



BEYOND AUTONOMOUS PRODUCTION: REDEFINING LANGUAGE COMPETENCE IN AI-MEDIATED LEARNING

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Abstract:

The rapid integration of generative artificial intelligence (AI) in higher education has fundamentally challenged traditional models of language competence, which have long relied on the assumption of autonomous individual production. In AI-mediated learning environments, where language models can generate linguistically accurate and stylistically appropriate texts, independent production can no longer be considered a sufficient indicator of language proficiency. This paper reconsiders the concept of language competence in university-level English and German courses from the perspective of AI-mediated learning. Rather than viewing generative AI primarily as a threat to established practices, the paper approaches it as a development that exposes limitations in existing competence models and requires a shift from product-oriented to process-oriented understandings of language proficiency. Drawing on models of communicative competence and theoretical approaches that emphasise the mediated nature of cognitive processes, the paper argues that competence should no longer be defined solely through autonomous production.

In response, the paper proposes a model of AI-mediated language competence (AILC), defined as the ability to critically manage, evaluate, and ethically deploy AI-generated language within specific communicative contexts. The model integrates three interrelated dimensions: linguistic knowledge, critical evaluation of AI-generated content, and strategic, ethical use of AI tools. Furthermore, the paper outlines pedagogical implications for language teaching, especially for assessment and curriculum design in English and German courses, particularly regarding AI literacy and process-oriented evaluation. It concludes that generative AI does not diminish the importance of language education, but necessitates a systematic redefinition of competence in digitally mediated learning environments.

Keywords:

Artificial Intelligence Literacy, AI-Mediated Language Competence, Process-Oriented Assessment, Digital Pedagogy, Human-AI Collaboration.

INTRODUCTION

The rapid integration of generative artificial intelligence (AI) into higher education has significantly challenged the established views of knowledge, authorship, and assessment. In the field of language education, these challenges are particularly pronounced as traditional models of language competence have long relied on the assumption that proficiency is demonstrated through autonomous individual production, whether in writing, speaking, or other forms of performance.

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Within these models, the final product has typically functioned as the principal indicator of linguistic knowledge. However, the growing presence of large language models capable of generating grammatically accurate, coherent, and contextually appropriate texts calls this assumption into question. If formally adequate texts can be produced within seconds through interaction with generative systems, independent production can no longer be treated as a reliable indicator of competence. This does not imply that linguistic knowledge has become irrelevant; rather, it suggests that the criteria through which competence is understood and evaluated require reconsideration.

Recent research has emphasised both the opportunities and the risks associated with generative AI in education. On the one hand, studies have highlighted the pedagogical potential of large language models for feedback, scaffolding, and individualised support [1], [2]. On the other hand, they have raised concerns regarding overreliance, reduced critical engagement, and implications for assessment and academic integrity [3], [4]. Moreover, emerging debates on AI literacy point to the growing need for competencies that extend beyond technical use to include critical evaluation, informed judgement, and responsible engagement with AI-generated content [5]. These developments are particularly relevant in university-level language courses, where language competence extends beyond grammatical accuracy to include discourse awareness, pragmatic appropriateness, and intercultural sensitivity. Moreover, they prove relevant in respect of differences between linguistic systems. English, for example, as the dominant language in digital corpora, often benefits from highly standardised AI-generated output, whereas German, on the other hand, may require more active evaluation due to its greater morphosyntactic complexity and context-sensitive formal conventions. Such differences suggest that the impact of AI on language competence cannot be treated as entirely language-neutral.

Against this background, the paper asks how language competence should be redefined in AI-mediated learning environments. It argues that traditional product-oriented models are no longer sufficient and proposes a model of AI-mediated language competence (AILC) that integrates linguistic knowledge, critical evaluation, and strategic-ethical agency. In doing so, the paper contributes to ongoing discussions on language education, AI literacy, process-oriented assessment, and human-AI collaboration in digitally mediated higher education.

2. FROM TRADITIONAL COMPETENCE TO AI-MEDIATED LEARNING

2.1. TRADITIONAL MODELS OF LANGUAGE COMPETENCE

Discussions of language competence have long been shaped by models that, despite important differences, share a common assumption: competence is demonstrated through individual performance. In generative linguistics, competence was initially understood as internalised knowledge of the linguistic system, distinct from performance as actual language use. While this distinction was not developed with pedagogy in mind, it strongly influenced later understandings of language knowledge as something evidenced through production [6]. Subsequent models even broadened this view. Hymes shifted attention from formal correctness to communicative appropriateness, arguing that language users require not only grammatical knowledge, but also the ability to use language effectively in social context [7], [8]. This perspective was further elaborated in Canale and Swain's model of communicative competence, which integrated grammatical, sociolinguistic, discourse, and strategic dimensions [8]. More recent approaches, including the action-oriented perspective reflected in the Common European Framework of Reference, have reinforced the idea that competence involves contextualised and purposeful language use [9]. Despite these theoretical developments, one underlying premise has remained unchanged: competence is ultimately inferred from what the learner can produce independently. Whether through essays, oral presentations, or other forms of assessed performance, the final linguistic product has functioned as a principal indicator of proficiency. In practice, much of higher education assessment still rests on this assumption, i.e. remains product-oriented.

