

AI-assisted Foreign Language Education in Higher Education



D2.1: Methodological framework outlining how AI tools can be integrated into university-level language teaching

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Table of Contents

1. Introduction of the manual on methodologies for AI-assisted language teaching and learning.....	4
1.1. Project context	4
1.2. Methodological approach	4
1.3. The AI-NYELV closed evidence base	5
1.4. Principles governing this deliverable.....	5
1.5. Structure of the deliverable	5
2. What do the integration of Artificial Intelligence technologies contribute and imply in second language education?	7
2.1. SWOT analysis of the integration of AI technologies in second language education	7
2.2. TOWS matrix: Strategic integration of AI in second language education	9
3. What do I, my institution, and my students need for AI tools to truly improve foreign language learning teaching: AI-NYELV Readiness Framework for AI-assisted foreign language education.....	12
3.1. Purpose of the framework	12
4. AI-NYELV strategic roadmap for AI adoption in foreign language teaching.....	15
Appendix: Analysed AI tools.....	17
A.1. Comparative synthesis of the analysed AI tools	17
A.2. Summary of the comparative analysis	24
A.2.1. Most comprehensive free AI tool for foreign language learning	24
A.2.2. Most user-friendly tools	24
A.2.3. Best tools for absolute beginners	24
A.2.4. Best tools for autonomous pronunciation practice	25
A.2.5. Best tools for autonomous grammar development	25
A.2.6. Best tools for collaborative speaking and listening activities	25
A.2.7. Best tools for collaborative reading and writing activities.....	25
A.2.8. Best assessment resources	25

1. Introduction of the manual on methodologies for AI-assisted language teaching and learning

Artificial Intelligence (AI) is rapidly reshaping the educational landscape and is creating new opportunities for the teaching and learning of foreign languages. Large Language Models, conversational agents, intelligent tutoring systems, speech technologies and AI-supported content generation are becoming increasingly accessible to teachers and learners. Their educational value, however, depends not only on technological capability but also on sound pedagogical integration, ethical implementation and informed professional judgement.

Deliverable A2.4 has been conceived as a practical methodological guide to support higher education language teachers in integrating AI into second language education. Rather than presenting AI as a substitute for teachers, this guide adopts the position that AI should complement teachers' expertise by supporting personalised learning, increasing learner autonomy, enriching classroom interaction and facilitating formative assessment while maintaining human pedagogical leadership.

A defining characteristic of this deliverable is that it has been developed using a closed evidence system. All analyses, recommendations and methodological proposals are derived exclusively from the documentation and empirical evidence generated within the AI-NYELV project together with the reference frameworks explicitly adopted by the consortium.

1.1. Project context

The AI-NYELV Erasmus+ project aims to explore the educational potential of AI for foreign language education in higher education. The project develops practical resources that enable teachers and institutions to integrate AI responsibly, ethically and effectively into language teaching.

Deliverable A2.4 belongs to Work Package 2 and constitutes the methodological component of the project. Its purpose is to transform the evidence generated by the different work packages into practical guidance for language teachers. Consequently, the document synthesises research findings, ethical principles, empirical evidence and the comparative analysis of AI tools to formulate evidence-informed methodological recommendations.

1.2. Methodological approach

The preparation of this deliverable follows a document-based synthesis methodology. Instead of conducting a new empirical study, the guide integrates the outputs already produced within the project and interprets them through a common analytical framework. The objective is to maintain complete traceability between evidence and recommendations.

Throughout the document, every recommendation is expected to be supported by one or more elements of the project's evidence base. Where evidence is insufficient, no additional claims are introduced.

1.3. The AI-NYELV closed evidence base

The methodological proposals contained in this guide are grounded on five complementary blocks of evidence. Together they constitute the AI-NYELV closed corpus:

- Block 1. Project documentation: The Erasmus+ project application, work packages and deliverables establish the objectives, scope, expected outputs and overall intervention logic of the project.
- Block 2. Project outputs: The Literature Review and the Ethical Framework provide the scientific and ethical foundations upon which subsequent methodological proposals are built.
- Block 3. International reference frameworks: Reference documents adopted by the consortium, including DigCompEdu and UNESCO guidance, provide internationally recognised principles for digital competence, AI literacy and responsible educational innovation.
- Block 4. Comparative analysis of AI tools: The project analyses individual AI applications using a common evaluation protocol. The comparative synthesis identifies educational affordances, limitations and appropriate pedagogical uses for each analysed tool.
- Block 5. Empirical evidence: Surveys administered to and interviews conducted with language teachers and students provide quantitative and qualitative evidence regarding current AI practices, perceived benefits, challenges, training needs and expectations.

