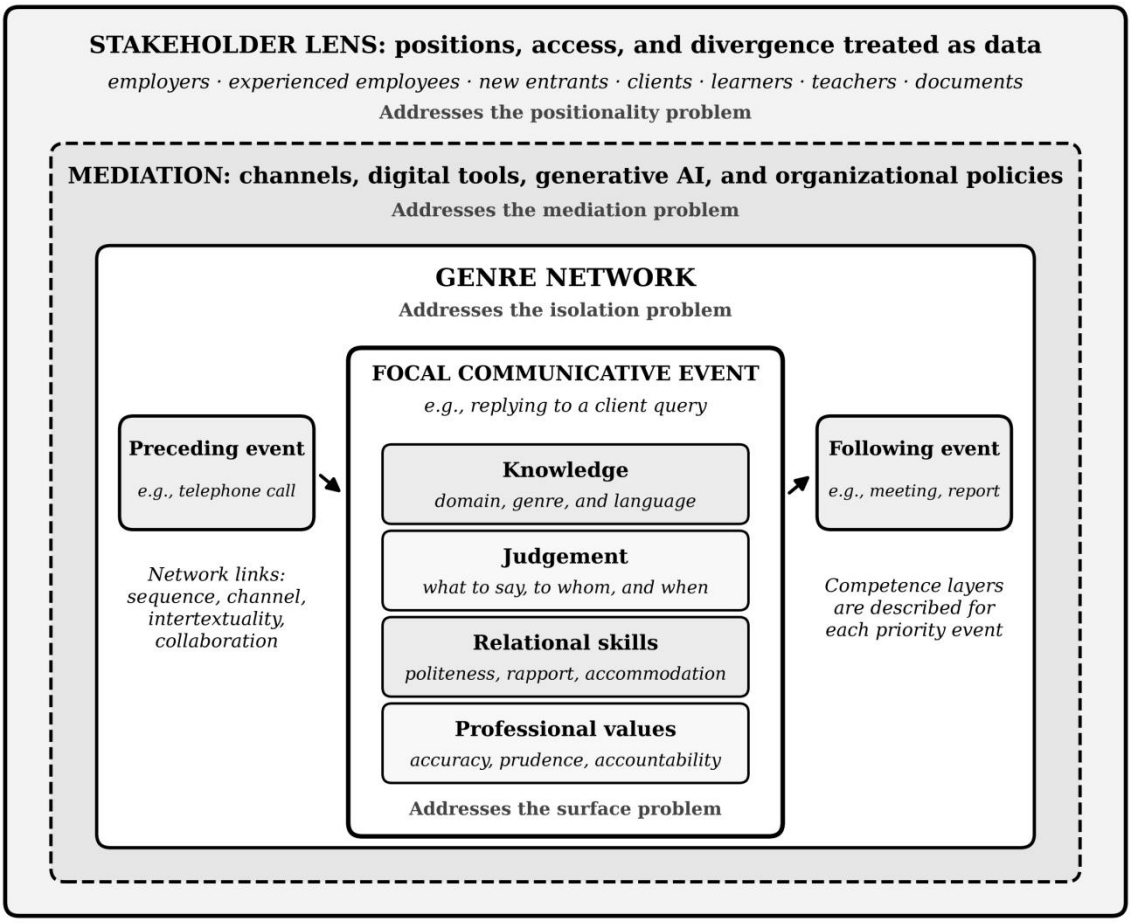


Figure 1. The Competence-in-Network (CiN) framework for EOP needs analysis, with the blind spot addressed by each dimension

The basic unit of analysis is the communicative event, understood as a recognisable occasion of communication with a purpose shared by a professional community (Swales, 1990). Each event is located in its genre network: the events that typically precede and follow it, its channels, the texts to which it refers, and the people with whom it is produced (Bremner, 2010; Evans, 2012). This dimension addresses the isolation problem.

