

From Plans to Practice: Communicative Competence in Foreign Languages and Curricular Equity in Engineering Education at UNTDF

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Abstract

Background: Higher education institutions are increasingly adapting to the demands of a globalized, multilingual world, with competency-based education emerging as a key strategy. In this context, the development of foreign language communicative competence has become essential, especially in technical fields such as engineering. **Aims:** This study examines how curricular decisions at the Universidad Nacional de Tierra del Fuego (UNTDF) align with the development of foreign language competencies, particularly English, within the Industrial Engineering program. The research aims to evaluate whether these curricular changes facilitate equitable access to language education and how they impact students' professional development. **Methods:** A qualitative, documentary analysis approach was used to examine the institutional and curricular documents of UNTDF, comparing the original 2012 curriculum with the revised 2024 curriculum. The study also includes insights from semi-structured interviews with faculty members involved in the program, exploring the challenges and effectiveness of these changes. **Result:** The study finds a significant shift in language education from the 2012 curriculum, which provided structured language instruction through progressive proficiency exams, to the 2024 curriculum, which reduces language requirements to a single sufficiency test. This change raises concerns about the depth and accessibility of language instruction, particularly for students without prior English proficiency. **Implication:** The findings highlight the importance of structured, equity-driven language policies that ensure all students have equal opportunities to develop the communicative skills necessary for success in a globalized professional environment. The study calls for more coherent curricular strategies that integrate language education into technical programs, aligning with national standards and internationalization goals.

Keywords: Communicative competence, Foreign languages, Curricular equity, Engineering education, Higher education

Introduction

In recent decades, higher education institutions have faced growing pressure to adapt their curricula to meet the demands of an increasingly globalized and multilingual world. Competency-based education has emerged as a strategic response to these challenges, emphasizing not only disciplinary knowledge but also the development of transversal skills such as communicative competence in foreign languages.

This article presents the preliminary findings derived from the analysis of institutional and curricular documents conducted within the framework of a research project developed at the Universidad Nacional de Tierra del Fuego, Antártida e Islas del Atlántico Sur (UNTDF). The study

aims to explore the communicative competencies in foreign languages required in the academic trajectories of students enrolled in Industrial Engineering. By examining curricular documents—such as the study plans of a given degree program and the subsequent update—the research reveals that curricular decisions often fail to promote equitable access to knowledge for all students. Rather than aligning with inclusive pedagogical principles, these decisions tend to perpetuate and exacerbate structural barriers that hinder the development of communicative competencies in foreign languages.

This study invites reflection on how curricular decisions and language policies influence the professional formation of university students. It focuses on the Industrial Engineering program at the Universidad Nacional de Tierra del Fuego, Antártida e Islas del Atlántico Sur (UNTDF), analyzing its academic offerings and institutional expectations regarding communicative competence in a foreign language. While the analysis centers on this specific case, it also provides a framework for comparison with similar programs at other institutions, offering insights into broader trends and challenges in competency-based education within other contexts.

In the evolving landscape of higher education, the capacity to communicate effectively in a foreign language—particularly English—has become a cornerstone of professional competence in engineering. This imperative is clearly articulated in the "Libro Rojo" del CONFEDI (2018), which asserts that graduates of engineering programs must possess sufficient proficiency in English to engage in technical communication. The "Libro Rojo" of CONFEDI (2018) is a foundational document that outlines the second-generation standards for accrediting engineering programs in Argentina. The document was developed and approved by the Federal Council of Deans of Engineering of the Argentine Republic (CONFEDI, 2018), which is the academic and institutional body representing the deans of engineering faculties nationwide.

Given that the majority of scientific and technical knowledge is disseminated in English, the skill to engage in technical communication is not merely desirable—it is essential. By focusing on a localized case with broader implications, this study contributes to ongoing debates about equity, access, and the role of language in higher education. It also offers a comparative lens for evaluating similar programs in other institutions, providing insights that may inform future curricular reforms and the development of language policy.

The UNTDF is situated in a geopolitically strategic region at the southernmost tip of Argentina. Due to its proximity to Antarctica and the South Atlantic, this university occupies a strategic position that fosters its involvement in regional growth, environmental responsibility, and international collaboration. As a public university, UNTDF was founded with a strong commitment to democratizing access to higher education for all inhabitants and residents of the province. This mission is clearly articulated in its Provisional Statute (Resolution R.O. No. 15/12), particularly in Article 1 of Section I: Foundational Purposes and Missions, which emphasizes inclusive participation in academic activities.

