

Integrating Artificial Intelligence and Multimedia Technologies into Teaching Philological Disciplines: A Modern Educational Model

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DOI: <https://doi.org/10.69760/gsrh.0260303005>

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Abstract

The accelerating digitalization of higher education has raised the problem of how philological disciplines — language, literature, and translation studies — can be modernized without losing their humanistic and text-centred character. While artificial intelligence and multimedia technologies are increasingly present in university classrooms, their systematic pedagogical integration into the teaching of philological disciplines remains insufficiently theorized. The purpose of this study is to develop an integrated educational model for combining artificial intelligence and multimedia technologies within the teaching of philological disciplines at higher education institutions. The research employs a qualitative design based on descriptive and comparative analysis, synthesis, generalization, pedagogical observation, and a case-study approach applied to contemporary scholarly literature, international policy documents, and current teaching practice. The findings indicate that generative artificial intelligence systems and multimedia resources jointly support the development of linguistic, literary-analytical, translation, and digital competences, while enhancing learner engagement, accessibility, and individualization of instruction. At the same time, hallucinations, academic integrity risks, algorithmic bias, copyright ambiguity, and overreliance on automated tools require sustained pedagogical supervision. It is concluded that the modernization of philological education should be approached not as the replacement of close reading, linguistic analysis, and translation craftsmanship, but as their technology-enhanced extension, with the instructor retaining central responsibility for meaning-making, ethical guidance, and critical interpretation.

Keywords: *philological education; artificial intelligence; multimedia technologies; language and literature teaching; translation studies; digital competence; higher education*

1. Introduction

The digital transformation of higher education has reshaped the conditions under which philological disciplines — language studies, literary studies, and translation studies — are taught at universities. Cloud-based platforms, generative artificial intelligence, and multimedia resources have altered how students encounter texts, acquire linguistic competence, and practise professional and literary communication. Because philological education has traditionally relied on close reading, grammatical analysis, and the interpretation of literary and cultural texts, its encounter with digital technologies raises distinctive pedagogical questions that differ from those found in more technically oriented fields.

Philological disciplines occupy a special position within the humanities because they combine linguistic, literary, cultural, and translation competences into a single field of professional preparation. Contemporary philology graduates are expected not only to demonstrate advanced language proficiency and literary erudition, but also to apply digital tools competently, engage critically with automatically generated text, and participate in intercultural and professional communication mediated by technology. These expectations have intensified the need for a coherent pedagogical framework capable of integrating artificial intelligence and multimedia technologies into the teaching of language, literature, and translation without diminishing the analytical and interpretive rigour that defines philological scholarship.

Recent advances in generative artificial intelligence — including large language models such as ChatGPT, Gemini, Claude, Microsoft Copilot, and Perplexity AI, together with neural machine translation systems such as DeepL — have introduced new possibilities for supporting linguistic analysis, literary interpretation, translation practice, and academic writing. At the same time, multimedia technologies, including interactive presentations, educational video, digital literary archives, corpora, collaborative platforms, and gamified learning tools, continue to enrich the presentation of linguistic and cultural material and to diversify the modalities through which students engage with texts.

Although a growing body of research addresses artificial intelligence and multimedia learning separately, comparatively little attention has been devoted to their combined, systematic application within the teaching of philological disciplines specifically, as distinct from language teaching in general or from technical and scientific education. Existing studies tend to examine isolated tools — a single chatbot, a single translation engine, a single multimedia platform — rather than proposing an integrated, competence-based pedagogical framework tailored to the particular demands of linguistic analysis, literary interpretation, and translation training. This gap justifies the development of a dedicated educational model for philological instruction.

The present study addresses this gap by proposing an integrated pedagogical model for combining artificial intelligence and multimedia technologies within the teaching of philological disciplines at higher education institutions. The scientific novelty of the study lies in (a) the development of an original competence-based model adapted specifically to linguistic, literary, and translation instruction; (b) the integration of technological, methodological, and competence-based perspectives within a single conceptual framework; (c) the demonstration that artificial intelligence can support not only language acquisition but also literary-analytical thinking, translation competence, and critical digital literacy; and (d) the formulation of practical recommendations for university instructors seeking to modernize philological education responsibly and ethically.

