Designing an English for Academic Purposes (EAP) Course for Computer Science Students: A Case Study at an Indonesian Polytechnic

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Abstract

English for Academic Purposes (EAP) courses in vocational institutions often fail to align with learners' real needs, particularly in fields such as Computer Science where both academic and workplace communication are essential. Drawing on the principles of needs analysis (Hutchinson & Waters, 1987; Munby, 1978; Dudley-Evans & St John, 1998), this study explores the EAP needs of Computer Science students in a polytechnic institution and develops a syllabus to address them. Data were collected from student questionnaires and supported by perspectives from an English module teacher and the head of department. Findings revealed that speaking and writing were the most urgent priorities, especially in oral presentations, job interviews, advertising texts, and academic writing. Reading and listening, while ranked lower, were acknowledged as supportive skills. Students also reported vocabulary and pronunciation as major constraints. Based on these results, a skills-based syllabus was developed that integrates academic and vocational genres through authentic tasks, supported by oral and written assessments and both formative and summative evaluation procedures. This study offers originality by proposing a comprehensive and pedagogically sound model for EAP in polytechnic settings, moving beyond mere needs identification. It highlights the importance of tailoring EAP provision to vocational realities and provides implications for syllabus design, teaching practice, and institutional policy.

INTRODUCTION

It is noticeable that the practice of English for Academic Purposes (EAP) has been flourishing across diverse educational contexts around the world. Many researchers have attempted to document the design, implementation, and evaluation of EAP courses in different settings (Changpueng & Pattanapichet, 2023; Ngo, 2023; Shen, 2023; Al Hantooshe, 2024; Syaifudin, 2024). Despite this global momentum, research on EAP in Indonesia has been relatively limited, particularly in relation to Computer Science students. This is noteworthy because Computer Science demands not only technical expertise but also the ability to access, process, and communicate knowledge in English. Consequently, the lack of studies on how EAP can be designed for Computer Science students in Indonesian polytechnic institutions creates a

significant gap in both theory and practice. Against this backdrop, the present study is keen to investigate the design of an EAP course syllabus for Computer Science students at Politeknik Gorontalo, Indonesia.

EAP is a broad concept, and scholars have sought to clarify what it entails. Recent scholarship emphasizes that English for Academic Purposes should be explicitly operationalized within educational institutions through structured pedagogy and curriculum design (Hyland & Shaw, 2016; Ding & Bruce, 2017). In a more specific definition, Dudley-Evans and St John (1998, p. 34) describe EAP as teaching that is directed toward "a study purpose". Perhaps the most comprehensive elaboration of EAP was offered by the English Teaching Information Centre (ETIC, 1975), which stated that EAP focuses on the communication skills of English that function primarily as study purposes within formal education. From a different perspective, Flowerdew and Peacock (2001) identify key features of English for Academic Purposes (EAP), including its focus on learners' specific needs, the use of authentic materials, and the adoption of communicative approaches. Complementing this, Strevens (1988) highlights EAP's orientation toward particular disciplines, reliance on custom-designed content, and the purposeful structuring of courses. For instance, EAP courses may be delivered as pre-departure programs for students preparing to study abroad, such as modules emphasizing the reading of academic texts. Alternatively, they may be organized in-sessional, meaning that students undertake them concurrently with their main academic courses (see Jordan, 1997, for further discussion).

Within the literature, there is broad consensus that needs analysis (NA) constitutes the cornerstone of EAP. In syllabus design, needs analysis is generally regarded as an important step, though its role and timing may differ across contexts (Higgins, 1966; Strevens, 1977; Coffey, 1984; Dudley-Evans & St John, 1998). The most influential contribution came from Munby (1978), who developed the Communication Needs Processor (CNP). Munby's model was groundbreaking in that it translated the concept of communicative competence into a systematic framework for syllabus design. According to his approach, NA should include categories such as purposive domain (job or study description), setting (time and venue), interaction (learners' role in social environments), instrumentality (use of spoken or written language), target level (required linguistic proficiency), and dialect (specific language varieties to be mastered). By covering these dimensions, Munby underscored the importance of aligning language instruction with real-world communicative demands.