1.4. Principles governing this deliverable

- Closed information system: only the approved corpus is used.
- Evidence traceability: recommendations derive from documented evidence.
- No unsupported inferences or external literature are incorporated.
- Pedagogical orientation: technology is evaluated according to educational value rather than novelty.
- Ethical governance: responsible, transparent and human-centred AI use underpins every recommendation.

1.5. Structure of the deliverable

Following this introductory section, the document presents a SWOT analysis, a strategic TOWS matrix stemming from the previous SWOT, the AI-NYELV Readiness Framework and a strategic roadmap for teachers with different levels of AI readiness. These chapters will culminate in a

comprehensive set of methodological guidelines designed to maximise the educational contribution of AI while controlling its limitations, risks and ethical implications. Several comparative syntheses of the analysed AI tools are included in the appendices of the guide.

2. What do the integration of Artificial Intelligence technologies contribute and imply in second language education?

2.1. SWOT analysis of the integration of AI technologies in second language education

The evidence gathered throughout the AI-NYELV project indicates that AI has the potential to significantly transform second language teaching and learning. The literature review, ethical framework, international reference frameworks, empirical evidence collected from teachers and students, and the comparative evaluation of AI tools all point towards considerable educational opportunities while simultaneously highlighting important pedagogical, technological, and ethical challenges. The following SWOT analysis synthesises these findings and identifies the principal internal strengths and weaknesses, together with the external opportunities and threats associated with the educational use of AI technologies in second language learning.

Strengths	Weaknesses
Wide availability of high-quality AI tools offering functional free versions, facilitating equitable access for learners and teachers.	Most AI systems have not been specifically designed for foreign language education but have been adapted from general-purpose technologies.
Immediate, personalised feedback supporting autonomous learning, particularly for grammar, vocabulary and writing.	Quality varies considerably across tools and languages, particularly in low-resource languages.
Continuous availability (24/7), allowing learners to practise independently beyond classroom hours.	Many tools provide limited support for authentic oral interaction and spontaneous communication.
Strong support for differentiated instruction through adaptation of texts, activities and explanations to learners' needs and CEFR levels.	Free versions often restrict advanced pedagogical functions or impose usage limits.
Significant reduction of teachers' workload in lesson planning, material preparation and formative assessment.	Teachers require new digital and pedagogical competences to integrate AI effectively.
High potential for inclusive education through multilingual support, text-to-speech, translation and accessibility functions.	Most systems cannot reliably evaluate intercultural competence, pragmatic language use or communicative appropriateness.
Availability of multimodal learning resources combining text, speech, images and interactive content.	AI-generated feedback may occasionally contain inaccuracies or misleading explanations, requiring teacher supervision.
Increasing integration with learning management systems and collaborative educational environments.	Limited transparency regarding how some AI systems generate responses or make pedagogical recommendations.

Opportunities	Threats
AI enables a shift towards more learner-centred, personalised and competency-based language education.	Excessive dependence on AI may reduce learners' autonomy, critical thinking and communicative initiative.
Teachers can devote more classroom time to interaction, communication and higher-order learning while AI supports routine practice.	Academic dishonesty, plagiarism and overreliance on AI-generated texts may compromise assessment validity.
Increasing availability of specialised educational AI tools specifically designed for language teaching.	Digital inequalities may persist where access to devices, connectivity or paid versions is limited.
AI facilitates lifelong learning through flexible, self-paced language practice accessible from any location.	Rapid technological development may make tools obsolete before teachers become proficient in their use.
Integration of AI supports multilingual and multicultural educational environments.	Privacy, data protection and ethical concerns remain significant, particularly regarding personal learning data.
Continuous technological innovation will expand pronunciation assessment, conversational AI and adaptive learning systems.	Commercial interests rather than educational priorities may shape future AI development.
AI can enhance collaboration between teachers by supporting resource sharing, co-creation and professional development.	Bias embedded within AI models may reinforce linguistic, cultural or social stereotypes.
International competence frameworks (DigCompEdu, UNESCO) provide guidance for responsible implementation.	Lack of institutional policies and teacher training may result in inconsistent or inappropriate classroom use.

The evidence collected within the AI-NYELV project suggests that AI should not be regarded as a substitute for language teachers but rather as a complementary educational technology capable of enhancing teaching and learning when implemented within a sound pedagogical framework.

The greatest educational benefits emerge when AI is used to support autonomous learning, provide immediate formative feedback, facilitate differentiated instruction, and reduce teachers' administrative workload, thereby allowing greater emphasis on communicative interaction and higher-order learning activities.