2. Literature Review

2.1. Digital Transformation in Philological Education

Digital transformation has become a defining feature of contemporary higher education, altering instructional design, resource delivery, and the roles of both teachers and students (Rodríguez-Abitia & Bribiesca-Correa, 2021). Within philological education specifically, digitalization has expanded access to primary texts, corpora, and scholarly resources while enabling new forms of collaborative and multimodal engagement with language and literature. Institutional frameworks such as the Digital Competence Framework for Citizens (DigComp 2.2) conceptualize digital competence broadly, encompassing information literacy, communication, digital content creation, problem-solving, and safety awareness (Vuorikari et al., 2022), all of which are directly relevant to the professional preparation of philologists.

Systematic reviews of digital transformation in higher education emphasize that technological adoption alone does not guarantee improved learning outcomes; pedagogical design, institutional strategy, and staff readiness remain decisive factors (Rodríguez-Abitia & Bribiesca-Correa, 2021). Ukrainian scholarship on digital transformation likewise highlights that successful implementation requires attention to organizational culture, staff development, and equity of access, alongside the introduction of new technologies (Vakerych et al., 2024). Within philological faculties, these considerations are compounded by the text-centred and interpretive nature of the discipline, which requires that digital tools support rather than substitute for close reading and critical analysis.

Learning management systems, digital corpora, electronic libraries, and cloud-based collaborative platforms have become integral to contemporary philological instruction, enabling asynchronous access to primary and secondary sources and supporting research-based learning. At the same time, scholars caution that digital transformation should remain human-centred, preserving the role of the instructor as an interpretive guide rather than reducing literary and linguistic study to information retrieval (UNESCO, 2023).

2.2. Artificial Intelligence in Teaching Language and Literature

Artificial intelligence has become one of the most actively researched innovations in contemporary language and literature education. Systematic reviews of AI applications in higher education demonstrate rapid growth in publications addressing personalized learning, automated feedback, and adaptive instruction (Zawacki-Richter et al., 2019; Bond et al., 2024), while more recent meta-syntheses call for increased attention to ethics, pedagogical rigour, and interdisciplinary collaboration in the design of AI-supported courses (Bond et al., 2024).

Within English and foreign-language instruction specifically, generative AI systems such as ChatGPT have been examined for their capacity to support writing development, grammar explanation, and learner engagement (Chukwuere, 2024; Mohamed, 2024). Systematic reviews of ChatGPT use in ESL/EFL contexts report consistent benefits for personalized feedback and learner autonomy, alongside recurring concerns regarding overreliance and reduced opportunities for independent language production (Lo et al., 2024). Comparable findings emerge from research on AI-assisted digital multimodal composing, which shows that generative tools reshape students' cognitive processes during writing tasks in ways that require deliberate pedagogical scaffolding (Liu et al., 2024).

Literary education has received comparatively less attention in the AI literature, yet emerging studies suggest that large language models can support the analysis of literary texts, comparative reading, thematic summarization, and the generation of discussion prompts, provided that instructors verify interpretive claims and encourage independent critical

engagement (Soelistiyowati et al., 2024). Research on generative AI in higher education more broadly confirms that AI-based tools can meaningfully increase student engagement and perceived learning value, while also raising questions of algorithmic bias and equitable access that are particularly salient in the interpretation of culturally embedded texts (Grájeda et al., 2024; Farisco et al., 2020).

International policy bodies have responded to these developments by articulating competency frameworks intended to guide responsible implementation. UNESCO's AI Competency Framework for Teachers identifies fifteen competencies across five dimensions — human-centred mindset, ethics of AI, AI foundations and applications, AI pedagogy, and AI for professional learning — organized into three progression levels (UNESCO, 2024a). A parallel framework for students emphasizes human-centred thinking, AI ethics, technical understanding, and system design (Miao & Shiohira, 2024). Earlier UNESCO guidance specifically addressed generative AI in education and research, recommending human-centred, transparent, and ethically supervised implementation (Miao & Holmes, 2023; Sabzalieva & Valentini, 2023). These frameworks provide a normative foundation for the pedagogically responsible integration of AI into philological instruction.

