



## METHODOLOGY FOR ORGANIZING DIFFERENTIATED INSTRUCTION BASED ON ARTIFICIAL INTELLIGENCE TOOLS IN ENGLISH LANGUAGE CLASSES

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### ABSTRACT

*This article examines the methodology for organizing differentiated instruction in English language classes through the use of artificial intelligence tools. The relevance of the topic is determined by the growing need to individualize learning in linguistically diverse classrooms where students differ in proficiency level, pace of learning, cognitive style, motivation, and communicative needs. Traditional one-size-fits-all teaching models often fail to address these differences in a systematic and sustainable manner, whereas artificial intelligence technologies create new opportunities for adaptive, data-informed, and learner-centered instruction. The purpose of the study is to develop and substantiate a methodological framework for the effective integration of artificial intelligence tools into differentiated English language teaching. The research is based on a qualitative and analytical approach involving the study of pedagogical theory, principles of differentiation, communicative language teaching, and the didactic potential of artificial intelligence applications in language education. The article presents a structured model in which artificial intelligence supports differentiation by content, process, product, pace, feedback, and assessment. Particular attention is paid to the teacher's role in setting objectives, selecting tools, monitoring learning trajectories, ensuring ethical use of technology, and preserving pedagogical control over instructional decisions. The results show that artificial intelligence tools can significantly improve the organization of differentiated instruction by enabling personalized task generation, immediate feedback, flexible scaffolding, and more efficient classroom management. At the same time, effective*

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*implementation requires methodological discipline, digital literacy, critical evaluation of AI-generated materials, and a clear alignment between technology use and language learning outcomes. The article concludes that artificial intelligence should not replace the teacher, but rather function as an intelligent pedagogical instrument that strengthens differentiated instruction, increases learner engagement, and improves the effectiveness of English language education.*

### **Introduction.**

The modernization of foreign language education has intensified the search for instructional models that can respond to the diverse needs of learners in contemporary classrooms. English language classes, in particular, are characterized by significant heterogeneity. Within a single group, students may differ in vocabulary range, grammatical awareness, pronunciation skills, reading fluency, confidence in speaking, previous exposure to English, and ability to work independently. In addition, learners bring different motivational profiles, cultural backgrounds, technological experiences, and expectations about instruction. Under such conditions, teaching all students through identical content, identical tempo, and identical tasks produces predictable problems: stronger learners become underchallenged, weaker learners lose confidence, and the overall efficiency of instruction declines. This pedagogical contradiction has made differentiated instruction one of the most important methodological principles in modern education. Differentiated instruction seeks to adapt teaching to student readiness, interests, and learning profiles while maintaining common educational goals. In English language teaching, this principle is especially valuable because language acquisition is dynamic, skill-based, and deeply dependent on practice, feedback, and gradual progression. However, the practical implementation of differentiation has traditionally been constrained by limited class time, large student groups, insufficient teaching resources, and the heavy workload placed on teachers who must design multiple versions of activities and assessments. Against this background, artificial intelligence tools have emerged as a promising means of strengthening pedagogical differentiation. AI-powered applications can generate tasks at different levels of complexity, provide instant feedback, analyze learner performance, support vocabulary development, simulate conversation, and help teachers prepare customized materials more efficiently. Yet the simple presence of AI tools does not automatically improve instruction. Without a coherent methodology, technology use remains fragmented, superficial, or even pedagogically harmful. Therefore, the central issue is not whether artificial intelligence can be used in English language teaching, but how it should be methodologically organized to serve differentiated instruction in a purposeful, ethical, and educationally valid way. The purpose of this article is to develop a methodological framework for organizing differentiated instruction based on artificial intelligence tools in English language classes. The objectives are to clarify the pedagogical foundations of differentiation, identify the didactic functions of AI tools, describe a staged model of implementation, and assess the advantages and limitations of this approach. The scientific novelty of the article lies

in the integration of differentiated instruction theory with the methodological logic of AI-assisted language teaching, resulting in a practical and theoretically grounded model for classroom use.

