Spanish as an International Academic and Scientific Language: Towards a Strategy at the UGR

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1. Introduction

The University of Granada strives to be a standard-bearing institution in lifewide learning, the generation of knowledge, and the transformation of our socio-economic environment. Internationalization, inclusion, digital transformation and social responsibility are cross-cutting themes in the UGR 2031 Strategic Plan[1].

In this vein, the promotion of Spanish as an academic and scientific language is aligned with the UGR's vision for the future. Specifically, this document proposes five strategic objectives: 1) Coordination and cohesion in the international promotion of Spanish; 2) Language policy and accessible communication in Spanish; 3) Training and science in Spanish; 4) Technologies and standardisation of academic Spanish; and 5) Economic value of Spanish. All of these areas are directly linked to the eight strategic pillars that will guide the University's development over the course of this decade. This proposal has been drawn up using a mixed methodology, combining top-down and bottom-up analysis.

First, we carried out a review of up-to-date, high-quality documentary sources on the current status of Spanish, identifying key data such as the number of speakers, available certifications, and its presence in scientific publications. We then identified the institutional bodies responsible for promoting Spanish as an international language, such as the Cervantes Institute and the Directorate-General for Spanish in the World (DGEM), analysing their core strategies. Second, we conducted a bottom-up analysis, based on the academic context of the UGR and its 2031 Strategic Plan, which made it possible to establish common ground between the core strategies of the DGEM and our own University's circumstances.

This process involved the participation and input of key players in language and internationalization issues at the UGR, including the Language Services Unit (USL), Directorate for Language Services and Resources, Directorate for Language Policy and Internationalization of Studies, Directorate for International Strategy, and the Modern Languages Centre (CLM). In addition, in order to enrich the proposal by taking into account the perspective of external higher education institutions in the Spanish-speaking world, we sought the collaboration of international organisations such as "La Rábida" Group of Ibero-American Universities, through the participation of its Steering Committee and General Assembly. Lastly, we also plan to share the proposals included in this document with the DGEM, and to present it in national and international academic forums and networks.

In short, this preliminary document proposes the creation of a Committee for the Promotion of Academic and Scientific Spanish at the University of Granada for the period 2025-31. This Committee will foster institutional debate, as well as the implementation of short, medium and long-term actions, through collaboration with local, regional, national and international organisations.

2. Internationalization and academic Spanish

The concept of academic internationalization refers to the process by which an international, intercultural or global dimension is integrated into the objectives, functions and delivery of higher education[2]. However, despite this broad and multifaceted definition, internationalization in higher education institutions is strongly conditioned by the use of English as a lingua franca. On the one hand, university researchers and teaching staff use English as the language of scientific communication to disseminate their research activities. On the other, in non-English-speaking institutions, the delivery of degree programmes and courses in English is often regarded as the quintessential indicator of academic internationalization. As a result, multilingualism in the scientific field is reduced to very specific languages and branches of knowledge.

In the case of Spanish, the lack of availability of publications and text corpora in the scientific and technological fields contrasts with its significant presence in the world, as confirmed by recent studies carried out by the Cervantes Institute, the Organization of Ibero-American States for Education, Science and Culture (OEI), and the Elcano Royal Institute. Consequently, the development of both language technologies (LT) and AI-driven applications in Spanish have not achieved the same quality standards as the models developed for English. These tools are not only important for language industries and the business sector, but can also play an essential role in the provision of services by public administrations. Likewise, these technologies can become a driver of change to achieve universal access to knowledge.

This situation has led to the emergence of new organisations dedicated to the promotion of Spanish as an international language for the transfer of specialised knowledge. Their strategies emphasise the need for cooperation between Spanish-speaking countries and institutions in order to establish coordinated action areas. Among other issues, these strategies should contribute to the academic use of Spanish, in all its variants, and to the generation of content in diverse fields of knowledge, especially in the scientific and technical fields where the presence of Spanish is very limited. Therefore, without detracting from the importance of English in higher education, universities in the pan-Hispanic sphere must embrace their key role in the generation and transmission of specialised knowledge.