UNTDF's academic and administrative structure is organized through a matrix of interrelated institutes. These institutes serve as the university's core academic units, each designed to address complex, interdisciplinary problems. According to Article 3 of the same section, the institutes are defined as "interdisciplinary configurations organized around integral problematics,"

and they are responsible for the university's central activities: research, teaching, training, and community service. This structure reflects UNTDF's pedagogical philosophy, which values cross-disciplinary collaboration and responsiveness to local and global challenges.

The university demonstrates a strong commitment to an educational model centered on skills development. In fact, its statute not only mentions skills as an objective, but also positions them as a fundamental pillar of its founding mission. Furthermore, although the statute does not explicitly mention a mandatory requirement for all students to learn a foreign language, it clearly emphasizes internationalization and international relations, which implies the ability to communicate in a foreign language. Indeed, it is widely acknowledged that English is the predominant language in academic and scientific fields. It would be reasonable to think that this approach would translate into curricula that include the development of communicative skills in languages. In this manner, the university implicitly acknowledges that language knowledge is a tool for globalization and expanding the academic and professional opportunities of its students.

In this context, curricular decisions and language policies take on particular significance. The university's emphasis on competency-based education includes the requirement of foreign language proficiency for graduation in several programs, such as Industrial Engineering. However, the implementation of this requirement—often limited to a sufficiency exam—raises questions about the depth and equity of language instruction. This research investigates the impact of UNTDF's institutional structure and educational policies on the development of communicative competence in foreign languages, and how these competencies align with the professional profiles expected of graduates. By situating the study within UNTDF's distinctive academic framework, the analysis contributes to broader discussions on curriculum design, language policy, and professional formation in multilingual and multicultural higher education settings.

Literature Review

This study is grounded in a multidisciplinary theoretical framework that examines the development of communicative competence in a foreign language within the context of higher education. The framework draws from academic literacy theory, critical sociolinguistics, and the socio-historical-cultural theory of activity to explore how language practices intersect with disciplinary learning, institutional structures, and broader sociopolitical dynamics.

Paula Carlino (2005, 2013) conceptualizes academic literacy not as a set of isolated technical skills, but as a socially situated practice embedded in the discursive culture of academic disciplines. Literacy, in this view, involves the appropriation of reading and writing strategies that enable students to participate meaningfully in the production and analysis of disciplinary texts. Carlino (2003) emphasizes that reading and writing are not generic abilities but are shaped by the epistemological demands of each field, the purposes of academic tasks, and the cognitive engagement of learners.

This perspective is particularly relevant to the study of foreign language competence in university settings, where students must navigate texts in English—often without explicit instruction—while engaging with complex disciplinary content. Carlino's framework supports the integration of literacy development into curriculum design, highlighting the need for pedagogical

approaches that foster deep comprehension and written production as tools for learning.

Lía Varela (2019) conceptualizes international academic mobility as a form of qualified migration deeply intertwined with the formation and reproduction of elites, where language knowledge operates as both a prerequisite and a mechanism of exclusion. Her framework highlights the unequal distribution of foreign language education in Argentina, shaped by internal language policies (PLI) and external language promotion strategies (PLE) from countries like Italy, France, Germany, and China. These disparities privilege students from urban, private, and elite institutions, reinforcing social stratification and limiting access to global academic opportunities. Varela argues that without equitable and diversified language instruction, internationalization policies risk perpetuating existing inequalities rather than democratizing higher education.

Baum's insights challenge the instrumentalist view of language policy in higher education, urging institutions to recognize the sociopolitical implications of requiring English proficiency. Her work highlights the importance of examining how language practices perpetuate or challenge colonial legacies, and how students' linguistic identities and cultural backgrounds impact their access to academic success. Building on Carlino's literacy lens, the study incorporates the critical perspectives of Graciela Baum (2021), who argues that language is far more than a communicative instrument—it is a phenomenon shaped by power relations, epistemic differences, cultural diversity, and colonial tensions. From this standpoint, the dominance of English in academic and technical discourse reflects global hierarchies that privilege certain forms of knowledge while marginalizing others.

Complementing these literacy and sociolinguistic perspectives is the socio-historical-cultural theory of activity, particularly as developed by Engeström (2015). This theory conceptualizes learning as a dynamic, collective process mediated by tools, rules, community, and division of labor. It provides a lens for analyzing how communicative competencies are constructed within institutional systems and disciplinary practices. By applying this framework, the study seeks to understand how foreign language competence is shaped by curricular structures, pedagogical strategies, and the interactions among students, faculty, and institutional policies.

