

English for Specific Purposes and Problem-Based Learning: Strengths and Opportunities

Cristina Mariotti¹

¹ Department of Political Sciences, University of Pavia, Italy

Correspondence: Cristina Mariotti, Department of Political Sciences, University of Pavia, Strada Nuova 65, Pavia 27100, Italy. E-mail: cristina.mariotti@unipv.it

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Abstract

In Europe, the internationalization of universities has resulted in the continuous expansion of English Medium Instruction. Despite the potential for acquiring language skills in EMI courses, characterized by authentic communication as L2-medium settings, linguistic education tends to be marginalized in these environments. As a result, the development of disciplinary literacy among students might be compromised. This research aims to explore the incorporation of problem-based activities as a means to create meaningful communication environments within English for Specific Purposes (ESP) settings. These settings focus on language learning, addressing the English language education needs of university students to promote disciplinary literacy and enhance academic skills in English. The study first outlines the connection between problem-solving and interaction in second language learning. Subsequently, it delves into the cognitive processes engendered by problem-solving and their relevance for ESP settings. Finally, an application of a problem-based activity within an ESP framework is presented, offering an illustrative example of how problem-solving and interaction can be integrated into the classroom.

Keywords: English for Specific Purposes (ESP), Problem-Based Learning (PBL), English-Medium Instruction (EMI), student-centred L2 teaching, Interaction Hypothesis of Second Language Acquisition.

1. Introduction

One of the primary objectives of higher education is to help students develop disciplinary literacy (Airey, 2011). English holds a central role as the primary language for international study, business, and travel, and for university students, acquiring academic literacy is essential not only in their native languages but also in English. In European higher education, the English-Medium Instruction (EMI) approach has increasingly been implemented as a means to integrate English and discipline-specific communication, often at the expense of English for Specific Purposes (ESP) (Mancho-Barés & Arnó-Macià, 2017, p. 267). EMI is defined as a form of L2-medium teaching, where subjects are taught in a language other than the learners' first language (L1). This characteristic aligns it with other forms of Bilingual Education (BE) or Content-Based Education (CBE). L2-medium instruction takes various forms, which vary depending on whether the focus is solely on subject matter learning, as seen in EMI, or also includes language instruction, as in Content and Language Integrated Learning (CLIL) and in Integrating Content and Language in Higher Education (ICLHE) (Costa, 2021, p. 94). Given their context of authentic communication, L2-medium settings are assumed to generate particularly engaging classroom discourse and to encourage learners to use the L2 for immediate communicative functions (Wolff, 1997). This can result in incidental learning of the L2 (Brinton, Snow, & Wesche, 1989; Krashen, 1982; Wode, 1999), which takes place when the learners' attention is directed toward content rather than the language itself and is assumed to be extremely effective and long-lasting. These features have been observed to promote L2 learning processes akin to spontaneous acquisition (Wode, 1999; Hulstijn, 2003).

Scholars have explored the connection between EMI and ESP in higher education, emphasizing their shared characteristics (Martín del Pozo, 2017; Tzoannopoulou, 2015), and have advocated for increased collaboration between EMI and ESP lecturers (Arnó-Macià & Mancho-Barés, 2015; Costa & Mastelotto, 2022; Mancho-Barés & Arnó-Macià, 2017). Although research highlights their commonalities, it should be recognized that in Europe there is a polarization concerning courses taught in English. On one end is EMI, where the focus is on learning subject-matter content, while on the other are non-EMI courses, such as English for Academic

Purposes (EAP) or English for Specific Purposes (ESP), where the focus is on acquiring English skills for effective communication within a specific academic community (Costa & Mastelotto, 2022).