Munby's model has been both influential and contested. Dudley-Evans and St John (1998), for example, criticized its strong orientation toward goal-driven target language use, arguing that it neglects the affective domain, such as learners' motivation. Similarly, Jordan (1997) suggested that the CNP lacks flexibility, as it confines syllabus designers to a narrow focus on students' target situation needs. Building on Munby's insights, other scholars have refined the understanding of NA. Richards and Schmidt (2010) considered NA as a process of determining and prioritizing learners' needs. Huhta et al. (2013) emphasized that NA aims to identify the tasks and situations learners encounter in real-world contexts, while Basturkmen (2010) argued that NA involves identifying the specific language and communication skills that enable learners to function effectively in both study and workplace settings.

Hutchinson and Waters (1987) and Dudley-Evans and St John (1998) distinguished among three dimensions of NA: target situation analysis (TSA), present situation analysis (PSA), and learning situation or learning needs. TSA focuses on learners' objectives, while PSA highlights their current knowledge and abilities, identifying the gap between what they have and what they need. Hutchinson and Waters further divided target needs into three domains:

necessities, lacks, and wants. "Necessities" refer to the essential skills learners must possess in their target contexts, such as a business professional who must deliver effective presentations or understand correspondence. "Lacks" refer to the deficiencies in learners' current competence compared with these necessities, while "wants" capture subjective or motivational needs, such as the desire to improve English for social communication. Learning needs, on the other hand, emphasize the processes and strategies by which learners acquire knowledge, including language items, skills, and teaching techniques.

Another essential dimension of NA concerns the involvement of stakeholders. Friedenberg et al. (2003, p. 27) argue that stakeholders' participation "creates a level of commitment… that is crucial to later success of the training program." Jordan (1997) likewise emphasized the roles of subject specialists, course designers, sponsors, teachers, and learners. Their contributions ensure that the NA reflects multiple perspectives and builds collective ownership of the learning process.

Various scholars have also proposed procedures for conducting needs analysis. Jordan (1997, p. 23) outlined a comprehensive ten-stage process that includes: "1) identifying the purpose of analysis, 2) delimiting the student sample, 3) deciding upon approaches, 4) acknowledging constraints and limitations, 5) selecting methods of data collection, 6) collecting data, 7) analyzing and interpreting results, 8) determining objectives, 9) implementing syllabus decisions, and 10) evaluating procedures and results". Building further, Hyland (2006) proposed a model that begins with questionnaire administration, analysis of spoken and written texts, observations, stakeholder consultations, and assessment. He emphasized that both qualitative and quantitative methods are useful to capture target and learning needs. Finally, McDonough (1984) stressed that evaluation is an ongoing process essential for ensuring the course remains relevant and effective.

While the theoretical models highlight what EAP and NA should entail, fewer studies have examined their application in Computer Science contexts. Hosseinpour and Koosha (2015, p.5), for example, found that "there is a noticeable gap between the current EAP courses and both the present and target situation needs of learners which is partly due to the low general English proficiency (GEP) of the students". They also found discrepancies between the two undergraduate groups and their instructors regarding perceived needs. These findings underline the challenge of reconciling institutional priorities with learner expectations.

In Indonesia, similar concerns have been raised. Septiana et al. (2020) conducted a needs analysis at Bina Darma University and reported that the target needs are speaking and writing skill. The two basic language skills receive a significant portion of attention in the preparation of the English syllabus. They further argued that "students need a learning process to focus more on practice than theory" (p. 299-310). Their study demonstrated the centrality of productive skills in Computer Science education, yet it was limited to a university setting. By contrast, the present research situates its investigation within a polytechnic institution, where the vocational orientation necessitates closer integration between academic and workplace demands.

Other Indonesian research has similarly emphasized the importance of practice-oriented ESP instruction. Although Nurhasanah and Kurniawan (2023) did not specifically address curriculum alignment, their finding that both students and teachers required ESP teaching based on the school program implies the importance of designing ESP courses that align with institutional curricula. However, they also found institutional challenges, particularly the limited proficiency of teachers in delivering ESP, which contributed to generally low outcomes in students' English ability. These findings suggest that even well-designed syllabi may face

obstacles if teacher capacity and institutional support are insufficient. In line with this, Rifiyanti and Dewi (2022) reported that informatics students considered speaking, listening, reading, and writing as essential skills for their studies. They also stressed the importance of integrating subject-specific content into English courses, noting that materials related to computer science were perceived as more engaging and supportive of learners' disciplinary knowledge. Together, these studies reinforce the need for EAP courses that are both skill-oriented and discipline-specific, while also highlighting institutional barriers that must be addressed to ensure successful implementation.