Thanks to their work in teaching, research, and knowledge transfer aimed at the social and business sectors, higher education institutions represent the ideal setting for training experts and creating a new Spanish-language lexicon, both of which are essential for the transmission of new knowledge. Therefore, in this preliminary document we propose the creation of a Committee for the Promotion of Academic and Scientific Spanish at the University of Granada, together with specific strategic objectives that will lay the groundwork for institutional debate and the proposal of short, medium and long-term actions. Some of these actions are already being implemented at the UGR, while others are in their initial stages or have not yet been developed.

3. Reports on the status of the Spanish language

Although the data on the number of speakers and the demand for certifications are very encouraging for the future of the Spanish language, it is also clear that Spanish is not

sufficiently represented in the transfer of specialised knowledge. Scientific publications in Spanish are scarce, resulting in a lack of both specialised terminology and text corpora in this language.

3.1 Speakers and certifications

The Cervantes Institute, founded in Spain in 1991, is currently part of the Spanish Ministry of Foreign Affairs, European Union and Cooperation (MAEUEC). It fosters the promotion and teaching of the Spanish language, as well as the dissemination of the culture of Spain, Hispanic America and Hispanic Africa. Through its centres, classrooms and branches, it is present in more than 90 cities in 45 countries and on five continents. Its main objective is to ensure that products and services related to the Spanish language maintain high standards, and also to promote the exchange of Spanish and pan-Hispanic culture with other cultures. In addition, its annual reports analyse the use of Spanish throughout the world and draw attention — among those interested in the present and future of the language — to specific issues that need to be addressed. In its report, "*El Español en el Mundo 2023: Anuario del Instituto Cervantes*" (Spanish in the World: 2023 Yearbook of the Cervantes Institute), the Institute offers the following data[3]:

- Nearly 500 million people spoke Spanish as their mother tongue (6.2% of the world's population).
- More than 23 million students were studying Spanish as a foreign language.
- Spanish was the third most used language on the Internet.
- Spanish ranked third in the United Nations and fourth in the institutional sphere of the European Union.
- If the Hispanic community in the United States were an independent country, its economy would be the fifth largest in the world, ahead of the British, Indian and French economies.

Interest in the language is also reflected in the foreign language proficiency certifications issued by several organisations and countries. In this regard, the following data is particularly noteworthy[4]:

- Systems for certifying proficiency levels in Spanish are more common in Europe, where there is a wider variety of exams and a greater demand for official qualifications in Spanish.
- However, in terms of the number of candidates assessed, the most popular certification is that of the American Council on the Teaching of Foreign Languages (ACTFL) in the United States, with more than 132 million candidates (2018-2022).
- The demand for certifications extends to both Spanish-speaking and non-Spanish-speaking countries, demonstrating the importance of learning and accreditation in different cultural and geographical contexts.
- The most common certification levels are B1 and B2, while the C2 level is the least widely offered, undoubtedly because it is least in demand both for academic purposes (B2 is usually sufficient in a university context and C1 in a professional context) and for official procedures (a C2 is not required in citizenship or nationality applications).

3.2 Spanish in science and in language technologies

A recent report published by the Organization of Ibero-American States for Education, Science and Culture (OEI) and the Elcano Royal Institute, as well as the 2023 Yearbook of the Cervantes Institute, reveal the following data in relation to scientific publications in Spanish:

- In 2020, the papers published in the journals indexed in the Web of Science (WoS) show that 13% of texts from Spain, 12% from Mexico, and 16% from Chile were published in Spanish, while the figures for Argentina, Colombia and Peru were closer to 20%, and around 12% for the rest of Latin America[5].

