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Using artificial intelligence to support written production skills in German as a foreign language: the case of *DeepL Write*

Abstract

The paper aims to explore the potential and limitations of generative artificial intelligence (AI) in enhancing written production skills in German as a foreign language (GFL) using the AI tool *DeepL Write*. The objective is twofold: firstly, to demonstrate how AI can provide a concrete opportunity to expand written production practice in GFL courses; secondly, to provide critical tools and operational strategies for the informed and pedagogically sound use of new technologies in the classroom. The paper is thus divided into two parts. The first presents a theoretical analysis of the objectives to be pursued in the context of the potential development of written production skills through AI tools and defines the objectives and methodology chosen for the practical part. The second part comprises practical didactic and methodological considerations, which were used to carry out a pilot study. The conclusion presents the results and discusses them.

Keywords

German as a foreign language – writing skills development – generative AI – *DeepL Write*

1. *Introduction*

The development of written production skills constitutes a fundamental element in both university education and work-oriented training. The ability to write appropriately entails a proficiency of skills that extend beyond mere grammatical correctness and involves the capacity to adapt language to the context and the audience, to organise ideas in a clear and coherent manner, and to utilise precise and relevant vocabulary (Gregg, Steinberg 1980). It is also essential to be aware of the communicative purpose of the text – whether it is to inform, explain or argue – and to respect the conventions of the text type (Gansel, Jürgens 2002, 57-62). Furthermore, effective writing requires the ability to reread and critically revise the text, thus ensuring accuracy and expressive effectiveness. Taking these factors into consideration, it can be deduced that the enhancement of written production skills constitutes a substantial challenge, especially within the framework of foreign language education (Börner, Vogel 1992; Kic-Drgas 2022; O'Brien 2004).

[1] This paper is the result of a joint discussion. Vincenzo Damiazzi was responsible for chapters 2.1, 3, 5 and 6, while Miriam Morf drafted paragraphs 1, 2, 2.2 and 4.

In GFL teaching practice, the development of written proficiency was historically accorded minimal priority (Siebold 2014, 58). The direct, audiolingual and audiovisual method was mainly based on lessons that excluded the use of writing, similar to the communicative approach, which focused on developing oral language skills (Krings 2016, 107). It is only recently that foreign language teaching has achieved a holistic understanding of communication, capable of equally integrating all four fundamental skills (Ciepielewska-Kaczmarek 2011, 268-269; Wolff 2009, 7), which can now be identified in the two macro areas of production and reception in the Companion Volume of the Common European Framework of Reference for Languages (CV-CEFR) (Council of Europe 2020).

The importance of fostering written production skills at intermediate (B) and advanced (C) levels of the CEFR is credited to the accelerated development of cross-border information and communication technologies. These have resulted in the emergence of novel language qualification profiles across a wide range of professional domains, wherein the capacity to produce and comprehend written texts assumes a pivotal role (Gansel, Jürgens 2002, 125). For instance, one may consider the significant proportion of international communication based on the production of written texts, or the numerous media-related professions in which the deliberate application of linguistic rules and an understanding of text types and genres are essential (Dulisch 1998, 59). Even at academic level, given the exponential growth of exchange programmes for teachers and students (e.g. Erasmus), there is an increasing need for the development of writing skills. The full spectrum of academic writing (ranging from the transcription of lectures to the composition of short assignments and culminating in the production of essays and dissertations) necessitates the development of scientific language skills and proficiency (Ehlich, Steets 2003; Kissling 2006) that cannot be taken for granted, particularly at language levels above B1. Connected to the evident challenges associated with writing, particularly at advanced levels, there is a discernible issue concerning the reduction of written production activities within educational programmes (Marx 2023, 481). In these areas, where language skills are increasingly linked to specialised content, textbooks often make extensive use of subject-specific language, mainly in written texts used for written comprehension exercises. The imbalance between reception and written production activities is mostly due to constrained teaching time, a circumstance that is disadvantageous for the execution of written exercises. These necessitate not only a considerable investment of time in writing, revision and evaluation, but also specific preparation on the characteristics of different genres and text types. Consequently, while proficient written communication skills are paramount for independent linguistic use, they often remain confined to upper-intermediate and advanced learning frameworks.

In view of the pivotal function of written production skills in educational and professional trajectories, there is a compelling need to investigate innovative tools that can facilitate their enhancement – among others, generative applications based on AI hold considerable promise. These technologies have reached a stage of advancement that necessitates constant pedagogical updating, and their utilisation in educational settings signifies a paradigm shift that necessitates critical examination and deliberation (Ham 2024,

467-468). The notion of prohibiting or limiting the implementation of AI in educational institutions appears to be in opposition to the present reality and the requirements of learners, who are already engaged with digital instruments that exert a significant influence on their academic and linguistic progression (Şentürk 2023) and that contribute to the shaping of their media literacy (Kerres 2017, 2024).

The integration of AI in educational settings presents a range of possibilities, including the personalisation of learning pathways, the automation of specific stages in the correction process, and the stimulation of linguistic creativity (Hartmann 2021, 684-687). Concurrently, challenges are also emerging, encompassing risks of plagiarism, reliance on digital tools due to the erosion of cognitive skills (George, Baskar, Srikaanth 2024), stylistic flattening, and loss of originality in written production. This scenario gives rise to a complex and multifaceted picture, in which the use of generative AI lies at the centre of both desirable and problematic practices, with consequent repercussions on the quality of teaching and learning. A pervasive concern among educators pertains to the notion of losing authority over the learning process. This sense of disorientation, already partly triggered by the general digitalisation of teaching, is exacerbated by the introduction of AI, which many perceive as a tool that could replace, rather than support, the role of the teacher (Chan, Tsi 2023). It is therefore essential to promote a vision of AI as a complementary resource, capable of supporting and enhancing teaching, without replacing human expertise or the educational relationship. This issue is rendered even more salient by the finding that learners consider AI feedback to be less important than that from teachers (Gruber 2023, 159; Tian, Zhou 2020).

The paper aims to address these challenges and is articulated into two main parts: one focused on theory, the other on practice. The first one offers a conceptual exploration of the aims connected to the possible enhancement of writing skills using artificial intelligence tools (section 2) and introduces both the objectives and the methodological framework adopted for the practical phase (section 3). The second part includes pedagogical and methodological reflections (section 4), which serve as the foundation for a pilot project (section 5). The final section summarizes the findings and discusses the outcomes.

