Exploring Terminological Variation Using a GenAI-Based Chatbot: The Concept of COMPETENCE in Higher Education*

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Abstract

This study explores the use of a GenAI–based chatbot for identifying terminological variation in higher education, focusing on the concept of COMPETENCE. Through the development and evaluation of a customised chatbot, the investigation focuses on the detection of terminological variants, the dimensions of variation, and the proposal of Spanish equivalents using OpenAlex. The results indicate that the chatbot supports the preliminary identification of relevant variants, demonstrating correspondence with Sketch Engine and UGRTerm. However, the presence of hallucinations indicates the need to verify the results. Overall, the findings show the potential of GenAI-based chatbots as complementary tools in terminology research.

Keywords

terminological variation, GenAI model, corpus-based analysis, terminology extraction, COMPETENCE

1. Introduction

The recent expansion of generative artificial intelligence models (GenAI models) across multiple sectors is particularly evident in the development of GenAI-based chatbots, which have emerged as tools capable of providing immediate assistance, answering queries, and offering explanations, among other functions [1, 2]. Within the field of linguistics, ChatGPT has demonstrated to be useful for natural language processing tasks, including meaning identification, error correction and explanation, text generation, definition provision, and the validation and translation of specialised terminology [3, 4]. Nevertheless, despite this potential, ChatGPT remains a relatively novel tool, and research addressing its application in the field of terminology is still limited.

The phenomenon of terminological variation, whether denominative (i.e. synonymy) or conceptual (i.e. polysemy), constitutes one of the main challenges to effective communication in specialised domains [5]. In many scientific fields, multiple terms are commonly used to refer to the same concept, which may lead to ambiguity and reduce terminological precision. Previous studies have typically relied on corpus-based tools, such as Sketch Engine, to investigate terminological variation [6]. However, the emergence of GenAI-based tools introduces new and still under-explored methodological possibilities for this line of research.

This study aims to identify and analyse the variation related to the concept COMPETENCE in the field of higher education through the development and refinement of the thETermFinder. This approach enables an evaluation of the utility of chatbots in the field of terminology, more specifically, in the identification and analysis of terminological variation to which academic concepts may be subjected. The rest of this chapter is structured as follows. Section 2 addresses key theoretical aspects, focusing on terminological variation, the application of GenAI models in Linguistics and Terminology, and the concept COMPETENCE in the field of European higher education. Section 3 outlines the materials and the methodology used in the study. Section 4 presents the main

* 5th International Conference on "Multilingual digital terminology today. Design, representation formats and management systems" (MDTT) 2026, June 25-26, 2026, Zadar, Croatia.

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results and the analysis of its identified variants. Finally, Section 5 concludes the chapter with the most significant findings.

2. Theoretical framework

2.1. Terminological variation

Terminological variation has long been a key concern in the field of Terminology, particularly due to the tension between prescriptive and descriptive approaches. While prescriptive theories promote univocity and view variation as a source of inconsistency [7, 8], descriptive approaches conceptualise knowledge units as dynamic and context-dependent [9]. From this perspective, variation is understood as both conceptual, where meanings shift according to context or user, and terminological, where different forms refer to the same specialised concept [10, 11, 12]. Furthermore, research has shown that such variation is systematic and motivated by cognitive, stylistic, or pragmatic factors rather than occurring randomly [13].

Variation is pervasive across specialised communication, affecting how concepts are structured, named, and used in different communicative and application-oriented contexts [14]. Accordingly, as Freixa [15] observes, variation is not only inevitable but also essential in specialised communication. Within this framework, denominative variation, defined as the coexistence of stable and socially recognised alternative denominations for the same concept, has received particular attention. Freixa [16] identifies key causes of denominative variation, including dialectal, functional, discursive, cross-linguistic, and cognitive factors. Complementary typologies offer more fine-grained classifications, such as that proposed by Faber and León-Araúz [17], who distinguish nine types of denominative variants: 1) orthographic variants with no geographic origin, 2) diatopic variants, 3) short form variants (abbreviations and acronyms), 4) diaphasic variants (scientific variants, informal variants, and domain-specific variants), 5) cognitive variants (dimensional and intentional variants), 6) metonymic variants, 7) diachronic variants, 8) non-recommended variants, and 9) morphosyntactic variants.