In addition to the theoretical perspectives already discussed, this study draws on insights from Revello Barovero (2025), whose doctoral research examines academic literacy practices in English as a foreign language within undergraduate programs at the Universidad Nacional de Tierra del Fuego (UNTDF). Her work highlights a critical tension between curricular planning and students' actual linguistic profiles, revealing that English-language materials are often selected based on disciplinary relevance rather than accessibility. This approach, while academically rigorous, risks excluding students who lack prior training in English and reinforces inequities in access to disciplinary knowledge. Revello Barovero (2025) argues for the explicit integration of foreign language development into curricular design—not merely as a technical skill, but as a core component of professional formation. Her findings underscore the need for institutional language policies that promote equity, transparency, and pedagogical coherence in multilingual academic contexts.

Method

The focus of this article is on analyzing documents that reveal the factors leading governing bodies to include foreign language communication among the core competencies to be developed in higher education engineering studies at UNTDF. This phase will involve a detailed examination of institutional and regulatory documents to assess the degree of alignment between the competencies required by these bodies and those currently offered by the institution. To achieve this, the study adopts a research design that enables a descriptive analysis of the phenomenon under investigation. This design allows the independent measurement of key categories which, once integrated, will help identify specific skills that constitute communicative competence in a foreign language—both within academic training and professional practice.

Documentary analysis involves a systematic review and interpretation of official documents to identify patterns, changes, and underlying meanings. In this study, the process begins with locating and examining the original curriculum plan from the inception of the Industrial Engineering program, alongside the current version. Both documents are read thoroughly to observe and compare changes in curricular structure, minimum content requirements, graduate profile, and the scope of the degree. This comparative approach enables researchers to track the evolution of educational priorities and evaluate how institutional offerings align with professional and academic expectations over time.

Complementing this documentary analysis, a semi-structured interview was conducted with the professor in charge of English in the Engineering course to gain a direct and deeper understanding of the situation, challenges, and perceived effectiveness of the changes in the curriculum.

Results

At the institutional level, UNTDF's 2012 curriculum for Industrial Engineering reflects these national standards by structuring foreign language competencies into three progressive levels. These levels encompass reading comprehension, written production, and oral expression, with increasing complexity and specificity across the academic trajectory. This structured approach contrasts with more recent curricular models, which tend to reduce language requirements to a single sufficiency test, raising concerns in the 10th semester about the depth and equity of language instruction in professional training.

The documentary analysis revealed a strong institutional and national emphasis on the importance of foreign language competence—particularly in English—for engineering graduates. The *Libro Rojo* published by CONFEDI (2018) establishes that graduates of engineering programs must demonstrate sufficient proficiency in English for technical communication, underscoring the language's central role in the graduate profile. This requirement is framed within the "Complementary Sciences and Technologies" block, where the comprehension of a foreign language (preferably English) is explicitly listed as a necessary competency. In the CONFEDI document *Competencias en Ingeniería* (2017), effective communication competence in a second language is identified as a key graduate outcome. This includes oral and written expression, professional interaction, and the ability to present ideas clearly and coherently. The document also emphasizes the importance of understanding and interpreting technical texts, as well as participating in interdisciplinary teams.

At the institutional level, UNTDF's 2012 curriculum for Industrial Engineering reflects these national standards through a structured and progressive evaluation system. Approved by Resolutions (RO) 133/14 and Ministerial 1939/15, and validated by CONEAU in Session No. 408 (06/10/2014), the plan includes four mandatory foreign language proficiency exams. See Table 1

Table 1. English Language Exams in the 2012 Curriculum – Industrial Engineering Program

EXAM NAME	SEMESTER
Examen de Inglés de Nivel I	4th semester
Examen de Inglés de Nivel II	8th semester
Examen de Inglés de Nivel III	10th semester

Note: Although listed as subjects in the curriculum, these are proficiency exams that students must pass in order to graduate. They are mandatory components of the academic program.

Although these evaluations are listed as subjects in the curriculum descriptor, they function strictly as proficiency exams. Students must pass them to qualify for graduation, making them a compulsory component of the academic trajectory. This structured approach, outlined in Table 1, which details the distribution of language exams across semesters, contrasts sharply with the 2024 curriculum, which reduces the language requirement to a single sufficiency test. As shown in Table 2, the newer model reduces the language requirement to a single sufficiency test and eliminates formal instruction in reading, writing, speaking, and listening skills. Instead, students are expected to demonstrate proficiency independently. The responsibility for language development is implicitly transferred to individual subjects, including English-language bibliography, without coordinated support.