It is worth noting that, despite the potential benefits of EMI for English language learning, the perceived low English proficiency of students enrolled in EMI courses appears to hinder them from maximizing their learning experience (Doiz, Lasagabaster, Costa, & Mariotti, 2019). Specifically, research indicates that while EMI is generally viewed as a positive experience, students participating in English-taught courses across disciplines often encounter difficulties in specific academic areas such as comprehension of lectures, oral skills, and heavier workload compared to students on L1-taught courses (Ackerley, 2017; Airey, 2009; Arkin & Osam, 2015; Belhiah & Elhami, 2015; Kim & Yoon, 2018; Evans & Morrison, 2011; Tatzl, 2011) and that English language learning is commonly assumed or overlooked in these settings (Aguilar, 2017; Dafouz, 2021; Pecorari, 2020; Richards & Pun, 2022). This attitude can be detrimental to the attainment of disciplinary literacy for university students, as observed by Airey (2016), who asserts that EMI lecturers play a critical role in socialising students into the discourse of their respective disciplines, emphasizing the inherent connection between learning and language.

In the current context, addressing students' English language education needs requires a specific focus on providing language courses designed to cultivate disciplinary literacy and enhance academic skills in English. This targeted approach is crucial to meet the evolving demands of students. Regrettably, there is little awareness among higher education institutions regarding the necessity for language support for both students and EMI lecturers (Doiz, Lasagabaster, Costa, & Mariotti, 2019), and EMI is largely entrusted to content lecturers within an institutional framework marked by compartmentalized departments and distinct knowledge areas (Arnó-Macià & Mancho-Barés, 2015). Meanwhile “disciplinary language learning at university level is often relegated in status to a remedial activity carried out in EAP courses outside the standard curriculum” (Airey, 2016, p. 74).

1.1 Rationale for This Study

In this position paper, it is claimed that English language courses tailored for specific disciplinary fields at the university level, such as EAP or ESP, can address the cognitive mechanisms associated to content-based learning, like EMI. This can be achieved by structuring their syllabi around pertinent disciplinary themes and incorporating problem solving activities. It has been noted that educational approaches combining formal language learning with acquiring language skills through meaningful content can foster the development of higher order cognitive processing. This, in turn, contributes to successful language learning and facilitates thinking in that language (Marsh, Díaz-Pérez, Frigols Martín et al., 2020, p. 3). Specifically, the ability to solve problems in an L2 exposes individuals to authentic materials and enables them to use the L2 to perform meaningful tasks related to their course of study. Consequently, they can not only attain proficiency in general Academic English (AE) but also develop disciplinary literacy in English.

Problem solving plays a central role in Problem-Based Learning (PBL), a learner-centred pedagogical approach that prompts learners to actively engage with problems mirroring the complexity of the professional field awaiting them beyond the classroom setting (Kök & Duman, 2023; Wood, 2003). Within this pedagogical framework, learners use the L2 to access and refine content-related data through activities such as conducting research, thinking critically, and presenting information to achieve a learning goal initiated by a problem scenario or status. In this paper, we correlate PBL with ESP for two reasons: firstly, by employing problem solving skills, learners engage in tasks that are meaningful as they pertain directly to their specialized course of study. Secondly, problem-solving is inherently interactive at both the intrapersonal and the interpersonal levels as it demands learners to pose questions to themselves and interact collaboratively with peers and the lecturer. This interaction serves to access their prior knowledge, question their own beliefs, and retrieve valuable information to address the gap presented by the problem.

The constructivist paradigm that lies at the core of Problem-Based Learning (Savery, 2019) aligns with Vygotsky's social-interactionist stance on language acquisition (1962, 1978, 1987) and with the Interaction Hypothesis of second language acquisition developed by Michael Long (1983), who stated that interaction “facilitates language acquisition because it connects input (what learners hear and read); internal learner capacities, particularly selective attention; and output (what learners produce) in productive ways” (Long, 1996, pp. 451–452).

This paper aims to clarify the rationale behind integrating problem-based activities in ESP courses. It focuses on how lecturers can design materials and activities centred around problem-solving to leverage on its potential benefits for L2 learning. Additionally, the paper explores how this approach allows instructors to reflect on their

pedagogical decisions and create opportunities for collaboration with content lecturers, in line with recommendations found in the literature (Basturkmen, 2014; Mancho-Barés & Arno-Macià, 2017). In the upcoming sections, we will present an overview of the shared aspects between ESP and L2-medium approaches. Subsequently, we will delve into the role of interaction in the development of L2 proficiency. Then, we will discuss the pedagogical implications of problem solving for L2 learning, highlighting its potential for fostering extensive interaction among participants. Lastly, we will introduce a framework for implementing problem-based activities in an ESP setting to provide empirical insight into the mechanisms that promote L2 proficiency through problem-solving.

