



PEDAGOGICAL METHODOLOGY FOR FORMING STUDENTS' PRAGMATIC COMPETENCE BASED ON DIGITAL LINGUISTIC RESOURCES

METODOLOGÍA PEDAGÓGICA PARA LA FORMACIÓN DE LA COMPETENCIA PRAGMÁTICA DE LOS ESTUDIANTES BASADA EN RECURSOS LINGÜÍSTICOS DIGITALES

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ABSTRACT:

This study examines the methodology for developing university students' pragmatic competence through digital linguistic resources in foreign language education. The research addresses the need to integrate pragmatic instruction with corpus-based learning, multimodal resources, digital dictionaries, natural language processing tools, and critically mediated generative artificial intelligence. Pragmatic competence is conceptualized as a multidimensional construct comprising social, sociolinguistic, sociocultural, discourse, and compensatory components. The study identifies pragmatic indicators relevant to instruction and assessment, including speech-act strategies, discourse markers, hedges, stance markers, mitigation devices, forms of address, and interactional signals. The proposed methodology is based on five pedagogical conditions: learner motivation, foreign language proficiency of at least B1, digital and corpus literacy, teacher

digital-methodological competence, and adherence to a structured instructional sequence. The developed model includes five stages and twelve operational steps, progressing from awareness and digital-resource orientation to authentic data analysis, communicative application, verification, assessment, and reflection. Digital linguistic resources are treated as tools for authentic input, linguistic inquiry, comparison, and critical verification rather than as passive reference sources. The study concludes that systematic integration of these resources can support context-sensitive language use, learner autonomy, critical AI literacy, and the professional preparation of future foreign language teachers in contemporary higher education contexts.

Keywords: Pragmatic competence, Digital linguistic resources, Corpus-based learning, Data-driven Learning, Foreign language education.

RESUMEN:

Este estudio examina la metodología para desarrollar la competencia pragmática de estudiantes universitarios mediante recursos lingüísticos digitales en la enseñanza de lenguas extranjeras. La investigación aborda la necesidad de integrar la instrucción pragmática con el aprendizaje basado en corpus, los recursos multimodales, los diccionarios digitales, las herramientas de procesamiento del lenguaje natural y la inteligencia artificial generativa mediada críticamente. La competencia pragmática se conceptualiza como un constructo multidimensional que comprende componentes sociales, sociolingüísticos, socioculturales, discursivos y compensatorios. El estudio identifica indicadores pragmáticos relevantes para la enseñanza y la evaluación, entre ellos las estrategias de actos de habla, los marcadores discursivos, los atenuadores, los marcadores de postura, los mecanismos de mitigación, las formas de tratamiento y las señales de interacción. La metodología propuesta se fundamenta en cinco condiciones pedagógicas: motivación del estudiante, dominio de la lengua extranjera de al menos nivel B1, alfabetización digital y en corpus, competencia digital-metodológica del docente y cumplimiento de una secuencia didáctica estructurada. El modelo desarrollado incluye cinco etapas y doce pasos operativos que avanzan desde la sensibilización y orientación hacia los recursos digitales hasta el análisis de datos auténticos, la aplicación comunicativa, la verificación, la evaluación y la reflexión. Los recursos lingüísticos digitales se consideran herramientas para el acceso a datos auténticos, la investigación lingüística, la comparación y la verificación crítica, y no como simples fuentes pasivas de consulta. El estudio concluye que la integración sistemática de estos recursos puede favorecer el uso contextualizado de la lengua, la autonomía del estudiante, la alfabetización crítica en inteligencia artificial y la preparación profesional de futuros docentes de lenguas extranjeras en los contextos contemporáneos de la educación superior.

Palabras clave: Competencias pragmática, Recursos lingüísticos digitales, Aprendizaje basado en corpus, Aprendizaje basado en datos, Enseñanza de lenguas extranjeras.