- If the analysis is extended to all the papers indexed in WoS (2000-2020), 90% are in English. Only Russian and Spanish have higher values than the other languages, but these values are insignificant, representing less than 2% of the total[6].

- More than 70% of scientific output in Spanish is concentrated in three subject areas: social sciences, health sciences, and arts and humanities[7].

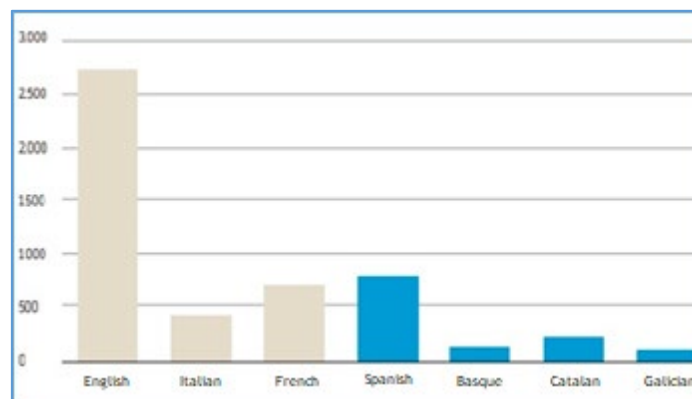- 57% of scientific output in the Spanish-speaking sphere is currently produced in Spain[8].

The factors that have led to this situation are many and go beyond the scope of this document. However, one of the most obvious issues is the system used to evaluate the scientific output of academics and researchers. As a result, there has been a general shift away from "local languages in favour of English in scientific publishing: for authors, as a way of accessing the journals with the highest impact factor in international rankings; for journals, to have a better chance of moving up to more prestigious positions in the indexes"[9]. All of this has had a negative impact on the revitalisation of languages such as Spanish, on linguistic diversity in science and academia and, consequently, on universal access to knowledge.

Despite the fact that Spanish-speaking countries generate scientific and technological knowledge, we are witnessing a loss of lexical domains in the Spanish language, especially in the pure sciences and in technical fields. This phenomenon reflects the lack of available linguistic mechanisms for naming new realities generated through advances in different branches of knowledge. The most frequently used mechanisms for creating terms in Spanish are calques and loanwords, especially from English, which are incorporated into scientific and technical language. These mechanisms enrich languages, but in this context, they also reflect the difficulty of creating genuine neologisms in Spanish that respond to the rapid evolution of knowledge[10].

Lastly, there is a lack of annotated text corpora in Spanish. These electronic datasets include descriptions of various kinds, which facilitate their use for R&D purposes in relation to language technologies. They are essential tools for computational linguistics and the development of language models used in natural language processing (NLP). The results have given rise to machine translation models, chatbots and generative artificial intelligence systems (e.g. ChatGPT).

According to a report by the Cervantes Institute and the Spanish Ministry of Economic Affairs and Digital Transformation (MAETD)[11] that analysed and compiled the corpora developed through the end of 2022 in relation to their applicability to language technologies and AI, more than 90% of the texts used to train AI systems were written in English. In

addition, *Figure 1* quantifies the corpora in Spanish and its variants, as well as the co-official languages of Spain, in relation to other languages. The lack of corpora in Spanish is an obstacle to the development of new technologies and to the relevance of this language in the digital sphere in the face of competition from English.

Figure 1: Quantification of text corpora[12]

4. New organisations and promotion strategies

Several organisations have echoed the need to promote Spanish as a language of science and to boost its presence in the field of new technologies. In the case of Spain, in 2022 the Spanish Ministry of Economic Affairs and Digital Transformation (MAETD) approved a strategic project for the so-called "New Language Economy" in order to "harness the potential of Spanish and the co-official languages as a driver of economic growth and international competitiveness in areas such as artificial intelligence, translation, learning, cultural dissemination, audiovisual production, research and science"[13]. Likewise, the Plan for the Advancement of Language Technology includes the creation of a knowledge base consisting of a corpus of data in Spain's co-official languages, so that their inclusion in technological applications is profitable and attractive for public administrations and companies in the sector[14].