For each priority event, the framework describes four layers of competence, which address the surface problem. The set is derived from existing models rather than invented. Bhatia's (2008) account of professional expertise distinguishes discursive competence, disciplinary knowledge and professional practice; Louhiala-Salminen and Kankaanranta (2011) distinguish business know-how, BELF competence and multicultural competence; and Kamil and Muhammad (2021) adopt grammatical, sociolinguistic, discourse and strategic competence. CiN groups the knowledge-related components of these models into *knowledge*; extends strategic competence from repairing breakdowns to making professional choices, which it calls *judgement*; combines sociolinguistic, multicultural and BELF relational skills

into *relational skills*; and separates *professional values*, which these models treat implicitly as part of professional practice, because practitioners use them explicitly as criteria for judging communication (Dewi et al., 2024). Table 5 gives operational definitions, example indicators and decision rules for coding.

Table 5. Operational definitions of the four competence layers

Layer	Definition	Theoretical sources	Example indicators	Decision rule for coding
Knowledge	What the communicator must know about the domain, the genre and the language to perform the event	Discursive competence and disciplinary knowledge (Bhatia, 2008); business know-how (Louhiala-Salminen & Kankaanranta, 2011); grammatical and discourse competence (Kamil & Muhammad, 2021)	Uses accounting terms correctly; follows the move structure of a client reply; refers accurately to an earlier report	Code here if the criterion concerns what must be known
Judgement	Choices about what to say, to whom, how much, when and through which channel, including escalation and verification	Strategic competence (Kamil & Muhammad, 2021), extended to professional choice; professional practice (Bhatia, 2008)	Decides how much technical detail to give; involves a supervisor when an error is found; checks AI output before sending	Code here if the criterion concerns a choice among options
Relational skills	Managing the relationship with interlocutors of different status, language and culture	Sociolinguistic competence (Kamil & Muhammad, 2021); multicultural and BELF competence (Louhiala-Salminen & Kankaanranta, 2011); politeness and rapport (Holmes & Stubbe, 2015)	Adjusts directness to the client relationship; uses small talk to build rapport; checks understanding with a non-native interlocutor	Code here if the criterion concerns the relationship
Professional values	Standards the profession uses to judge communication	Professional practice and culture (Bhatia, 2008, 2017); accounting values (Dewi et al., 2024)	Accuracy, prudence, confidentiality, accountability, straightforwardness	Code here if the criterion is stated as a standard of the profession

Note. When a criterion involves two layers, code the primary layer by the decision rule and record the secondary layer.

Because the layers overlap in practice, coders should assign each piece of evidence to the layer that best explains the practitioner's criterion, using the decision rules in Table 5, and record a secondary layer when a criterion clearly involves two. For example, "I check the figures against the ledger before replying" is coded as a value (accuracy) when it is described

as a professional standard and as judgement when it is described as a decision about when verification is needed. Double-coded segments and inter-coder agreement should be reported.

The framework records the channels, digital tools, AI systems and organisational policies that mediate each event. For AI, it asks whether and how AI is used, what must be checked before AI-assisted communication is sent, and what policies permit or restrict its use. This dimension addresses the mediation problem.

The framework records which stakeholders described each event and how their descriptions differ. Divergence is treated as data that reveals the choices course designers face, not as noise to be averaged away. The lens also includes learners' own occupational aspirations, so that the analysis does not prepare all learners for a single imagined workplace (Belcher, 2006). This dimension addresses the positionality problem.

The event–competence matrix

The framework is operationalised through an event–competence matrix, which records, for each priority event, the information required by the four dimensions. Table 6 illustrates the matrix for one accounting event. Its content is hypothetical: the event and professional values draw on Dewi et al. (2024), but the network, mediation and stakeholder entries were constructed for illustration and do not report data. A second hypothetical matrix for a hospitality event is given in Appendix A.

