

Generative Artificial Intelligence and Teaching According to Aptitude in Private Undergraduate College English: A Production-Oriented Approach Framework

Huifan Chen , Lijuan Shen*

School of Foreign Languages, Xiamen Institute of Technology, Xiamen 361021, China

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Abstract

Generative artificial intelligence (GenAI) is reshaping how language is taught and learned, yet its potential to support teaching according to each learner's aptitude—a long-stated ideal in Chinese higher education—remains under-theorized, especially in resource-constrained private undergraduate institutions. This conceptual paper proposes a framework that embeds GenAI within the Production-Oriented Approach (POA) to enable differentiated, aptitude-responsive college English instruction at scale. Drawing on POA's three-stage cycle (driving, enabling, assessing) and on established accounts of differentiated instruction and individual differences in second language acquisition, the paper unpacks six implementation pathways: AI-assisted diagnostic profiling, adaptive enabling materials, culturally situated micro-content, differentiated production tasks, automated personalized feedback, and teacher mediation with integrity safeguards. Rather than treating GenAI as a substitute for pedagogical judgment, the framework positions it as an engine that extends the teacher's capacity to respond to learner readiness, interest, and learning profile. The paper clarifies the conditions under which such a model is likely to succeed, flags risks of over-reliance and inequity, and offers propositions for future empirical testing. It is offered as a theoretical contribution, not a report of an empirical study.

Keywords: Generative Artificial Intelligence, Production-Oriented Approach, Teaching According to Aptitude, Differentiated Instruction, College English, Private Undergraduate Institutions, China

Introduction

Private undergraduate institutions in China occupy a distinctive niche in the national higher-education system. This paper focuses on college English provision for non-English majors in Chinese private undergraduate institutions, considering settings where differences in learner readiness and constraints on individual instructional support may complicate differentiated teaching. Under these constraints, the classical educational ideal of teaching

according to aptitude—instruction that is genuinely responsive to each learner's readiness, interests, and learning profile—has functioned more as an aspiration than as a daily classroom reality (Tomlinson, 2014).

The arrival of generative artificial intelligence (GenAI), built on large language models, changes the calculus. GenAI can generate, adapt, translate, and scaffold language materials on demand, and it can simulate interlocutors and provide immediate, individualized feedback (Kohnke et al., 2023; Godwin-Jones, 2023). These affordances make it plausible, for the first time at scale, to operationalize aptitude-based differentiation inside a single heterogeneous classroom. At the same time, enthusiasm without a pedagogical backbone risks fragmentation: tools are adopted piecemeal, tasks drift from curricular goals, and the teacher's role becomes unclear (Kasneci et al., 2023).

This paper argues that the Production-Oriented Approach (POA), a foreign-language pedagogy developed in the Chinese context by Wen Qiufang, supplies the coherent backbone that GenAI adoption currently lacks (Wen, 2017, 2018, 2024). POA's output-driven, learning-use-integrated cycle is unusually well suited to channel GenAI's generative power toward explicit instructional ends. The purpose of this paper is therefore to propose a conceptual framework that integrates POA and GenAI to support teaching according to aptitude in private undergraduate college English; to articulate concrete implementation pathways; to specify the conditions and risks that govern its success; and to derive propositions for future empirical testing. The paper is explicitly theoretical: no empirical data are presented, and all pathway descriptions are design proposals rather than validated practices.

Literature Review

Generative AI in English language teaching

Research on GenAI in language education has accumulated rapidly. A consistent strand reports that GenAI supports individualized practice, lowers the affective filter through non-judgmental interaction, and supplies formative feedback that would be prohibitively expensive to provide at scale (Barrot, 2023; Godwin-Jones, 2023). Before the widespread adoption of GenAI, a systematic review identified adaptive systems, personalisation, and intelligent tutoring as established areas of AI application in higher education (Zawacki-Richter et al., 2019). At the same time, a parallel strand warns of academic-integrity threats, over-reliance that may erode learner autonomy, uneven access, and the uneven quality of machine output (Kasneci et al., 2023; Kohnke et al., 2023). For private undergraduate institutions, these benefits and risks are both magnified: the need for differentiation is acute, but so is the risk that tool adoption outpaces teacher capacity.