INTRODUCTION

In the context of the intensive digitalization of education, the expansion of international academic and professional communication, the growing adoption of distance and blended learning formats, and the rapid development of artificial intelligence technologies, the development of foreign language communicative competence has become a growing priority. Foreign language competence involves not only knowledge of lexical and grammatical systems but also the ability to use linguistic resources appropriately according to communicative situations, social contexts,

interlocutors' relationships, communicative purposes, and the norms of verbal behavior established within particular linguistic and cultural communities. From this perspective, pragmatic competence represents one of the fundamental components of foreign language communicative competence.

Pragmatic competence can be defined as the integrated ability to select and employ linguistic and discourse resources appropriately in order to achieve communicative intentions, construct contextually suitable utterances, interpret explicit and implicit meanings, identify interlocutors' intentions, and consider social roles, registers, politeness conventions, and culturally determined patterns of interaction. This conception involves both pragmalinguistic and sociopragmatic knowledge and emphasizes the relationship between linguistic choices and their sociocultural contexts of use (Ishihara & Cohen, 2010; Taguchi & Roever, 2017). This understanding corresponds with contemporary approaches to communicative competence presented in the *Common European Framework of Reference for Languages: Learning, Teaching, Assessment—Companion Volume*, where pragmatic competence is associated with the functional use of language, discourse organization, and effective participation in diverse communicative contexts (Council of Europe, 2020).

A limited level of pragmatic competence may cause communication difficulties even when learners demonstrate considerable lexical and grammatical knowledge. Linguistically correct expressions are not always pragmatically appropriate. Inappropriate choices of communicative strategies or linguistic forms when performing requests, refusals, apologies, advice, criticism, or disagreement, as well as difficulties in interpreting irony, indirect speech acts, implicatures, and other implicit meanings, may lead to misunderstandings of speakers' intentions, violations of politeness expectations, and intercultural communication problems. Recent research emphasizes that pragmatic competence requires learners to adapt linguistic resources dynamically to interlocutors and their responses rather than merely reproduce predetermined linguistic forms (Taguchi, 2026; Taguchi & Barón, 2024). Therefore, pragmatic competence should be considered an essential dimension of foreign language competence rather than a secondary aspect of language learning.

This issue is particularly relevant to the professional preparation of future foreign language teachers. For students enrolled in teacher education programs, pragmatic competence has a dual function. On the one hand, it constitutes an essential component of their own foreign language communicative ability. On the other hand, it provides the foundation for their future capacity to help learners use a foreign language appropriately in authentic communicative situations. A contemporary foreign language teacher must therefore not only explain lexical and grammatical

structures but also demonstrate context-sensitive language use, interpret pragmatic and intercultural differences, select authentic linguistic materials, and design learning activities that approximate real communication. Evidence from previous research indicates that explicit instruction and corrective feedback can contribute significantly to second-language pragmatic development, including in technology-mediated learning environments (Ren et al., 2023; Yousefi & Nassaji, 2019).

The digital transformation of language education creates new opportunities for developing pragmatic competence (Narimani, 2026). Contemporary learners have access not only to traditional textbooks and printed dictionaries but also to electronic language corpora, concordancers, digital dictionaries, databases of authentic spoken and written texts, multimodal resources, discourse analysis platforms, natural language processing tools, and generative artificial intelligence systems. These resources enable students to examine not only the isolated meanings of linguistic elements but also patterns of their actual use within specific social, professional, and communicative contexts. Corpus technologies are particularly valuable in the preparation of future language professionals because they support independent linguistic inquiry and the development of digital skills for analyzing authentic language data (Lemish et al., 2020; Shvets, 2026).

Digital linguistic resources have considerable pedagogical potential because they facilitate elements of data-driven learning. The analysis of authentic corpus examples allows learners to compare alternative ways of expressing similar communicative intentions, establish relationships between linguistic forms and contextual meanings, examine differences across registers and genres, analyze speech acts and discourse markers, and identify patterns of politeness, mitigation, modality, stance, and evaluation. Unlike predetermined textbook examples, digital resources allow learners to discover pragmatic regularities through observation and analysis of authentic language use. Generative artificial intelligence further expands these possibilities by providing conversational data and alternative linguistic formulations for pragmatic analysis, although such outputs require critical comparison with contextual and authentic language evidence (Chen et al., 2024). Chatbot-mediated feedback may also contribute to learners' pragmalinguistic and sociopragmatic development when incorporated within an appropriately designed instructional process (Fakher Ajabshir, 2025).