Given the scale and complexity of terminological variation, its identification and analysis increasingly rely on corpus-based methods and techniques from natural language processing within the field of computational terminology [8]. Advances in natural language processing (NLP), corpus linguistics, and artificial intelligence have enabled more efficient extraction and analysis of specialised terminology [18]. While recent studies point to the potential of language models and generative AI in improving terminological consistency [4], research on their systematic application to the analysis of terminological variation remains limited.

2.2. GenAI models for linguistic and terminology applications

GenAI has emerged as an important innovation in natural language processing. ChatGPT models, such as ChatGPT-5.2 developed by OpenAI, are based on transformer architectures trained on large volumes of textual data, enabling the generation of coherent and contextually appropriate text [19, 20]. In the linguistic domain, ChatGPT shows strong potential for NLP tasks including information extraction, text generation, classification, summarisation, sentiment analysis, and machine translation [21, 22]. It can also support corpus analysis by generating code and regular expressions for data cleaning, sampling, and feature extraction [22, 23]. Moreover, ChatGPT can categorise keywords semantically, although such classifications may remain overly generic when applied to specialised corpora [24]. While ChatGPT can generate concordances and frequency lists, its performance does not yet surpass that of dedicated corpus management tools [25].

In lexicology and terminology, ChatGPT represents a promising tool for identifying and extracting information from both general and specialised texts. It can be applied to Named Entity Recognition tasks, facilitating the extraction of entities without requiring large annotated corpora [21, 26]. However, due to its training on domain-general data, the model's output may lack the

level of specialisation needed for precise terminological analysis. Consequently, task-specific prompt design is essential to enhance result quality [27]. In this regard, ChatGPT allows the creation of customised chatbots with tailored knowledge bases, supporting specialised research applications. In light of this functionality, Ortiz-Garduño and Torres-Salinas [28] propose a five-phase methodology for developing domain-specific chatbots, which is adopted in this chapter for the creation of tHETermFinder to analyse terminological variation in the concept of COMPETENCE.

However, it is essential to consider the limitations inherent in generative chatbots. Among these, hallucinations are particularly salient, understood as a phenomenon characterised by the production of text that is grammatically well formed and seemingly coherent, yet diverges from factual accuracy or from the intent of the source material [29]. This limitation poses significant challenges for linguistic and terminological research, as it may affect the reliability of the generated outputs and necessitates systematic validation against authoritative sources and expert judgement.

2.3. The COMPETENCE concept in the field of European higher education

European higher education has undergone profound changes since the creation of the European Higher Education Area (EHEA), which at present comprises 49 countries with diverse academic traditions and highly heterogeneous educational systems. Through successive ministerial meetings, the EHEA has gradually consolidated as a more integrated, comparable, competitive, and quality space, fostering a more coherent and forward-looking European higher education system [30].

Within this context of quality enhancement in teaching and learning, a significant shift has taken place towards a competence-based model, often referred to as the new educational paradigm [31]. This model moves away from a sole emphasis on knowledge acquisition and instead focuses on what learners know and can do at the end of the learning process. As a result, concepts such as LEARNING OUTCOME, LEARNER, and COMPETENCE have gained prominence [32]. Among these, the concept of COMPETENCE has become particularly central, emerging as a cornerstone of contemporary higher education in Europe [33]. Given the importance of this concept, the European Parliament, in its recommendation on the establishment of the European Qualifications Framework for Lifelong Learning, provides a clarification of its meaning:

> competence means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development [34].

This concept represents the new shift in higher education, therefore, it is essential to clearly understand the scope of the concept and to analyse its use and possible variants in order to ensure more coherent and consistent communication within the EHEA. Precise and shared terminology is crucial to guarantee the recognition of qualifications and learning outcomes across a wide variety of education systems.

3. Materials and methods

3.1. tHETermFinder development flow

The model used for the creation of tHETermFinder (Figure 1) was ChatGPT-5.2, as it represents the latest version of ChatGPT and includes functionalities for developing customised chatbots. This model was used for building tHETermFinder,[1] a chatbot capable of identifying and analysing terminological variation related to the concept of COMPETENCE.

Building on previous work by Ortiz-Garduño and Torres-Salinas [28], the development process began with a planning phase aimed at defining the chatbot's objective, target audience, and scope, namely the identification of terminological variants of COMPETENCE for scientific and academic users.