Table 6. Event–competence matrix for one accounting event (hypothetical illustration)

Dimension	Task-inventory description	CiN description
Event	Write emails to clients	Reply to a client's query about a figure in a quarterly financial report
Network	Not recorded	Often follows a telephone call from the client and may precede a meeting or a revised report
Knowledge	Email format; business vocabulary	Accounting concepts behind the figure; the client's reporting history; conventions of explanatory client emails
Judgement	Not recorded	How much technical detail to give; whether an error must be acknowledged; when to involve a supervisor
Relational skills	Polite opening and closing	Adjusting directness and politeness to the client relationship and cultural background
Professional values	Not recorded	Accuracy, prudence and straightforwardness; confidentiality of client data
Mediation	Not recorded	Firm's email system; possible AI drafting subject to firm policy; figures verified against source documents before sending
Stakeholder lens	Single rating of importance	Managers stress accuracy and speed; new entrants report difficulty judging tone; learners aspire to work in local and multinational firms

The matrix serves three purposes. In data collection, its rows structure interview guides, observation schedules and document analysis, so that informants are asked about concrete events rather than abstract skills. In analysis, it provides a common format for integrating evidence and recording divergence. In course design, it translates into learning outcomes, tasks and assessment criteria: an outcome derived from Table 6 might require learners to explain a disputed figure to a client in writing after a simulated telephone call, assessed for accuracy, judgement, tone and verification. The relative weight of the dimensions varies across occupations. For a software developer, mediation by AI coding assistants may dominate; for a nurse handing over a patient, the network and values of accuracy and confidentiality dominate, and policy may forbid public AI tools for patient information. For a hotel front-office employee, relational skills and the translation apps already in use may be central (Appendix A).

Operationalising the Framework: A Six-Stage Procedure

The CiN framework is intended for course teams with limited time and access. Table 7 sets out a six-stage procedure adapted to vocational and professional education, where learners are often pre-experience and access to workplaces must be negotiated.

Table 7. Six-stage procedure for CiN-based EOP needs analysis

Stage	Focus	Typical methods	Output
1. Define the occupational target	Occupation, roles, organisations; pre-experience or in-service learners	Curriculum review; discussion with programme leaders; means analysis	Scope and list of candidate events
2. Negotiate access and partnerships	Employers, practitioners, alumni, associations; confidentiality	Partnership agreements; consent procedures; anonymisation plan	Agreed sources and ethical safeguards
3. Map events and networks	Priority events, networks, channels, tools, AI use and policies	Event-based interviews; anonymised texts; observation or shadowing; internship (PKL) logs	Draft event–competence matrices
4. Diagnose the present situation	Learners' performance on target-like events; aspirations and preferences	Simulated workplace tasks (e.g., in teaching factories); writing and speaking samples; questionnaires	Profile of lacks and wants for priority events
5. Validate and prioritise	Divergence between stakeholders; consequences of failure; feasibility	Member-checking meetings with practitioners, teachers and learners	Agreed priorities and documented decisions
6. Design, implement and review	Outcomes, tasks, materials, assessment; changes in practice, tools and policies	Course design; periodic review with industry partners	Course aligned with matrices; review schedule

Note. PKL = Praktik Kerja Lapangan (industrial placement).

Three features of the procedure deserve comment. First, Stage 2 treats access as a design problem. Where observation is impossible, analysts can interview recent graduates, ask practitioners for anonymised or simulated texts, draw on published genre research, and validate findings with a few practitioners, as Dewi et al. (2024) did for accounting. Second, Stage 3 uses event-based questions, such as "When you write to a client, what usually happens before and after it?" and "What do you check before sending a text prepared with a translation or AI tool?", which elicit network and mediation information that frequency scales cannot. Third, Stage 4 assesses performance on simulated events rather than relying on self-ratings alone (Long, 2005; Serafini et al., 2015). For pre-experience learners, internships offer a valuable resource: learners can keep structured logs of the events they encounter, note what preceded and followed them, record tool and AI use, and collect anonymised texts with their supervisors' permission.