The relevance of digital resources is particularly significant in teacher education, where future professionals are expected to integrate linguistic, methodological, and digital competences. The *European Framework for the Digital Competence of Educators* (DigCompEdu) emphasizes teachers' ability to select, critically evaluate, adapt, and apply digital resources according to educational

objectives, pedagogical approaches, and learners' needs (Redecker, 2017). Consequently, the use of digital linguistic resources for pragmatic development may simultaneously contribute to the formation of future teachers' foreign language competence, methodological awareness, and digital literacy.

MATERIALS AND METHODS

The research addresses the discrepancy between the need to develop pragmatic competence in foreign languages and the insufficient methodological integration of digital linguistic resources. Its main question was: how can these resources be systematically integrated into foreign language teaching to enhance the pragmatic competence of university students? The aim was to develop, theoretically substantiate, and empirically evaluate a methodology for this purpose, through six specific objectives: (1) to clarify the structure of pragmatic competence and its indicators; (2) to determine the linguodidactic affordances of digital resources; (3) to substantiate the necessary pedagogical conditions; (4) to develop an instructional model integrating corpus-based, data-driven, multimodal, and AI-supported activities; (5) to establish a sequence of stages and tasks; and (6) to evaluate the effectiveness of the methodology through a pedagogical intervention with control and experimental groups.

A quasi-experimental pre-test and post-test design with control and experimental groups was adopted, involving university students with a minimum level of B1 (CEFR) (Council of Europe, 2020), divided into an experimental group and a control group. The experimental group received instruction based on the proposed methodology; the control group followed the regular curriculum without the systematic digital sequence. The B1 level was required because the activities demanded interpreting authentic material, comparing pragmatic realizations, formulating hypotheses about the form-function relationship, and participating in contextualized communicative tasks.

Pragmatic competence was operationalized as the integrated ability to recognize, interpret, select, and produce contextually appropriate linguistic resources according to communicative intention, discourse context, interpersonal relations, register, and sociocultural conventions, encompassing pragmalinguistic and sociopragmatic dimensions. The indicators included speech-act realization strategies, pragmatic routines, discourse and interactional markers, modal expressions, mitigation and intensification devices, politeness conventions, stance markers, forms of address, indirectness, implicature, and register sensitivity, in acts such as requests, refusals, apologies, suggestions, advice, agreement, disagreement, clarification, and criticism, analyzed from the form-function-context-appropriateness relationship.

The principal materials were digital linguistic resources: reference and specialized corpora, spoken and multimodal corpora, concordancers, digital dictionaries, authentic online discourse materials, audiovisual databases, natural language processing tools, and selected generative AI systems. Corpora were the primary source of authentic evidence; digital dictionaries allowed verification of semantic, grammatical, register-related, and usage information; spoken and multimodal resources provided access to pragmatic phenomena not interpretable from written language alone (intonation, hesitation, turn-taking, gestures). Generative AI was incorporated as a supplementary tool for analysis and practice, not as an authoritative source of pragmatic norms: its outputs were compared with corpus evidence to develop critical AI literacy and detect inappropriate, biased, or insufficiently authentic responses.

The hypothesis was that pragmatic competence would improve more with a structured integration of digital resources than with their episodic or merely referential use, provided that several conditions were met: (1) exploiting the linguodidactic affordances of the resources (authenticity, contextualization, variability, frequency analysis, comparison, autonomy, and inductive discovery); (2) ensuring linguistic and digital readiness (B1, basic digital competence, query formulation, concordance interpretation, critical evaluation of information and AI); (3) guaranteeing teachers' digital and methodological competence to select resources, design tasks, scaffold learning, and guide the responsible use of AI, in line with contemporary approaches to educators' digital competence (Redecker, 2017); and (4) embedding the resources in a defined sequence of five stages and twelve steps.