2. The Relationship Between ESP and L2-Medium Instruction

Since the 1970s, the Communicative Approach (CA) to language teaching has emphasized the relevance of contextualisation in L2 learning and the necessity to base teaching activities on meaningful contexts (Brumfit & Johnson, 1979; Richard & Schmidt, 1983; Widdowson, 1978). During the same period, research on English as a Foreign Language (EFL) teaching began to focus on how language is utilized in authentic communication. This research operated on the premise that since language varies in different situations, tailoring language instruction to meet the specific needs of learners in particular contexts is essential. The ESP approach originated from the necessity to familiarize students in higher education, as well as in vocational and professional contexts, with the vocabulary and communicative functions characteristic of their academic and professional communities of practice. It relies on “the underlying methodology and activities of the disciplines and professions it serves” and is “centred on the language (grammar, lexis, register), skills, discourse and genre relevant to these activities” (Dudley-Evans & St John, 1998, pp. 4–5). Consequently, it is intrinsically learner-centred (Dudley-Evans, 1998; Hutchinson & Waters, 1987), favouring self-direction in learning with the aim of “turning learners into users” (Carver, 1983, p. 134). Grounded in these principles, ESP can be described as a form-focused language pedagogy where language goals arise from authentic communicative needs (Lyster, 2007). The syllabus should be customized to meet the learners' needs, addressing specific learning goals and fostering learner autonomy (Basturkmen, 2006). According to Brinton, Snow and Wesche (1989, p. 7), through the frequent use of authentic materials and attention to the real-life purposes of the learners, ESP courses “often follow a methodology similar to that of the other content-based models in which a major component is experiential language learning in context”.

An emphasis on learners and on genuine communicative needs is also central to L2-medium approaches. However, in these approaches, particularly in CLIL and ICLHE, the emphasis is on acquiring both disciplinary content and language, and in the case of EMI, exclusively on acquiring content (Costa, 2017; Cummins, 2013; Genesee & Lindholm-Leary, 2014). Consequently, in L2-medium instruction, language objectives become subservient to content, allowing for more flexibility in standard usage, code-switching, and the provision of support (‘scaffolding’) to facilitate access to content (González-Ardeo, 2013). Yet, as noted by Mancho-Barés and Arnó-Macià (2017), in higher education, there should be a synergy between English-mediated forms of instruction and ESP since “taken together, discipline-specific content and an explicit focus on genres and texts can be considered an integral part of disciplinary learning, and in this respect, ESP lecturers have a say”. We believe that fostering this synergy requires ESP instructors to choose themes and genres that resonate with learners with the support of content lecturers. Furthermore, encouraging the production of interaction sequences in the ESP classroom through problem-based pedagogy can contribute to this interplay. The reasons for ensuring that interaction occurs are provided in the next section.

3. The Role of Interaction in Second Language Learning

It is argued that interaction stands as a cornerstone in Second Language Acquisition (SLA) as it provides learners with opportunities for authentic language use, enabling them to develop linguistic proficiency and communicative competence. Moreover, there is a growing acknowledgment that interaction activates and facilitates the learning process, balancing asymmetrical roles through cooperation (Crawford Camiciottoli, 2004; Morell, 2007; Sánchez García, 2018). Since the early 70s, SLA researchers have extensively investigated the characteristics of the linguistic environment surrounding L2 learners to comprehend the conditions conducive to the acquisitional process. One widely debated proposal is the Input Hypothesis, formulated by Stephen Krashen in the early 1980s. According to Krashen (1982, 1985), learners progress in the acquisition of a second language by comprehending input directed at them. In this perspective, comprehensible input is seen as a necessary condition for transitioning from one stage (i) to the next (i+1) in second language learning (1982, p. 21). This process is realized through the introduction of simplifying adjustments to the input by native speakers. During the same period, Michael Long developed the Interaction Hypothesis of SLA (1981, 1983). Long shared Krashen's view on the importance of comprehensible input for language acquisition but diverged in his approach