[1]Access tHETermFinder through the following link: https://chatgpt.com/g/g-6932d641ab1481919b97de36de07a8aa-thetermfinder

During the design phase, interaction scenarios, core functionalities, and technical aspects were specified, including the selection of variants from specific materials and the analysis of key features of their source documents. A central part of this phase involved determining the resources required to support the chatbot's functionality, which chatbots built on ChatGPT can integrate through the "knowledge" parameter to improve their accuracy and enrich their responses about specific topics. In this study, this ad hoc knowledge consisted of the self-compiled EHEA Sample corpus (Section 3.2.), which was integrated to provide tHETermFinder with a specialised dataset from which the first variants of the concept COMPETENCE could be extracted.

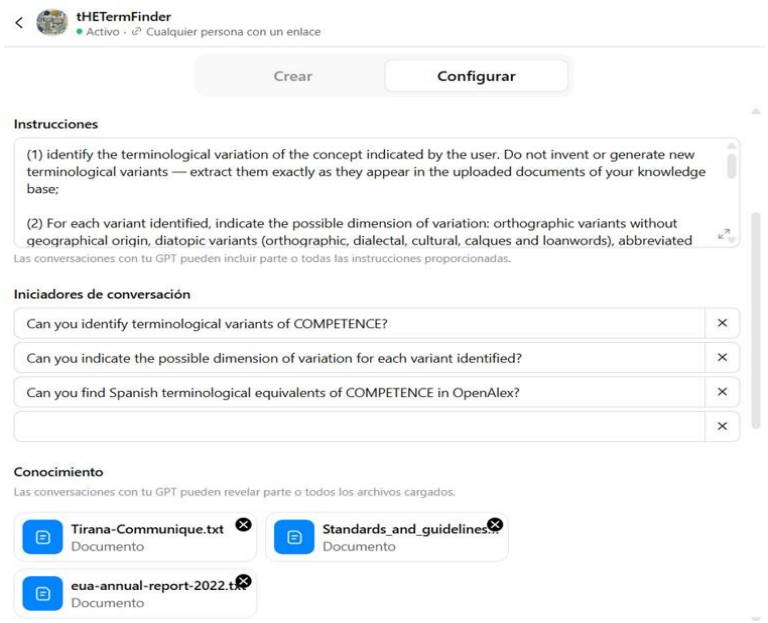

Figure 1: Internal configuration of tHETermFinder

This setup was complemented with OpenAlex, a free and open scientific database of the global research system [35]. To enable interaction with this resource, a connection to its free API was established, allowing access to a broader set of materials. During the implementation phase, parameters were configured to optimise interaction quality by limiting the analysis to titles, abstracts, keywords, and authorship within a random sample of 50 OpenAlex records per query in the "Higher Education" category. In addition, three conversation starters were defined to guide initial user interactions. Finally, the chatbot was validated to assess whether it fulfilled its objectives, and the results of this evaluation are presented and discussed in the Results section.

3.2. EHEA Sample and Sketch Engine

To analyse and identify the variants of the concept COMPETENCE, the self-compiled EHEA corpus was used, as mentioned in the previous section. This corpus comprises 2,016,718 tokens and 1,756,329 words, and it adheres to the quality criteria outlined by Buendía-Castro and Ureña Gómez-Moreno [36], which include authorship, topic relevance, availability of the full text, and accessibility. The EHEA corpus consists of 89 texts, all sourced from the European University Association (https://eua.eu) and the European Higher Education Area (https://www.ehea.info) websites. The documents cover a diverse range of genres, including books, communiqués, statements, declarations, guidelines, and articles, all on European higher education.

Given the need to ensure manageable input sizes for methodological purposes and experimental control, a subcorpus, designated the EHEA Sample, was created. The choice of a smaller corpus for the evaluation of the tool could be regarded as a limitation. However, as noted above, corpus representativeness does not depend exclusively on its size, but rather on its suitability for the research purpose [37]. In this regard, the aim of this study is not to provide an exhaustive

compilation of the terminology used in the EHEA, but to assess the performance of the chatbot in identifying terminological variation within a specialised domain. This subcorpus contains 16,086 words and 18,472 tokens and covers three out of the 89 documents of the EHEA corpus. These three documents were selected based on their relevance to the concept under study, the number of words in each document, and the authorship, to represent the three most influential institutional actors in this context: the European Association of Institutions in Higher Education, the European University Association, and the EHEA Ministers. Consequently, although modest in size, the EHEA Sample is sufficiently representative for the purpose of examining key semantic patterns and variants within the broader corpus.