2. *Developing written production skills with AI tools*

In the contemporary digital era, technological devices and artificial intelligence systems have become an integral part of the daily professional activities of a significant portion of the world's population (Kovács 2023). This raises important questions about the potential for developing written production skills through computer-based learning, particularly through e-learning programmes or with the assistance of artificial intelligence tools (Hartmann 2021). However, general language courses tend to favour communicative approaches, often neglecting writing activities (Feist 2008, 1-2). This phenomenon is further evidenced by the predominance of a conceptually oral written language[2] in the writ-

[2] The terms 'conceptual writing' and 'conceptual speech' were coined in the mid-1980s. The former refers to a conceptually written language, realised through a phonic-acoustic channel, as in the case of

ing activities proposed in textbooks (Marx 2023, 483). Despite an increase in the complexity of vocabulary and grammar, writing activities at intermediate and advanced levels continue to be linked to personal experience and are characterised by a dialogic nature, with minimal distinction between informal and formal language use. The complexity of writing tasks, coupled with the time-intensive nature of completing them, often makes it challenging to incorporate them into the conventional classroom hours. Moreover, the development of written skills that are appropriate to professional or academic contexts is not generally identified as a primary objective for many GFL learners, who are focused on developing oral interactional skills (Feilke 2016, 129; Krings 2016, 107). This may provide a rationale for the relative scarcity of specific writing courses offered by universities, schools and language institutes, in comparison to the greater availability of conversation courses. In this scenario, the employment of generative AI programmes for the purpose of developing written production skills could signify a strategic opportunity. However, for such tools to be pedagogically effective, they should be integrated within a didactic framework that emphasises not only the final product but also the process of writing itself (Murray, 1972).

A process-oriented approach (*prozessorientierter Ansatz*) to writing instruction is widely recognised for its pedagogical effectiveness, particularly in the context of second and foreign language acquisition (Kertes 2018; Kadmiry 2021). Rather than focusing solely on the final written product, this approach emphasises the various phases of the writing process – including planning, drafting, revising, and editing – as integral components of skill development. According to Merz-Grötsch (2010), the teaching of writing should not be reduced to the correction of final texts but should instead involve structured guidance through successive stages, allowing learners to experience writing as a dynamic, recursive activity. This method fosters metacognitive awareness, enhances autonomous learning strategies, and supports the development of linguistic accuracy and textual coherence over time. Moreover, process-oriented writing encourages the integration of peer feedback and collaborative revision, which not only improves language output but also deepens learners' engagement with content and form. In the classroom context, such an approach creates space for formative assessment and allows teachers to scaffold instruction in a way that aligns with the individual learner's needs. By treating writing as a process rather than a one-time event, educators can cultivate more reflective, confident, and competent writers (Sarhady 2015).

2.1 Objectives for the development of written production skills based on the CV to the CEFR

As discussed above, while the pedagogy of writing emphasises the importance of free and creative writing for the development of writing skills (Faistauer 2010, 283), teaching prac-

a public speech or a sermon in church. The latter refers to a conceptually oral language, even if realised in graphic form, as in the case of a text message or WhatsApp message. Further information on these two concepts may be found in the works of Koch and Österreicher (1985; 1994; 2007), while a more in-depth discussion of their reception model based on the language of proximity and distance can be found in Feilke and Henning (2016).

tice shows that, even in the early years of learning, writing primarily plays a role as an intermediate skill (*Mittelfertigkeit*) rather than a specific skill (*Zielfertigkeit*) (Ciepielewska-Kaczmarek 2011, 269). In the domain of foreign language education – and particularly in the context of GFL – instrumental writing assumes a predominant role. This approach involves the use of writing as a means of developing fundamental skills and as a pedagogical tool to facilitate the achievement of further linguistic goals (Fischer-Kania 2008, 484). Writing facilitates a process of reflective engagement with content, concepts, contexts, registers, functions and forms, contributing to the advancement of cognitive and linguistic structures (Klein, Boscolo 2016). As Königs (2018) also emphasises, the focus of GFL teaching tends to be more oriented towards communicative phenomena, centred on a conceptually oral language that is close to everyday speech, as opposed to authentically written language, which is conceptually more distant from colloquial language (Koch, Österreicher 1994, 588). Even in cases where GFL teaching includes both oral and written production exercises, the reference model remains a singular standard variety corresponding to the written language employed in Germany. This model is representative of only a small part of the language that is used in practice and does not consider any type of variation, including diastratic or diaphasic variations (Sinner 2014, 136-141). These variations are essential for the development of written production skills – especially at advanced levels – as they allow students to consciously adapt their language according to the recipient, the text type and the communicative purpose, as also highlighted in the CV to the CEFR (Figure 1).

Figure 1 – *Indicators for overall written production in the Companion Volume to the CEFR (Council of Europe 2020, 66)*

	Overall written production
C2	Can produce clear, smoothly flowing, complex texts in an appropriate and effective style and a logical structure which helps the reader identify significant points.
C1	Can produce clear, well-structured texts of complex subjects, underlining the relevant salient issues, expanding and supporting points of view at some length with subsidiary points, reasons and relevant examples, and rounding off with an appropriate conclusion. Can employ the structure and conventions of a variety of genres, varying the tone, style and register according to addressee, text type and theme.
B2	Can produce clear, detailed texts on a variety of subjects related to their field of interest, synthesising and evaluating information and arguments from a number of sources.
B1	Can produce straightforward connected texts on a range of familiar subjects within their field of interest, by linking a series of shorter discrete elements into a linear sequence.
A2	Can produce a series of simple phrases and sentences linked with simple connectors like "and", "but" and "because".
A1	Can give information about matters of personal relevance (e.g. likes and dislikes, family, pets) using simple words/signs and basic expressions. Can produce simple isolated phrases and sentences.
Pre-A1	Can give basic personal information (e.g. name, address, nationality), perhaps with the use of a dictionary.

As illustrated in Figure 1, the transition from intermediate level (B) to advanced level (C) is accompanied by a substantial progression in writing proficiency, marked by an increase in textual complexity and a concurrent development in communica-

tive awareness. At level B2, students should be able to produce clear, well-structured texts on a variety of topics, demonstrating their ability to summarise and critically evaluate information, particularly on topics of personal or professional interest. The transition to level C1 requires a significant improvement in textual and linguistic competence, as well as knowledge of different registers, styles and tones, which can be adapted to the text type and the target audience. The level of proficiency designated as C2 is characterised by complete proficiency of writing and suggests not only the advanced use of the language, but also full discursive and stylistic competence. Therefore, an integrated teaching approach is required and must combine metalinguistic awareness, exposure to authentic models and guided practice.

In order to develop written production skills, it is essential that learners are able to identify the distinctive features of various text genres (e.g. emails, argumentative essays, reviews, newspaper articles etc.) and text types (informative, narrative, appellative texts etc.) in relation to structural components, lexical choice, degree of formality and communicative purpose, thereby highlighting knowledge and skills in the field of textual linguistics[3]. Moreover, the development of solid written production skills necessitates an in-depth understanding of the sociolinguistic aspects of language. This knowledge is essential for understanding and consciously managing variations in register, tone and form. With regard to the above-mentioned objectives in the field of textual linguistics and sociolinguistics, generative AI tools provide significant support and assistance, as will be illustrated below.