At the same time, the project findings underline that successful integration depends on the development of teachers' digital competences, the establishment of clear ethical guidelines, the protection of learners' privacy, and the critical evaluation of AI-generated content.

Human pedagogical judgement remains essential for designing meaningful learning experiences, fostering intercultural communication, and ensuring that AI serves educational objectives rather than determining them.

2.2. TOWS matrix: Strategic integration of AI in second language education

The TOWS matrix extends this analysis by combining these factors to formulate strategic recommendations that can guide educational institutions, teacher educators and language teachers in the effective and responsible implementation of AI technologies.

	Opportunities (O)	Threats (T)
Strengths (S)	SO Strategies	ST Strategies
	SO1. Exploit the availability of powerful AI tools to personalise language learning pathways and increase learner autonomy through adaptive activities and immediate feedback.	ST1. Use the teacher's pedagogical expertise to compensate for AI inaccuracies, hallucinations and linguistic limitations by maintaining continuous human supervision.
	SO2. Integrate multimodal AI resources (text, speech, image and translation) to create more inclusive learning environments supporting learners with diverse linguistic and educational needs.	ST2. Develop ethical classroom protocols regulating acceptable AI use in order to minimise plagiarism, excessive dependence and misuse during assessment.
	SO3. Use AI to automate routine tasks (lesson preparation, material generation and formative assessment), allowing teachers to devote more classroom time to communicative interaction and higher-order thinking.	ST3. Combine AI-generated activities with communicative and collaborative classroom tasks that preserve authentic human interaction.
	SO4. Exploit multilingual AI systems to facilitate international collaboration, intercultural projects and multilingual communication across educational contexts.	ST4. Select AI tools that comply with recognised privacy and data protection standards and establish institutional policies governing responsible data management.

	Opportunities (O)	Threats (T)
Weaknesses (W)	WO Strategies	WT Strategies
	WO1. Strengthen teachers' AI literacy through continuous professional development aligned with DigCompEdu and UNESCO competency frameworks.	WT1. Establish institutional guidelines defining appropriate educational uses of AI and clarifying teachers' and students' responsibilities.
	WO2. Combine specialised AI applications (pronunciation, grammar, writing, assessment) rather than relying on a single general-purpose tool.	WT2. Avoid technological dependence by ensuring that essential language competences continue to be developed through human interaction and authentic communication.
	WO3. Use the growing ecosystem of educational AI applications to compensate for current limitations in oral interaction, assessment and adaptive learning.	WT3. Periodically review AI tools before institutional adoption to account for rapid technological evolution and changing licensing conditions.
	WO4. Promote collaborative teacher communities to exchange validated prompts, classroom experiences and examples of good practice.	WT4. Encourage learners to critically evaluate AI-generated information and verify outputs using multiple sources rather than accepting responses uncritically.

The TOWS analysis suggests that the successful integration of AI into second language education depends less on the technological sophistication of individual tools than on the pedagogical ecosystem within which those tools are implemented. AI should therefore be understood as an educational support technology that complements, rather than replaces, teachers' professional expertise.

Three strategic priorities emerge from the analysis:

- First, institutions should invest in the development of teachers' digital and pedagogical competences, enabling them to select, evaluate and integrate AI tools according to clearly defined educational objectives.
- Second, AI should primarily be used to enhance learner autonomy, personalise instruction, and automate repetitive teaching tasks, thereby allowing teachers to concentrate on communicative interaction, intercultural competence, collaborative learning and critical thinking—areas in which human mediation remains indispensable.
- Finally, sustainable implementation requires the establishment of ethical governance frameworks addressing transparency, privacy, data protection, academic integrity and responsible AI use. These principles should underpin institutional policies, curriculum design and classroom practice to ensure that technological innovation contributes positively to language education while safeguarding educational quality and learners' rights.

3. What do I, my institution, and my students need for AI tools to truly improve foreign language learning teaching: AI-NYELV Readiness Framework for AI-assisted foreign language education

The evidence gathered throughout the AI-NYELV project indicates that the educational value of AI depends less on the technology itself than on the conditions under which it is implemented. Successful integration requires an appropriate combination of teacher competences, institutional support, technological infrastructure and learner preparedness. The findings indicate that effective AI-supported language education depends on the interaction of four mutually reinforcing dimensions.

Dimension	Main objective
- Teacher competence - Technical infrastructure - Institutional support - Learner readiness	- Pedagogically meaningful AI integration - Reliable and equitable access to AI technologies - Sustainable implementation and ethical governance - Critical, autonomous and responsible AI use

3.1. Purpose of the framework

The AI-NYELV Readiness Framework has been developed to support higher education institutions, language teachers and teacher educators in assessing their preparedness to integrate AI into foreign language education.