Discussion

Contribution to EOP needs analysis theory

In answer to RQ1 and RQ2, the synthesis shows that occupational needs are networked, relational, multilingual, mediated and value-laden, and that designs relying on perception-based task inventories capture these features only partially. In answer to RQ3, the CiN framework does not replace earlier models but integrates and extends them. It retains the target and present situation distinction (Dudley-Evans & St John, 1998; Munby, 1978) and the commitment to multiple sources and methods (Long, 2005; Serafini et al., 2015). Its specific additions, shown in Table 1, are the genre network as part of the unit of analysis, professional values as a distinct layer, mediation as an event-level dimension, and stakeholder divergence as data. It thus brings together three strands that have developed largely in parallel: genre and workplace discourse research (Bhatia, 2008; Evans, 2012; Holmes & Stubbe, 2015), competence-oriented proposals for EOP (Huhta et al., 2013; Kamil & Muhammad, 2021; Louhiala-Salminen & Kankaanranta, 2011), and critical perspectives on whose needs NA serves (Belcher, 2006).

The framework is also compatible with the learning-centred emphasis of Hutchinson and Waters (1987), because each layer suggests how competence can be developed: knowledge through analysis of authentic texts, judgement through case-based decisions about disclosure and escalation, relational skills through role plays with interlocutors of different status and background, and values through discussion of practitioners' criteria and critical

incidents. The network and mediation dimensions suggest task sequences that move across channels and tasks in which learners verify and revise AI-assisted drafts. Locating AI within the mediation dimension of each event allows NA to capture differences between sectors in which AI-assisted drafting is routine and sectors in which confidentiality rules restrict it.

Implications for vocational and professional education in Indonesia

For Indonesian vocational high schools, polytechnics and professional programmes, the framework has five practical implications. First, it can give substance to the link-and-match agenda of the national policy on revitalising vocational education and training (Presiden Republik Indonesia, 2022): partnership agreements with industry can include the access, confidentiality and periodic review arrangements required at Stages 2 and 6. Second, industrial placement (*Praktik Kerja Lapangan*, PKL) can be used as a data source, with structured event logs completed during placement feeding Stage 3, which turns an existing curriculum requirement into a needs analysis resource. Third, teaching factory models, in which students produce goods or services under industry-like conditions, can host the simulated workplace events used in Stage 4 and in assessment. Fourth, curriculum review should compare the events and genres in curricula and textbooks with those mapped in the field, since Indonesian studies continue to report gaps between the two (Dewi et al., 2024; Handayani et al., 2024; Kailani et al., 2025; Nurhidaya et al., 2025; Rahmat et al., 2025). Fifth, the procedure must be scaled to local means: in large classes with limited contact hours, course teams may complete full matrices for only three to five priority events per programme and rely on shorter descriptions for the rest. As AI and translation tools spread, NA should also establish event by event where such tools are permitted and what must be verified.

Limitations

The framework has not yet been validated empirically. It is a conceptual proposal, and its components, matrix and procedure have not yet been reviewed by an independent panel or applied in a programme. The authors plan a two-step validation: an expert review of the framework, layer definitions and matrix by EOP specialists and practitioners, reporting content validity indices, followed by a pilot application in one Indonesian vocational programme. Until then, the framework should be treated as a set of testable claims. Further limitations follow from the method. The patterns in this article rest on 16 purposively selected studies, so they describe tendencies in this sample rather than prevalence in the field. The four layers overlap in practice and will need careful coding. Mapping networks and

mediation requires more time and access than a questionnaire, which may limit adoption. Finally, the AI evidence comes mainly from studies outside EOP and will date quickly, so the mediation dimension will require frequent updating.

CONCLUSION

Needs analysis is the bridge between EOP courses and the workplaces they serve, but a bridge built from task inventories alone no longer reaches the other side. A synthesis of 16 workplace NA studies, read against genre, workplace discourse, BELF and AI research, shows that occupational needs are networked, relational, multilingual, mediated and value-laden, and that they are defined differently from different positions. The Competence-in-Network framework responds by describing each priority event in terms of its network, four operationally defined layers of competence, its mediation and the stakeholder positions from which it is defined, and it adds mediation and stakeholder divergence to existing holistic and competence-based models. Operationalised through an event–competence matrix and a six-stage procedure aligned with Indonesian vocational policy, the framework offers practitioners a practical tool and researchers five testable propositions. Its value will depend on validation and on whether courses designed with it prepare learners for the workplaces they actually enter.