What generative AI disrupts is not the value of these models, but the stability of that assumption. If formally well-structured texts can be generated through interaction with AI systems, the direct link between final product and internal knowledge becomes less straightforward. The question, then, is not whether traditional models should be abandoned, but whether autonomous production alone can still be considered a sufficient basis for defining or evaluating competence [10].



2.2. GENERATIVE AI AND THE TRANSFORMATION OF LANGUAGE PRODUCTION

The emergence of generative AI has altered not only how texts can be produced, but also how writing itself may be understood as a cognitive and pedagogical context. Large language models do not merely support language production through correction or suggestion, as earlier digital tools often did; they can generate substantial text, reformulate ideas, and simulate discourse across genres and registers [1], [3]. This has important implications for language learning. If writing increasingly involves interacting with generated drafts, selecting among alternatives, and revising AI-produced content, then the locus of competence may shift from initial production towards evaluation, adaptation, and control. Namely, the act of writing may now involve less beginning from a blank page and more working critically with generated possibilities, i.e. what used to be an act of creation has turned into a mediated decision-making.

This shift can be understood in relation to broader perspectives on distributed and extended cognition, which emphasise that cognitive processes may be shaped through interaction with external tools and mediating artifacts [11], [12]. From this perspective, the use of generative AI does not necessarily replace cognition, but may reorganise where and how cognitive effort occurs [10], [13]. In other words, what changes is not the need for judgement, but where that judgement is exercised [13]. In case of language learning, competence will be increasingly demonstrated not only through producing language, but also through managing AI-mediated production critically and effectively. At the same time, recent research has cautioned that such possibilities depend on how AI is used. Without critical engagement, AI may encourage superficial processing, overreliance, or passive acceptance of generated output [3], [4]. This is also where discussions of AI literacy become particularly relevant, as they emphasise that meaningful use of generative systems requires more than technical familiarity; it requires evaluative judgement, contextual awareness, and responsible decision-making [5], [14].

From this perspective, generative AI does not simply introduce a new tool into existing pedagogical models. It actually pressures those models tied to autonomous production to account for forms of competence that emerge through mediation, not outside it [10], [13].

2.3. ENGLISH AND GERMAN IN AI-MEDIATED CONTEXTS

These issues become even more significant when considered across different linguistic systems. Although generative models can operate across languages, their performance is not necessarily uniform, nor are the demands they place on users identical.

English, as the dominant language in digital corpora and AI training data, often benefits from highly standardised output, particularly in academic and professional discourse. This may create an impression of reliability, even where generated texts remain generic, repetitive, or insufficiently nuanced. In such cases, the challenge may lie less in detecting formal accuracy than in evaluating discourse quality, argumentation, and contextualised appropriateness. In other words, the difficulty may lie not in spotting overt errors, but in recognising when apparently fluent output remains shallow or overly formulaic. On the other hand, German presents partly different demands. Its morphosyntactic complexity, including case marking, agreement, and syntactic constraints, may require more active monitoring of AI-generated output. Even where outputs are formally acceptable, their pragmatic or stylistic adequacy may require careful evaluation. This does not imply a simple opposition between a “reliable” English and a “problematic” German, but rather suggests that different languages demand different forms of critical engagement from users. These differences matter conceptually—if the use of generative AI is shaped, at least in part, by characteristics of particular languages, then competences in AI-mediated environments cannot be understood as entirely language-neutral [15]. It must account both for enduring linguistic knowledge and for the evaluative and strategic capacities required in technology-mediated interaction [14], [15], [10], [13].

It is from this point that the need emerges for a broader framework capable of integrating these dimensions. The following section proposes such a framework through the concept of AI-mediated language competence (AILC).



3. A MODEL FOR AI-MEDIATED LANGUAGE COMPETENCE (AILC)

What has been suggested so far is that the central challenge introduced by generative AI is not the disappearance of language competence, but the inadequacy of models that define competence primarily through autonomous production. If language use increasingly takes place in interaction with generative systems, then competence must be understood in a way that accounts for this mediated condition rather than treating it as external to the concept itself.