Unlike general digital competence frameworks, the AI-NYELV framework focuses specifically on the pedagogical integration of AI within second language teaching and learning. It combines the evidence generated throughout the AI-NYELV project—including the Literature Review, the Ethical Framework, the comparative analysis of AI tools, the surveys and interviews with teachers and students, and the international reference frameworks — into a practical model for implementation.

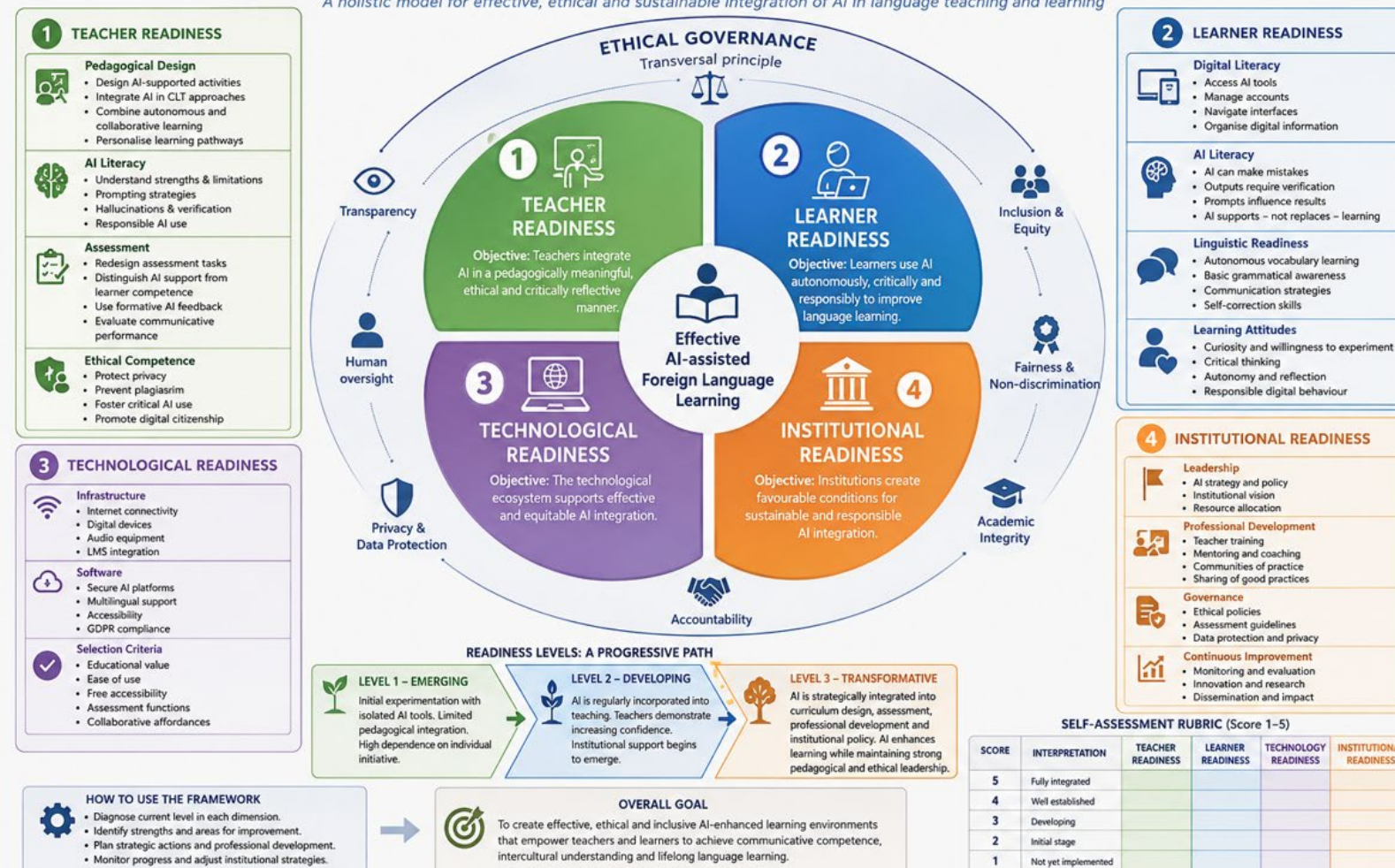
The framework assumes that successful AI integration depends on the balanced interaction of four dimensions:

1. Teacher readiness
2. Learner readiness
3. Technological readiness
4. Institutional readiness

These dimensions are supported by ethical governance, which operates as a transversal principle throughout the framework (see Figure below).