2.3. Theoretical Foundations of Multimedia Learning

The theoretical foundation of multimedia learning derives principally from Mayer's Cognitive Theory of Multimedia Learning (CTML), which holds that meaningful learning occurs when learners actively select, organize, and integrate verbal and visual information into coherent mental representations (Mayer, 2021, 2022). CTML rests on three assumptions — dual channels, limited capacity, and active processing — which together explain why coordinated verbal and visual presentation of material generally produces deeper understanding than text alone (Mayer, 2021, 2022; Clark & Mayer, 2024).

These principles are complemented by Paivio's Dual Coding Theory, which proposes that verbal and non-verbal information are processed through partially independent cognitive systems, so that combining textual and visual representations of literary or linguistic content strengthens comprehension and retention (Paivio, 1986). Sweller's Cognitive Load Theory further emphasizes that instructional materials should be designed to minimize extraneous cognitive load while supporting the processing of essential content (Sweller, 2011), a principle directly relevant to the design of multimedia materials for grammar instruction, literary analysis, and translation practice.

Contemporary extensions of CTML highlight the role of generative learning strategies — including summarizing, mapping, and self-explaining — in strengthening the transfer of multimedia-presented knowledge (Fiorella & Mayer, 2015, 2016), as well as the influence of instructor presence and affective tone in video-based instruction on learner engagement (Horovitz & Mayer, 2021; Huang & Mayer, 2019). Reviews of the theory's development confirm that its core assumptions have remained stable even as its applications have expanded into online, mobile, and AI-mediated learning environments (Greene, 2022), which supports its continued relevance for the design of multimedia resources within philological instruction, including annotated digital literary editions, narrated grammar explanations, and subtitled audiovisual texts.

2.4. Technologies for Translation and Linguistic Competence Development

Translation and linguistic-analytical competence form a core component of philological education, and their development has been substantially affected by neural machine translation and generative AI. Comparative studies of DeepL, Google Translate, and ChatGPT indicate that each system exhibits distinctive strengths: neural machine translation engines such as

DeepL are frequently favoured for stylistic accuracy and reading comprehension support, while generative models demonstrate greater flexibility in handling context-sensitive and creative language (Understanding Students' Acceptance of ChatGPT as a Translation Tool, as cited in comparative MT research). Surveys of student attitudes confirm that Google Translate remains the most widely used tool, followed by DeepL and ChatGPT, primarily for reading comprehension, grammar checking, and writing support (Full article: Use of machine translation in foreign language education, 2025).

Research on translation pedagogy cautions that machine translation tools, however capable, continue to struggle with culturally embedded expressions, idiomatic nuance, and legal or literary register, underscoring the continued necessity of human interpretive judgement in professional and literary translation training (Evaluating the Translation Accuracy of ChatGPT and DeepL, 2024). Studies of interpreting competence similarly show that while digital tools can support preparation and terminology management, they cannot substitute for the cognitive and communicative competences developed through sustained human practice (Linguistics and Education, 2024).

Within business and professional communication strands of philological education, AI-supported tools have been shown to enhance intercultural and professional competence when combined with authentic communicative tasks (Mebitil, 2023). Taken together, this literature suggests that translation-oriented and linguistic-analytical instruction benefits from AI and multimedia technologies primarily when these tools are positioned as instruments for comparison, verification, and stylistic reflection rather than as substitutes for independent linguistic reasoning.

3. Purpose of the Study

The purpose of this study is to develop a competence-based model for integrating artificial intelligence and multimedia technologies into the teaching of philological disciplines — including practical language instruction, literary studies, and translation studies — at higher education institutions. Unlike technology-oriented approaches that examine individual digital tools in isolation, the present research adopts a pedagogical perspective in which artificial intelligence and multimedia technologies are treated as complementary components of an integrated educational environment centred on the instructor's disciplinary and interpretive expertise.