Tamblyn, 1980). Its subsequent success, particularly in medical and health sciences education, led to its adoption in diverse educational contexts globally, preparing students for real-world scenarios (Hung, Jonassen, & Liu, 2008). Embracing a cognitive constructivist viewpoint, PBL suggests that learners can process disciplinary content more efficiently by constructing mental models relevant to problems. Unlike traditional lecture-based learning, PBL prioritizes student-centred learning (Rotgans & Schmidt, 2012). Research indicates that PBL's effectiveness stems from its ability to stimulate active engagement, encourage critical thinking, and promote deep learning. This approach motivates students to integrate knowledge from various sources to achieve a more comprehensive understanding of the subject matter (Savin-Baden & Major, 2004). Furthermore, Sockalingam and Schmidt (2011) underscore the importance of well-structured problems, noting that thoughtfully designed tasks should facilitate learning objectives while allowing for the exploration of multiple solutions. According to Barrows (1986, pp. 481–482), PBL is structured around the following key components:

- 1) **Problem Engagement:** learners are tasked with addressing complex problems that mirror real-life situations, increasing motivation for learning;
- 2) **Self-directed Study:** Learners develop an awareness of their individual learning needs and take responsibility for locating and using appropriate information to solve the presented problems.

The first component centres on the construct of engagement and its precursor, motivation, which is considered a critical determinant of any learning process. In particular, it can significantly influence the perception of second language learners regarding their L2 selves and their interaction with input (Dörnyei, 1998; Dörnyei, 2009). The second component is linked to the concept of self-direction or agency, which is connected with motivation and holds equal importance in any learning process (Woodward, 2009; Sokol, Hammond, Kuebli et al., 2015). It is posited that when students act as agents in their learning—taking an active role in deciding what and how they will learn - they tend to exhibit greater motivation and are more likely to set objectives for their learning. It should be pointed out that the concept of self-directed learning is closely connected with that of continuous learning, a tenet of cognitive development according to Vygotsky (1962). Moreover, given the rapid evolution of knowledge in specialized professional domains, agency and self-direction skills assume paramount significance for today's university students.

We believe that these principles bear resemblance to those that inspired the development of the ESP approach to L2 learning, especially concerning the use of authentic learning materials within a meaningful and motivating context and the stimulation of learners' ability to self-direct their study endeavours (Basturkmen, 2006; Carver, 1983; Dudley-Evans, 1998; Hutchinson & Waters, 1987). Moreover, problem-solving activities are intrinsically relational, engaging learners in a series of cognitive operations that necessitate interaction on several levels. This engagement leads participants in the classroom to activate the L2 fostering mechanisms outlined in section 3 and summarized in Table 1.

Table 1. Interaction levels and cognitive operations activated by problem-solving activities in ESP classrooms

Interaction level	Problem-related operations	L2-related operations
Intrapersonal	Comprehending and processing information in the L2 through authentic materials	- Actively recalling L2 forms - Engaging in deep cognitive elaboration of content information through the L2, involving evaluation, inquiry, and making inferences
Interpersonal (learner/learner)	Sharing information to reach a solution	- Scaffolding (the more competent learner assists the less competent one/s) - Lowering the affective filter
Interpersonal (learner/lecturer)	Reporting the solution to the lecturer	- Scaffolding (the lecturer assists the learner/s) - Generating comprehensible input that is both semantically and syntactically rich in target language forms (lecturer) - Feedback (lecturer) - Output production (learner/s)

In this context, the term 'operation' is employed within the framework of Vygotsky's sociocultural perspective, where "psychological tools" or "mediational means" are defined as external aids (such as language, symbols, cultural tools, etc.) that assist individuals in performing mental operations beyond their current developmental level (1978). Through social interaction and the use of these tools, individuals can internalize and master new cognitive operations, progressing to higher levels of cognitive functioning.