The above empirical studies reveal two key patterns. First, there is consistent recognition of speaking and writing as core priorities for Computer Science students. Second, while needs analysis have been conducted, few studies have translated their findings into detailed syllabi that integrate assessment and address the specific vocational demands of polytechnic education. Consequently, there remains a gap in the literature regarding how EAP courses can be systematically designed for Computer Science students in Indonesian polytechnics.

Therefore, the present study contributes by addressing this gap. It employed a needs analysis of both students and stakeholders to identify priorities, and then used these findings to propose an EAP syllabus tailored for Computer Science students at Politeknik Gorontalo. By doing so, it seeks to bridge the divide between theoretical models of NA and the practical challenges of syllabus design in vocational higher education.

METHOD

This This study employed a descriptive qualitative design, complemented by simple quantitative description to support interpretation of the findings. The descriptive qualitative orientation was chosen because the aim was to provide a detailed account of students' academic English needs and to situate those needs within the concrete context of Computer Science study at a polytechnic institution. As Sandelowski (2000) and Nassaji (2015) argue, descriptive qualitative research is suitable when the goal is to capture participants' perspectives and present an in-depth description of a phenomenon in its natural setting. The addition of descriptive statistics enabled the study to highlight measurable trends in learners' priorities and supported the qualitative findings. Quantitative description was therefore limited to summarizing closed-ended questionnaire responses so that broad patterns of priority could be identified and then contextualized with qualitative comments from respondents.

The participants were sixteen first-year Computer Science students at Polytechnic Gorontalo. They were purposively selected as the cohort newly introduced to an English for Academic Purposes (EAP) course, which made them relevant informants for identifying early academic and occupational language needs. Participants' ages ranged from about 18 to 20 years, and an institutional placement test placed their proficiency at B1 (intermediate) on the CEFR scale. To obtain an institutional perspective, two institutional informants namely the English module teacher, and the Head of the Computer Science Department were also involved. Including these informants provided a limited but useful triangulation of learner and institutional perspectives while retaining a single, consistent instrument.

A single questionnaire, adapted from established needs-analysis frameworks (Munby, 1978; Hutchinson & Waters, 1987), served as the study's sole instrument. The questionnaire combined closed-ended items about the importance of specific skills and tasks and open-ended items that invited free-text comments about learning difficulties, preferred activities, and topic suggestions. Closed-ended items enabled descriptive summaries (frequencies and percentages), while open-ended responses supplied qualitative material used to develop themes.

Student questionnaires were administered during a scheduled class meeting to ensure maximum participation. The researcher introduced the study, explained each section of the form in both English and Indonesian as needed, answered clarifying questions, and allowed approximately thirty minutes for completion; completed student forms were collected immediately. The module teacher and the Head of Department received the questionnaire electronically and returned their responses within one working week. All questionnaires were checked for completeness and prepared for analysis. Subsequently, closed-ended responses were entered into a spreadsheet and open-ended responses were transcribed verbatim into a qualitative file.

The closed-ended responses were tabulated and summarized as frequencies and percentages to present a descriptive overview of priorities across speaking, writing, reading, and listening and associated tasks. Qualitative data from open-ended items were analyzed thematically using Braun and Clarke's (2006) six-step procedure: familiarization with the data, initial coding, searching for themes, reviewing and refining themes, defining and naming themes, and reporting. Inductive codes were derived from participants' own words and then organized into higher-order themes such as priority skills, perceived constraints, and preferred classroom activities. Integration of quantitative and qualitative findings occurred during interpretation: numerical patterns signalled priority areas while thematic extracts provided explanatory depth and examples. The inclusion of institutional informants within the questionnaire contributed to credibility through limited triangulation.

Participation was voluntary and written informed consent was obtained from all respondents. Anonymity was preserved via pseudonyms for students and role-based descriptions for institutional informants. No audio or video recording was used; the study relied exclusively on written questionnaires. Ethical clearance was obtained from Politeknik Gorontalo prior to data collection.

RESULTS AND DISCUSSIONS

The findings revealed a clear hierarchy of priorities among the four language skills. Speaking was rated as the most urgent need, with more than 60% of students identifying it as their top priority, followed by writing at 23.5%, while reading and listening were regarded as supportive but less central. The institutional informants confirmed this pattern, emphasizing that speaking and writing should occupy the largest portion of instructional time to prepare students for both academic and professional communication.