Furthermore, to verify and validate the results obtained from the TermVariationBot tool, a parallel analysis of terminological variants of the concept COMPETENCE was conducted using the Sketch Engine platform (www.sketchengine.eu), a corpus analysis tool [38, 39]. Sketch Engine provides a wide range of functionalities, including the tools Word Sketch, which generates a summary of grammatical and collocational behaviour; Wordlist, which creates frequency lists; and Concordance, which shows instances of words or phrases in context. This complementary analysis allows for a more robust and triangulated examination.

4. Results and discussion

4.1. Results of the terminological extraction

The results of this study are structured around the 4 prompts that guide the chatbot's tasks, which are:

1. Identify the terminological variation of the concept indicated by the user. Do not invent or generate new terminological variants — extract them exactly as they appear in the uploaded documents.
2. For each variant identified, indicate the possible dimension of variation: orthographic variants without geographical origin, diatopic variants (orthographic, dialectal, cultural, calques and loanwords), abbreviated variants (acronyms and initialisms), diaphasic variants (scientific, informal, specialised), cognitive variants (dimensional and intentional), metonymic variants, diachronic variants, non-recommended variants, morphosyntactic variants.
3. Provide fragments from the corpus in which explicit elements (dates, institutions, place names, normative references, etc.) appear that justify the dimension of variation. If there is insufficient evidence, indicate the uncertainty.
4. Find terminological equivalents in Spanish for the variants identified in the corpus, using the OpenAlex Works search API restricted to the field of higher education.

The clarification "DO NOT INVENT ANYTHING. Use only data explicitly retrieved from the uploaded documents and OpenAlex" was added at the end of the instructions to mitigate, at least, the hallucinations inherent to the system. These prompts offer a systematic approach to exploring different aspects of terminological variation, including the identification of alternative expressions for COMPETENCE, the possible dimensions of the variation, the context in which the variants appear, and their Spanish equivalents. Figure 2 illustrates the main interface of tHeTermFinder, along with the example questions that guide users in exploring the chatbot's functionalities:

a) Can you identify terminological variants of COMPETENCE?
b) Can you indicate the possible dimension of variation for each variant identified?
c) Can you find Spanish terminological equivalents of COMPETENCE in OpenAlex?

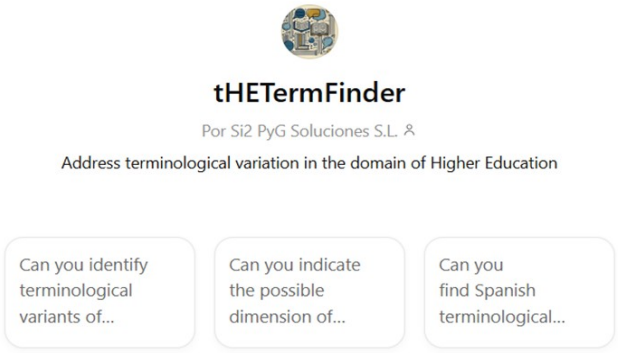

Figure 2: Overview of the main tHETermFinder interface from the user's perspective

The first prompt instructed the chatbot to identify terminological variants related to the concept of COMPETENCE within the provided documents. The system identified several terminological variants related to COMPETENCE across the corpus (Figure 3). The chatbot also responded to the second prompt regarding the dimension of variation. The terminological variation around the concept of COMPETENCE is differentiated along morphosyntactic (*competence*), diatopic (*competency*), and cognitive (*skill, capacity*) dimensions. The third prompt requested corpus fragments that contain explicit contextual elements (dates, institutions, place names, or normative references) supporting each variant, and required an explicit indication of uncertainty when evidence was insufficient. The reported answer reproduced short quotations from the three documents.

Variant (Singular Form)	Dimension of Variation	Evidence or Status
competence	**Morphosyntactic** – canonical singular form; denotes individual qualification or professional ability.	"Institutions should assure themselves of the **competence of their teachers**."
competency	**Diatopic (American English)** – North American lexical and orthographic variant of *competence*; not used in EHEA texts.	*Not attested in corpus.* Its absence confirms the European norm favouring *competence* in ESG and Bologna documents.
skill	**Cognitive (dimensional)** – refers to a specific or procedural aspect of competence, typically practical or transferable.	"Programmes provide students with both academic knowledge and **skills**, including those that are transferable."
capacity	**Cognitive (intentional) + Metonymic** – shifts reference from individual ability to institutional or systemic potential.	"Support for the entrepreneurial and innovation **capacities** of higher education institutions."