AI-NYELV READINESS FRAMEWORK FOR AI-ASSISTED FOREIGN LANGUAGE EDUCATION

A holistic model for effective, ethical and sustainable integration of AI in language teaching and learning



The AI-NYELV Readiness Framework conceptualises AI integration as an ecosystem rather than a technological intervention. Readiness emerges from the interaction of competent teachers, prepared learners, reliable technological infrastructure and supportive institutional leadership, all operating within a robust ethical framework. Consequently, sustainable innovation in AI-assisted foreign language education depends on the balanced development of all four pillars rather than on excellence in any single dimension.

The framework proposes three progressive levels:

Level	Characteristics
Level 1 – Emerging	Initial experimentation with isolated AI tools. Limited pedagogical integration. High dependence on individual initiative.
Level 2 – Developing	AI is regularly incorporated into teaching. Teachers demonstrate increasing confidence. Institutional support begins to emerge.
Level 3 – Transformative	AI is strategically integrated into curriculum design, assessment, professional development and institutional policy. AI enhances language learning while maintaining strong pedagogical and ethical leadership.

4. AI-NYELV strategic roadmap for AI adoption in foreign language teaching

The key factor for successful integration is not only digital competence, but maturity in the use of AI, because a teacher may have high digital competence and little experience with generative AI.

TEACHER PROFILE	STRATEGIC PRIORITIES	MAIN FOCUS OF ATTENTION	RECOMMENDED AI TOOLS (AI-NYELV ANALYSIS)	EXPECTED EDUCATIONAL OUTCOMES
LEVEL 1 NOVICE AI USER	Build confidence through simple and low-risk applications. Develop basic AI literacy and prompting skills.	• Understanding AI strengths and limitations • Ethical use • Prompt writing • Verification of AI outputs • Simple classroom integration	ChatGPT, Google Gemini, Microsoft Copilot, Perplexity, Duolingo, Microsoft Translator, TTS Maker	Increased confidence; reduced preparation time; first experiences with AI-supported learning; improved learner motivation.
LEVEL 2 INTERMEDIATE AI USER	Integrate AI into lesson planning and classroom activities. Promote learner autonomy and formative assessment.	• Collaborative learning • Differentiation • Personalised learning • AI-supported feedback • CEFR adaptation • Assessment redesign	ChatGPT, Gemini, Perplexity, MagicSchool AI, TeacherAid, Diffit, Brisk Teaching, Curipod, LanguageTool, Grammarly, Talkpal	AI becomes part of regular teaching practice; increased learner autonomy; richer classroom interaction; improved formative assessment.
LEVEL 3 ADVANCED AI USER	Design AI-enhanced learning ecosystems and institutional innovation.	• Curriculum redesign • Multimodal learning • Collaborative projects • Institutional implementation • AI governance • Ethical leadership • Professional development	ChatGPT, Gemini, Claude, Perplexity, MagicSchool AI, TeacherAid, Notion AI, Mini Course Generator, BothMate, InterpreBank, ElevenLabs, TTS Maker	Sustainable AI integration; institutional innovation; advanced learner autonomy; collaborative learning environments; AI-supported curriculum development.

The following table details the strategies that can shape the roadmap for the progressive integration of AI technologies according to the teachers' or institutional levels of readiness and maturity.

Level	Main objective	Recommended activities	Teacher role
Level 1 – Exploration	Become familiar with AI.	- generating vocabulary lists; - simplifying texts; - producing grammar explanations; - translating classroom materials; - creating reading comprehension questions; - preparing pronunciation practice.	AI User
Level 2 – Integration	AI becomes part of everyday teaching.	- Designing interactive role-play chatbots for student speaking/writing practice. - Creating differentiated learning pathways and tiered activities based on student proficiency levels. - Generating targeted feedback structures or rubrics for automated drafting assistance. - Developing flipped classroom resources, such as AI-generated dialogue scripts or cultural context summaries. - Crafting multi-modal lesson assets (e.g., text-to-image prompts for visual storytelling or vocabulary matching games).	AI Learning Designer
Level 3 – Transformation	Redesign language learning.	- project-based learning; - multilingual international collaboration; - AI-supported curriculum design; - learning analytics; - multimodal assessment; - AI-supported autonomous learning pathways; - teacher mentoring.	AI Learning Leader