2.2 Writing with AI: examples of AI-based applications for text generation

At the beginning of the 19th century, Hermann Paul (1920) emphasised that language is based on the reproduction of pre-existing elements, thereby laying the theoretical foundations for the concept that is now central to automatic text generation technologies. According to this concept, comprehensibility and communicative effectiveness depend on the use of already known and shared linguistic structures (Meier-Vieracker 2024, 134-135). Generative language models, when trained on a wide range of textual data, have been shown to produce contextually appropriate linguistic outputs based on probabilistic combinations of previously learned elements

[3] According to the classification proposed by Beaugrande and Dressler (1981), textual linguistics is divided into three main areas. The first is textual semantics, which analyses the meaning and conceptual organisation of the text. The second is textual pragmatics, which deals with the communicative functions and effectiveness of the text in contexts of use. The third is textual syntax, which studies the ways in which meaning is expressed through syntactic structures. Textual semantics and textual syntax are, on occasion, grouped together under the concept of textual grammar (Gansel, Jürgen 2002, 113). The knowledge offered by this area is particularly relevant for the development of written competence in students of GFL, as it provides useful tools for understanding and producing mechanisms of textual cohesion and coherence (Siebold 2014, 60). In addition, the findings of research in the domain of textual pragmatics are also of critical importance for the pedagogy of writing. The comprehension of the communicative function of texts and their characteristic features facilitates an approach to writing as a situated practice, wherein linguistic form is inextricably linked to the text's purpose and genre (Portmann-Tselikas 2000, 832).

(Hartmann 2021, 686). Communicative requirements, expressed through natural language prompts, are interpreted by the model as a textual context from which to generate formally correct and often stylistically effective responses. Despite the absence of semantic understanding in the human sense, the model exhibits a capacity to simulate textual coherence and cohesion that surpasses that of rule-based systems. This suggests a performance that, within the limits of its capabilities, appears communicatively credible. This renders such tools highly beneficial for the purposes of practising and improving one's writing skills in a foreign language. AI tools, when integrated into a well-defined pedagogical framework, have the potential to expand the traditional concept of literacy from the proficiency of discrete skills to the ability to skilfully construct one's writing using multiple digital features and resources (Ironsi, Ironsi 2024). This can promote participatory engagement in online contexts and critically assess the impact of emerging technologies on literacy processes and outcomes (Darvin, Hafner 2022).

Below are some examples of AI-based applications for text generation that may have an impact on writing in foreign language teaching. The selection of examples was based on the availability of a complimentary online version of the application, suitable for utilisation in a classroom setting or for individual study.

One of the lesser-known AI tools among learners and teachers is *Artikelschreiber*[4], a free online platform that integrates an article search engine and a text generator, based on intelligent algorithms and Natural Language Processing (NLP) technologies. The system has been programmed to generate an article by entering a primary and secondary keyword in English or German. However, it has been observed that the article is largely derived directly from the original text identified as the source. Another example of a generative application is *Blog Idea Generator*, which uses the Generative Pre-trained Transformer 3 language model to suggest ideas related to a specific topic, making it an easy-to-use tool for training creative writing (Harmann 2021, 689-691). *Essaybot* behaves in a similar way, offering writing support features by suggesting relevant text fragments based on a given topic, as well as paraphrasing tools aimed, among other things, at circumventing plagiarism detection systems. Another NLP-based tool is *QuillBot*, which allows paraphrasing and text revision in its free version. The paid premium version offers supplementary features, including grammar checking, automatic summarisation and citation generation, making it a very useful tool in academic settings. A comparable level of performance is offered by *Wordtune*, a content generator that, in a manner analogous to *Gemini*, employs sophisticated NLP technologies to enhance the expressive quality of texts. *Wordtune* is available in a free version, which suggests learners lexical and syntactic alternatives. Paid versions (premium and business) are also available, and these include additional features such as sentence length adjustment and style modulation.

Among the most well-known and recent applications, which have also been studied for possible use in education, are *ChatGPT*, *Bing Copilot* and *Gemini* (Akan

[4] The Internet addresses of the software mentioned in this section are listed at the end of the paper with the names of the providers, after the bibliographical references.

2025; Falk 2024). These applications have significant similarities in their use of generative AI and NLP technologies, offering multimodal functionality and complex conversational capabilities. Although these tools are already largely used by students, they are not particularly useful in teaching writing for text revision. This is because they do not visually highlight the changes and improvements made, making it difficult and unintuitive to understand exactly what has been changed. Tools such as *LanguageTool* and *DeepL Write* are much more effective for this purpose (Hassler, Wegmüller 2024, 26-28). Despite the evident similarities between the two tools, *LanguageTool* is distinguished by the presence of two distinct dialogue windows. The first of these is designed to address only formal errors, while the second functions as a paraphrasing tool. In the initial window, words containing spelling and grammatical errors are corrected, and these errors are highlighted in red. Words which could be improved are highlighted in yellow. Within the paraphrasing window, three distinct styles are available for selection: formal, standard and simple. In comparison to *LanguageTool*, *DeepL Write* is not designed to identify formal errors, but rather to offer effective and fluent rephrasing suggestions that are tailored to the chosen register. This makes this tool particularly useful in teaching writing in a foreign language, especially for paraphrasing texts and helping students acquire sociolinguistic and textual linguistic skills, which is also the main reason why it was chosen to conduct the pilot study.

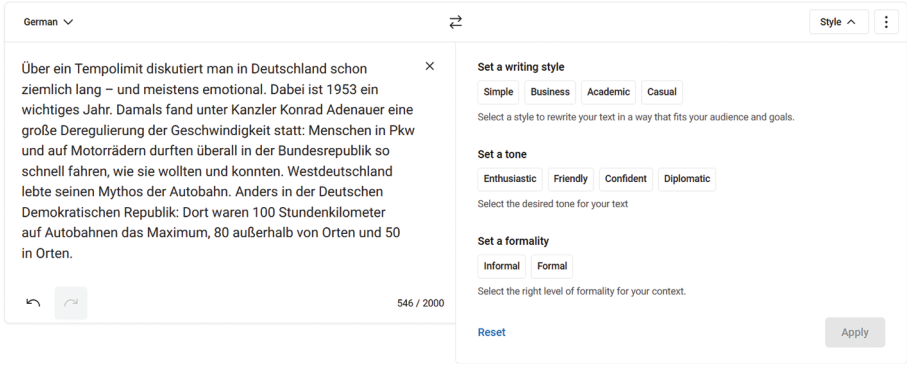
3. *Objectives and methodology*

The integration of *DeepL Write* as a pedagogical instrument within the framework of advanced GFL classes enables educators to encourage more conscious reflection on the communicative and formal dimensions of written production. *DeepL Write* facilitates the process of reviewing and refining one's own written compositions, proposing alterations that can be examined and integrated by the student (Hassler, Wegmüller 2024, 27). On this basis, students do not merely receive a 'corrected text', but rather an immediate and detailed feedback that stimulates metacognitive activity on their own writing process. It is the responsibility of educators to provide guidance to students in the use of the software, with the objective of improving their audience-oriented writing skills and respecting the characteristics of text genre and thematic register. Such a practice is well-suited to the paradigm of action-oriented learning, wherein the utilisation of digital tools becomes an integral component of the learning process.