The Production-Oriented Approach

POA is a pedagogy for foreign-language teaching formulated by Wen Qiufang and grounded in three principles—learning-centeredness, the integration of learning and use, and whole-person education—and realized through a three-stage teaching cycle: driving, enabling, and assessing (Wen, 2017, 2018). In the driving stage, an output-oriented task activates learners' needs and reveals gaps; in the enabling stage, the teacher scaffolds the targeted language and content so that learners can meet the driving challenge; and in the assessing stage, learning is evaluated against the original productive goal. POA was designed explicitly to counter the learning-use separation that characterizes much traditional English

instruction in China, and empirical work suggests it can reduce speaking anxiety and raise confidence among university learners (Pan, 2025). Its output-first logic makes it a natural host for GenAI, whose generation and scaffolding capacities map directly onto the enabling stage.

Teaching According to Aptitude and Differentiated Instruction in Chinese EFL

The ideal of teaching according to aptitude calls for instruction that meets learners where they are. In second language acquisition, this maps onto well-established claims about individual differences: learners vary systematically in readiness, aptitude, motivation, and learning profile, and effective instruction must respond to that variation (Ellis, 2008; Dörnyei, 2009). Differentiated instruction offers the operational vocabulary for doing so, asking teachers to vary content, process, product, and affect in response to learner need (Tomlinson, 2014). In Chinese private undergraduate English classrooms, the demand for such differentiation is pronounced, but its manual delivery is costly; scaffolding theory further suggests that support must be calibrated to the learner's zone of proximal development to be effective (Vygotsky, 1978). GenAI's capacity to produce leveled, learner-specific materials promises to reduce the cost of calibration dramatically—provided it is governed by a clear pedagogy rather than left to ad hoc prompting.

Theoretical Framework

The proposed framework integrates three elements: POA's three-stage cycle, the differentiated-instruction principle of responsiveness to learner profile, and the scaffolding logic of the zone of proximal development. GenAI is positioned not as an autonomous tutor but as a malleable engine that the teacher directs at each POA stage.

In the driving stage, GenAI assists diagnostic profiling: brief entry tasks, writing samples, or guided self-reports are analyzed to surface each learner's readiness, interests, and gaps, giving the teacher an evidence base for teaching according to aptitude (Kohnke et al., 2023). In the enabling stage, GenAI generates adaptive, leveled scaffolding—graded input, glosses, models, and guided practice—and, crucially, culturally situated micro-content that increases relevance and willingness to produce. In the assessing stage, GenAI supplies personalized formative feedback that lets the teacher recalibrate support continuously toward each learner's zone of proximal development (Vygotsky, 1978). Throughout, the teacher retains the mediating role: setting goals, curating machine output, and exercising the pedagogical judgment that no model can supply (Wen, 2018; Tomlinson, 2014).

Implementation Pathways

AI-Assisted Diagnostic Profiling in the Driving Stage

Before a unit begins, learners complete a short productive task. GenAI analyzes the output—together with a brief interest and self-efficacy survey—to produce a learner profile indicating approximate proficiency, recurring error patterns, and topical interests. The teacher reviews these profiles and uses them to group learners and to seed the enabling materials. The intent is to convert the abstract ideal of teaching according to aptitude into an actionable, low-cost diagnostic routine.

Adaptive Enabling Materials Generated by GenAI

POA's enabling stage demands scaffolded input aligned to the driving task. GenAI can generate multiple leveled versions of the same core material—simplified and expanded

renditions, bilingual glosses, and worked examples—so that learners at different readiness levels engage the same curricular goal through appropriately calibrated support. This realizes differentiation at the level of process and content while preserving a shared learning objective.

