



Generative AI in Language Education

A Critical Framework for Pedagogical Integration

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Just as calculators transformed mathematics education, GenAI is reshaping language teaching

Then: Calculators

- Shifted focus from computation
- To problem-solving skills
- Required pedagogical rethinking

Now: GenAI

- Shifts from mechanical production
- To critical thinking & communication
- Demands new frameworks

ChatGPT achieved widespread accessibility within months of release (late 2022)

GenAI offers **adaptive learning**, **feedback**, and **accessibility**,
but poses **integrity** and **bias** challenges.

Two-Phase Methodology

1

Scoping Review

Mapped emerging scholarship on GenAI in L2/FL education

- 46 peer-reviewed papers analyzed
- Identified key themes, opportunities, and challenges

2

Critical Interpretive Synthesis

Moved beyond description to critique and theory-building

- Examined underlying assumptions
- Reconciled contradictory perspectives
- Developed human-centered pedagogical framework

Generative AI: Computational techniques capable of producing meaningful content—text, images, or audio—from training data

Key Technologies

Large Language Models (LLMs):

- ChatGPT
- Google Gemini
- Claude
- Microsoft Copilot

Capabilities:

- Natural language generation
- Translation & error correction
- Contextual adaptation
- Personalized feedback

Unlike traditional AI (classify/predict), GenAI creates outputs resembling human work

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 Personalization

Adaptive systems adjusting to individual learner needs, preferences, and proficiency levels

 Immediate Feedback

Real-time assessment of grammar, vocabulary, and sentence structure

 Accessibility & Inclusion

AI-generated infographics, speech synthesis, and voice interaction for diverse learners

 Resource Efficiency

Automated creation of practice exercises, texts, and assessments

 24/7 Learning Support

Continuous access to language assistance and personalized learning pathways

 Innovative Assessment

Continuous formative assessment with portfolio-based approaches

Evidence shows improvements in reading comprehension, motivation, and anxiety reduction



Academic Integrity

AI-generated text indistinguishable from student work; blurred lines between assistance and cheating



Bias & Misinformation

Systems trained on biased datasets perpetuate stereotypes and cultural insensitivity



Over-Dependence

Risk of skill atrophy; students may fail to develop independent language competence



Privacy & Data Security

Student data access raises concerns about breaches and commercial misuse



Cultural & Linguistic Bias

Favoring dominant languages and cultural perspectives; marginalizing dialects and variations



Metacognitive Skills

Compromise in developing self-monitoring and learning regulation abilities

Research caution: Over-reliance may undermine critical thinking and independent judgment

Core Principle

AI should augment, not replace, human educators



Ethical Principles

- Student agency first
- Transparency & explainability
- Pedagogical purposefulness
- Social justice focus



GenAI Literacy

- For educators & learners
- Critical evaluation skills
- Understanding capabilities
- Ethical use strategies



Assessment Reform

- Authentic contexts
- Process-focused approaches
- Metacognitive strategies
- Real-world integration

Key Goal: Develop skilled, autonomous, and culturally competent language users

Social Constructivism

Theorists: Dewey, Vygotsky, Piaget, Papert, Freire

Emphasizes collaborative learning and meaningful interaction

Challenge: Can human-AI interaction substitute for authentic human communication?

Task-Based Language Teaching

Emphasizes authentic, communicative tasks mirroring real-world language use

GenAI Support:

- Provides authentic texts
- Facilitates communication practice
- Offers immediate feedback

Critical: Maintain authenticity and communicative purpose

Learner Autonomy

GenAI can enhance autonomy through 24/7 access, personalized pathways, and immediate feedback—but must be balanced to avoid over-dependence

Current Research Limitations

Narrow Focus:

- Predominantly EFL contexts
- Higher education settings only
- Writing skills emphasized
- Limited attention to speaking, listening, reading

Gaps:

- Relationships between learner variables poorly understood
- Limited longitudinal studies
- Insufficient cross-cultural research
- Few studies in primary/secondary education

Priority Research Areas



Learning Outcomes

Comparative effectiveness studies across contexts and populations



Other Languages

Italian, Spanish, French across different educational levels



Long-term Effects

Longitudinal studies on language learning and development

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1 Classroom Integration

- Gradual introduction of AI tools
- Scaffolded approach to avoid over-reliance
- Task-based learning enhanced through AI
- Maintain focus on learning objectives

2 Professional Development

- Pre-service training with hands-on experience
- Ongoing support for educators
- Technical & pedagogical skills development
- Ethical considerations discussion

3 Curriculum Development

- Balance innovation with pedagogy
- Authentic contexts for language use
- Cross-curricular connections
- Broader implications of AI technology

4 Policy Framework

- Academic integrity guidelines
- Data privacy protocols
- Accessibility standards
- Clear guidance for all stakeholders

Essential Points

1 Neither Revolution Nor Threat

GenAI is a powerful tool requiring balanced, evidence-based integration—not blind adoption or rejection

2 Teachers Remain Central

Educators are indispensable as pedagogical architects, ethical guides, and facilitators of meaningful human learning

3 Human-Centered Framework Essential

Prioritize student agency, transparency, pedagogical purpose, and ethical use over technological novelty

4 Collaborative Approach Required

Success demands cooperation among educators, students, administrators, policymakers, and developers

The Path Forward

GenAI represents a pedagogical opportunity to realign educational priorities toward higher-order thinking skills and authentic learning experiences



Ethical Integration

Grounded in clear principles and student welfare



Literacy Development

For both educators and learners



Evidence-Based Practice

Informed by ongoing research

"The goal remains developing skilled, autonomous, and culturally competent language users"

GenAI should enhance, not diminish, language learning quality and equity



Thank You

Questions & Discussion

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"A balanced, constructivist, human-centred approach prioritising pedagogical integrity, ethical use, and inclusive access"