Strategic recommendations

Priority	Novice	Intermediate	Advance
Build AI confidence	★★★★★	★★★★☆	★★☆☆☆
Prompt engineering	★★★★☆	★★★★★	★★★★★
Ethical AI use	★★★★★	★★★★★	★★★★★
Lesson preparation	★★★★★	★★★★★	★★★★☆
Assessment redesign	★★☆☆☆	★★★★★	★★★★★
Collaborative learning	★★☆☆☆	★★★★★	★★★★★
Autonomous learning	★★★★☆	★★★★★	★★★★★
Curriculum innovation	★★☆☆☆	★★★★☆	★★★★★
Institutional leadership	★★☆☆☆	★★☆☆☆	★★★★★

Appendix: Analysed AI tools

This section synthesises the individual analyses carried out on the AI tools evaluated within the AI-NYELV project. While the individual tool descriptions provide detailed information on the characteristics, functionalities and pedagogical affordances of each application, the comparative matrix presented below offers a concise overview designed to support informed decision-making by language teachers and educational institutions.

The evaluation criteria were selected in response to the most frequently identified needs emerging from both the literature review and the surveys and interviews conducted with teachers and students participating in the project.

A.1. Comparative synthesis of the analysed AI tools

Following the common evaluation framework described in the previous section, the 26 AI tools included in the AI-NYELV project were compared across the key dimensions that are most relevant for language education. Rather than producing a single overall ranking, the comparative analysis identifies the relative strengths of each tool according to specific educational purposes and learning scenarios. This approach acknowledges that AI tools differ substantially in their pedagogical objectives, technological capabilities, and intended users. Consequently, a tool that performs exceptionally well in one area (e.g., pronunciation practice or collaborative writing) may be less suitable for another (e.g., assessment or classroom management).

Comparative synthesis focuses on those characteristics that are most relevant for teachers and educational institutions when selecting AI-supported language-learning technologies. The analysis therefore considers not only linguistic capabilities but also aspects such as accessibility, ease of implementation, adaptability to different learner profiles, collaborative affordances, assessment functions, and data privacy. This multidimensional perspective reflects current recommendations for the pedagogically responsible integration of AI into higher education.

Instead of recommending a universally "best" tool, the synthesis adopts a fitness-for-purpose perspective. Each application was evaluated according to the educational functions it performs most effectively, recognising that language learning requires a combination of complementary technologies rather than reliance on a single platform. Some tools excel at supporting autonomous learning through adaptive feedback, whereas others are particularly effective for collaborative classroom activities, authentic communication, lesson preparation, multilingual content creation, or formative assessment. Similarly, several specialised applications provide outstanding support for pronunciation practice, speech synthesis, or terminology management without offering broader pedagogical functionality.

To facilitate practical decision-making, the comparison has been organised into a set of pedagogically meaningful criteria that reflect the needs of language teachers, learners, and educational institutions. These criteria include:

- Availability of a functional free version;
- Ease of use and accessibility;
- Suitability for beginner learners;
- Support for autonomous pronunciation practice;
- Support for autonomous grammar learning;
- Collaborative speaking opportunities;
- Collaborative writing opportunities;
- Assessment capabilities.

For each criterion, the tools demonstrating the strongest educational affordances are highlighted. The selection is based on the detailed individual analyses presented in the AI-NYELV tool descriptions and should therefore be interpreted as an evidence-informed recommendation rather than as an absolute ranking. Several tools appear across multiple categories because they provide broad pedagogical functionality, while others are identified as highly specialised solutions for specific educational needs.

The comparative matrix presented below synthesises these findings and provides a practical overview that can support informed decision-making by teachers, teacher educators, curriculum designers, and institutional leaders. Rather than replacing the detailed analyses contained in the individual tool descriptions, the matrix serves as a navigation instrument that enables readers to identify the most appropriate AI technologies according to their specific pedagogical objectives and teaching contexts. In this table, "Direct/Built-in" means the tool natively supports multiple users working together or has an automated assessment engine, while "Indirect (Via sharing/prompting)" means the tool itself is single-user, but students can share outputs, or teachers can prompt the tool to generate tests, rubrics, and quizzes.