From a practical standpoint, *DeepL Write* allows users to edit a text in their desired style (*Schreibstil*), tone (*Ton*) or formality (*Anredeform*). Users can select either from four distinct styles: simple, business, academic and casual; four different tones: enthusiastic, friendly, confident and diplomatic; or two levels formality: informal, formal (cf. Figure 2). After the selection of either style, tone or formality, the software then rephrases the text, highlighting linguistic suggestions that are consistent with the aforementioned choices in green. This aspect assumes relevance

in advanced language training, where control of stylistic nuances becomes a key indicator of communicative competence (Günther 2007, Moraldo 2023).

Figure 2 – *DeepL Write dialogue box for setting style, register or level of formality*



Another notable feature of *Deepl Write* includes the possibility of selecting synonyms or alternative expressions to modify the lexical items suggested by the tool. This feature facilitates the enrichment of vocabulary and the development of expressive variety. Furthermore, *DeepL Write* enables the rephrasing of sentences and the shortening of paragraphs, thereby enhancing clarity and textual coherence. These tools are useful for both proofreading and producing more effective texts in terms of communication.

However, it is imperative to underscore that the utilisation of tools such as *DeepL Write* should never evolve into an automatic reliance on technology. The educational value of the system lies in the students' ability to engage critically with the system's suggestions, whether accepting, rejecting or adapting them in accordance with their own linguistic discernment. In this sense, AI acts as a feedback generator rather than a substitute for the human writing process. The educational objective is not for a software to substitute students, but rather to aid them in refining and improving their texts, thereby fostering their autonomy and linguistic proficiency (Schiff 2021).

Another critical aspect is the phenomenon of so-called AI 'hallucinations' (Salvagno, Taccone, Gerli 2024), i.e. incorrect or decontextualised suggestions generated by the system. Such episodes require constant intervention by the teacher, who is responsible for educating students in the vigilant and conscious use of AI. This approach constitutes a component of a more extensive digital and critical literacy, which is becoming increasingly apparent in the contemporary language teaching landscape.

On the base of these premises, our pilot study was structured around three principal research questions with a focus on the use of AI for the improvement of written production in German. The key questions are as follows:

a) How can artificial intelligence support the development of written production skills? – This question explores the potential of AI, in particular *DeepL*

Write, in helping students improve the quality of their writing and reflect on their own texts;

b) How can teachers integrate *DeepL Write* into advanced GFL teaching to promote writing activities that are appropriate to the target audience, text type and theme? – Here, the focus is on the active role of the teacher in the methodological and targeted use of the tool as an integral part of teaching.

c) How can students use *DeepL Write* as a feedback generator, intended as a support (and not a substitute) in the learning process? – The focus is on student autonomy and their ability to critically use the automatic feedback received, leveraging it within a pathway to language awareness.

For the pilot study, these research questions were contextualised within a process-oriented approach (*prozessorientierter Ansatz*) to writing. Based on the theoretical reflections of Merz-Grötsch (2010), it aims to make the writing process transparent and manageable, helping learners to progressively improve their skills. This approach differs from traditional approaches focused on the final product and instead concentrates on the process of text production itself.

The aim of the teaching activities is not the production of a finished text, but rather the promotion of metacognitive reflection on the writing process itself (Sommer 2020, 17-34). The exercises are designed to accomplish three fundamental objectives. Firstly, they seek to broaden the students' existing knowledge. Secondly, they are intended to facilitate a thorough analysis and address any language difficulties that the students may have in a targeted manner. Thirdly, and finally, they are intended to optimise the final product. Considering this, the production of multiple versions of the same text is not only anticipated but also encouraged. These variations provide valuable information about the level of knowledge and specific training needs of each learner.

The teaching programme is divided into a series of stages that follow a logical and pedagogical progression:

- The preparatory phase (*vorbereitende Phase*) aims to activate students' prior knowledge and gradually introduce them to the task of written production. In this stage, reading and text analysis strategies are used to stimulate interest and familiarise students with the text type that is the basis of the activity.
- The development phase (*aufbauende Phase*) allows linguistic and structural difficulties to be identified and isolated so that they can be addressed specifically. At this point in the process, the foci are the analysis of model texts and the guided reflection on the linguistic and rhetorical elements characteristic of the chosen text type. Students are encouraged to engage with the distinctive features of written German, particularly regarding cohesion, coherence and stylistic appropriateness in relation to the communicative context.
- The structuring and communicative writing phase (*strukturierende Phase und kommunikatives Schreiben*) is the core of text production. In this phase, students write a first draft of the text, putting into practice the knowledge and

strategies acquired in the previous phases. The emphasis is on the internal coherence of the text, clarity of expression and logical organisation of ideas. The teacher acts as a facilitator and accompanies the students in the writing process, providing guidance rather than corrections.

– The revision and improvement phase (*Verbesserungsphase*) allows students to refine their texts in terms of language, style and content. In this phase, students work on varying their language register according to the audience and communicative purpose, adjusting their tone and complying with the formal and textual conventions of the text type. Revision is seen as an opportunity to reflect critically on one's work and to make conscious choices aimed at improving quality.

In sum, the integration of AI tools such as *DeepL Write* – when grounded in a process-oriented pedagogy – opens new opportunities for fostering learner autonomy, refining academic writing, and deepening genre-specific competence in GFL contexts.

4. *Proposed teaching plan*

In accordance with the objectives and teaching methodology that have been delineated above, this section now describes in detail the teaching plan that was subsequently implemented in the pilot studies discussed in the next chapter (section 5). The examples shown here are based on a text taken from the online magazine *Deutsch Perfekt*[5], as shown also in Figure 2. In terms of level, the text is categorised in the magazine as intermediate (*Mittel*), corresponding to level B of the CEFR. In this specific case, given the presence of numerous technical terms relating to the automotive and transport sectors, the language level can be assessed as B2.

The proposed plan is divided into the four stages mentioned above (section 3) and aims to gradually develop textual and sociolinguistic competence, first in the domain of reception (preparation and development phase) and subsequently in that of production (structural and communicative writing phase with revision and improvement).