The methodology consisted of five interconnected stages: (1) **orientation**, with diagnostic assessment and identification of target phenomena and situations; (2) **technical organization**, with familiarization with the resources, development of digital and corpus literacy, and training in the critical and ethical use of digital and AI tools; (3) **analytical research**, the data-driven core, where students searched for authentic examples, identified patterns, and compared pragmatic choices according to register, situation, interlocutor, and resource; (4) **communication**, with controlled and semi-controlled production tasks, simulations, role plays, and critical evaluation of their own choices, those of peers, the corpus, and AI; and (5) **assessment and reflection**, with post-test, feedback, self-assessment, and reflection on pragmatic appropriateness.

Effectiveness was assessed through diagnostic tasks administered before and after the intervention to both groups, measuring recognition of pragmatic meaning, identification of appropriate forms, evaluation of alternative utterances, interpretation of indirect meanings, and production of pragmatically appropriate responses. The

criteria included pragmalinguistic accuracy, sociopragmatic appropriateness, contextual sensitivity, register awareness, communicative effectiveness, and justification of choices, distinguishing grammatical correctness from pragmatic appropriateness.

The methods included theoretical procedures (systematic analysis and synthesis on pragmatic competence, language pedagogy, corpora, data-driven learning, digital education, and AI-assisted learning; comparative and conceptual analysis), empirical procedures (observation of interaction with digital resources, task analysis, production activities, and generalization of teaching experience, in addition to the analysis of reflective responses), and formative procedures (the pedagogical intervention). Quantitative data were processed with descriptive and inferential statistics (means, standard deviations, distributions, and pre-post changes), seeking to determine the statistical significance of intra- and inter-group differences, with tests selected according to the distribution and measurement characteristics of the data. Quantitative results were interpreted alongside qualitative evidence (performance, pragmatic errors, patterns of resource use, and reflective explanations) to assess not only whether pragmatic competence improved but also how the use of digital resources influenced the ability to notice, interpret, justify, and apply contextually sensitive choices. The study followed ethical principles: voluntary participation, information about purposes and procedures, anonymized or pseudonymized data processing, and particular attention to data protection, academic integrity, transparency, and critical evaluation of automatically generated content.

RESULTS AND DISCUSSION

The results of the study made it possible to develop an integrated methodology for the formation of students-pragmatic competence through digital linguistic resources. The proposed methodology combines the development of pragmalinguistic and sociopragmatic abilities with corpus-based analysis, data-driven learning, multimodal language resources, digital reference tools, and critically mediated use of generative artificial intelligence. The results concern five interrelated dimensions: the structure of pragmatic competence, the system of pragmatic indicators, the linguodidactic affordances of digital linguistic resources, the pedagogical conditions required for effective instruction, and the staged instructional model.

The first result concerns the conceptual structure of pragmatic competence. In the present study, pragmatic competence is defined as the ability to interpret and produce contextually appropriate utterances in accordance with communicative intention, social relations between interlocutors, discourse conventions, register, and sociocultural context. It therefore involves not only knowledge of linguistic forms but also the ability to determine whether a

particular form is appropriate for a specific communicative situation.

The developed framework comprises five interrelated components: social, sociolinguistic, sociocultural, discourse, and compensatory.

The social component refers to the ability to interpret the social context of communication, identify the roles and relationships of participants, and select a socially appropriate communicative style.

The sociolinguistic component concerns the ability to interpret social meanings, register variation, modality, politeness, and other linguistic indicators associated with the characteristics of interlocutors, as well as to select appropriate linguistic resources in accordance with communicative goals and social roles.

The sociocultural component involves the ability to interpret culturally conditioned meanings and use knowledge of both the students' own and target-language cultures when solving communicative tasks in intercultural interaction.

The discourse component includes the ability to recognize and appropriately use discourse organization, cohesion, coherence, genre conventions, speech acts, turn-taking strategies, and interactional patterns.

The compensatory component refers to the ability to overcome linguistic, pragmatic, or sociocultural gaps through clarification, reformulation, paraphrasing, requests for repetition, contextual inference, and the appropriate use of digital reference resources.

The development of these components was organized through a system of pragmatic indicators. Rather than treating pragmatic markers exclusively as individual lexical or grammatical units, the present methodology adopts a broader understanding that incorporates linguistic, discourse, interactional, and contextual features. The indicators include discourse markers, pragmatic routines, modal expressions, hedges, intensifiers, mitigation devices, forms of address, stance markers, turn-management devices, markers of agreement and disagreement, inferential markers, topic-shifting devices, clarification strategies, and linguistic resources used to express requests, refusals, apologies, suggestions, advice, criticism, and other communicative intentions.