Table 2. Comparative Overview of English Language Integration in the 2012 and 2024 Curricula

Aspect	2012 Plan	2024 Plan
Instructional Structure	Included	Not included
Skill Development	Reading, writing, speaking, listening	Not explicitly taught. There is only a description of the reading Specialised texts in English
Integration in Curriculum	Across different academic years	Extracurricular
Language training Support	Coordinated by EDI	Delegated to subject instructors
Equity of Access	Structured for all students with extracurricular support	Dependent on prior knowledge

Note: This table highlights the shift from a structured and inclusive language instruction model in the 2012 curriculum to a less democratic, more decentralized and implicit approach in the 2024 plan, where language development is less formally integrated and more reliant on individual student background and instructor discretion.

This shift raises concerns about the depth, equity, and consistency of language instruction. While the 2012 plan aligned with national and institutional goals for communicative competence, the 2024 model risks marginalizing students without prior English training and undermines the development of essential professional skills in a globalized context.

The professor in charge of Industrial Engineering English subjects and syllabuses since 2023, and a member of the EDI (UNTDF School of Languages), states that she was never called upon to provide her opinion or expertise on the changes to the Foreign Language program in

Industrial Engineering. The professor learned about the new curriculum by chance, through another professor who was working on the changes. When she saw the changes, the curriculum had already been modified and finalized.

Likewise, the professor has not participated in any stage of the transition, such as document development or equivalency analysis, among others. She states that she stays informed of the changes by reading the corresponding documents and by hearing from the students who provide her with information they collect. It is worth noting that the EDI, including the professors working there, reflects on the significance and potential implications of not having been called at any point to participate in the new curriculum.

In summary, the evidence suggests that the transition from the UNTDF's 2012 Industrial Engineering curriculum to its 2024 counterpart represents a significant shift from a structured, progressive language program to a decentralized, implicit model. This change, while ostensibly streamlining the curriculum, creates a profound disconnect with established national standards for professional competence. The new model places an undue burden on students and a fragmented responsibility on subject-matter professors, thereby jeopardizing the consistent development of the essential communicative skills that both CONFEDI (2018) and the university itself identify as critical for engineering graduates in a global context.

Discussion

The comparative analysis of the 2012 and 2024 curricula for Industrial Engineering at UNTDF reveals a significant shift in the institutional approach to foreign language instruction. In the 2012 curriculum, language proficiency was embedded as a structured and progressive component of the academic trajectory. As shown in Table 1, students were required to pass a series of proficiency exams—English Level I, II, and III—distributed across multiple semesters. These evaluations, although listed as subjects, functioned strictly as mandatory proficiency assessments, essential for graduation.

This new program does not ensure that all students have access to coordinated support through the Escuela de Idiomas (EDI). The exams are isolated requirements, and there is no formal proposal from the authorities for English subjects to become part of a broader pedagogical strategy aimed at developing communicative competence in reading, writing, speaking, and listening. There is a lack of integration of language training across academic years. There is a need for fostering equity and consistency in skill development.

In contrast, the 2024 curriculum reduces accessibility and limits the range of opportunities available to students. As detailed in Table 2, the language requirement has been reduced to a single sufficiency test, with no formal instruction in the core language skills. The responsibility for language development is transferred to individual subject professors, who may include English-language bibliography in their courses but are not required to teach the language itself. This shift effectively removes coordinated support and places the burden of proficiency on students' prior knowledge and independent effort.

The implications of this change are multifaceted. While the newer model may reflect broader trends in higher education toward curricular flexibility and interdisciplinary integration, it

risks undermining equitable access to language training. Students without a strong background in English may find themselves at a disadvantage, particularly in disciplines where technical literature is predominantly published in the English language. Moreover, the lack of structured instruction may hinder the development of comprehensive communicative competence, which is increasingly recognized as essential for professional success in globalized contexts.

This discussion underscores the need for a balanced approach—one that acknowledges the importance of language proficiency while ensuring institutional support and teaching coherence. The findings suggest that curricular reforms should not only respond to evolving educational paradigms but also safeguard the foundational competencies that enable students to thrive academically and professionally. It is also necessary to emphasize that CONFEDI (2018) has not altered its principles.

Conclusion

This study has highlighted the critical role of English language communicative competence in the academic and professional formation of students in the Industrial Engineering program at UNTDF. Through a comparative analysis of the 2012 and 2024 curricula, it became evident that institutional shifts have led to a reduction in structured language instruction. While national frameworks such as CONFEDI (2018) emphasize the importance of language proficiency for technical and interdisciplinary collaboration, the current curricular design risks undermining these goals by placing the burden of language acquisition on students without providing adequate language teaching support.