Nevertheless, cooperation with the Ibero-American community and joint work on the creation of open data and resources is essential. To this end, the Directorate-General for Spanish in the World (DGEM), part of the Secretariat of State for Ibero-America and the Caribbean and Spanish in the World (Spanish Ministry of Foreign Affairs, European Union and Cooperation [MAEUEC]), is responsible for promoting the Spanish language and consolidating the tools necessary to optimise its potential in the international arena. It is also responsible for the implementation of policies to promote Spanish throughout the world and has established the following lines of action[15]:

- **Coordination**: To ensure, by means of a single common strategy, the coherence of actions to promote Spanish and the collaboration between the main actors and institutions engaging in activities to champion our language abroad.

- **Promotion***:* To establish strategic lines of action for the promotion of Spanish in those geographical spheres where it is not an official language.

- **Cohesion:** To contribute to the increased cohesion of the Spanish-speaking community at the global level and to promote collaboration with Ibero-American institutions in order to promote the Spanish language around the world.

- **Technology and artificial intelligence**: To promote the role of the Spanish language as a driver of economic growth and international competitiveness within the framework of the ongoing digitalization process and the exponential development of the knowledge economy.

- **International relations**: To consolidate Spanish as a language of prestige in diplomacy and international relations, promoting its use in international organisations and facilitating its use in bilateral diplomacy.

- **Media**: To foster the use of Spanish in centres of media power, both in conventional media, as well as in social networks and on digital platforms.

- **Science**: To promote the use of the Spanish language in scientific spheres and to improve the visibility and impact of science literature produced in Spanish.

- **Accessibility:** To situate Spanish at the vanguard of advances in the sphere of language and accessibility.

5. Mission of the pan-Hispanic universities

The promotion of Spanish as an international academic language by higher education institutions must respond not only to the growing demand for Spanish language learning and certifications, but also to the responsibility that Spanish-speaking universities must assume in the generation and dissemination of knowledge in this language. This has implications for the training of future scientists, and also for universal access to knowledge and language equality in the digital sphere[16].

UNESCO defines open science as an inclusive concept in which multilingual scientific knowledge is openly available, accessible and reusable for everyone; scientific collaborations and the exchange of information are increased for the benefit of science and society; and the processes of creation, evaluation and communication of scientific knowledge are open to social actors beyond the traditional scientific community[17].

However, proposing these objectives in the university context is complex, since English is perceived not only as the language of science, but as the language of relevant science, granting it status in the international arena[18]. The approach to promoting Spanish should therefore not undermine the undeniable role of English, but rather recognise that the presence of the Spanish language, in all its variants, is also important. This means guaranteeing 1) the education and training of new researchers, 2) new scientific output, and 3) the dissemination of knowledge in the Spanish language[19].

5.1 Promotion of academic and scientific Spanish at the UGR

Given that two out of every three researchers work in higher education institutions[20], Spanish-speaking universities are in a strong position to contribute to the training of researchers and to the production and dissemination of knowledge in Spanish. These HE institutions have long been characterised by their collaboration through networks, alliances and projects — structures that are essential for achieving the aforementioned objectives.

In this context, the DGEM has acknowledged the need to strengthen the coordination of promotional actions and collaboration between institutions, including those of the academic sector, establishing this as a strategic line in the international promotion of Spanish. At the same time, the New Language Economy project highlights the need for cooperation with Hispanic-American countries in order to seek synergies and strengthen our common language. On the one hand, if proactive action is not taken, Spanish will become a colloquial language[21], lacking the linguistic mechanisms necessary to name new concepts arising from scientific progress. On the other, with regard to technology, the lack of quality text corpora in the Spanish language — compared to English — is an obstacle to improving the functioning of AI-based systems and machine translation.