These results indicate that polytechnic learners value productive skills more highly than receptive ones. Such a pattern aligns with previous studies (e.g., Septiana et al., 2020; Hosseinpour & Koosha, 2015) that also highlight the predominance of speaking and writing in vocational EAP contexts.

Skill to be prioritized in English
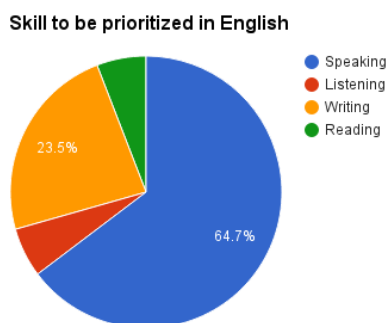
This hierarchy of skills resonates with several strands of literature. Orade (2012) emphasized that speaking is often considered the most essential skill in foreign language learning because it allows learners to express ideas and demonstrate proficiency in real-time communication. Similarly, Septiana et al. (2020) reported that speaking and writing emerged as the two most significant skills in their needs analysis of Computer Science students in Indonesia, echoing the pattern identified in this study. On the other hand, some international studies have given greater prominence to reading as the foundation of academic engagement (e.g., Jordan, 1997; Flowerdew & Peacock, 2001). The divergence underscores the importance of localized needs analysis: while reading may be emphasized in university-based contexts where academic research is central, polytechnic students preparing for occupational roles prioritize oral and written production skills more directly applicable to workplace and professional settings.

This prioritization also aligns with Hosseinpour and Koosha's (2015) observation of a gap between existing EAP courses and learners' actual needs. They argued that EAP provision often underestimates the importance of oral communication and professional writing, resulting in a mismatch between curriculum design and workplace realities. The present study highlights a similar concern: if EAP courses in polytechnic settings explicitly address speaking and writing as central skills, students may remain underprepared for both academic and professional demands.

In terms of theoretical framing, the prioritization pattern resonates with Hutchinson and Waters' (1987) tripartite model of needs: *necessities, lacks,* and *wants*. Speaking and writing represent clear "necessities" for vocational and academic success, while students' limited vocabulary and pronunciation difficulties demonstrate their "lacks." At the same time, their strong preference for oral communication, including social interaction, reveals a motivational "want" that must be integrated into course design if instruction is to be engaging and sustainable.

Speaking emerged as the most prominent skill across student and institutional responses. Within speaking, students identified three sub-priorities: (1) social interaction skills such as introducing themselves and expressing ideas in formal and informal contexts, (2) oral presentation skills for sharing ideas and products globally, and (3) job interview strategies for securing future employment.

The need for social interaction skills reflects the reality that English is not only an academic medium but also a lingua franca in professional and intercultural encounters. Hutchinson and Waters (1987) emphasized that "wants" must also be recognized alongside "necessities" and "lacks." The desire for effective social interaction underscores the importance of motivation in EAP course design. Compared with existing research, this focus on social interaction appears underexplored. While many studies (e.g., Septiana et al., 2020; Rifiyanti & Dewi, 2022) identify presentation and academic writing as key skills, fewer highlight the role of everyday communication. This finding suggests that polytechnic students perceive English not only as an academic requirement but also as a practical tool for social and professional networking. The present study thus extends previous work by foregrounding interpersonal communication as a legitimate component of EAP for vocational contexts.

The finding that oral presentation skills were identified as vital for promoting ideas and products aligns with the broader ESP literature, where presentations are often regarded as key communicative activities in academic and professional contexts (e.g., Storz, 2002). Mandel's (1993) work, while not part of the ESP literature, offers practical guidance on effective presentation delivery that complements this pedagogical focus. Hosseinpour and Koosha (2015) also observed that many students felt underprepared for tasks requiring public speaking,

despite such skills being highly valued by instructors and employers. The findings of this study reinforce these observations but add a vocational dimension: for Computer Science students at a polytechnic, presentations are not limited to classroom contexts but extend to pitching ideas in professional or entrepreneurial settings. This finding also complements Jordan's (1997) argument that EAP should prepare learners not only for academic performance but also for participation in broader disciplinary communities. By practicing oral presentations, students acquire skills that are transferable beyond the classroom into conferences, seminars, and professional pitches.