To achieve this purpose, the study pursues the following objectives:

1. To examine contemporary theoretical approaches to digital transformation, artificial intelligence, and multimedia learning as they apply to philological education.
2. To analyse the educational potential of contemporary AI systems — including ChatGPT, Gemini, Claude, Microsoft Copilot, Perplexity AI, and DeepL — for supporting linguistic analysis, literary interpretation, translation practice, and academic writing.
3. To investigate the role of multimedia technologies — including interactive presentations, educational video, digital literary archives, corpora, collaborative platforms, and gamified learning tools — in developing linguistic, literary, and translation competences.
4. To identify the pedagogical advantages and limitations of integrating artificial intelligence and multimedia technologies into philological instruction, with attention to academic integrity, algorithmic bias, and responsible technology use.
5. To develop a competence-based pedagogical model combining artificial intelligence, multimedia technologies, and instructor-guided interpretive practice within philological education.

6. To formulate methodological recommendations for university instructors implementing inclusive and pedagogically sound digital practices in language, literature, and translation courses.

The study proceeds from the assumption that the effective integration of artificial intelligence into philological education depends primarily on pedagogical design and disciplinary expertise rather than on technological capability alone, and that digital innovation should extend, rather than replace, the interpretive and analytical traditions of philological scholarship.

4. Research Methods

The present study employs a qualitative research design combining theoretical analysis with pedagogical interpretation in order to develop a competence-based model for integrating artificial intelligence and multimedia technologies into the teaching of philological disciplines. Because the research seeks to synthesize contemporary educational theories, technological developments, and practical teaching approaches rather than to measure specific learning outcomes experimentally, qualitative methodology was considered most appropriate for the stated objectives.

Descriptive analysis was applied to examine the theoretical foundations of digital transformation, artificial intelligence, multimedia learning, and philological education presented in recent scholarly literature and international policy documents. Comparative analysis was employed to identify similarities and differences among contemporary AI systems — including ChatGPT, Gemini, Claude, Microsoft Copilot, Perplexity AI, and DeepL — with particular attention to their applicability to linguistic, literary, and translation instruction, as well as to compare multimedia technologies such as presentation software, digital archives, educational video, and gamified platforms.

Synthesis served as a principal method for integrating findings from the reviewed literature into a unified conceptual framework, combining artificial intelligence, multimedia technologies, and competence-based philological pedagogy rather than treating them as isolated phenomena. Generalization was applied to formulate broader pedagogical conclusions regarding trends transferable across different philological sub-disciplines, including language instruction, literary studies, and translation training.

Pedagogical observation constitutes an important methodological component of the study, informed by long-term university teaching experience in English language instruction, including courses in professionally oriented English, business communication, and translation-oriented language education. Continuous observation of students' interaction with multimedia resources, digital platforms, and generative AI tools has informed the identification of instructional strategies that promote engagement, interpretive competence, and responsible digital literacy. These observations are interpretative rather than experimental and are used to illustrate practical tendencies within authentic university teaching contexts.

The case-study approach was employed to illustrate the practical implementation of artificial intelligence and multimedia technologies within representative teaching scenarios drawn from language, literature, and translation instruction, including grammar and vocabulary instruction, literary text analysis, academic writing, and translation practice. The combination of descriptive analysis, comparative analysis, synthesis, generalization, pedagogical observation, and the case-study approach ensured methodological triangulation appropriate to the study of rapidly evolving educational technologies. The research is limited to pedagogical and methodological aspects of technology integration; technical characteristics of AI systems and experimental measurement of learning outcomes fall outside its scope.

5. Main Results

5.1. Artificial Intelligence Tools in Philological Disciplines

The analysis indicates that artificial intelligence has become an increasingly significant instructional resource within philological disciplines, functioning as a pedagogical assistant that supports linguistic analysis, literary interpretation, translation practice, and academic writing rather than replacing the interpretive authority of the instructor. Each of the analysed systems demonstrates distinctive strengths relevant to different components of philological instruction.