In the preparatory phase students are provided with the text and asked to carry out an initial brainstorming, decoding and comprehension activity. This consists of answering a series of questions relating to both internal and external factors of the text (Schmidt 1976, 114), following the text analysis model proposed by Nord (2007, 40). Questions relating to factors external to the text therefore concern the author (*Sender*), the author's intention (*Senderintention*), the recipient (*Adressant*), the channel used (*Kanal*), the place and time when the text was written (*Ort und Zeit*), and the reason for writing it (*Anlass*). Questions relating to factors internal

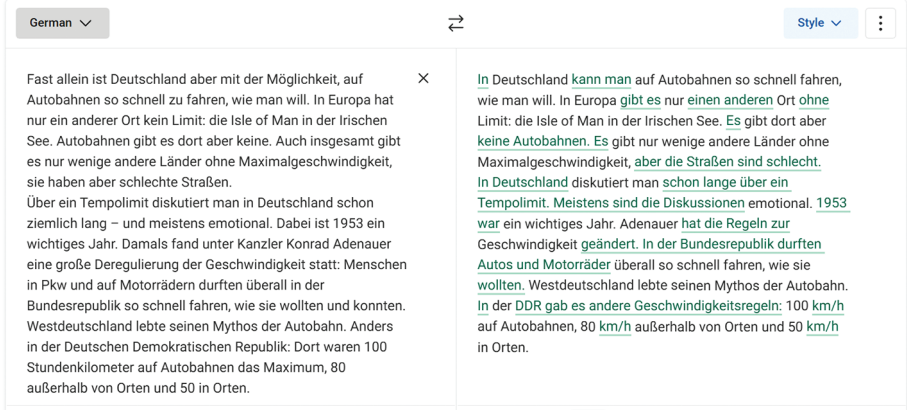
[5] The selected text was extracted from *Deutsch Perfekt* online magazine and can be viewed in its entirety via the following link: https://www.deutsch-perfekt.com/deutsch-lesen/schnell-schneller-deutsche-autobahnen (last accessed May 2025).

to the text concern the main theme (*Thematik*), the content in all its parts (*Inhalt*), verbal and non-verbal elements (*verbale und nonverbale Elemente*) with particular attention to the vocabulary used and the syntactic form (*Lexik und Syntax*), structure and division of the text (*Aufbau und Textgliederung*) as well as presuppositions (*Präsuppositionen*), i.e. references to information that the reader must know in order to understand the text. This phase is an essential step in the development of foreign language learners' textual and sociolinguistic skills, as it allows for an in-depth understanding of the structure and function of texts, fostering the development of critical and practical skills that are indispensable for written production tasks. By enabling students to identify and reproduce diverse text types, adapting tone, register and structure according to the communicative context, this approach contributes to the cultivation of comprehensive literary competence (Schmölzer-Eibinger, Weidacher 2007).

The development phase is dedicated to stylistic comparison. The students are presented with the same text in the four styles available in *DeepL Write*. The primary activity involves the identification of the distinctive characteristics inherent in each style, which are then documented in a table. Several linguistic aspects should be observed, including syntax, vocabulary, sentence length and the use of language for specific purposes (LSP). By means of this comparison, students establish a stylistic inventory to be used as a reference in the subsequent independent production phase. For convenience, some characteristics of the individual styles highlighted in the text under consideration are listed below:

– Simple style (Figure 3): prevalence of the canonical subject-verb order, division of complex sentences into shorter main clauses, lexical simplification (e.g. *Auto* instead of *PKW* to mean car), avoidance of genitive constructions in favour of compounds;

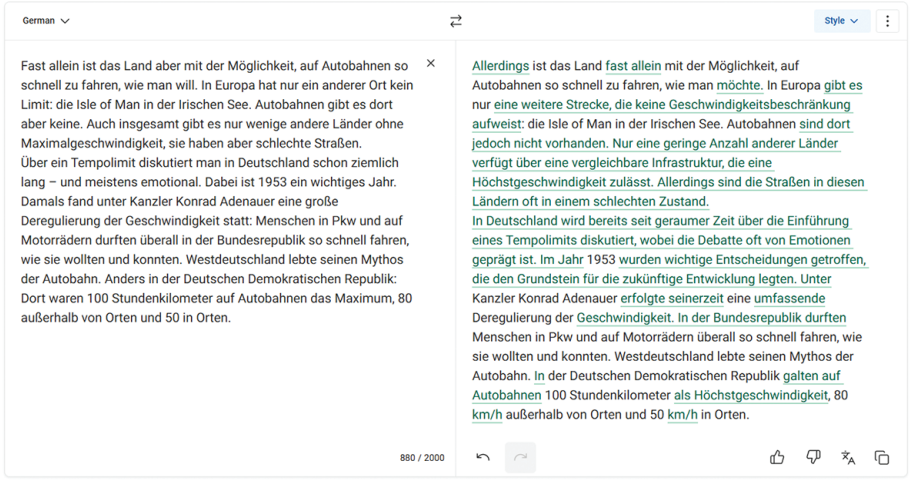
Figure 3 – *Rephrasing of the text in the simple style (with changes highlighted in green)*



– Business style (Figure 4): dense syntax with longer sentences and very complex compound words (*Geschwindigkeitsbeschränkung* for speed limit) that

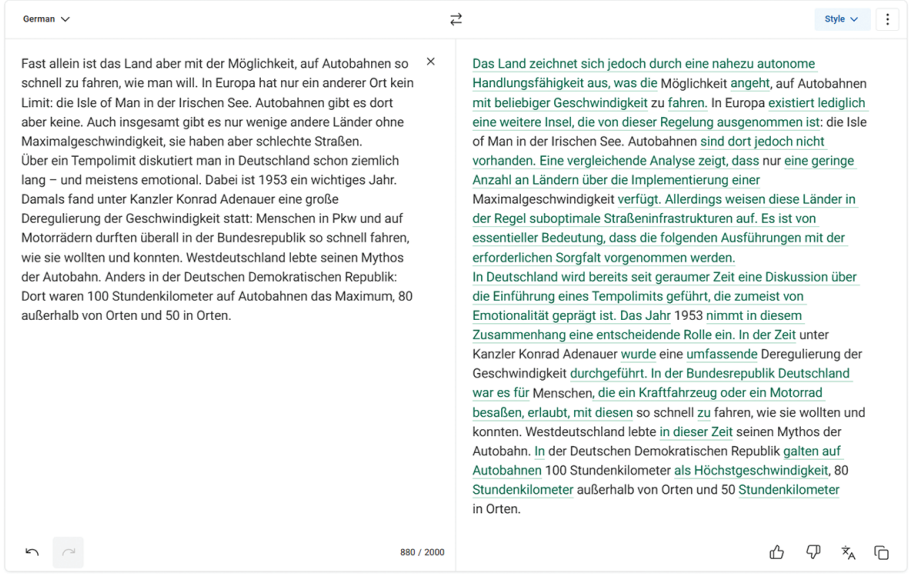
tend to be used in place of words of Latin origin (*Tempolimit*, as well as *Höchstgeschwindigkeit* instead of *Maximalgeschwindigkeit*);