The prioritization of job interview strategies reflects the vocational orientation of polytechnic education. Rooney (2004) emphasized the structured nature of interviews and the need for targeted preparation. While few EAP studies explicitly address interview skills, their inclusion in this study reflects both student aspirations and institutional expectations. By identifying interviews as a communicative event requiring systematic training, this study contributes an underexplored dimension to the EAP literature in Indonesia.

Writing was ranked as the second most important skill, with three primary domains: (1) advertising products or ideas (e.g., brochures, leaflets, flyers), (2) academic writing for producing publishable work, and (3) job application writing (CVs and cover letters). The focus on advertising reflects a vocational emphasis rarely foregrounded in EAP research, which tends to prioritize academic genres. Rifiyanti and Dewi (2022) reported that informatics students favored materials that integrated computer science content, finding them more engaging and useful. Similarly, in this study, writing tasks related to advertising were perceived as relevant because they directly connected English skills with students' disciplinary practices, such as promoting software applications or technological innovations. This finding extends the literature by highlighting how EAP can incorporate workplace-oriented genres alongside academic ones. From the perspective of needs analysis theory, this emphasis represents a practical alignment between the purposive domain in Munby's (1978) Communication Needs Processor and the vocational realities of learners. Advertising genres situate English learning in the context of real-world communicative events that students are likely to encounter, thereby ensuring that the syllabus addresses authentic communicative competence.

Students also recognized academic writing as essential, particularly for structuring essays and producing publishable work. This echoes the global EAP literature emphasizing the centrality of academic writing (e.g., Hyland, 2006; Jordan, 1997). At the same time, Hosseinpour and Koosha (2015) noted a persistent gap between students' low general English proficiency and the demands of academic writing, a challenge likely mirrored in this context given the students' B1 proficiency level. The present study, therefore, reinforces the need for scaffolding academic writing tasks to match learners' proficiency levels while still exposing them to the conventions of academic discourse.

The emphasis on writing CVs and application letters reflects an orientation toward employability. Septiana et al. (2020) similarly noted that students valued writing tasks that had direct relevance to job preparation. By aligning with these findings, the present study confirms that employability-oriented writing genres should be integrated into EAP syllabi for vocational learners.

Reading was ranked as a lower priority compared to speaking and writing, but it was still recognized as necessary. Students highlighted three specific subskills: (1) understanding main ideas, (2) locating specific information, and (3) inferring word meaning from context. This pattern contrasts with many traditional EAP contexts where reading is often considered the foundation of academic study (Jordan, 1997). For example, Flowerdew and Peacock (2001)

noted that reading academic texts is central to knowledge acquisition across disciplines. In this respect, the findings of the present study diverge, suggesting that in vocational polytechnic contexts, productive skills overshadow receptive skills.

Nevertheless, the fact that reading was not dismissed entirely indicates an awareness of its supportive role. Rifiyanti and Dewi (2022) found that informatics students considered reading essential for accessing subject-specific content, which resonates with this study's recognition of reading as supportive of academic engagement. However, the relatively low prioritization also suggests that reading may be best taught in integration with other skills, for example, reading-to-write tasks or reading-to-present assignments. This integrated approach echoes Hyland's (2006) advocacy of tasks that combine multiple skills to mirror authentic academic practices. For instance, students might read technical documents not as an isolated exercise but as preparation for writing a report or giving a presentation. In this sense, the findings support a shift away from viewing reading as an end in itself toward positioning it as a scaffold for higher-order communicative performance.

Listening was rated as the least prioritized skill, yet students still acknowledged its importance, particularly in two areas: (1) identifying information in conversations and (2) comprehending job interview questions. This result reflects a functional understanding of listening as supportive of speaking, rather than as an end in itself. As Dudley-Evans and St John (1998) noted, EAP often emphasizes integrated skills rather than isolated ones. The finding is also consistent with Orade's (2012) view that speaking is often foregrounded because it represents visible proficiency, while listening remains a silent but necessary partner.

Compared with other studies, the vocational orientation of listening needs in this study is notable. Whereas university-based EAP research often highlights listening to lectures (Hyland, 2006), these polytechnic students emphasized listening in interpersonal and professional contexts such as interviews. This divergence reinforces the argument that localized needs analyses are essential for tailoring EAP to specific learner populations.