Despite its potential advantages, applying a PBL pedagogy to ESP classrooms presents a series of challenges and

decisions that instructors need to address during the course design stage. Firstly, the focus must remain on language, which is the object of evaluation, but the materials and activities should be based on disciplinary content relevant to learners. For this reason, we propose that the choice of the themes, materials and activities should precede that of the language syllabus, with the latter being mapped onto content. This aligns with the assumption that ESP is a form-focused language pedagogy where language goals emerge from genuine communicative needs. The syllabus should be tailored to the learners' needs to reach specific learning goals and foster learner autonomy (Basturkmen, 2006). Secondly, ESP instructors are tasked with designing and identifying problems that, as mentioned in the literature above, should simultaneously be 1) well-structured, 2) complex, and allow for 3) making hypotheses. To meet the first requisite ('well-structured'), ESP instructors need to ensure that learners clearly understand the requirements, the necessary steps for obtaining a solution, and how to determine when a solution has been achieved. The second requisite ('complex') implies that finding a solution to the problem will require learners to go through a sequence of cognitive operations. Echoing Krashen's Comprehensible Input Hypothesis (1982), we hold that just as input must be slightly more complex but not excessively so ($i+1$) for language learning to occur, the same can be hypothesized for the setup of problems in the ESP classroom. It must be possible for learners to activate some previous knowledge to create new connections, but the problem must not be out of their reach since emotional factors, such as anxiety, motivation, and self-confidence, can act as a filter that affects language acquisition (Affective Filter Hypothesis, Krashen, 1985). Finally, the third requisite ('making hypotheses') implies that the answer to the question underlying the problem should be answered by exploring several possible routes, leading to informed decisions supported by content-relevant data. This means that the question underlying the problem should be a referential question (as in example 2) rather than a display question (as in example 3):

(2) L = and what I'm interested in knowing is if you agree with what he was saying (.) if you and if you feel that these arguments (.) that he is making () sound or valid (.) or maybe (.) you know () you think some of these arguments are valid and some others are invalid

(3) L = what is another word for reduction in prices?

(Costa & Mariotti, 2023, p. 35)

In (2), the lecturer employs a referential question, prompting the student not only to access previous knowledge through active recall but also to apply this knowledge creatively. This requires the production of utterances that reflect a higher-order cognitive workload compared to mere recall (Bloom, Engelhart, Furst et al., 1956). Referential questions demand the student to establish connections within a new network of thoughts to express a well-grounded reflection with a wide, virtually limitless range of possible options. Therefore, referential questions necessitate the deployment of high order thinking skills, fostering original thought and critical reflection. Contrastingly, display questions, typically employed by instructors to assess student knowledge and understanding, as seen in (3), primarily activate low-order thinking skills such as the active recall of previously learned information. While display questions play an important role in classroom discourse (Mehan, 1985), the predetermined nature of the answer to such questions implies that they are not as cognitively stimulating as referential questions (Long & Sato, 1983; Verplaetse, 1998).

We have that ESP lecturers have the technical and experiential knowledge necessary for making the above described pedagogical decisions. However, it is crucial to acknowledge that, with few exceptions, they typically lack expertise in disciplinary content. Therefore, in the design phase of a problem-based ESP course, the language lecturer should actively seek collaboration with the content expert. This collaboration aims to identify themes and problems that are both meaningful and appropriate for the content knowledge level of the learners. Additionally, it involves devising the necessary steps to guide learners through the problem-solving process while maintaining a focus on teaching the L2, which, in an ESP course, is also the subject of evaluation. In the following section, we will describe the implementation of a problem-based pedagogy in an ESP course, highlighting the interplay between the two approaches and the strategic coordination between the English language lecturer and the content lecturer.

5. Applying Problem Solving in an ESP Setting

The author of this paper drew upon the aforementioned principles to create a syllabus for a 40-hour ESP course in the English for the Humanities strand attended by 115 second year undergraduate students in the Department of Political Sciences at a university in northern Italy during the academic year 2022–2023. The course spanned four months with a mid-term break, and classes were held twice a week. In this section, a descriptive-exploratory perspective is adopted to outline the criteria and informed decisions made in designing and implementing materials and classroom activities. While the author's insider status provides insight into the context, it is