### **Methods.**

The study is based on a qualitative methodological design combining theoretical analysis, comparative pedagogical interpretation, and systematization of educational practice related to differentiated instruction and artificial intelligence in language education. The first methodological basis of the study is the principle of learner-centered education, according to which teaching should be organized not around a fixed instructional script but around the developmental and communicative needs of students. The second basis is the theory of differentiated instruction, which emphasizes adaptation of content, process, product, learning environment, and assessment to the characteristics of learners. The third basis is communicative language teaching, which views language not as a static system of forms, but as a tool for meaningful interaction. The fourth basis is the emerging didactics of AI-supported learning, which explores how intelligent systems can facilitate personalization, scaffolding, and feedback. To develop the proposed methodology, the study synthesizes conceptual works on differentiation, digital pedagogy, and foreign language instruction, while also analyzing the functional capabilities of widely used AI tools relevant to English classes. These tools include text generators, grammar and style assistants, adaptive quiz platforms, speech recognition systems, feedback generators, conversational chatbots, vocabulary support applications, and task personalization systems. The analysis focuses not on specific commercial brands as ends in themselves, but on the instructional functions they perform within a differentiated learning environment. The methodological procedure includes several analytical stages. At the first stage, the main dimensions of differentiation in English language teaching are identified, namely differentiation by readiness level, by learning pace, by task complexity, by mode of support, by communicative purpose, and by assessment format. At the second stage, the pedagogical affordances of AI tools are mapped onto these dimensions in order to determine how technology can support each one. At the third stage, a classroom methodology is designed that includes diagnostic input, grouping strategies, differentiated task design, AI-assisted scaffolding, teacher monitoring, and formative evaluation. At the fourth stage, this model is examined through the criteria of pedagogical feasibility, learner autonomy, validity of language practice, ethical safety, and sustainability in ordinary educational settings. The study does not claim experimental statistical generalization; rather, it offers a theoretically grounded and methodologically structured model intended for further classroom adaptation and empirical testing. Such an approach is justified because the present stage of educational innovation requires not only measurement of outcomes, but also careful design of pedagogical models that can later be tested and refined. In this sense, the article adopts a constructive methodological orientation: it builds a coherent instructional framework from established pedagogical principles and from the real didactic possibilities of artificial intelligence tools.

### **Results.**

The results of the study make it possible to formulate a methodology for organizing differentiated instruction based on artificial intelligence tools in English language classes as a multistage pedagogical system. This system begins with diagnostic differentiation. Before instruction is adapted, the teacher must establish a clear picture of student diversity. AI tools

can support this stage by helping create placement tasks, vocabulary diagnostics, grammar checks, reading comprehension quizzes, and short speaking prompts analyzed through speech-recognition or teacher-reviewed recordings. Based on this data, students can be grouped flexibly according to specific instructional purposes rather than permanently labeled as strong or weak. One of the important findings is that differentiation becomes more effective when it is skill-specific. A student may be strong in reading but weak in speaking, or accurate in grammar but limited in vocabulary. AI tools enable teachers to identify such profiles more efficiently and to assign tasks accordingly. The second result is the structuring of differentiation through six interconnected methodological components: content, process, product, pace, feedback, and assessment. Differentiation by content means that learners engage with material at different levels of lexical density, grammatical complexity, or conceptual difficulty while pursuing the same general topic. AI tools can generate simplified, standard, or enriched versions of reading texts, dialogues, exercises, or vocabulary lists on the same theme, allowing all students to participate without being excluded by inappropriate difficulty. Differentiation by process refers to the way students work with the material. Here AI supports multiple pathways: some learners may receive guided prompts, sentence starters, model answers, or translation support, while others engage in open-ended production, critical comparison, debate, or extended writing. This makes classroom activity more elastic and responsive. Differentiation by product concerns what students produce to demonstrate learning. In an AI-supported English class, learners may complete the same objective through different products, such as a written summary, a dialogue script, a recorded oral response, a vocabulary map, or a grammar reflection. AI tools can help generate rubrics, provide preliminary feedback, or support revision. Differentiation by pace is one of the strongest domains of AI application. Students who need more time can work with AI-supported hints, repeated exercises, and scaffolded explanations, while faster learners can move to extension tasks without waiting for the whole class. Differentiation by feedback is also significantly strengthened. Traditional classrooms often suffer from delayed or uneven feedback, but AI tools can instantly indicate grammatical errors, lexical inaccuracies, coherence issues, or pronunciation problems. This immediate response supports self-correction and increases time on task. Finally, differentiation by assessment allows teachers to use varied forms of checking progress, including adaptive quizzes, individualized mini-tests, skill-focused checkpoints, and portfolio-style tasks. A major result of the study is the formulation of a six-stage methodological cycle for classroom implementation. At the first stage, the teacher defines the communicative and linguistic objectives of the lesson. Without this, AI use becomes decorative rather than functional. At the second stage, the teacher diagnoses student readiness and selects the dimension of differentiation that is most relevant for the lesson objective. At the third stage, the teacher chooses AI tools according to function, not fashion. For example, if the goal is vocabulary acquisition, the tool should support lexical practice and contextualization; if the goal is speaking fluency, then conversation simulation or speech feedback is more appropriate. At the fourth stage, the teacher designs tiered tasks or alternative pathways. A basic group may receive more guided practice, an intermediate group may work with semi-open tasks, and an advanced group may perform creative or analytical tasks. At the fifth stage, students interact with AI tools under teacher guidance, with clear rules regarding accuracy checking, originality, and responsible use. At the sixth stage, the teacher evaluates learning outcomes, compares the effectiveness of different pathways, and adjusts future instruction.