Figure 4 – *Rephrasing of the text in the business style (with changes highlighted in green)*



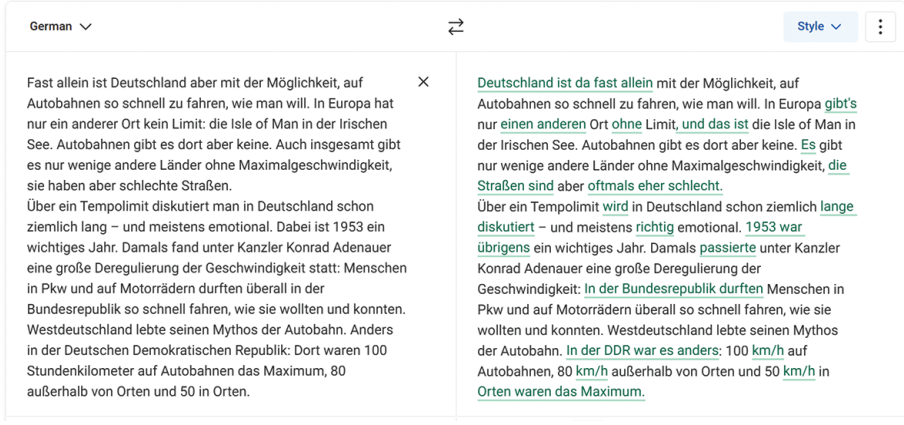
– Academic style (Figure 5): use of genitive constructions (*eines Tempolimits*), use of logical connectives (*jedoch*), high-register verbs (*aufweisen*), use of textual signals for discourse structuring and rhetorical strategies (*seit geraumer Zeit* instead of *ziemlich lang*) passive forms and nominalisations (*von Emotionalität geprägt* instead of *emotional*);

Figure 5 – *Rephrasing of the text in the academic style (with changes highlighted in green)*



– Casual style (Figure 6): predominance of forms typical of spoken language, also evident in spelling, such as fusions (*gibt's* instead of *gibt es*) that are closer to colloquial language, a documentary tone with a higher level of informality, lack of full verbalisation with the use of generic support verbs, including auxiliaries, and the use of adverbs or modal particles that reinforce meaning (*da*, *eher*, *richtig*).

Figure 6 – *Rephrasing of the text in the casual style (with changes highlighted in green)*



In the structuring and communicative writing phase, students are asked to produce their own texts based on their previous observations and the stylistic inventory they have already developed. The proposed activity is as follows: rewrite the text in each of the four styles that were analysed, paying close attention to the specific stylistic features that emerged (*Überarbeiten Sie den folgenden Text in den vier analysierten Stilen. Achten Sie dabei auf die spezifischen Stilelemente, die in der Tabelle eingetragen wurden*). Teachers can request that learners adapt a short text in the four styles or select one style to develop in a longer and more complex text. This practice fosters the capacity to modulate the linguistic register in accordance with the communicative purpose and the target audience, thereby stimulating a deliberate and strategic approach to written production.

In the revision and improvement phase, critical reflection is introduced with the assistance of AI. The aim of the proposed activity is to facilitate a comparison between one's own text and a version generated by an AI system in the same style through three questions:

1. What are the differences between your text and the one written by AI? (*Was sind die Unterschiede zwischen Ihrem Text und dem der künstlichen Intelligenz?*)
2. Which of the two texts is closer to the chosen style? (*Welcher der beiden Texte entspricht am ehesten dem gewünschten Stil?*)
3. Which parts of the artificially generated text would you keep in your text? (*Welche Elemente des künstlich erzeugten Textes würden Sie für Ihren eigenen Text beibehalten?*)

Following the comparison stage, students can refine their texts. Reflection on the function and impact of AI thus opens a critical dialogue on the integration of technology into the language learning process.

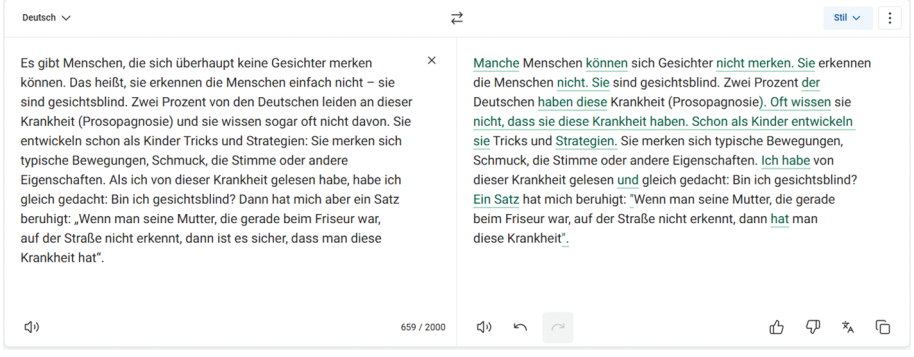
The preliminary results of a pilot study based on the described teaching plan are presented below. The plan has been designed for students of German as a foreign language and focuses on the acquisition of LSP and the recognition of different types of text in order to subsequently produce authentic texts by giving them writing tasks that reflect real communicative situations.

5. *Pilot study*

The pilot study took place within an advanced German language elective course in a master's degree programme at the Department of Political and Social Sciences of the *Università Cattolica* in Milan in November 2024. The target audience was 10 students with an intermediate-to-advanced level of German (at least B1+ of the CEFR). An excerpt from the textbook used for the course, *Panorama B1* (Williams et al. 2017, 14), was used for the pilot study. This excerpt had already been covered in a previous lesson and deals with prosopagnosia (also known as face blindness), a neurological disorder that prevents people from recognising faces, including familiar ones.

The preparatory phase was carried out partly within the textbook using the proposed text comprehension exercises and partly – especially in relation to the target audience and the linguistic factors internal to the text – through targeted questions. Subsequently, in the development phase, the four versions of the text processed by *DeepL Write* (in its free version)[6] in the four different styles were presented (Figures 7-10).