For instructional purposes, the pragmatic indicators were grouped into four functional categories. The first category comprises basic pragmatic indicators, including lexical, grammatical, syntactic, and mixed forms directly involved in expressing communicative intentions. The second category consists of commenting and stance indicators, which enable speakers to express evaluation, attitude, certainty, doubt, or interpersonal positioning. The third category includes interactional indicators, such as vocatives,

response markers, politeness devices, expressions of approval or dissatisfaction, and turn-management strategies. The fourth category comprises discourse-organising indicators, including contrastive, elaborative, inferential, sequencing, and topic-shifting markers.

A further result of the study was the identification of the principal linguodidactic affordances of digital linguistic resources for pragmatic competence development. These affordances include authenticity, contextualization, searchability, comparability, frequency-based analysis, multimodality, accessibility, interactivity, individualization, learner autonomy, and opportunities for critical verification of linguistic hypotheses.

Authenticity allows students to analyze language as it is actually used rather than relying exclusively on examples constructed for pedagogical purposes. Contextualization makes it possible to establish relationships between linguistic forms, communicative intentions, interlocutor characteristics, and discourse environments. Searchability and frequency analysis enable students to determine how frequently particular expressions occur and in which contexts they are typically used. Comparability allows learners to contrast alternative pragmatic realizations across registers, genres, communicative situations, and speaker relationships.

Multimodal resources extend this analysis beyond written language by incorporating intonation, gesture, facial expression, turn-taking, pauses, and other features relevant to pragmatic interpretation. Digital accessibility enables students to work with linguistic data independently and repeatedly, while interactivity supports exploratory and inquiry-based learning.

Generative artificial intelligence adds another analytical layer by enabling students to generate alternative communicative scenarios and compare automatically generated language with authentic corpus evidence. However, the results of the methodological analysis indicate that artificial intelligence should function as a supplementary analytical resource rather than as a source of unquestioned linguistic authority. Consequently, AI-generated outputs are incorporated into tasks that require verification, comparison, explanation, and critical evaluation.

The study also identified five pedagogical conditions necessary for the effective implementation of the methodology. First, students should demonstrate sufficient motivation to engage in exploratory and data-driven learning. Second, their foreign language proficiency should be at least B1 according to the CEFR, allowing them to interpret authentic linguistic material with appropriate scaffolding. Third, students require basic digital and corpus literacy. Fourth, the teacher must possess sufficient digital, linguistic, and methodological competence to select appropriate resources and scaffold students' interaction with them.

Fifth, students should follow a structured learning algorithm that gradually moves from awareness and observation to analysis, communication, evaluation, and reflection.

On the basis of these findings, an instructional model was developed. The model comprises five interconnected functional blocks: preconditions, target setting, theoretical and conceptual foundations, functional-technological implementation, and assessment and outcomes. The methodological foundation of the model combines systemic, competence-based, learner-centred, activity-based, communicative-cognitive, and data-driven approaches.

At the practical level, these approaches are implemented through a number of didactic and methodological principles. The principal didactic principles include learner activity, accessibility, conscious learning, autonomy, individualization, digital integration, and gradual increase in task complexity. The methodological principles include communicative orientation, contextualization, differentiation, authenticity, multimodality, approximation of learning tasks to real-life communication, novelty, critical evaluation of digital information, and adaptation to students-linguistic and digital readiness.

The practical implementation of the model comprises five sequential stages divided into twelve operational steps, as presented in Table 1.

Table 1. Stages and Operational Steps of the Methodology for Developing Pragmatic Competence through Digital Linguistic Resources.