Figure 3: Terminological variants and dimensions of COMPETENCE identified within the provided knowledge base

To estimate the hallucination rate, the prompt sequence was repeated a second time under the same conditions. This second run made it possible to compare the consistency of the chatbot's outputs across repetitions and to identify potential discrepancies in the retrieval and interpretation of terminological variants. The rerun produced a similar table including the variants *competence*, *competences*, *competencies*, *civic competencies*, and *skills*, and responded to the second prompt regarding the dimension of variation. As in the first run, *competence*, *skills* and *competency* were identified again. However, the second run introduced *civic competencies* as a cognitive (dimensional) variant, and did not retrieve *capacity*, which had appeared in the first run.

The fourth prompt aimed to identify the terminological equivalents in the Spanish language by querying the OpenAlex database related to the variants previously identified in the corpus, particularly within a random sample of publications categorised in the Higher Education domains

of the OpenAlex repository (Figure 4). In response to this prompt, and searching in the titles, abstracts, and keywords metadata, the chatbot proposed the following equivalents in the first run:

Using OpenAlex results restricted to higher education terminology:

English Variant	Spanish Equivalent	Notes
competence / competences	**competencia / competencias**	Standard in EU and Bologna Process translations.
skills	**habilidades / destrezas**	Often paired with *competencias* in learning outcomes frameworks.
capacity / capacities	**capacidad / capacidades**	Used for institutional or systemic competence.
competency / competencies (US usage)	**competencia / competencias**	Same term, but translation context marks regional variation.

Figure 4: Terminological equivalents in Spanish of COMPETENCE identified in OpenAlex through the database's API

The rerun enabled an assessment of the stability of the chatbot's cross-linguistic output. As in the first run, *competence* /*competences* was again mapped onto *competencia*/*competencias*, and *skills* was linked to *habilidades* or *destrezas*. However, since the system had not identified *capacity* as a variant, it did not provide a Spanish equivalent for that term either; by contrast, it did translate *civic competencies* as *competencias cívicas*.

4.2. Evaluation of the results

Using the tHETermFinder chatbot, which is based on the EHEA Sample, several terms related to the concept of COMPETENCE were identified. These include *competence*, *competency*, *skill*, and *capacity*, all of which appear explicitly in the documents comprising the analysed corpus. To assess the results produced by tHETermFinder, the analysis began with an examination of the definition of COMPETENCE, as this allows for a more precise conceptual framing. As a reference point, the lexicographical definition provided by the Cambridge English Dictionary [40] was analysed, in which *competence* is defined as "the ability to do something well" or "an important skill that is needed to do a job". The dictionary further identifies *competency* as a variant form of the term.

Subsequently, the definition of COMPETENCE as established within the framework of European higher education was examined (Section 2.3). In this context, COMPETENCE is defined as the "ability to mobilise knowledge, skills and personal, social and/or methodological abilities" [34]. This definition enables the identification of closely related concepts, including SKILL, KNOWLEDGE, and ABILITY, thereby underscoring the integrative character of COMPETENCE as an umbrella concept that encompasses more specific conceptual units.

An examination of other authoritative academic resources, such as the termbase UGRTerm, shows that this conceptual understanding of COMPETENCE is maintained, although it is represented through two principal variants: *skill* and *competence*.[2] Similarly, CEDEFOP [41], in its glossary *Terminology of European education and training policy*, uses the terms *key skills* and *key competences* as synonyms, defining them as a "sum of skills". These examples illustrate that, within the context of European education, different variants are used to refer to the concept of COMPETENCE, which is consistently understood as a set of skills and/or knowledge.

With regard to the analysis of the EHEA Sample, certain similarities with the results of the previous analysis can be observed. The use of the Word Sketch tool shows that, within the

[2]https://ugrterm.ugr.es/indice-alfabetico/?type=all-words&search=competence&term=184309

subcorpus, the term *competence* co-occurs with the terms *skills* and *knowledge* (Figure 5), reinforcing their close conceptual relationship.