ChatGPT supports grammar explanation, vocabulary development, essay drafting, and the generation of discussion questions for literary seminars, while allowing students to practise argumentation and critical response to generated interpretations (Chukwuere, 2024; Lo et al., 2024). Gemini's multimodal capabilities enable the joint analysis of textual and visual material, which is valuable for teaching literary adaptation, illustrated editions, and cultural context. Claude's capacity to process extended documents supports the summarization and comparative analysis of scholarly articles and lengthy literary texts, assisting students in organizing complex critical arguments. Microsoft Copilot facilitates the preparation of presentations and collaborative philological research projects through integration with productivity software, while Perplexity AI supports literature searches and terminology research through source-referenced responses that encourage verification (Grájeda et al., 2024).

DeepL and comparable neural machine translation systems occupy a distinctive position in translation-oriented philological instruction. Survey research shows that Google Translate remains the most widely used tool among students, followed by DeepL and ChatGPT, primarily for reading comprehension, grammar checking, and writing assistance (Use of machine translation in foreign language education, 2025), while comparative evaluations indicate that generative and neural systems differ in their handling of stylistic nuance, idiomatic expression, and implied meaning (Evaluating the Translation Accuracy of ChatGPT and DeepL, 2024). Rather than replacing translation instruction, these tools are most effective when used analytically — to compare alternative renderings, evaluate stylistic choices, and identify translation loss.

Table 1 summarizes the principal applications of the analysed AI systems within philological instruction.

AI Tool	Primary Applications in Philological Teaching	Competences Developed
ChatGPT	Grammar explanation, essay drafting, discussion prompts, role-play dialogue	Writing, critical thinking, communicative competence
Gemini	Multimodal analysis of text and image, literary adaptation, cultural context	Visual literacy, interpretive analysis
Claude	Summarization and comparison of scholarly and literary texts, argument organization	Academic literacy, analytical reasoning
Microsoft Copilot	Presentation design, collaborative research projects, document preparation	Digital competence, teamwork
Perplexity AI	Literature search, terminology research, source verification	Information literacy, critical evaluation

DeepL	Translation comparison, stylistic analysis, vocabulary development	Translation competence, linguistic awareness
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Overall, the findings suggest that artificial intelligence contributes most effectively to philological instruction when it functions as an instrument for comparison, verification, and generative practice, complementing rather than substituting the close reading and interpretive judgement that remain central to the discipline.

5.2. Multimedia Technologies in Philological Instruction

Multimedia technologies continue to play an essential role in philological education by presenting linguistic and literary content through complementary verbal, visual, and auditory channels, in accordance with the Cognitive Theory of Multimedia Learning (Mayer, 2021, 2022). Presentation software, digital literary archives, educational video, corpora, and collaborative platforms jointly support vocabulary acquisition, grammar instruction, literary analysis, and intercultural understanding.

Digital literary archives and electronic libraries provide direct access to primary texts, scholarly editions, and secondary criticism, strengthening independent research and close-reading skills. Educational video materials — including recorded lectures, literary adaptations, author interviews, and dramatized readings — develop listening comprehension and interpretive engagement while exposing students to authentic language use in diverse communicative and cultural contexts. Interactive and gamified learning platforms, including quiz-based and point-driven tools, have been shown to strengthen vocabulary retention, grammatical accuracy, and learner motivation in language courses, with reviews of gamification in EFL/ESL instruction reporting consistent gains in engagement and reduced language-learning anxiety (Zhang & Hasim, 2023).

Collaborative digital platforms support peer editing, shared annotation of literary texts, and joint translation projects, extending classroom discussion beyond scheduled sessions. Learning management systems provide the organizational infrastructure for blended and hybrid philological courses, enabling continuous instructor feedback and flexible access to course materials. Taken together, these resources create a multimodal learning environment consistent with the dual-channel and active-processing assumptions of contemporary multimedia learning theory (Clark & Mayer, 2024).

Table 2 summarizes the principal multimedia technologies examined and their applications within philological instruction.