Culturally Situated Micro-Content for Motivated Production

Relevance drives output willingness. One promising instantiation embeds regional cultural micro-materials—for example, Min-culture content drawn from the local Fujian context—into enabling tasks, so that learners practice English while engaging familiar cultural references. Related funded work explores the application of Min-culture micro-materials in the enabling stage of POA for college English writing; that line of inquiry supplies a concrete content strand for the present framework, though the current paper reports no empirical results of its own. The broader point is that GenAI can assemble such locally grounded micro-content on demand, tailoring cultural salience to the learner population.

Differentiated Production Tasks Matched to Readiness

In the productive phase, learners are assigned output tasks whose challenge is matched to their profiles and zones of proximal development rather than to a single class-wide standard. GenAI helps scale task variation—generating parallel prompts at graduated difficulty—so that stronger and weaker learners are both stretched without being overwhelmed or bored. This is differentiation at the level of product, the dimension Tomlinson (2014) identifies as most consequential for learner engagement.

Automated, Personalized Formative Feedback

GenAI can return immediate, individualized feedback on drafts—highlighting language errors, suggesting clearer phrasing, and prompting reflection—freeing the teacher to focus on higher-order concerns such as argument, audience, and cultural appropriateness (Barrot, 2023). Feedback is treated as formative and dialogic: the learner revises, the machine responds, and the teacher intervenes where machine judgment is insufficient.

Teacher Mediation, Academic Integrity, and Equity Safeguards

The framework places the teacher firmly at the center as curator, judge, and ethical gatekeeper. Institutional policies should require disclosure of GenAI use, protect equitable access so that differentiation does not deepen digital divides, and include bias and factual-accuracy checks on machine output (Kasneci et al., 2023). Integrity is preserved by designing tasks that are inherently reflective and process-oriented, so that the tool supports learning rather than substituting for it.

Discussion

The framework is most likely to succeed under four conditions. First, learning objectives must be explicit, so that GenAI output is evaluated against curricular goals rather than generated ad hoc. Second, teachers require AI literacy—not merely prompt engineering, but the pedagogical discernment to accept, modify, or reject machine output (Kohnke et al., 2023). Third, infrastructure and equitable access must be assured. Fourth, assessment must align with the differentiated, production-oriented design, or the model will be undermined by a return to uniform testing.

Several risks warrant vigilance. Over-reliance may atrophy learner autonomy and error-detection skill; inequity may widen if access is uneven; algorithmic bias and hallucinated content can mislead; and data privacy concerns accompany any profiling system (Kasneci et al., 2023; Crompton & Burke, 2023). POA's learning-centered, teacher-mediated structure is precisely what guards against tool-driven drift: because output remains the driver and the teacher remains the mediator, GenAI extends rather than displaces pedagogical judgment (Wen, 2018).

Because the paper is conceptual, its claims are best treated as hypotheses. Four propositions merit future empirical testing: (P1) GenAI-assisted diagnostic profiling increases the accuracy of aptitude-based grouping relative to teacher intuition alone; (P2) adaptive enabling materials raise measured learning gains for lower-readiness learners without depressing those of higher-readiness learners; (P3) culturally situated micro-content increases willingness to produce among private-undergraduate learners; and (P4) personalized formative feedback improves revision quality but only when paired with teacher validation. These propositions translate the framework into testable form.

Conclusion

This paper has argued that the Production-Oriented Approach offers a coherent pedagogical backbone for using generative artificial intelligence to realize teaching according to aptitude in private undergraduate college English. By mapping GenAI's affordances onto POA's driving, enabling, and assessing stages, the framework converts a long-standing ideal into a set of concrete, scalable pathways while keeping the teacher's mediating role intact. The contribution is theoretical: a design proposal and a set of empirical propositions, not a validated intervention. As private undergraduate institutions search for cost-effective ways to serve heterogeneous learners, the framework offers a defensible starting point—one that future classroom studies can confirm, refine, or contest.

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