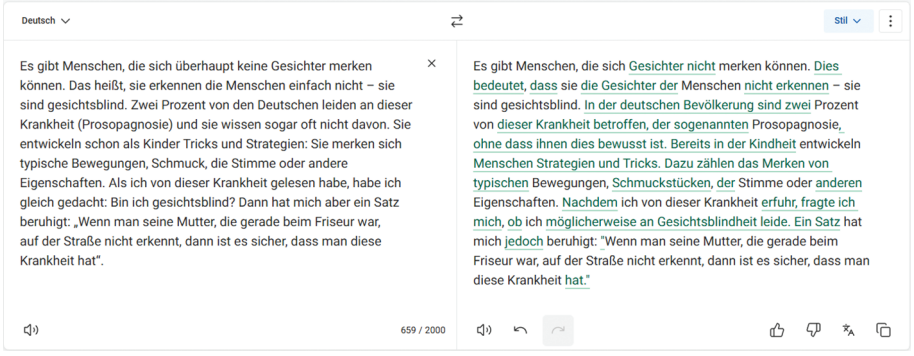
Figure 7 – *Rephrasing of the pilot study text in the simple style*



[6] A paid version of the tool is currently available, while during the pilot study it was only possible to use the free beta version released in English and German.

As demonstrated in the initial sentence of Figure 7, the employment of a simple style often results in the manifestation of a paratactic style, characterised by the elimination of subordinate clauses (*die sich überhaupt keine Gesichter merken können*) and the removal of adverbs that serve a reinforcing function in negations (*überhaupt*). A further simplification can be observed in the use of more general verbs such as 'to have a disease' (*eine Krankheit haben*) instead of more precise verbal expressions such as 'to suffer from a disease' (*an einer Krankheit leiden*). Even the use of pronominal particles that refer to previously mentioned concepts, as in the sentence 'they don't even know anything about it' (*sie wissen sogar nichts davon*), tends to be replaced by simpler constructions, as in the case of the main clause 'they often don't know' (*Oft wissen sie nicht*) followed by the declarative clause 'that they have this disease' (*dass sie diese Krankheit haben*).

Figure 8 – *Rephrasing of the pilot study text in the business style*

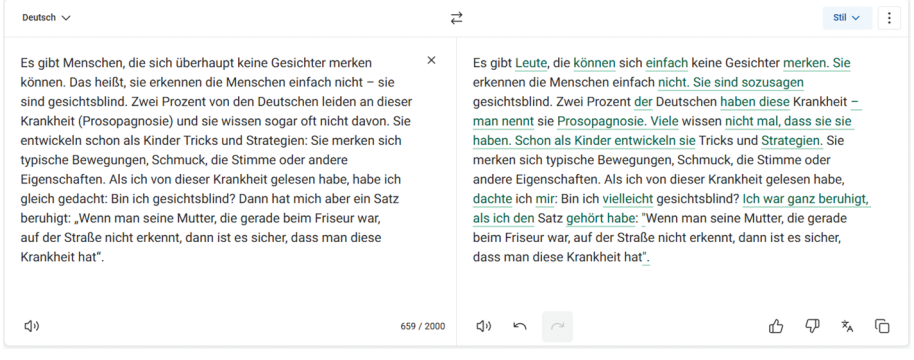


The business style also has fundamental characteristics that are evident in the first sentence, where the subjective expression that reinforces the meaning created by the adverb 'absolutely' (*überhaupt*) is eliminated, adopting a more sober, direct and professional language. The use of this style is characterised by the substitution of informal expressions with a more formal register, as evidenced by the transition from *das heißt* (i.e.) to *dies bedeutet* (that means). The requirement for clarity is also reflected in the selection of vocabulary, where more technical terminology is employed. For instance, the sentence 'two per cent of Germans suffer from this disease' (*zwei Prozent der Deutschen leiden an dieser Krankheit*), is expressed as 'two per cent of the German population is affected by this disease' (*In der deutschen Bevölkerung sind zwei Prozent von dieser Krankheit betroffen*). The greater terminological precision required by business language is also evident in the noticeable increase in text length, a feature also found in the academic style.

Figure 9 – *Rephrasing of the pilot study text in the academic style*

The academic writing style is evident in several rewordings that make the text more abstract and scientific, introducing concepts such as 'homogeneous group' (*homogene Gruppe*), which give the whole text a more academic or technical tone. In this style there is a shift from an active and personal form such as 'two per cent of Germans suffer from this disease' (*Zwei Prozent von den Deutschen leiden an dieser Krankheit*) to an impersonal and passive form such as 'according to current estimates, approximately two per cent of the German population is affected by this disease' (*Gemäß aktuellen Schätzungen sind in der deutschen Bevölkerung etwa zwei Prozent von dieser Krankheit betroffen*). This highlights objectivity and detachment, characteristics that are peculiar to formal scientific texts. Also evident are the clarification and expansion of information, found in the reformulation of the phrase 'they are often not even aware of it' (*sie wissen sogar oft nicht davon*), which becomes 'in many cases, those affected are unaware of their illness' (*In vielen Fällen ist den Betroffenen ihre Erkrankung nicht bewusst*). These changes are aimed at increasing clarity and formality. In addition to these features, connectives and related structures have been introduced to improve cohesion, making the text more fluid and articulate by hypotaxis.

Figure 10 – *Rephrasing of the pilot study text in the casual style*



In contrast to the academic version, the casual style is characterised by parataxis. Lexical and stylistic simplifications are also evident: neutral terms such as *Menschen* (individuals) are replaced by more colloquial words such as *Leute* (people), while the addition of modal particles (a characteristic feature of spoken German) such as 'simply' (*einfach*) helps to make the statement more accessible. In addition, there is frequent use of paraphrasing and informal structures, for example with the insertion of attenuating expressions such as 'that is to say' (*sozusagen*), which give a conversational and less assertive tone. At the textual level, the AI intervention introduces a more explanatory narrative, with the addition of phrases not found in the original, such as 'Many people don't even know they have it' (*Viele wissen nicht mal, dass sie sie haben*), which increase communicative effectiveness for a non-specialist audience. Finally, the introduction of markers of subjective uncertainty, such as 'maybe' (*vielleicht*), and the simplification of subordinate clauses make the entire text more fluid and understandable, especially for readers with intermediate language skills.

The students worked in groups and analysed the texts in order to compile a table summarising the characteristics of each style. In the plenary phase, the tables of the individual groups were discussed and collated into a single table (Table 1), which was then used as a guide in the next phase.