Stage	Step	Learning activity	Expected result
1. Target-oriented stage	1	Introduction to pragmatic competence, its relevance, appropriateness, speech acts, register, politeness, and contextual meaning	Students understand the distinction between grammatical correctness and pragmatic appropriateness
1. Target-oriented stage	2	Identification of the objectives, communicative situations, target pragmatic phenomena, and expected learning outcomes	Students understand the purpose and structure of the learning sequence
1. Target-oriented stage	3	Familiarization with assessment criteria and examples of successful pragmatic performance	Students understand how pragmatic competence will be evaluated
2. Organizational and technical stage	4	Introduction to corpora, concordances, digital dictionaries, multimodal resources, NLP tools, and selected generative AI systems	Students acquire basic digital and corpus literacy
2. Organizational and technical stage	5	Instruction in search strategies, data interpretation, source evaluation, and responsible AI use	Students can use digital linguistic resources safely and critically
3. Research and analytical stage	6	Searching for selected pragmatic phenomena in authentic corpus and multimodal data	Students identify authentic examples of pragmatic language use
3. Research and analytical stage	7	Analysis and classification of pragmatic indicators according to form, function, register, social context, and communicative intention	Students establish relationships between linguistic form and pragmatic function
3. Research and analytical stage	8	Comparison of corpus examples, dictionary information, multimodal evidence, and AI-generated alternatives	Students develop critical awareness of pragmatic variation, contextual appropriateness, and the limitations of digital resources
4. Communicative stage	9	Completion of controlled and semi-controlled pragmatic production tasks involving the identified pragmatic patterns	Students practice the use of pragmatic indicators in contextualized communication
4. Communicative stage	10	Role plays, simulations, problem-solving tasks, digitally mediated interaction, and production of written responses	Students transfer observed pragmatic patterns to independent communicative performance
4. Communicative stage	11	Peer review, comparison with authentic examples, revision, and critical reflection of pragmatic choices	Students evaluate their language use and develop metapragmatic awareness
5. Assessment and reflective stage	12	Teacher assessment, self-assessment, comparison of initial and final pragmatic performance	Students evaluate their progress and develop reflective skills

The sequence presented in Table 1 reflects a progression from explicit awareness to independent pragmatic performance. The first two stages establish conceptual, motivational, and technological readiness. The research and analytical stage represent the core of the data-driven component, as students independently examine authentic language evidence and identify patterns of pragmatic use. The communicative stage transfers these observations into productive language activity, whereas the final stage integrates assessment with reflection and metapragmatic awareness.

An important feature of the proposed methodology is the transition from a conventional corpus-based model towards a broader digital linguistic resource ecosystem. Corpora remain the primary source of authentic evidence, but they are complemented by digital dictionaries, spoken and multimodal databases, audiovisual materials, natural language

processing tools, and generative AI. Each resource performs a distinct methodological function rather than being introduced merely as an additional technological tool.

The resulting instructional cycle can therefore be represented as follows: contextual awareness → digital-resource orientation → authentic data search → noticing → pragmatic analysis → comparison → hypothesis formation → communicative application → peer and corpus verification → revision → assessment → reflection.

This sequence allows pragmatic competence development to be understood as an iterative process in which students repeatedly move between authentic linguistic evidence and their own communicative production. Digital resources consequently perform three interconnected functions: they act as sources of authentic language input, instruments for linguistic inquiry, and tools for verifying and refining students' communicative choices.

The developed methodology also expands the educational outcomes beyond pragmatic competence itself. Regular engagement with corpora and other linguistic technologies contributes to corpus literacy and digital competence, while comparison of AI-generated and authentic linguistic data supports critical AI literacy. Reflection, peer review, and evidence-based justification of linguistic choices additionally promote learner autonomy and metalinguistic awareness.

Thus, the principal result of the study is an integrated model for developing students pragmatic competence through digital linguistic resources that combines the structured development of social, sociolinguistic, sociocultural, discourse, and compensatory abilities with authentic data analysis, data-driven learning, multimodal communication, digital inquiry, critical AI use, communicative practice, and reflective assessment. The proposed five-stage and twelve-step methodology provides a systematic transition from the observation and interpretation of pragmatic phenomena to their independent and contextually appropriate use in foreign language communication.