AI USE AND DISCLOSURE

The authors used Claude (Anthropic) for language editing, restructuring the manuscript in response to reviewers' comments, formatting it in the journal template, preparing Figure 1 from the authors' design, and locating candidate sources. The tool was not used to generate data or findings. The authors checked every source against the original publication, verified all content, and take full responsibility for the article.

ETHICAL STATEMENT AND INFORMED CONSENT

This conceptual article synthesises published literature and did not involve human participants or personal data. Ethical approval and informed consent were therefore not required.

CRediT AUTHORSHIP CONTRIBUTION STATEMENT

Sitti Nurpahmi: Conceptualization, Methodology, Writing – original draft. Author 2: Investigation, Formal analysis, Writing – review & editing. Author 3: Supervision, Validation, Writing – review & editing.

CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this article.

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DATA AVAILABILITY

No new data were generated. The list of included studies and their coding are reported in Tables 3 and 4.

REFERENCES

Belcher, D. D. (2006). English for specific purposes: Teaching to perceived needs and imagined futures in worlds of work, study, and everyday life. *TESOL Quarterly, 40*(1), 133–156.

Bhatia, V. K. (2008). Genre analysis, ESP and professional practice. *English for Specific Purposes, 27*(2), 161–174.

Bhatia, V. K. (2017). *Critical genre analysis: Investigating interdiscursive performance in professional practice*. Routledge.

Bremner, S. (2010). Collaborative writing: Bridging the gap between the textbook and the workplace. *English for Specific Purposes, 29*(2), 121–132.

Brown, J. D. (2016). *Introducing needs analysis and English for specific purposes*. Routledge.

Brynjolfsson, E., Li, D., & Raymond, L. (2025). Generative AI at work. *The Quarterly Journal of Economics, 140*(2), 889–942. https://doi.org/10.1093/qje/qjae044

Chan, S. C. (2019). Long-term workplace communication needs of business professionals: Stories from Hong Kong senior executives and their implications for ESP and higher education. *English for Specific Purposes, 56*, 68–83. https://doi.org/10.1016/j.esp.2019.07.003

Crosling, G., & Ward, I. (2002). Oral communication: The workplace needs and uses of business graduate employees. *English for Specific Purposes, 21*(1), 41–57.

Dell'Acqua, F., McFowland, E., III, Mollick, E., Lifshitz, H., Kellogg, K. C., Rajendran, S., Krayer, L., Candelon, F., & Lakhani, K. R. (2026). Navigating the jagged technological frontier. *Organization Science*. https://doi.org/10.1287/orsc.2025.21838

Dewi, I. P., Ambarwati, E. K., Utami, P. P., & Puspitaloka, N. (2024). Preparing accountants in a globalized industry: Analysis of language use in professional setting. In N. Haristiani et al. (Eds.), *Proceedings of the 7th International Conference on Language, Literature, Culture, and Education (ICOLLITE 2023)* (pp. 236–242). Atlantis Press. https://doi.org/10.2991/978-94-6463-376-4_31

Dudley-Evans, T., & St John, M. J. (1998). *Developments in English for specific purposes: A multi-disciplinary approach*. Cambridge University Press.

Evans, S. (2012). Designing email tasks for the Business English classroom: Implications from a study of Hong Kong's key industries. *English for Specific Purposes, 31*(3), 202–212.