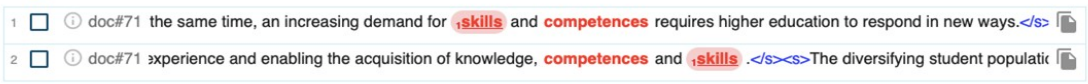

Figure 5: Word Sketch concordances associated with the lemma *competence*

To further analyse the terms associated with the concept COMPETENCE, a search was conducted in the EHEA Sample corpus using the Concordance tool. The Corpus Query Language (CQL) enables more precise searches, giving us the ability to specify the exact information we want the query to return. In this case, the CQL query is designed to identify the lemma competence or competency, followed by up to three words and one of the specified expressions or symbols: "and," "like," "such," "(," "," or ":". Sentences are defined as text segments delimited by the <s/> tag. This approach makes it possible to identify specific knowledge patterns that reflect term variation, as demonstrated by the following CQL search query:

[lemma="competence|competency"] []{0,3} [word="\(|,|:|or|and|like|such"] within <s/>

The concordances (Table 1) indicate that, within the field of European higher education, the concept COMPETENCE is realised through a set of terms that function, in practice, as contextual variants. In the concordance lines, terms such as *competences*, *skills*, *capacity*, and *competencies* occur in similar semantic environments and are associated with identical education objectives. In particular, the recurrent coordination of "competences and skills" can be observed in sequences such as the acquisition of knowledge, competences, and skills. Likewise, expressions such as "transversal and future-proof skills" or "capacity for creative and critical thinking" illustrate how *skills* and *capacity* are used to denote specific dimensions of COMPETENCE, namely abilities that are to be developed within the framework of the EHEA.

Table 1
Concordances extracted from the EHEA Sample

COMPETENCE_POTENTIAL_VARIANTS	
[...] teacher's role is essential in creating a high quality student experience and enabling the acquisition of **knowledge, competences and skills**. The diversifying student population and stronger focus on learning outcomes require student-centred [...].	EHEA Sample
[...] that they develop transversal and future-proof skills, capacity for creative and critical thinking, as well as civic **competencies,** to support their active participation in a democratic society and a rapidly changing labour market. Amidst these [...].	EHEA Sample
Process tools. " We reaffirm our commitment to enabling all learners to acquire international and intercultural **competencies, and** we will reinforce our efforts to identify and remove barriers and promote physical mobility, also in order to [...].	EHEA Sample

In this context, these terms do not introduce distinct concepts but rather represent alternative formulations of the same underlying conceptual content. Finally, the occurrence of the term *competencies* provides further evidence of denominative variation at the orthographic level.

Overall, the use of these forms supports the view that the concept COMPETENCE is represented in academic discourse through multiple, partially synonymous denominations.

Based on the definitions analysed and the examination of the EHEA Sample subcorpus using the Sketch Engine tool, the terms *competence*, *competency*, *skill*, *ability*, *knowledge*, and *capacity* were identified as denominative variants (Table 2). According to the classification of this type of variants proposed by Faber and León-Araúz [17], they correspond to the following types: (1) orthographic variants with no geographic origin, in the case of *competence* and *competency*; and (2) metonymic variants, in the case of *skill*, *ability*, *knowledge* and *capacity*, since, as evidenced in the analysed definitions, these terms are considered integral components of the concept COMPETENCE. It is important to note that, although metonymic variants could be interpreted as referring to different concepts rather than as instances of terminological variation, an analysis of their use in this context shows that they are, in fact, used to refer, albeit less precisely, to the concept of COMPETENCE.

Table 2
Identified denominative variants using a corpus-based approach, including their corresponding variant types

Concept	Denominative variant	Variant type
COMPETENCE	*competence*	orthographic variants with no geographic origin
COMPETENCE	*competency*	orthographic variants with no geographic origin
COMPETENCE	*skill*	metonymic variants
COMPETENCE	*ability*	metonymic variants
COMPETENCE	*knowledge*	metonymic variants
COMPETENCE	*capacity*	metonymic variants

The qualitative analysis was supplemented with a preliminary quantitative assessment. For this purpose, precision and recall metrics were calculated considering the variants of COMPETENCE identified through the authoritative sources and corpus evidence discussed above. Specifically, the gold standard comprised the variants *competence*, *competency*, *skill*, *ability*, *knowledge*, and *capacity*. Precision was defined as the proportion of variants retrieved by tHETermFinder that were validated by the sources, whereas recall was defined as the proportion of source-attested variants that were successfully retrieved by tHETermFinder.