Technology	Educational Applications	Competences Developed
Presentation software (PowerPoint, Canva)	Vocabulary and grammar presentation, literary analysis visuals, student presentations	Presentation skills, information organization
Digital literary archives and e-libraries	Access to primary texts, scholarly editions, and criticism	Research competence, close-reading skills
Educational video and dramatized readings	Listening comprehension, literary adaptation analysis, cultural context	Listening, interpretive engagement
Corpora and terminology databases	Linguistic analysis, vocabulary and translation research	Linguistic awareness, research competence
Gamified and interactive platforms	Vocabulary revision, grammar practice, formative assessment	Motivation, language accuracy

Collaborative platforms and LMS	Peer editing, shared annotation, blended course delivery	Collaboration, learner autonomy
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5.3. Applications in Language, Literature, and Translation Courses

The combined use of artificial intelligence and multimedia technologies demonstrates distinctive applications across the principal components of philological education. In practical language courses, AI systems support grammar correction, vocabulary expansion, and conversational practice, while multimedia resources provide authentic listening and reading materials that contextualize linguistic forms within real communicative situations.

In literary studies, generative AI can assist students in generating initial interpretive hypotheses, summarizing critical scholarship, and organizing comparative analyses, while multimedia resources — including digitized manuscripts, illustrated editions, and filmed adaptations — enrich textual interpretation with visual and historical context. Instructors retain responsibility for evaluating the validity of AI-generated interpretations and for guiding students toward independent critical argumentation, since generative systems may produce plausible but superficial or inaccurate literary claims (Soelistiyowati et al., 2024).

In translation studies, AI and multimedia technologies jointly support terminology research, comparative translation analysis, and stylistic editing. Students may use neural machine translation and generative AI to produce draft translations for critical evaluation, comparing alternative renderings against parallel corpora and reference dictionaries, thereby strengthening both linguistic precision and translation-critical judgement (Use of machine translation in foreign language education, 2025).

Table 3 summarizes representative applications across the three principal components of philological education.

Philological Component	Artificial Intelligence	Multimedia Technologies
Practical language instruction	Grammar correction, vocabulary practice, conversational simulation	Interactive quizzes, authentic audio and video
Literary studies	Interpretive hypotheses, summarization of criticism, comparative analysis	Digitized manuscripts, illustrated editions, adaptations
Translation studies	Draft translation, terminology support, stylistic comparison	Parallel corpora, terminology databases, dictionaries

5.4. Advantages of Integrating AI and Multimedia Technologies

The findings demonstrate several pedagogical advantages associated with the integration of artificial intelligence and multimedia technologies into philological instruction. Immediate, personalized feedback allows students to identify grammatical, stylistic, and interpretive weaknesses during the learning process rather than only at summative assessment, supporting self-regulated learning (Lo et al., 2024). Adaptive AI-generated materials allow instructors to differentiate instruction according to students' proficiency levels and disciplinary interests, whether in language acquisition, literary analysis, or translation practice.

Multimedia technologies enhance accessibility and engagement by presenting linguistic and literary content through multiple modalities, consistent with dual-coding and cognitive-load principles (Paivio, 1986; Sweller, 2011). Gamified and interactive tools have been shown to increase motivation and reduce language-learning anxiety while reinforcing vocabulary and

grammatical accuracy (Zhang & Hasim, 2023). AI-supported literature search and summarization tools additionally reduce the time required for preliminary research, allowing more classroom time for interpretive discussion and critical analysis.

Table 4 summarizes the principal educational benefits identified in the analysis.

Function	Educational Benefit
Personalized feedback	Immediate correction of grammar, style, and argumentation; supports formative assessment
Adaptive learning	Differentiated materials according to proficiency and disciplinary focus
Multimodal presentation	Stronger comprehension and retention through combined verbal-visual processing
Gamified practice	Increased motivation, reduced anxiety, reinforced accuracy
AI-assisted research	Faster literature review, more classroom time for interpretation
Translation comparison	Strengthened translation-critical judgement and stylistic awareness

5.5. Challenges of Integrating AI and Multimedia Technologies

Despite these advantages, the integration of artificial intelligence into philological education is accompanied by significant challenges. Generative systems may produce hallucinated citations, fabricated biographical details, or inaccurate interpretive claims that appear linguistically convincing but lack scholarly grounding, requiring students to verify AI-generated content against authoritative sources (Chukwuere, 2024). The accessibility of AI-generated text has intensified concerns regarding academic integrity and the risk that students submit automatically generated essays or translations without independent critical engagement (Lo et al., 2024; Liu et al., 2024).