AI Tool	Functional free version	Ease of use	Suitable from CEFR pre-A1	Autonomous pronunciation	Autonomous grammar	Collaborative speaking	Collaborative writing	Assessment resources
Babbel	No (Limited Trial)	High	Yes	Yes (Speech recognition)	Yes (Structured lessons)	No	No	Direct (Built-in reviews and end-of-lesson quizzes)
BoothMate	No (Paid/Pro)	Medium	N/A (Interpreter tool)	No	No	Direct (Glossary sharing for interpreting teams)	No	No
ChatGPT	Yes (Freemium)	High	No (Requires text/voice prompting)	Yes (Via Voice Mode)	Yes (Via prompting)	Indirect (Group conversation via Voice Mode)	Indirect (Shared chat links for group editing)	Indirect (Excellent for generating rubrics, quizzes, and diagnostic tests)
Coursebox	Yes (Freemium)	Medium	N/A (Teacher tool)	No	No	No	No	Direct (Automated quiz generation within courses)
DeepL	Yes (Freemium)	High	Yes (For basic vocab lookup)	Yes (TTS playback)	Yes (DeepL Write)	No	Indirect (Collaborative editing via DeepL Write sharing)	No
Duolingo	Yes (Ad-supported)	High	Yes	Yes (Speech recognition)	Yes (Implicit/Explicit)	No	No	Direct (Built-in milestone tests and adaptive placement)

AI Tool	Functional free version	Ease of use	Suitable from CEFR pre-A1	Autonomous pronunciation	Autonomous grammar	Collaborative speaking	Collaborative writing	Assessment resources
ElevenLabs	Yes (Freemium)	High	Yes (Listening to generated audio)	Yes (High-quality TTS)	No	No	No	Indirect (Generates audio files for listening comprehension exams)
ELSA Speak	Yes (Freemium)	High	Yes	Yes (Specialized feedback)	No (Focus on speaking)	No	No	Direct (Detailed speech diagnostics, CEFR alignment, and progress tests)
Google Gemini	Yes (Freemium)	High	No (Requires text prompting)	Yes (Voice output)	Yes (Via prompting)	Indirect (Group brainstorming via voice)	Indirect (Exporting drafts directly to shared Google Docs)	Indirect (Excellent for creating customized assessment tasks/rubrics)
Google Notebook LM	Yes	Medium	N/A (Research/Study tool)	No	No	No	Direct (Shared notebooks for collaborative source synthesis)	Direct (Automatically generates study guides, FAQs, and quizzes from sources)
Google Translate	Yes	High	Yes	Yes (TTS playback)	No	No	No	No

AI Tool	Functional free version	Ease of use	Suitable from CEFR pre-A1	Autonomous pronunciation	Autonomous grammar	Collaborative speaking	Collaborative writing	Assessment resources
Grammarly	Yes (Freemium)	High	No (Requires A2+ writing ability)	No	Yes (Writing corrections)	No	Direct (Real-time suggestions inside shared cloud documents)	Direct (Automated writing metrics, readability scores, and plagiarism checks)
InterpretBank	No (Paid/Pro)	Low	N/A (Interpreter tool)	No	No	No	Direct (Database sharing for interpretation teams)	No
Language Tool	Yes (Freemium)	High	No (Requires A2+ writing ability)	No	Yes (Multilingual checker)	No	Direct (Team/shared style guides and correction setups)	Direct (Automated text quality score and grammar analytics)
Learning Studio AI	Yes (Freemium)	Medium	N/A (Teacher tool)	No	No	No	No	Direct (Built-in automated assessment and quiz generation)
Magic School AI	Yes (Freemium)	High	N/A (Teacher tool)	No	Yes (Generates exercises)	No	No	Direct (Comprehensive suite for generating diagnostics, rubrics, and customized quizzes)

AI Tool	Functional free version	Ease of use	Suitable from CEFR pre-A1	Autonomous pronunciation	Autonomous grammar	Collaborative speaking	Collaborative writing	Assessment resources
Matesub	Yes (Freemium)	Medium	N/A (Subtitling tool)	No	No	No	Indirect (Exporting subtitle files for peer review)	No
Microsoft Translator	Yes	High	Yes	Yes (TTS & Voice input)	No	Direct (Multi-device live conversation translation mode)	No	No
No Mini Course Generator	Yes (Freemium)	Medium	N/A (Teacher tool)	No	No	No	No	Direct (Built-in questions and score gates for micro-courses)
Notion	Yes (Freemium)	Medium	N/A (Workspace tool)	No	Yes (Notion AI writing aid)	Indirect (Commenting on audio/video embeds)	Direct (Real-time multi-user writing with collaborative AI assistance)	Indirect (Can build tracker tables, flashcards, and grading databases)
Perplexity AI	Yes (Freemium)	High	No (Requires text prompting)	No	Yes (Explains rules if asked)	No	Indirect (Shared "Collections" for group research)	Indirect (Can compile facts to verify teacher-made test items)
Pons Translate Pro	Yes (Freemium)	High	Yes	Yes (TTS playback)	No	No	No	No