Munby's (1978) model also sheds light here: his dimension of instrumentality highlights whether communication is oral or written. In this case, listening is instrumental in enabling accurate responses in spoken encounters such as interviews. Thus, even though listening ranked lower in priority, its integration is vital to ensuring competence in oral communication, demonstrating the interdependence of skills in authentic communication.

Beyond skill preferences, the findings highlighted two key challenges: limited vocabulary and difficulties in pronunciation. These constraints hindered learners' ability to use English effectively across all skills. Vocabulary emerged as a significant barrier, particularly for expressing ideas and engaging with academic texts. Hutchinson and Waters (1987) argued that *lacks*, the gap between learners' current abilities and target needs, must be systematically addressed in syllabus design. Moreover, these findings underscore the need for targeted vocabulary instruction, particularly in computer science terminology. The presence of these constraints highlights the importance of stakeholders in EAP course design (Jordan, 1997). Teachers and subject specialists must collaborate to ensure that instruction not only targets disciplinary content but also systematically addresses linguistic obstacles. In this way, vocabulary and pronunciation can be embedded into the broader communicative syllabus rather than treated as isolated problems.

The final stage of the needs analysis was to translate findings into a proposed syllabus. The syllabus adopted a skills-based structure, following Krahnke's (1987) definition of such syllabi as those organized around the development of specific language skills, namely listening, speaking, reading, and writing, rather than grammatical or lexical items. This model was selected

in this study to address the students' prioritization of speaking and writing and to facilitate the integration of communicative abilities identified in the needs analysis. The syllabus comprises ten units delivered across one semester (18 meetings). Each unit corresponds to a key communicative function identified in the needs analysis, including social introductions, expressing ideas, listening for information, job interviews, oral presentations, advertising products, job application writing, academic writing, reading for main ideas and details, and a final assessment.

This syllabus demonstrates several features consistent with ESP/EAP best practice:

1. Alignment with Needs – Hutchinson and Waters (1987) stress that syllabus content should emerge from needs analysis rather than preconceived notions of what students ought to learn. Each unit in this syllabus can be traced back to explicit learner or stakeholder priorities. For example, students' emphasis on oral communication is reflected in extended treatment of presentations and interviews.

2. Integration of academic and vocational genres – previous Indonesian studies (e.g., Septiana et al., 2020) identified needs but did not develop comprehensive syllabi. By contrast, this study moves beyond diagnosis to design. Notably, it integrates academic genres (essays, academic writing) with vocational ones (job applications, advertising). This dual focus addresses the polytechnic mission of preparing graduates for both further study and employment.

3. Incorporation of authentic tasks – Ellis (2003) and Larsen-Freeman & Anderson (2011) advocate for task-based and communicative approaches. The syllabus embeds authentic activities such as role plays for interviews, simulations for presentations, and the creation of brochures and flyers. These tasks ensure that learning mirrors real-life communicative demands.

4. Assessment strategy – the syllabus adopts both oral and written assessments to capture the dual focus on productive skills. Following Tratnik (2008), the tests are task-based and performance-oriented, requiring students to demonstrate presentations and produce advertising texts.

5. Formative orientation – Although evaluation is covered later in the paper, it is worth noting that the syllabus incorporates formative practices such as peer feedback, reflective discussion, and mini-tests to support continuous learning.

In comparison to earlier work, this syllabus fills a notable gap. Hosseinpour and Koosha (2015) diagnosed mismatches between student and teacher perceptions of needs but did not propose practical solutions. Septiana et al. (2020) highlighted productive skills for Computer Science students but limited their analysis to the university context. Nurhasanah and Kurniawan (2023) pointed out institutional barriers in vocational settings but did not develop course designs. This study therefore makes an original contribution by offering a comprehensive, context-specific syllabus model that integrates needs analysis findings with practical instructional planning for a polytechnic Computer Science student.

The proposed syllabus design

Session	Topics	Objectives	Learning activities	Assessment
1	Introduction	The students are able to introduce themselves to someone or some people in various context/situation	Practice some of the most-commonly used expression in introduction	Role play

| | | | Watch some samples videos about introduction

Create a dialogue with their partner and present it to the class | |
|---|---|---|---|---|
| 2 | Expressing ideas | The students are able to express their ideas

The students are able to use polite expressions of expressing ideas | Practicing general expressions in expressing ideas, e.g. *I think, in my opinion, from my point of view,* etc.