Taking this into account, the paper proposes AI-mediated language competence (AILC), defined as the ability to critically manage, evaluate, and ethically deploy AI-generative language within specific communicative contexts. The model is based on the assumption that competence in AI-mediated learning environments cannot be reduced either to traditional linguistic knowledge or to technical proficiency in using AI tools. Rather, it emerges through the interaction of three independent dimensions: core linguistic foundation, critical AI evaluation, and strategic-ethical agency. This understanding is consistent with broader perspectives on competence as dynamic and multidimensional [8], [9], while also reflecting approaches that view cognition and performance as mediated through interaction with tools and distributed processes [11], [12]. The present model further extends these perspectives by explicitly incorporating generative AI as part of the competence environment itself.

3.1. CORE LINGUISTIC FOUNDATION

The first component of the model is core linguistic foundation. This includes knowledge of grammatical structure, lexis, discourse conventions, and pragmatic norms in the target language. In English and German courses, it also includes sensitivity to register, formal conventions, and intercultural appropriateness. This component remains fundamental because critical engagement with AI-generated output presupposes the ability to recognise what is linguistically, pragmatically, or stylistically appropriate. A learner who lacks sufficient linguistic knowledge may be able to generate text through AI, but may not be able to assess whether that output is accurate, contextually appropriate, or rhetorically effective. In this sense, generative AI does not reduce the relevance of linguistic knowledge; it changes

the conditions under which that knowledge is demonstrated. Rather than appearing only through independent production, linguistic knowledge may also be manifested through the ability to detect problems, improve generated texts, and make informed linguistic choices during revision [16].

This distinction is particularly relevant in relation to English and German. While AI-generated English may often appear normatively stable, this may conceal generic discourse patterns that require evaluative judgement. In German, morphosyntactic complexity may make such judgement more visibly necessary. In both cases, linguistic knowledge remains the enabling condition of competence rather than a dimension replaced by technology. Emerging research on proactive language learning and AI-mediated informal learning further supports the view that linguistic competence increasingly operates in interaction with agentic and digitally mediated practices, rather than as an isolated internal resource [17].

3.2. CRITICAL AI EVALUATION

The second component of AILC is the capacity to critically evaluate AI-generated language. This includes identifying inaccuracies, recognising generic or weak argumentation, assessing contextual appropriateness, and determining when generated output requires revision. This dimension is necessary because the output of generative systems, however fluent, is not equivalent to reliable knowledge. Recent scholarship has repeatedly emphasised the risks of hallucination, oversimplification, and persuasive but misleading outputs in large language models [1], [3]. In educational contexts, this means that acceptance of AI-generated text cannot itself be treated as competent use. Critical evaluation, therefore, represents more than error detection—it involves analytical judgement, as well as questioning whether a generated argument is sufficiently precise, whether a formulation fits a specific communicative purpose, or whether a text reproduces formulaic discourse rather than meaningful content. In other words, competent engagement with AI necessitates not only evaluating outputs, but understanding the assumptions, biases, and power relations embedded in AI-mediated textual production [18].

This dimension also shifts the locus of performance. In traditional models, competence is often evidenced by producing a text. In AI-mediated environments, it may increasingly be evidenced by evaluating and improving one. For this reason, critical AI evaluation should not



be treated as a supplementary digital skill added onto linguistic competence. As a matter of fact, it functions as a constitutive dimension of competence itself under AI-mediated conditions. In this sense, critical evaluation is closely aligned with what recent studies describe as agentic AI practices, where competence is demonstrated through active judgement, not passive reliance on generated content [17], [18].

3.3. STRATEGIC-ETHICAL AGENCY

The third component is strategic-ethical agency, understood as the capacity to make informed decisions about when, how, and to what extent AI should be used, while maintaining responsibility for the resulting text. This dimension addresses a problem often underdeveloped in discussions of AI use: competence is not only a matter of what users can do with AI, but also of how they govern that interaction. Recent surveys on AI literacy and responsible AI use have stressed that judgement, transparency, and ethical awareness are central to meaningful engagement with generative systems [5], [14].

Within AILC, this includes dimensions about whether AI use is appropriate for a given task, how generated material should be revised or acknowledged, and where responsibility for the final product remains located. This is especially significant in academic writing, where questions of authorship and integrity cannot be separated from questions of competence. The concept of agency is important here because it prevents competence from being reduced either to tool use or to passive reliance on generated output. Competent users do not delegate responsibility to the system; they remain decision-makers within the process. This dimension may also be understood to include forms of digital text sovereignty, i.e. the capacity of users to maintain authorial control and critical ownership over AI-mediated textual production rather than surrendering epistemic authority to automated systems [16]. Relatedly, recent studies of critical digital literacy and AI-mediated learning emphasise that agency in AI environments is not merely individual decision-making, but can in fact be understood as distributed and socially situated, shaped through agentic practices that connect users, tools, and contexts [17], [18].