In the first run, this yielded a precision of 100%, as all the retrieved variants were confirmed by the reference set. Recall, however, was lower (66.7%), since the chatbot retrieved only four of the six validated variants, namely *competence*, *competency*, *skill*, and *capacity*. In a second run, conducted under the same conditions, the chatbot retrieved four normalised forms, which were *competence*, *competency*, *civic competency*, and *skill*. Of these, three were included in the reference set, which results in a precision of 75% and a recall of 50%. These results suggest that the chatbot is generally precise in identifying plausible variants, but shows lower stability and only partial coverage across repeated runs.

To evaluate the terminological equivalences retrieved via the OpenAlex API, UGRTerm, a Spanish-English termbase specialised in higher education, was employed. This resource served as an external validation tool to assess the appropriateness of the Spanish equivalents identified automatically (Table 3).

Table 3
Validation of terminological equivalences through UGRTerm

English Variant (tHETermFinder)	Spanish equivalent (OpenAlex)	Spanish equivalent (UGRTerm)
competence	competencia	competencia (preferido)/ destreza (permitido)/ habilidad (permitido)
skill	destreza/habilidad	competencia (preferido)/ destreza (permitido)/ habilidad (permitido)
capacity	capacidad	capacidad

The results indicate that the chatbot correctly identifies the terminological variants and proposes Spanish equivalences consistent with those included in UGRTerm. However, in the case of *skills*, discrepancies arise regarding the preferred status of the term, as UGRTerm prioritises *competence* over *skill* and *ability*. The chatbot does not capture these distinctions, highlighting the need to consult specialised termbases to determine the authoritative status of terms.

As noted by Heinisch [42], large language models constitute a valuable resource that can support terminologists in terminology research and management, although their limitations must be considered when applied to terminology-oriented tasks. In this respect, the results obtained in this study show that tHETermFinder is capable of identifying terminological variation and proposing Spanish equivalents for the concept of COMPETENCE. Nevertheless, some outputs lack precision and exhibit hallucinations. For this reason, the use of the chatbot is considered particularly useful for the preliminary identification of terminological variants, while subsequent validation is required to ensure the reliability of the results. As a future line of research, the study aims to replicate the analysis across multiple iterations to quantitatively assess the degree of hallucination, as well as to conduct a more exhaustive corpus-based analysis using Sketch Engine to identify all possible variants of COMPETENCE.

5. Conclusions

This study has examined the potential of GenAI-based chatbots for the identification and analysis of terminological variation in higher education, taking the concept of COMPETENCE as a case study. The results show that tHETermFinder is capable of detecting relevant terminological variants and proposing Spanish equivalents that align with those recorded in specialised terminological resources such as Sketch Engine and UGRTerm. These findings support the usefulness of generative chatbots as auxiliary tools in terminology work, particularly at exploratory stages, where they can facilitate the rapid identification of candidate terms.

However, the study also highlights important limitations associated with the use of generative chatbots, notably the presence of hallucinations in some outputs. For this reason, the results should be taken as provisional and validated using corpus-based methods and terminological databases. Future research will deepen the quantitative dimension of the analysis to provide a more precise assessment of the hallucination rate, as well as to conduct a more exhaustive analysis with Sketch Engine to identify all terminological variants associated with the concept of COMPETENCE. It will also compare the findings for COMPETENCE with those obtained for other, more clearly delimited concepts, in order to test the performance of tHETermFinder and to prove the transferability of the approach.

Acknowledgements

This work was supported by the Spanish Ministry of Universities [Predoctoral Grants for the Training of University Lectures (FPU), FPU21/01204], the Vice-Rectorate for Research and

Knowledge Transfer of the University of Granada [Bridging Contracts Programme], the European Commission [Arqus European University Alliance, 612247-EPP-1-2019-1-ES-EPPKA2-EUR-UNIV], the European Commission Erasmus + European Universities [Arqus II, ERASMUS-EDU-2022-EURUNIV-1], and the Spanish Ministry of Science and Innovation [Integración transversal de la cultura en una base de conocimiento terminológico medioambiental, PID2020-118369GBI00].

Declaration on Generative AI

During the preparation of this work, the author(s) used GPT-5.2 in order to: Grammar and spelling check. Further, ChatGPT-5.2 was employed as a research tool for the specific purpose of developing a specialised GenAI chatbot focused on terminological variation. After using this tool, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the publication's content.

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A. API configuration

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