Practicing polite expression in delivering argument/ideas

Make a dialogue with a partner | Role play |
| 3 | Identifying information in conversation | The students are able to identify specific information in conversation

The students are able to reporting some particular information | Listen to the audio recording

The students to list some specific information appear in the audio recording

The students reporting the information to the class

The teacher delivers feedback to the students regarding their work | Oral/written test |
| 4 | Job interview | The students are able to prepare themselves for job interview

The students are able to organize themselves during interview | The teacher to explain stages in preparation of job interview

The teacher to explain the general sequences in job interview

The students to practice how to deal with questions during job interview | Oral test /simulation |

			The students to practice how to create good impression in job interview The students to practice job interview with their partner (adopted from Rooney 2004, p. 1-23)	
5	Oral presentation	The students are able to planning their presentation The students are able to understand the structure of an oral presentation The students are able to use some visual aids in oral presentation	The students to listen to teacher's presentation about the purpose of doing presentation The teacher to explain stages in preparation and planning presentation The teacher to explain the general structure of oral presentation which consist of introduction, the body, and the end or conclusion The teacher to explain the importance and how to use visual aids in oral presentation Watch sample videos about good oral presentation The students to deliver a short presentation The teacher provides formative feedback on students' performance (see Hyland & Hyland, 2019)	Oral test

			The students to deliver a longer presentation The teacher provides formative feedback on students' performance (see Hyland & Hyland, 2019) (adopted from Mandel, 1993; Storz, 2002)	
6	Advertising product	The students are able to produce brochure, leaflet and flyer to advertise their ideas/products	The teacher to introduce the general structure of brochure, leaflet and flyer The students see some examples of good writing of brochure, leaflet and flyer The students write brochure, leaflet and flyer The teacher provides formative feedback on students' performance (see Hyland & Hyland, 2019)	Written test
7	Writing for the purpose of getting job	The students are expected to have basic knowledge and ability to produce curriculum vitae The students are expected to have basic knowledge and ability in writing job application letter	See some examples of neatly structured of curriculum vitae The students to practice composing the curriculum vitae in a good structure See some examples of neatly structured of job application letter The students to practice composing the curriculum vitae in a good structure.	Written test

| 8 | Academic writing | The students are able to understand what academic writing is

The students are able to understand the general structure of academic writing

The students are able to produce academic writing | The students to listen to teacher's presentation about academic writing

The teacher to explain the general structure of academic writing which consist of *introduction, main body (thesis statement and supporting details), and conclusion*

See some examples of well-structured academic writing

The students to produce academic writing

The teacher provides formative feedback on students' performance (see Hyland & Hyland, 2019) | Written test |
| 9 | How to identify main idea and specific information of particular text | The students are able to comprehend the main idea of particular text

The students are able to find specific information that goes along with the main idea | Practicing skimming technique

Practicing scanning technique | Written test |
| 10 | Final test | The students are able to show their understanding about skills and concept that they have learnt | The students have both oral and written test | Oral/written test |

Evaluation of the course itself is equally important to ensure that objectives are met. Following Hutchinson and Waters (1987), evaluation seeks to determine whether the course operates according to its intended purpose. For this reason, both formative and summative formats were adopted. Formative evaluation occurs throughout the semester via classroom discussions, reflective feedback, and mini-assessments, allowing instructors to adjust teaching in response to student progress. Summative evaluation is carried out at the end of the program through questionnaires, enabling students to express their views on the course's strengths and weaknesses for future development (Dudley-Evans & St John, 1998). By combining authentic testing with ongoing evaluation, the syllabus ensures coherence between learner needs,

instructional practices, and program improvement, thereby completing the cycle of needs analysis, course design, and review.

The findings confirm that speaking and writing are the main priorities for Computer Science students in a polytechnic context, consistent with earlier studies in Indonesia (Septiana et al., 2020; Rifiyanti & Dewi, 2022) and abroad (Hosseinpour & Koosha, 2015). Subskills such as job interview strategies, oral presentations, advertising, and application writing reveal a vocational orientation less visible in university-based EAP. This supports Hutchinson and Waters' (1987) view that needs are context-dependent. While the overall skill hierarchy reflects global trends, the communicative events identified here highlight the distinctiveness of polytechnic learners. The findings also show the interdependence of skills: speaking and writing dominate, but reading and listening play supportive roles, preparing students for presentations, written tasks, and interviews. This aligns with Hyland's (2006) argument that academic literacy is integrated, not fragmented. At the same time, vocabulary and pronunciation difficulties illustrate the "lacks" (Hutchinson & Waters, 1987) that must be addressed through authentic, communicative tasks.