3.4. DYNAMIC RELATIONS AMONG COMPONENTS

It is important that the three dimensions of AILC should not be understood as separate layers added together, but as an integrated system. Linguistic knowledge enables critical evaluation. Critical evaluation informs revision and adaptation. Strategic-ethical agency governs how these processes are enacted and how responsibility is maintained. Each dimension presupposes and strengthens the others. This interdependence is precisely what distinguishes AILC from models that treat digital skills as external additions to existing competence frameworks. The argument proposed here is stronger: under AI-mediated conditions, competence itself must be reconceptualised as operating through this dynamic relation. Therefore, competence ought to be understood not as a static possession, but as an emergent configuration enacted through mediated practice [17]. From this perspective, competence is no longer defined solely as the ability to produce language autonomously; it represents the ability to manage language production competently in a mediated environment.

4. PEDAGOGICAL IMPLICATIONS

The proposed model for AI-mediated language competence has implications not only for how competence is conceptualised, but also for how language learning is assessed and organised in higher education. If competence can no longer be inferred solely from the final linguistic product, then assessment practices based exclusively on autonomous written production become increasingly insufficient. This does not imply abandoning traditional forms of evaluation, but rather complementing them with approaches capable of capturing competence as it is enacted in AI-mediated conditions.

One practical implication follows from assessment itself. In many cases, greater emphasis may need to be placed on process-oriented forms of evaluation. In practical terms, this may involve tasks that require students not simply to submit written texts, but to demonstrate how they evaluate, revise, and justify decisions made in working with AI-generated content. Such approaches may include guided revision tasks, reflective commentary accompanying written assignments, or oral discussion of choices made during the writing process. In this way, assessment can move beyond the binary opposition between “independent” and “AI-assisted” work and focus instead on whether students demonstrate informed linguistic and evaluative judgement [14], [15].



Another implication concerns curriculum design. If critical evaluation and strategic use of generative systems form part of contemporary language competence, then AI literacy cannot remain external to the curriculum or be treated merely as an informal student skill. Rather, elements of critical prompt use, evaluation of generated output, and responsible AI use may need to be integrated into existing courses on academic writing, translation, discourse analysis, or language practice [14], [18]. At the same time, the comparison between English and German suggests that such integration may not be entirely uniform. Differences in discourse conventions, morphosyntactic complexity, and pragmatic norms may shape how AI-mediated competence is developed and assessed across language-specific contexts. Finally, this has further implications for the role of the teacher. In AI-mediated environments, the teacher's role is not reduced, but partly reconfigured. Rather than functioning primarily as evaluator of final products, the teacher may increasingly act as a guide in developing students' evaluative judgement, critical awareness, and responsible use of AI-supported practices [17], [18]. In this sense, the teacher's role may shift less towards controlling AI use and more towards helping students develop informed ways of working with it.

Taken together these implications suggest that the integration of generative AI into language education should not be approached primarily as a problem of technological adoption, but as a question of assessment design, curricular adaptation, and competence development. Seen this way, the significance of AI-mediated language competence lies not only in redefining what counts as competence, but in providing a basis for rethinking how that competence may be fostered and reorganised in higher education.

5. CONCLUSION

The integration of generative artificial intelligence into language education does not eliminate the relevance of language competence, but exposes limitations in models that define competence primarily through autonomous production. In AI-mediated learning environments, the ability to produce language independently can no longer function as a sufficient indicator of proficiency. What requires reconsideration is not the value of linguistic knowledge itself, but the conditions under which competence is demonstrated, assessed and developed. In response to this challenge, this paper has proposed AI-mediated language competence (AILC) as

a framework that reconceptualises competence through the interrelation of linguistic knowledge, critical AI evaluation and strategic-ethical agency. The central argument has been that competence in AI-mediated environments is increasingly manifested not only through production, but through the capacity to manage, evaluate, and take responsibility for language use in interaction with generative systems. Therefore, the significance of the proposed model lies not only in addressing current challenges posed by generative AI, but in offering a conceptual basis for rethinking assessment, curriculum design, and language education more broadly in digitally mediated higher education.

Rather than diminishing the importance of language education, generative AI makes the question of competence more complex, and for that reason, arguably more important. The challenge for English and German studies is therefore not whether to respond to AI, but how to do so in ways that preserve linguistic knowledge, strengthen critical agency, and support responsible participation in evolving human-AI learning environments. It is important to note that this paper is conceptual in nature and does not include empirical validation of the proposed model. Its practical application therefore requires further research through teaching practice and concrete AI-mediated language tasks, while AILC may serve as a framework for examining language competence in contemporary educational contexts.

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