Consequently, the University of Granada, as a leading institution in academic internationalization, must acknowledge and promote the use of Spanish as an international academic language and, in short, as a valid language for the dissemination of scientific and technological knowledge. To this end, first we must establish broad strategic lines, such as those derived from the priorities established by the DGEM, making it possible to initiate debates on general policies and positioning, as well as to establish a series of objectives and concrete actions in the short, medium and long term. Some of the actions proposed in this document are already being implemented at the UGR, within the framework of other institutional policies and strategies set out in the eight pillars of the University's 2031 Strategic Plan, while others have not yet been developed or could be improved. Ultimately, we must respond to the needs and rights recognised by open science, universal access to knowledge and the Sustainable Development Goals of the UN's 2030 Agenda.

5.2   Proposed objectives and actions at the UGR

Objective 1. Coordination and cohesion in the international promotion of Spanish

To contribute to joint actions in the international promotion of Spanish, through coordinated strategies for the advancement of the Spanish language and the cohesion of the academic communities and networks that share Spanish as a lingua franca.

Actions:

- Establish a Committee for the Promotion of Academic Spanish at the UGR to define the priorities of the strategic objectives and relevant actions.

- Draft an institutional statement on the promotion of Spanish as a language of science, supporting the concept of open, diverse and accessible science.

- Establish contact with the Cervantes Institute and the Directorate-General for Spanish in the World (DGEM) in order to align our objectives and enhance the visibility of the work carried out at the University of Granada.

- Establish contact with the Ibero-American Observatory of Science, Technology and Society (CTS), an initiative of the Organization of Ibero-American States for Education, Science and Culture (OEI), in order to collaborate on actions to promote Spanish in Hispanic-American science.

- Create a UGR chair, in collaboration with other institutions and companies involved in language industries, to promote the use of Spanish in science.

UGR 2031 Strategic Plan

| 3. Generation of knowledge | 4. Tranformation of our enviornment | 5. A socially responsible University | 6. Good governance | 7. An international University |

2030 Agenda - SDGs

4 QUALITY EDUCATION · 8 DECENT WORK AND ECONOMIC GROWTH · 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE · 10 REDUCED INEQUALITIES · 16 PEACE, JUSTICE AND STRONG INSTITUTIONS · 17 PARTNERSHIPS FOR THE GOALS

Objective 2. Language policy and accessible communication in Spanish

To contribute to clear academic communication and to promote Spanish as a prestigious academic and scientific language in international relations, as well as to support the use of Spanish in university media.

Actions:

- Identify existing actions to promote Spanish as a language of science at Spanish universities.

- Promote internationalized catalogues of academic programmes in Spanish.

- Encourage the publication of scientific content in Spanish in the media, social networks and digital platforms of universities.

- Identify and publicise existing style guides covering academic and scientific Spanish in order to contribute to the correct use of the language in its different variants.

- Generate content in Spanish that complies with the Web Content Accessibility Guidelines (WCAG).

UGR 2031 Strategic Plan

| 2. Transformational learning | 3. Generation of knowledge | 5. A socially responsible University | 7. An international University | 8. Digital transformation |

2030 Agenda - SDGs

4 QUALITY EDUCATION · 10 REDUCED INEQUALITIES · 16 PEACE, JUSTICE AND STRONG INSTITUTIONS · 17 PARTNERSHIPS FOR THE GOALS

Objective 3. Training and science in Spanish

To contribute to the promotion of Spanish as a language of instruction at university level and for the dissemination of scientific knowledge, as well as to improve both the international visibility of science published in Spanish and universal access to knowledge.

***Actions*:**

- Foster meetings and conferences with a view to exchanging ideas and best practices for collaboration within higher education in the Spanish-speaking world.

- Explore new ways of promoting Spanish as an international language in the academic sphere.

- Participate in prestigious networks that promote higher education in Spanish, especially in Latin America, the USA and Spain.