acknowledged that serving as both the researcher and the researched may introduce bias (Scheurich, 1997). The ESP lecturer, with a decade-long teaching experience and expertise in SLA theories, particularly the interactionist strand, sought advice from a content lecturer before developing the syllabus and selecting materials, aligning with ESP research recommendations (Basturkmen, 2014; Mancho-Barés & Arno-Macià, 2017). The content lecturer, an expert in UN resolutions using an EMI approach, offered strategic support in choosing content-related themes, materials and activities. PBL principles were discussed to design a well-structured and adequately complex problem, allowing students to activate previous knowledge to make hypotheses without presenting excessive difficulty. As regards the language syllabus, following Basturkmen's indications (2020), the ESP lecturer conducted a needs analysis to address learners' language learning needs, considering the B2 English competence level expected by the end of the Bachelor's programme. As emphasized in the previous section, to foster the acquisition of disciplinary literacy in English, content-related decisions informed form-related choices, particularly regarding lexis, pragmatic aspects, and communicative functions in keeping with the assumption that ESP is a form-focused language pedagogy where language goals should be tailored to the learners' disciplinary contextualized needs. Materials were designed to reflect the language and communicative functions encountered in professional or academic settings and incorporated authentic multimedia elements such as videos, images, and audio recordings, aligning with literature recommendations (Basturkmen, 2010; Carver, 1983; Hutchinson & Waters, 1987). The activities followed a problem-based framework, featuring case studies, simulations, and role-plays geared towards solving a problem. In this instance, the problem involved identifying a solution to a humanitarian crisis by writing operative clauses as part of a UN General Assembly resolution. The course's overarching goal was to organize a General Assembly session, executed as a final lecture role-play involving the entire class in debating and voting on the UN resolution. In the previous cohort, the lecturer addressed similar themes but adopted a more traditional, lecturer-fronted mode interspersed with meaning-oriented task-based activities not connected in an overarching PBL framework.

The language goals and the underlying pedagogy for the course were outlined in the course programme and reiterated during the initial lecture to raise awareness among the students. Before the course commencement, the researcher had insight into the students' general and academic linguistic competence, covering both receptive and productive skills, based on the results of an English exam taken approximately four months before the course began. Students displayed a spectrum of proficiency levels, ranging from B1 to C1. To be eligible for attendance, students were required to have a minimum attendance rate of 80% in the classes. To foster learners' agency and motivation, the problem was introduced to the classroom following a funnel-like progression, starting with familiarizing students with the topic and gradually encouraging self-direction as they worked on the problem solution by making informed decisions about relevant information and reliable sources. Output production was a requirement for students in both oral and written forms to qualify for the final exam, which consisted of a written test and an oral test, each contributing 50% to the final grade. The written test included lexicogrammatical exercises consistent with those assessing general English knowledge and exercises targeting language structures used during the course. Additionally, it featured exercises to elicit the deployment of pragmalinguistic strategies, evaluating their formal correctness and appropriateness to the context (see Appendix B). The oral test focused on students' experiences during the course. Both tests maintained consistency with the structure used for the previous cohort to ensure comparability of results. The initial half of the course (20 hours) centred on contextualizing topics, addressing the problem, and concurrently working on the L2 through form-focused exercises and multimodal resources that enabled students to access meaningful input and engage in output production. The subsequent lectures were structured with a view to progressively engaging students in activities demanding the activation of deep cognitive operations, such as the discussion of case studies, simulations, and role-plays. These lectures incorporated both individual and group activities strategically designed to create opportunities for interaction on all three relational levels identified in Table 1. Groups were formed based on students' performance in the English course completed approximately four months before the course's initiation. Heterogeneous grouping was adopted with the belief that students working alongside more proficient peers are likely to be stimulated to achieve their potential (Vygotsky, 1978). Table 2 shows how the levels of interaction and cognitive operations prompted by PBL were employed by selecting activities tailored to enhance L2 competence.