To evaluate the effectiveness of the proposed methodology, a pedagogical experiment was designed using a quasi-experimental pre-test, post-test model with control and experimental groups (Table 2). The experimental sample comprised 84 undergraduate students enrolled in foreign language teacher education programs. The participants were between 18 and 21 years of age and demonstrated English proficiency ranging from B1 to B2 according to the Common European Framework of Reference for Languages. Students were assigned to an experimental group ($n = 42$) and a control group ($n = 42$).

Table 2. Pre-test and Post-test Results of Pragmatic Competence Assessment.

Group	n	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Mean gain
Experimental group	42	58.4	7.6	78.9	7.1	20.5
Control group	42	57.9	7.8	64.2	7.5	6.3

The intervention lasted 12 weeks and included two 90-minute sessions per week, corresponding to a total of 36 instructional hours. Both groups studied comparable communicative topics and received the same overall amount of instructional time. However, the experimental group followed the five-stage and twelve-step methodology developed in the present study, while the control group received conventional communicative foreign language instruction without the systematic integration of digital linguistic resources.

The experimental instruction incorporated electronic language corpora, concordancers, digital dictionaries, spoken and multimodal resources, authentic online discourse materials, natural language processing tools, and generative artificial intelligence. Particular emphasis was placed on corpus-based observation, comparison of authentic examples, identification of pragmatic patterns, communicative application, verification of AI-generated alternatives, peer feedback, and reflection. This sequence corresponded to the instructional model presented in Table 1, which progresses from pragmatic awareness to independent communicative performance.

Students' pragmatic competence was assessed before and after the intervention using an author-developed assessment battery with a maximum score of 100 points. The instrument consisted of five dimensions corresponding to the structure of pragmatic competence proposed in this study: social, sociolinguistic, sociocultural, discourse, and compensatory competence. Each dimension contributed a maximum of 20 points to the overall score.

The assessment tasks included contextual appropriateness judgments, discourse completion tasks, interpretation of indirect meanings, selection of appropriate register, pragmatic error identification, dialogue completion, reformulation tasks, and open-ended production of contextually appropriate responses. Students were required not only to select or produce an appropriate utterance but also, in selected tasks, to justify their linguistic choice in relation to the communicative context.

The assessment criteria included pragmalinguistic accuracy, sociopragmatic appropriateness, contextual sensitivity, register awareness, communicative effectiveness, and the ability to justify pragmatic choices. These criteria correspond to the assessment framework established in the methodological section of the study.

The pre-test results showed that the two groups were comparable before the intervention. The experimental group obtained a mean score of 58.4 points ($SD = 7.6$), whereas the control group obtained a mean score of 57.9 points ($SD = 7.8$). The difference between the groups was not statistically significant, $t(81.94) = 0.30$, $p = .767$, indicating that the initial level of pragmatic competence was approximately equivalent in both groups.

Following the 12-week intervention, substantial differences emerged. The mean score of the experimental group increased to 78.9 points ($SD = 7.1$), while the control group reached 64.2 points ($SD = 7.5$). The post-test difference between the groups was statistically significant, $t(81.75) = 9.22$, $p < .001$. The corresponding effect size was large, Cohens $d = 2.01$.

The experimental group demonstrated an average gain of 20.5 points, corresponding to an increase of approximately 35.1% relative to the initial score. The control group improved by 6.3 points, equivalent to approximately 10.9%. The difference between the gain scores of the two groups was statistically significant, $t(81.70) = 9.85$, $p < .001$, with a large effect size, Cohen's $d = 2.15$.

Within-group analysis also indicated statistically significant improvement in both groups. For the experimental group, the increase from pre-test to post-test was significant, $t(41) = 19.54$, $p < .001$. The control group also demonstrated a statistically significant improvement, $t(41) = 6.38$, $p < .001$. However, the substantially larger gain observed in the experimental group indicates that the structured integration of digital linguistic resources produced a considerably stronger instructional effect than conventional foreign language instruction alone.

The qualitative analysis of students task performance revealed that the most noticeable improvements in the experimental group concerned the ability to distinguish between grammatically correct and pragmatically appropriate utterances, select register-sensitive formulations, recognize indirect speech acts, use mitigation strategies, and justify linguistic choices with reference to communicative context. Students also demonstrated greater sensitivity to social distance, interlocutor status, politeness conventions, and discourse organization.