- Promote programmes, agreements and opportunities for undergraduate and postgraduate studies taught in Spanish.

- Encourage the reform of research evaluation systems that penalise the use of the Spanish language, publishing on open access platforms, or publishing in formats other than academic journals.

UGR 2031 Strategic Plan

2030 Agenda - SDGs

Objective 4. Technologies and standardisation of academic Spanish

To contribute to the creation of a standardised corpus of scientific Spanish, in coordination with other Spanish-speaking countries, with the aim of improving AI models in Spanish.

Actions:

- Identify existing Spanish-language science repositories at Hispanic-American institutions, in collaboration with organisations such as the DGEM, in order to promote their interoperability and contribute to universal access to knowledge.

- Identify existing scientific text corpora in Spanish at Hispanic-American institutions, in collaboration with the DGEM and in line with the Plan for the Advancement of Language Technology.

- Cooperate on terminology initiatives with other scientific organisations and academic institutions, promoting standardised terminology repositories that provide researchers with the neologisms necessary to produce and communicate science in the Spanish language.

UGR 2031 Strategic Plan

2030 Agenda - SDGs

Objective 5. Economic value of Spanish

To continue promoting the role of Spanish as a driver of growth and competitiveness in the activities of the Modern Languages Centre (CLM).

Actions:

- Boost the presence of the CLM/UGR in the main markets for Spanish as a second language (USA, China and, to a lesser extent, Japan and Brazil) through fairs, visits to local campuses, contracts with commercial representatives and agreements with international student recruiters.

- Analyse the potential of emerging markets for Spanish and develop entry strategies, especially in India, South Africa and Indonesia.

- Carry out feasibility studies on the creation of modern languages centres on partner university campuses as a means of recruiting students at their home universities, especially in China.

- Create specific academic programmes to meet the needs of students for whom Spanish is a heritage language, especially in the USA.

- Boost the range of available Spanish language accreditations, identifying which ones are most valued when it comes to working in international organisations, public administrations, teaching Spanish as a second language, and other employment sectors in the main non-EU countries of origin (USA, China, Japan, Brazil, India, South Africa, Indonesia), EU partner countries, and the UK.

UGR 2031 Strategic Plan

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6. Conclusion

This document analyses the current status of Spanish as an international academic and scientific language, while highlighting the challenges and opportunities it faces in an English-dominated context. Despite the large number of Spanish speakers in the world and the growing demand for learning Spanish, its role in the transfer of specialised knowledge is limited.

Scientific publications in Spanish are scarce, resulting in a lack of specialised terminology and a limited availability of text corpora in this language. This has a negative impact on the development of language technologies in Spanish, as well as AI-based applications, limiting their potential in various fields.

Faced with this situation, the UGR seeks to position itself as a leading institution in the promotion of Spanish as an international academic language. Through a series of strategic objectives, the University aims to:

- Foster coordination and cohesion in the international promotion of Spanish;

- Promote a language policy that encourages accessible communication in Spanish;

- Strengthen training and scientific output in Spanish;

- Contribute to the development of technologies and the standardisation of academic Spanish, and;

- Boost the economic value of Spanish.

Likewise, among other key actions, we propose creating a Committee for the Promotion of Academic Spanish at the UGR, collaborating with relevant institutions such as the Cervantes Institute and the DGEM, while promoting the publication of scientific content in Spanish. Based on the use of Spanish as a lingua franca, all of these objectives are in line with the pillars of the UGR 2031 Strategic Plan, especially those related to internationalization, inclusion, digital transformation, lifewide learning, generation of knowledge, and the transformation of our socio-economic environment.

In short, it is essential that universities throughout the Spanish-speaking world assume their responsibility as hubs for generating and disseminating specialised knowledge in Spanish. Only through joint and coordinated efforts can Spanish become established and evolve as a language of science and technology on the international stage.

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