Table 1 – *Characteristics of the text styles in DeepL Write according to the students of the pilot*

	Einfach	**Geschäftlich**	**Akademisch**	**Locker**
Wortschatz	Wiederholungen, einfache Wörter (keine Fachwörter)	mehr Präpositionen, Komposita	fachsprachlich , Komposita	umgangssprachlich
Satzbau	kurze Sätze, wiederholte Strukturen, Parataxe (fast ausschließlich Hauptsätze)	längere Sätze mit Nebensätzen	Nebensätze, Nominalisierung	viele Hauptsätze
Textlänge	kurzer Text	längerer Text	längerer Text	mittellang
Adressaten	breites Publikum	kein spezifisches Publikum	eher in Richtung Fachtext	breites Publikum
Weitere stilistische Merkmale	wenige Daten bzw. Infos, informell	Passiv, Komposita, keine Abkürzungen	Genitiv	diskursiv, einfacher

In the structuring and creative writing phase, the students, still in their respective groups, reworked the text in a single style assigned to them by the teacher and proceeded to restructure the original text according to the stylistic characteristics highlighted in the table. Since there were three groups of students, the styles developed were simple, business and casual. The academic style was not addressed in this pilot study. The text was developed by the groups as follows.

– Simple style:
  Viele Menschen können sich keine Gesichter merken. Sie erkennen Menschen nicht. Aber das kann eine Krankheit sein. Sie entwickeln schon als Kinder Tricks

und Strategien. Zum Beispiel sie merken sich typische Bewegungen, Schmuck, die Stimme oder andere Aspekte. Ich habe diese Krankheit entdeckt und habe gedacht: bin ich gesichtsblind? Aber ich weiß, dass wenn man seine Mutter, die gerade beim Friseur war, erkennt, dann ist man nicht krank. (Source: Group 1)

– Business style:
Viele Menschen können sich keine Gesichter merken. Das bedeutet, dass sie Schwierigkeiten haben, andere Menschen zu erkennen, weil sie gesichtsblind sind. Zwei Prozent der Deutschen leiden an dieser Krankheit, die Prosopagnosie heißt, und sie wissen oft nicht davon. Sie entwickeln schon als Kinder Tricks und Strategien: Sie merken sich typische Bewegungen, Schmuck, die Stimme oder andere Eigenschaften. Timo Brunner, der Protagonist des Texts, hatte Zweifel daran, ob er gesichtsblind war, als er von dieser Krankheit las. Die Antwort war einfach: Die eigene Mutter zu erkennen ist ein Zeichen, dass man nicht krank ist. (Source: Group 2)

– Casual style:
Es gibt Leute, die es nicht schaffen, die Gesichter von den anderen Menschen zu erinnern und erkennen. Zwei Prozent von den Deutschen wissen nicht, dass, diese Tendenz eigentlich mit einer Krankheit zu tun hat. Um mit diesem Problem klarzukommen, entwickeln sie von der Kinderzeit verschiedene Strategien und Tricks, wie zum Beispiel Bewegungen, die Stimme und so weiter. Als ich diese Krankheit entdeckt habe, habe ich mich gewundert, ob ich gesichtsblind war. Zum Glück habe mich aber einen Satz beruhigt: "Wenn man seine Mutter, die gerade beim Friseur war, auf der Straße nicht erkennt, dann ist es sicher, dass man diese Krankheit hat". (Source: Group 3)

In a subsequent lesson, the revision and improvement phase took place. In this phase, the students reflected on the quality and adherence to style of the texts they had produced and then compared them with the versions developed by the AI. They then identified the strengths and weaknesses of their approach to text restructuring and the AI's approach and finally discussed the potential use of *Deepl Write* and which aspects they would implement to improve their writing production skills. These discussions are summarised and reported in the concluding paragraph of this paper.

6. *Conclusion and discussion*

The findings of this study emphasise the opportunities and limitations of integrating AI tools such as *DeepL Write* into the teaching and learning of written production in German as a Foreign Language. While acknowledging the potential of such tools to provide concrete support during the writing process, especially in terms of reworking texts, students also highlighted the need for critical oversight and hu-

man validation, particularly when writing in a foreign language. The students indicated that, during the revision stage, their primary focus was typically on lexical adjustments; however, *DeepL Write* was found to propose more extensive structural rephrasing with greater frequency, which were at times perceived as unnecessarily redundant or excessive. This discrepancy suggests a potential gap between the current revision practices of students and the more extensive textual transformation that AI tools may suggest.

It is imperative to acknowledge that the efficacy of AI-assisted writing is contingent upon students' fundamental competencies in text analysis, a skill that remains indispensable irrespective of technological augmentation. In the context of language learning, the development of written production skills must be undertaken together with written reception skills, as the two influence each other. The ability to write effective texts requires a solid familiarity with textual structures, communicative registers and discursive conventions, which is mainly acquired through the analysis and comprehension of written texts. Therefore, writing practice cannot be separated from careful exposure to and reflection on the textual models that form its foundation. Furthermore, while students recognised the potential of utilising *DeepL Write* for their academic work in their native language, they indicated an ongoing reliance on native speakers or instructors when working in a foreign language to ensure linguistic accuracy and communicative effectiveness. This highlights how machine feedback cannot replace that of human experts, who, in the field of learning, correspond to the figure of the teacher (Tian, Zhou 2020).

Several areas for future research and pedagogical development emerge from the insights gained from this pilot study. Firstly, the empirical scope of the pilot study should be expanded by involving a larger and more diverse sample of GFL learners across different proficiency levels and educational settings. This would provide a more nuanced understanding of how learner variables, such as linguistic background, digital literacy and metacognitive awareness, influence the use and perception of AI-assisted writing tools. Additionally, future studies should incorporate a broader range of text genres and communicative tasks, to assess whether the advantages and disadvantages of AI tools vary by discourse or text type.

Secondly, a comparative analysis of multiple AI-based platforms should be included in order to examine differences in revision suggestions, linguistic quality and pedagogical potential. This would help educators to make more informed decisions about which tools best align with their instructional goals and learners' needs. This is compounded by the fact that many platforms currently in use are available in both free and paid versions (cf. section 2.2). It would therefore be very interesting to observe and analyse whether there is a difference in using one version rather than the other, especially in relation to the possible corrections that can be made, which influence the specific training of the software. A study in mechanical engineering evaluated ChatGPT's ability to solve university exam questions, using the paid (GPT-4) and free (GPT-3) versions as references (Frenkel, Emara 2023). The results showed that the paid version achieved an average answer accuracy of 76%,

compared to 51% for the free version, indicating a significant difference in accuracy between the two versions.

Thirdly, longitudinal studies could investigate the long-term impact of AI-assisted writing on learners' written competence using specific psychological- and neurobiological-based models such as I-PACE (Brand et al. 2016). Such studies should also examine whether sustained exposure to AI-generated suggestions fosters deeper metalinguistic awareness or, conversely, leads to over-reliance on external tools.

Finally, the integration of AI in language education requires the development of teacher training programmes to provide instructors with the skills to critically evaluate and effectively implement these tools. This includes fostering an understanding of AI's limitations and potential biases, as well as its role in promoting or inhibiting learner autonomy. Future pedagogical models should explicitly address how to scaffold students' interactions with AI to support reflective, self-directed learning rather than passive dependence.

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