AI Tool	Functional free version	Ease of use	Suitable from CEFR pre-A1	Autonomous pronunciation	Autonomous grammar	Collaborative speaking	Collaborative writing	Assessment resources
Talkpal AI	Yes (Freemium)	High	Yes	Yes (Voice chat/roleplay)	Yes (Real-time corrections)	No	No	Direct (Real-time formative language feedback during chats)
TeachAid	Yes (Freemium)	Medium	N/A (Teacher tool)	No	No	No	No	Direct (Generates formative assessments and lesson-aligned quizzes)
TTS Maker	Yes	High	Yes (Listening to basic audio)	Yes (Audio generation)	No	No	No	Indirect (Audio asset creation for listening exams)
WordScope	No (Paid/Pro)	Medium	N/A (Translator tool)	No	Yes (AI translation revision)	No	Direct (Shared project workflows for translation revision)	No

A quick note on LLMs (ChatGPT, Gemini, Perplexity): While highly versatile for grammar explanations and pronunciation practice (via voice features), they generally are not suitable for Pre-A1 autonomous use. True beginners lack the L2 foundation to write effective prompts or evaluate the AI's output, requiring a teacher to mediate the interaction (as noted in "Level 2: Integration").

Our overall recommendations for these tools by educational purpose would be the following:

Educational purpose	Recommended AI tools
Complete all-round language learning	ChatGPT, Gemini
Beginners (CEFR Pre-A1 – A1)	Duolingo, ChatGPT, Gemini, Talkpal
Autonomous pronunciation	ELSA Speak, TTS Maker
Autonomous grammar	ChatGPT, Gemini, Grammarly, Language Toolm talkpal AI
Academic writing	Grammarly, Notebook LM, Notion AI
Oral interaction in class	BothMate, ChatGPT, Gemini, Microsoft Translator
Collaborative classroom activities	MagicSchool AI, Notion, TeachAid
Lesson preparation	MagicSchool AI, TeachAid
Assessment	Coursebox, MagicSchool AI, TeachAid
Translation and interpreting	Boothmate, DeepL, InterpretBank, Microsoft Translator
Accessibility and inclusive education	ChatGPT, ElevenLabs, TTS Maker

A.2. Summary of the comparative analysis

The comparative analysis allows several important conclusions to be drawn regarding the pedagogical potential of the AI tools evaluated within the AI-NYELV project.

A.2.1. Most comprehensive free AI tool for foreign language learning

ChatGPT and Google Gemini emerge as the most versatile AI tools, offering a well-balanced combination of conversational practice, grammar explanation, activity generation, writing support, adaptive learning and teacher assistance, even in their free versions. In addition, Google Gemini benefits from seamless integration with the Google Workspace ecosystem, making it particularly suitable for educational contexts.

A.2.2. Most user-friendly tools

Duolingo, ChatGPT, Perplexity, and Talkpal provide particularly intuitive user interfaces that require minimal digital competence. Among these, Duolingo stands out for its highly accessible gamified learning environment and carefully scaffolded progression.

A.2.3. Best tools for absolute beginners

For learners starting from CEFR Pre-A1/A1 (absolute beginners), Duolingo, ChatGPT, Talkpal, and ELSA Speak offer guided learning pathways, continuous feedback and structured progression, enabling learners to begin studying a foreign language with little or no prior knowledge.

A.2.4. Best tools for autonomous pronunciation practice

ELSA Speak is the most specialised application for pronunciation training due to its advanced phonetic analysis and immediate corrective feedback. Talkpal and ElevenLabs effectively complement pronunciation practice by providing natural voice interaction and conversational speaking opportunities.

A.2.5. Best tools for autonomous grammar development

ChatGPT, Google Gemini, and Grammarly provide the most comprehensive support for grammar learning. Their ability to explain grammatical structures, justify corrections, reformulate texts and provide contextualised feedback makes them particularly valuable for independent language learning.

A.2.6. Best tools for collaborative speaking and listening activities

Talkpal, ChatGPT, Google Gemini, and MagicSchool AI demonstrate the greatest potential for supporting teacher-guided communicative activities. Their conversational capabilities facilitate role-plays, dialogue simulations and interactive oral tasks that promote meaningful language use in the classroom.

A.2.7. Best tools for collaborative reading and writing activities

ChatGPT, Google Gemini, Grammarly, MagicSchool AI, and Notion AI stand out for supporting collaborative writing, text revision, co-editing and teacher feedback. These tools facilitate both individual and collaborative writing processes while encouraging formative assessment and continuous improvement.

A.2.8. Best assessment resources

MagicSchool AI, Duolingo, Perplexity, and Mini Course Generator provide the strongest assessment functionalities. These include rubric generation, quiz creation, learner progress monitoring and various forms of formative assessment that support both teachers and learners throughout the learning process.