Fikria, A., Puspitasari, A., & Lestianingsih, D. (2023). Probing the needs of injecting technical communication in English module in Indonesia Railways Polytechnic: A students' perspectives. *IJET (Indonesian Journal of English Teaching), 12*(2), 142–150. https://doi.org/10.15642/ijet2.2023.12.2.142-150

Forey, G. (2004). Workplace texts: Do they mean the same for teachers and business people? *English for Specific Purposes, 23*(4), 447–469. https://doi.org/10.1016/j.esp.2004.01.003

Handayani, F., Zaim, M., & Ardi, H. (2024). Understanding frontline needs: Perspective of Indonesian nurses on the English coursebook materials. *LEARN Journal: Language Education and Acquisition Research Network, 17*(2), 392–418. https://doi.org/10.70730/HSQF3805

Hoang, T. N., Tran, D. T., Hoang, G. T. H., & Tran, T. T. T. (2024). English communication needs of professional engineers and the relevance of English language training in higher education. *Taiwan Journal of TESOL, 21*(2), 33–64. https://doi.org/10.30397/TJTESOL.202410_21(2).0002

Holmes, J., & Stubbe, M. (2015). *Power and politeness in the workplace: A sociolinguistic analysis of talk at work* (2nd ed.). Routledge.

Huhta, M., Vogt, K., Johnson, E., & Tulkki, H. (2013). *Needs analysis for language course design: A holistic approach to ESP*. Cambridge University Press.

Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learning-centred approach*. Cambridge University Press.

Hyland, K. (2022). English for specific purposes: What is it and where is it taking us? *ESP Today, 10*(2), 202–220. https://doi.org/10.18485/esptoday.2022.10.2.1

Jaakkola, E. (2020). Designing conceptual articles: Four approaches. *AMS Review, 10*(1–2), 18–26. https://doi.org/10.1007/s13162-020-00161-0

Jasso-Aguilar, R. (1999). Sources, methods and triangulation in needs analysis: A critical perspective in a case study of Waikiki hotel maids. *English for Specific Purposes, 18*(1), 27–46.

Kailani, A., Emilia, E., Gustine, G. G., & Siti Rodliyah, R. (2025). Alignment of outcome-based nursing curriculum with the language needs in the health sector in Indonesia. *Issues in Language Studies, 14*(2). https://doi.org/10.33736/ils.9393.2025

Kamil, M. A., & Muhammad, A. M. (2021). Professional communication competence in English for occupational purposes (EOP) courses: A systematic literature review and proposal of a framework. *Journal of Teaching and Learning for Graduate Employability, 12*(2), 260–278. https://doi.org/10.21153/jtlge2021vol12no2art1075

Kankaanranta, A., & Louhiala-Salminen, L. (2010). "English? – Oh, it's just work!": A study of BELF users' perceptions. *English for Specific Purposes, 29*(3), 204–209.

Kassim, H., & Ali, F. (2010). English communicative events and skills needed at the workplace: Feedback from the industry. *English for Specific Purposes, 29*(3), 168–182. https://doi.org/10.1016/j.esp.2009.10.002

Kim, S.-H. (2021). Analyzing workplace English communication use and needs: Insights from Korean corporate employees. *Journal of Pan-Pacific Association of Applied Linguistics, 25*(1), 1–24. https://doi.org/10.25256/PAAL.25.1.1

Lee, H.-P., Sarkar, A., Tankelevitch, L., Drosos, I., Rintel, S., Banks, R., & Wilson, N. (2025). The impact of generative AI on critical thinking: Self-reported reductions in cognitive effort and confidence effects from a survey of knowledge workers. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems* (pp. 1–22). ACM. https://doi.org/10.1145/3706598.3713778

Long, M. H. (2005). Overview: A rationale for needs analysis and needs analysis research. In M. H. Long (Ed.), *Second language needs analysis* (pp. 1–16). Cambridge University Press.

Louhiala-Salminen, L., & Kankaanranta, A. (2011). Professional communication in a global business context: The notion of global communicative competence. *IEEE Transactions on Professional Communication, 54*(3), 244–262. https://doi.org/10.1109/TPC.2011.2161844

Malini, N. L. N. S., Sukarini, N. W., Yadnya, I. B. P., & Maharani, S. A. I. (2022). Exploring needs analysis of English language training: An evidence from small hotel and restaurant employees in Nusa Lembongan, Bali, Indonesia. *Indonesian Journal of Applied Linguistics, 12*(1), 212–223. https://doi.org/10.17509/ijal.v12i1.46437

Mohammed, A. S. E. (2025). English for occupational purposes (EOP): Public and environmental health employees' needs for English language. *Research and Innovation in Applied Linguistics, 3*(2), 133–151. https://doi.org/10.31963/rial.v3i2.5430

Munby, J. (1978). *Communicative syllabus design*. Cambridge University Press.