Algorithmic bias represents a further concern, particularly in literary and cultural instruction, where AI systems trained on imbalanced datasets may reproduce cultural stereotypes or offer uneven representation of diverse literary traditions (Farisco et al., 2020). Copyright and data-privacy considerations require careful attention when AI tools process unpublished student work or copyrighted literary material. Finally, overreliance on AI-generated translations or interpretations risks weakening the analytical and linguistic reasoning skills that philological education is intended to cultivate, underscoring the continuing necessity of instructor-guided verification and critical reflection (UNESCO, 2024a).

Table 5 summarizes the principal challenges identified and corresponding pedagogical responses.

Challenge	Recommended Pedagogical Response
Hallucinations and fabricated references	Verify AI-generated content against peer-reviewed and primary sources
Academic integrity risks	Promote transparent citation and instructor-supervised original analysis
Algorithmic and cultural bias	Encourage critical comparison across multiple authoritative sources
Copyright and data privacy	Avoid uploading copyrighted or unpublished material; follow institutional policy

Overreliance on automated tools	Use AI as a supplementary, not substitutive, instructional resource
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5.6. Proposed Educational Model

Building on the preceding analysis, the study proposes a competence-based educational model for integrating artificial intelligence and multimedia technologies into the teaching of philological disciplines. The model places the instructor at the beginning of the instructional sequence, reflecting the assumption that successful integration depends on pedagogical and disciplinary expertise rather than technological capability alone. The instructor defines learning objectives, selects appropriate digital resources, and retains interpretive and ethical responsibility throughout the process.

Within this framework, artificial intelligence functions as an instructional assistant that supports grammar instruction, literary-analytical hypothesis generation, translation comparison, and academic writing, while multimedia technologies transform this content into interactive, multimodal learning experiences. Their combined implementation creates the conditions for authentic engagement with language, literature, and translation, organized around practical philological tasks — close reading, comparative translation, academic argumentation, and intercultural communication — rather than isolated exercises.

The principal educational outcome of the model is the development of philological competence, understood as a multidimensional construct encompassing linguistic proficiency, literary-analytical and interpretive skill, translation competence, digital literacy, and critical thinking. This competence, in turn, contributes to graduate readiness for professional roles in education, publishing, translation, media, and intercultural communication. As in other domains of higher education, the model is conceived as cyclical: professional practice generates new learning needs that sustain continuous development of digital and disciplinary competence throughout a philologist's career.

Figure 1 presents the structure of the proposed model.

Figure 1. Competence-Based Model for Integrating Artificial Intelligence and Multimedia Technologies into the Teaching of Philological Disciplines

- 1. Instructor (disciplinary and pedagogical expertise)**
2. Artificial Intelligence (linguistic, literary, and translation assistance)
3. Multimedia Technologies (multimodal presentation and engagement)
4. Philological Learning (language, literature, translation)
5. Philological Competence (linguistic, literary, translation, digital, critical)
- 6. Graduate Readiness for Professional and Academic Practice**

The proposed model demonstrates that educational innovation in philological disciplines should be driven by pedagogical and interpretive objectives rather than by technological novelty, and that artificial intelligence and multimedia technologies achieve their greatest value when integrated into a coherent instructional framework directed by the university teacher.

6. Discussion

The findings of this study are broadly consistent with international research on digital transformation and artificial intelligence in higher education, while extending existing scholarship through a model specifically adapted to the interpretive and text-centred character of philological disciplines. Consistent with systematic reviews of AI in higher education (Zawacki-Richter et al., 2019; Bond et al., 2024), the present analysis confirms that AI

contributes positively to personalized feedback, adaptive instruction, and learner engagement, while requiring sustained ethical and pedagogical oversight.