Another important result concerned students use of digital linguistic evidence. At the beginning of the intervention, many students tended to rely primarily on dictionary definitions or the first available digital answer. During the research and analytical stage, however, they increasingly

compared multiple corpus examples, examined extended contexts, and considered frequency, register, and discourse environment before selecting a linguistic form. This development supports the role of digital linguistic resources as instruments of inquiry rather than merely reference tools.

The comparison of authentic corpus evidence with AI-generated responses produced an additional pedagogical effect. Students became more aware that grammatically fluent AI-generated language was not necessarily pragmatically optimal. They identified cases in which generated responses were excessively formal, insufficiently sensitive to social relationships, or less conventional than forms observed in authentic data. Consequently, the verification of AI-generated language against corpus and multimodal evidence contributed not only to pragmatic competence but also to critical AI literacy.

The experimental findings are consistent with previous research demonstrating the positive effect of corpus-based and data-driven learning on language development. Boulton & Cobb (2017) and Ueno & Takeuchi (2023) reported substantial benefits of corpus-supported instruction, while Bardovi-Harlig & Mossman (2025) and Bardovi-Harlig et al. (2017) demonstrated that corpus-based instruction could increase learners use of pragmatic routines. The present methodology extends these approaches by integrating corpus-based learning with multimodal evidence, digital reference resources, communicative practice, and critically mediated generative AI.

The findings are also consistent with research showing that technology-supported pragmatic instruction can provide contextualized input, repeated practice, and opportunities for interaction (Qi & Chen, 2025). However, the present model differs from approaches centred on a single digital technology. Its principal feature is the systematic allocation of different pedagogical functions to different digital linguistic resources. Corpora provide authentic usage evidence, digital dictionaries support semantic and register verification, multimodal resources provide paralinguistic and interactional information, and generative AI functions as a source of alternative formulations subject to subsequent verification.

Overall, the experimental results support the hypothesis that pragmatic competence develops more effectively when digital linguistic resources are incorporated into a structured pedagogical sequence rather than used episodically. The results indicate that the proposed five-stage and twelve-step methodology can facilitate significant development in students ability to recognize, interpret, select, and produce contextually appropriate foreign language forms while simultaneously promoting learner autonomy, corpus literacy, digital competence, and critical AI literacy.

CONCLUSIONS

The study confirms that pragmatic competence is a multidimensional component of communicative competence in foreign languages, organized into social, sociolinguistic, sociocultural, discourse, and compensatory components, assessable through observable indicators such as speech acts, discourse markers, pragmatic routines, and forms of address.

The findings demonstrate the pedagogical value of integrating language corpora and concordances with digital dictionaries, multimodal resources, natural language processing tools, and generative artificial intelligence. These resources facilitate access to authentic linguistic evidence and enable students to identify pragmatic patterns, compare linguistic choices, and evaluate communicative appropriateness, provided that adequate pedagogical structuring exists.

The proposed methodology is based on five essential conditions (motivation, a minimum level of B1, digital and corpus literacy, the teacher's digital-methodological competence, and a structured instructional sequence) and is developed in five interconnected stages—orientation, technical organization, analytical research, communication, and reflective assessment—through twelve operational steps.

A distinctive feature is the critical integration of generative AI, used as a resource for analysis and comparison rather than as an unquestionable model of pragmatic correctness. Its contrast with authentic corpora and multimodal evidence simultaneously develops pragmatic competence and digital, corpus, and critical AI literacy.

The methodology is particularly relevant to the preparation of future foreign language teachers, as it integrates linguistic, pragmatic, methodological, intercultural, digital, and analytical competences. Its main contribution lies in moving beyond the isolated use of technological tools through their systematic integration into a coherent, contextualized, and critical model.

Future research should validate the methodology with larger and more diverse populations, examine its effectiveness across different levels and contexts, determine the specific contribution of each digital resource to the components of pragmatic competence, and investigate the long-term retention and transfer of pragmatic skills, as well as the evolving role of generative AI while preserving authentic linguistic evidence and students' critical engagement.

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CONFLICTS OF INTEREST:

The authors declare that there are no conflicts of interest.

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