Beyond diagnosis, this study contributes a pedagogical response through a skills-based syllabus supported by authentic assessment and dual evaluation procedures. This approach completes the cycle of analysis, design, and review (Dudley-Evans & St John, 1998). Few prior ESP studies in Indonesia have incorporated syllabus design alongside testing and evaluation, making this model distinctive in its holistic scope. By integrating academic and vocational genres in one course, it not only confirms earlier patterns but also extends them, offering a transferable framework for EAP in polytechnic contexts.

CONCLUSION

This study set out to investigate the English for Academic Purposes (EAP) needs of Computer Science students in a polytechnic institution in Indonesia and to design a syllabus that responds directly to those needs. The findings revealed a clear hierarchy of skill priorities, with speaking and writing emerging as the most urgent, while reading and listening, though ranked lower, were still recognized as necessary supportive skills. Within speaking, students emphasized social interaction, oral presentations, and job interviews as key subskills. Writing needs included advertising products, academic writing, and job application documents. Reading was associated with comprehension, locating information, and vocabulary development, while listening was linked to identifying information and preparing for interviews. Alongside these priorities, students reported constraints in vocabulary and pronunciation that hindered their ability to perform effectively, highlighting the gap between current proficiency and the communicative demands of their academic and professional environments.

This study contributes to the EAP field by moving beyond the common focus on needs diagnosis to propose a comprehensive pedagogical model. It not only identifies the specific language needs of Computer Science students but also develops a detailed, skills-based syllabus that addresses those needs through authentic and contextually relevant tasks. A skills-based syllabus was designed that integrates academic and vocational genres within a single coherent framework. Authentic tasks such as interviews, presentations, and advertising texts were combined with academic writing activities, reflecting both institutional requirements and learner aspirations. To ensure that progress is measured in ways that mirror target situations, two summative assessments were included: an oral presentation and a written brochure. In addition, a dual evaluation framework was adopted, combining formative feedback and summative questionnaires to track course effectiveness and inform future improvements. Taken together,

these steps create a full cycle of needs analysis, syllabus design, assessment, and evaluation—an approach not commonly observed in prior Indonesian ESP studies, which often stop at identifying needs.

The findings have important pedagogical implications. They suggest that educators in polytechnic EAP contexts should prioritize productive skills such as speaking and writing, while strategically integrating receptive skills such as reading and listening as supportive tools to enhance and scaffold these primary skills. Instruction should also embed vocabulary and pronunciation practice into communicative activities rather than treat them as separate components. In addition, stakeholder involvement is essential to ensure relevance and sustainability. Collaboration between language instructors, subject specialists, and administrators helps maintain a balance between academic literacy and workplace-oriented communication. For institutions, this study underscores the need to design EAP courses tailored to vocational realities, rather than adapting models created for research-focused universities.

At the same time, several limitations should be acknowledged. The study focused on a single discipline within one institution, which may limit the generalizability of its findings to other vocational contexts. Consequently, the identified priorities and the proposed syllabus model may reflect contextual factors specific to Computer Science education at Politeknik Gorontalo rather than representing all polytechnic environments. Future research could extend this approach to disciplines such as engineering, health sciences, or business to identify disciplinary differences in EAP needs. Additional methods such as classroom observations, graduate tracer studies, or interviews with employers could also provide a richer understanding of how EAP courses contribute to professional readiness. Longitudinal research might further explore how students transfer the skills developed in EAP classes into workplace or academic environments after graduation.

Finally, this study demonstrates that systematic needs analysis, combined with responsive syllabus design, authentic testing, and ongoing evaluation, can yield an EAP model that is both context-specific and pedagogically sound. By balancing academic and vocational demands, the proposed syllabus equips Computer Science students not only for immediate classroom success but also for professional communications. In doing so, it contributes to the wider literature on EAP in Indonesia and offers a transferable framework for other polytechnic contexts seeking to align English instruction with the lived realities of their learners.

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