Table 2. Problem-based activities geared towards developing L2 competence through interaction

Interaction level	Problem-related operations	L2-related operations	Problem-based activities
Intrapersonal	Comprehending and processing information in the L2 through authentic materials	<ul style="list-style-type: none"> - Actively recalling L2 forms - Engaging in deep cognitive elaboration of content information through the L2, involving evaluation, inquiry, and making inferences 	<ul style="list-style-type: none"> - Selecting relevant information about the assigned country - Assessing source reliability - Formulating hypotheses for problem solution - Planning negotiation strategies before participating in decision-making caucuses - Drafting policy statements concerning the problem
Interpersonal learner/learner	Sharing information to reach a solution	<ul style="list-style-type: none"> - Scaffolding (the more competent learner can assist the less competent one/s) - Lowering the affective filter 	<ul style="list-style-type: none"> - Reporting on critical issues to the class during Q&A - Caucusing to negotiate mutually accepted solutions - Writing operative clauses
Interpersonal learner/lecturer	Reporting the solution to the lecturer	<ul style="list-style-type: none"> - Scaffolding (the lecturer assists the learner/s) - Generating comprehensible input that is both semantically and syntactically rich in target language forms (lecturer) - Feedback (lecturer) - Output production (learner/s) 	<ul style="list-style-type: none"> - Reporting on critical issues to the class during Q&A - Delivering opening speeches in the final session of the GA

To validate the hypotheses formulated on the intrapersonal level, students received detailed feedback on their written output concerning the appropriateness of their pragmalinguistic strategies and lexicogrammatical features such as tense, aspect, agreement, verb patterns, lexical collocations, word order, connecting clauses, and punctuation. On the interpersonal level, students individually conducted research on the country they were representing and the presented problem. They then formed hypotheses, analysed sub-sets of the overarching problem in small groups, and crafted operative clauses with the supervision of the lecturer. Q&A sessions mediated by the lecturer provided opportunities for both peer and learner-lecturer scaffolding. During these sessions, students took turns reporting to the class on how they addressed challenges in retrieving and managing the information needed for completing their country information sheets and for writing their policy planning papers. The cohort's final test results indicated a success rate of 82.1% and an average grade of 26.5/30, surpassing both the success rate and average grade of the previous cohort, as shown in Table 3:

Table 3. Results obtained in the final test by the 2021–2022 and the 2022–2023 cohorts

Academic year 2021–22		Academic year 2022–23	
No. of students who took the test / no. of enrolled students	155/210	No. of students who took the test / no. of enrolled students	173/221
No. of students who passed the test	117/155 (75.4%)	No. of students who passed the test	142/173 (82.1%)
Average grade	25.5/30	Average grade	26.5/30

All 115 attending students successfully passed the final test and achieved an average grade consistent with the cohort's overall average. Notably, the majority of participating students demonstrated improvement, with 72% increasing their individual grade by an average of 2 points compared to the exam they took at the end of the previous English course. This improvement suggests progress in both general and academic English proficiency. These results might indicate that the course layout resonated well with the students' needs, but the researcher is aware that other variables might have intervened and that the above reported results might have been at least partially affected by the challenges faced by stakeholders during the Covid-19 pandemic, particularly for the 2021–2022 cohort. For this reason, the researcher is looking forward to gathering results from future cohorts to track students' performance. Feedback on the course was obtained through a questionnaire issued by the university, comprising 10 closed questions and one open-ended question. Closed questions assessed perceived

clarity in lecture delivery, effectiveness in motivating students to engage with the course material and participate actively in class discussions, and relevance of the course to learning goals. The questionnaire, scored on a 10-point scale, yielded a higher mean score than the Department's course average (8.75 vs. 7.82), with positive to very positive remarks in response to the open-ended question.