The findings underscore the need for coherent language policies and curricular strategies that align with both institutional missions and professional demands. Reinforcing structured language instruction and integrating it meaningfully into academic trajectories is essential not only for equity and access but also for preparing graduates to navigate globalized work environments. Furthermore, the study invites broader reflection on how curricular decisions shape the development of core competencies and calls for collaborative efforts among educators, administrators, and policymakers to ensure that language education is treated as a strategic component of professional training.

Ultimately, this research provides a foundation for future inquiries and institutional dialogue. It advocates for the creation of a unified language policy at UNTDF—one that harmonizes teaching and assessment criteria and supports students in developing the communicative skills necessary to engage critically and effectively in their disciplines. In doing so, it contributes to the ongoing transformation of higher education toward models that are inclusive, competency-driven, and responsive to the realities of a multilingual and interconnected world.

Originality Statement

The authors declare that this article is their own work and to the best of their knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been accepted for publication in any other published materials, except where

due acknowledgment is made in the article. Any contribution made to the research by others, with whom the authors have worked, is explicitly acknowledged in the article.

Conflict of Interest Statement

The authors declare that this article was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

- Baum, G. (2021). Diseños de materiales decoloniales situados para la enseñanza como lengua otra. *Cuadernos de la ALFAL*, 13(2), 133-168. ISSN 2218-0761.
- Carlino, P. (2005). *Escribir, leer y aprender en la universidad: Una introducción a la alfabetización académica*. Fondo de Cultura Económica. <https://www.aacademica.org/paula.carlino/3.pdf>
- Carlino, P. (2013). Alfabetización académica diez años después. *Revista Mexicana de Investigación Educativa*, 18(57), 355-381. https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=s1405-66662013000200003
- Clark, B. R. (1991). *The academic life: Small worlds, different worlds*. Princeton University Press.
- CONEAU. (2010). *Informe de evaluación institucional de la Universidad Nacional de General Sarmiento*. Buenos Aires: Comisión Nacional de Evaluación y Acreditación Universitaria.
- CONEAU. (2014). Sesión 1. 408. 06 de octubre de 2014. <https://www.coneau.gob.ar/archivos/actas/Acta408.pdf>
- CONFEDI. (2018). *Propuesta de estándares de segunda generación para la acreditación de carreras de ingeniería en la República Argentina: Libro Rojo de CONFEDI* (1ra ed.). Universidad FASTA Ediciones. https://confedi.org.ar/download/documentos_confedi/LIBRO-ROJO-DE-CONFEDI-Estandares-de-Segunda-Generacion-para-Ingenieria-2018-VFPublicada.pdf
- Congreso de la Nación Argentina. (2009). *Ley N° 26.559: Creación de la Universidad Nacional de Tierra del Fuego, Antártida e Islas del Atlántico Sur*. Boletín Oficial de la República Argentina. <https://www.argentina.gob.ar/normativa/nacional/ley-26559-161801>
- Engeström, Y. (2015). *Learning by expanding: An activity-theoretical approach to developmental research* (2nd ed.). Cambridge University Press.
- Lawrence, P. R., & Lorsch, J. W. (1986). *Organization and environment: Managing differentiation and integration*. Harvard Business School Press.
- Marginson, S., & Considine, M. (2000). *The enterprise university: Power, governance, and reinvention in Australia*. Cambridge University Press.
- Obeide, O. (1998). La estructura organizacional de las instituciones universitarias. *Revista de Educación Universitaria*, 12(3), 45-62.
- Resolución Rectoral N° 289-2012 (29 de octubre de 2012). By which the Industrial Engineering program is created at UNTDF.
- Revello Barovero, E. N. (2025). *Modos de alfabetización académica en lengua extranjera inglés en carreras de grado de la Universidad Nacional de Tierra del Fuego, Antártida e Islas del Atlántico Sur* (Doctoral thesis). Universidad Nacional de Córdoba. <https://pa.bibdigital.ucc.edu.ar/4884/>
- Universidad Nacional de Tierra del Fuego, Antártida e Islas del Atlántico Sur. (2012). *Estatuto Provisorio*

(Resolución R.O. N° 15/12). UNTDF. https://www.untdf.edu.ar/uploads/documentos/reso_015-12_estatuto_1468617852.pdf

Universidad Nacional de Tierra del Fuego, Antártida e Islas del Atlántico Sur. (2025). *Manual de Misiones y Funciones* (Resolución R.O. N.º 007/2025). UNTDF.

Varela, L. (2019). Políticas de lenguas y movilidad académica internacional en Argentina. *Revista Digital de Política Lingüística*, 11, 6-20.