Noy, S., & Zhang, W. (2023). Experimental evidence on the productivity effects of generative artificial intelligence. *Science, 381*(6654), 187–192. https://doi.org/10.1126/science.adh2586

Nurhidaya, Badeni, & Kasmaini. (2025). Aligning English instruction with workplace communication: A needs analysis of vocational high school students. *JPI: Jurnal Pustaka Indonesia, 5*(2), 23–37. https://doi.org/10.62159/jpi.v5i2.2248

Octaviano, L. M. S., & Aranha, S. (2022). Análise de necessidades: O mapeamento de gêneros para um curso de Inglês para Fins Profissionais na área de Desenvolvimento de Sistemas [Needs analysis: The mapping of genres for an English for Professional Purposes course in Systems Development]. *Horizontes de Linguística Aplicada, 21*(1), Article AG6. https://doi.org/10.26512/rhla.v21i1.42664

Presiden Republik Indonesia. (2022). *Peraturan Presiden Republik Indonesia Nomor 68 Tahun 2022 tentang Revitalisasi Pendidikan Vokasi dan Pelatihan Vokasi* [Presidential Regulation No. 68 of 2022 on the revitalization of vocational education and vocational training].

Rahmat, S., Putri, S., & Mutmainnah, N. (2025). The role of English in merchant marine: The main course or supplemantary course? *Journal of English Language Teaching, Literature and Culture, 4*(1), 32–44. https://doi.org/10.53682/jeltec.v4i1.11899

Satrio, I. B., Hustarna, & Yanto. (2025). Mapping the English language needs of Indonesian hotel staff: A systematic literature review. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature, 13*(2), 7921–7937. https://doi.org/10.24256/ideas.v13i2.8394

Serafini, E. J., Lake, J. B., & Long, M. H. (2015). Needs analysis for specialized learner populations: Essential methodological improvements. *English for Specific Purposes, 40*, 11–26.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Swales, J. M. (1990). *Genre analysis: English in academic and research settings*. Cambridge University Press.

West, R. (1994). Needs analysis in language teaching. *Language Teaching, 27*(1), 1–19. https://doi.org/10.1017/S0261444800007527

Zhang-Wu, Q. (2026). "Article laundry" or "tutor in pocket?": Multilingual writers' generative AI-assisted writing in professional settings. *Computers and Composition*. https://doi.org/10.1016/j.compcom.2026.102983

APPENDIX

Appendix A. Hypothetical event–competence matrix for a hospitality event. The entries are invented for illustration; they are informed by Indonesian hospitality needs analyses (Malini et al., 2022; Satrio et al., 2025).

Table A. Event–competence matrix for a hotel front-office event (hypothetical)

Dimension	Task-inventory description	CiN description
Event	Handle guest complaints	Respond at check-in to a guest whose booked room type is unavailable
Network	Not recorded	Follows an online booking confirmation email; may lead to an upgrade offer, a follow-up message and a note in the property management system
Knowledge	Hotel vocabulary; apology phrases	Room categories and rates; booking terms; structure of a service recovery exchange
Judgement	Not recorded	What compensation can be offered without a supervisor; when to call the duty manager
Relational skills	Polite expressions	Managing a frustrated guest; checking understanding with guests of varied accents; adjusting formality
Professional values	Not recorded	Hospitality, honesty about availability, fairness between guests
Mediation	Not recorded	Property management system; translation app on a work phone; hotel policy on what may be promised in writing
Stakeholder lens	Single rating of importance	Managers stress guest satisfaction scores; staff report difficulty with accents; students aspire to work in international chains or local resorts