6. Conclusions

The incorporation of problem-based learning (PBL) principles into ESP courses represents a promising avenue towards fostering comprehensive language proficiency and disciplinary literacy. By aligning the constructivist paradigm of PBL with Vygotsky's social-interactionist theory (1978) and Long's Interaction Hypothesis (1996), this study underscores the pivotal role of meaningful interaction in second language acquisition. Interaction, whether on an intrapersonal or interpersonal level, not only facilitates input comprehension but also fosters negotiation of meaning and the co-construction of discourse, propelling learners towards a deeper grasp of the language. The pedagogical implications outlined in this paper highlight how problem-solving activities within ESP classrooms can create an environment conducive to active engagement, critical thinking, and self-directed learning. Parallel to the ESP approach, PBL fosters learner-centredness and authentic language use by immersing students in real-world problems relevant to their disciplinary field, nurturing their language skills while addressing genuine communicative needs. However, the implementation of PBL in ESP settings presents challenges that educators must strategically address. It is suggested that balancing language-focused objectives with content relevance, designing well-structured yet appropriately complex problems, and fostering a supportive environment for hypothesis generation necessitate careful planning and collaboration between ESP instructors and content lecturers. This integration process also requires ESP instructors to develop an awareness of the L2 learning potential of the problem-based approach. The practical application of problem-solving methodologies in an ESP course for Political Sciences undergraduates exemplifies how these principles manifest within a higher education context. Through a student-centred approach, scaffolded learning, and a content-informed syllabus, the course aimed to address language learning objectives while applying problem-solving skills essential for future professional settings, fostering authentic communication mechanisms similar to those proposed for EMI and building a bridge between the two ends of the language-driven vs. content-driven continuum. We believe the integration of ESP and PBL is worth exploring, and we look forward to future empirical data to investigate its outcomes.

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Appendix A

Written tasks required to qualify for the final exam.

A. Country information

Conduct research on the country you are representing by answering the following questions:

1. What type of government does your country have?
2. Which ideologies (political, religious, or others) influence your country's government?
3. What domestic issues might impact your country's foreign policy?
4. What are the major historical events in your country and why are they significant?

5. What ethnicities, religions, and languages are present in your country?
6. What is the geographical location of your country, and in what ways does its geography impact its political relationships?
7. What are the characteristics of your country's economy?

B. Policy planning

Conduct research on the stance of your country regarding the specific topic of the resolution by answering the following questions:

1. How and why does this problem affect the nation you are representing?
2. What do you think your country's position on the topic of the debate will be? Why?
3. What solutions have already been tried to solve the problems presented in the resolution by the UN?
4. What was your country's position on those attempted solutions?
5. What solutions does your country prioritize for current or future implementation?
6. Who are probable allies of your country in dealing with the problem?
7. How would you convince other nations to support your proposed solution?

C. Position paper

Write a position paper (one page, single-spaced, 2 cm margins, Times New Roman, 12 points) on the solutions proposed by your country including:

- a brief introduction to your country and its history concerning the topic;
- your country's policies on the issue and the justification for these policies;
- recommendations on what your country believes should be done to address the issue.

D. Opening speech

Based on your position paper, write an opening speech for the final General Assembly session. Keep it concise and focused on your country's policy regarding the topic. You have a maximum of 3 minutes to deliver the speech, emphasizing the major concerns for your country and actions you will support.

Appendix B

Prompts used to evaluate pragmalinguistic appropriateness, lexicogrammatical correctness, and use of specialised lexis (excerpt from the final written test)

A. Paraphrase the following expressions:

1. A BATNA is the 'second best alternative'.
2. Just because you seem to have all the power in a negotiation, you should not squeeze all the value from your opponent.
3. Be careful when placing your anchors.
4. Why don't you meet me halfway?
5. We need to reach an agreement by consensus.

B. You are participating in a caucus with fellow delegates to discuss the allocation of funds aimed at mitigating human trafficking. Please rewrite the sentences provided to include varying degrees of hedging. Apply at least three different hedging strategies discussed during the course.

1. We need to hire more technical advisors.
2. I don't agree with your proposal.
3. Your budget allocation plan is poorly designed.
4. I need more time to finish my report.
5. You said your country would provide funding for this project.

Table B1. Assessment criteria for every prompt

Feature	Scoring system	Score
Appropriateness of pragmalinguistic strategies	1 2 3 4 5	
Sentence length	1 2 3 4 5	
Syntactic complexity	1 2 3 4 5	
Word order	1 2 3 4 5	
Linking	1 2 3 4 5	
Punctuation	1 2 3 4 5	
Tense	1 2 3 4 5	
Aspect	1 2 3 4 5	
Agreement	1 2 3 4 5	
Grammatical collocations	1 2 3 4 5	
Lexical collocations	1 2 3 4 5	
Use of specialised lexis	1 2 3 4 5	
Total		/60

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