The results also reinforce the continued relevance of Mayer's Cognitive Theory of Multimedia Learning for humanities instruction, demonstrating that multimodal presentation of linguistic and literary material supports comprehension and retention in ways consistent with dual-channel and active-processing assumptions (Mayer, 2021, 2022; Clark & Mayer, 2024). At the same time, the study extends this literature by showing that these principles apply not only to language acquisition narrowly conceived, but to literary interpretation and translation training as well.

A further point of alignment concerns the continuing centrality of the instructor. Although generative AI systems can produce plausible interpretive suggestions and draft translations, the literature consistently emphasizes that human critical judgement remains indispensable for literary and cultural analysis, particularly given the risk of algorithmic bias and hallucinated content (Farisco et al., 2020; UNESCO, 2024a). The proposed model reflects this consensus by positioning the instructor at the centre of instructional design rather than treating AI as an autonomous source of interpretation.

The study contributes an original perspective by addressing philological disciplines as a distinct pedagogical domain, rather than subsuming them within general language-teaching or technology-integration literature. This distinction matters because literary interpretation and translation practice place particular demands on critical judgement, cultural sensitivity, and stylistic discernment that differ from the more skills-oriented objectives typical of general English or technical communication instruction.

Certain limitations should be acknowledged. The proposed model is based on descriptive analysis, comparative analysis, and pedagogical observation rather than large-scale empirical measurement of learning outcomes. Future research involving multiple philological faculties, longitudinal designs, and quantitative assessment of literary-analytical and translation competence would strengthen the evidence base for the model proposed here.

7. Conclusion

The present study allows several conclusions regarding the integration of artificial intelligence and multimedia technologies into the teaching of philological disciplines. Digital transformation has expanded the possibilities for language, literature, and translation instruction by creating more flexible, multimodal, and research-accessible learning environments. Artificial intelligence has demonstrated considerable potential in supporting personalized feedback, literary-analytical hypothesis generation, translation comparison, and academic writing, while multimedia technologies have enhanced engagement, accessibility, and multimodal comprehension of linguistic and literary material.

The findings indicate that the greatest pedagogical effectiveness is achieved not through the isolated use of artificial intelligence or multimedia technologies, but through their systematic integration within a competence-based instructional framework that preserves the interpretive and analytical traditions central to philological scholarship. The proposed educational model places the university instructor at the centre of this process, retaining responsibility for instructional design, ethical supervision, and the evaluation of AI-generated content.

At the same time, successful implementation requires careful attention to hallucinations, academic integrity, algorithmic bias, copyright, data privacy, and the risk of overreliance on automated tools. The originality of the present study lies in the development

of an integrated pedagogical framework, adapted specifically to the linguistic, literary, and translation components of philological education, with the aim of strengthening philological competence and professional readiness among graduates. Future research should include empirical validation of the proposed model through studies conducted across multiple philological faculties, together with quantitative assessment of literary-analytical, translation, and digital competence development.

The integration of artificial intelligence and multimedia technologies into philological education should therefore be regarded not as a replacement for close reading, linguistic analysis, and translation craftsmanship, but as an effective pedagogical instrument that, when applied responsibly and critically, enhances the quality of philological instruction and better prepares graduates for the evolving demands of academic, cultural, and professional communication.

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Declarations

Funding: This research received no external funding.

Conflicts of Interest: The author declares no conflict of interest.

Author Contributions: Conceptualization, methodology, investigation, writing – original draft, and writing – review & editing: I.R. The author has read and agreed to the published version of the manuscript.

How to Cite:

Renska, I. (2026). Integrating artificial intelligence and multimedia technologies into teaching philological disciplines: A modern educational model. *Global Spectrum of Research and Humanities*, 3(3), 51–65. <https://doi.org/10.69760/gsrh.0260303005>

Received: 2 August 2026

Accepted: 20 August 2026

Published: 21 August 2026

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