Another important result is the clarification of the teacher's role. In technologically enthusiastic discussions, there is a temptation to imagine that AI can automate differentiation. This assumption is weak and pedagogically dangerous. The study shows that artificial intelligence can support differentiation, but it cannot define educational priorities, interpret classroom climate, replace pedagogical tact, or reliably judge the deeper communicative value of student output without human supervision. The teacher remains the architect of learning. AI functions as an instrument for extending the teacher's capacity to adapt, respond, and support. In practical terms, the methodology works best when AI is embedded into recurring lesson structures. For example, during pre-reading, an AI tool may provide vocabulary previews at different difficulty levels. During reading, students may work with varied comprehension questions matched to readiness. During speaking practice, a chatbot may simulate an interview for one group while another group conducts peer interaction with teacher-provided prompts. During writing, AI may provide language suggestions, but final revision is checked against teacher criteria. During reflection, learners compare AI-generated feedback with teacher comments to develop critical digital literacy. This integrated approach prevents AI from becoming an isolated gadget and instead makes it part of a coherent differentiated pedagogy. The study also identifies positive instructional effects likely to emerge from this methodology. These include increased student engagement because tasks are more appropriately matched to ability; improved learner confidence because support is individualized; better classroom management because students can work productively at different levels; greater autonomy because learners receive immediate guidance; and more efficient teacher preparation because AI assists in creating differentiated materials. At the same time, the results indicate that the methodology requires boundaries. Teachers must verify factual and linguistic accuracy, avoid overreliance on automated correction, protect data privacy, and prevent students from outsourcing thinking to machines. Differentiated instruction fails if AI turns students into passive recipients of generated text. Therefore, the methodology stresses active language use, reflection, revision, and teacher moderation at every stage.

### **Discussion.**

The proposed methodology should be understood not as a technological shortcut, but as a pedagogical response to an old problem using new instruments. The old problem is heterogeneity in language classrooms. The new instruments are AI tools capable of supporting personalization at a scale that traditional instruction often cannot sustain. The strength of the methodology lies in its alignment with core educational principles: responsiveness to learner differences, focus on communicative competence, formative support, and structured progression from diagnosis to feedback. However, its practical value depends on how rigorously it addresses several critical issues. The first is the problem of pedagogical reductionism. There is a risk that teachers may interpret differentiated instruction too narrowly, reducing it to easier tasks for weaker students and harder tasks for stronger students. That is crude differentiation, not quality methodology. True differentiation involves variation in support, modality, pathway, and product, not only in difficulty. AI can help with complexity adjustments, but unless the teacher deliberately designs meaningful alternatives, the classroom merely becomes stratified rather than genuinely differentiated. The second issue concerns the validity of AI-generated language material. Artificial intelligence can produce grammatically acceptable but contextually awkward, stylistically unnatural, or pedagogically

misaligned content. In English language classes this is a serious problem because learners may not yet have enough competence to detect subtle errors or unnatural phrasing. Therefore, every AI-generated text, exercise, prompt, or explanation must be filtered through teacher expertise. The methodology is only as strong as the teacher's willingness to verify and refine AI output. The third issue involves learner autonomy and dependence. AI tools can support independent work, but they can also weaken genuine effort if students use them merely to obtain ready-made answers. In writing tasks especially, unregulated AI use may create an illusion of competence while hiding weak grammar, poor lexical control, or limited argumentation. For this reason, the methodology must distinguish between productive AI use and evasive AI use. Productive use includes idea generation, vocabulary support, model comparison, feedback interpretation, and guided revision. Evasive use includes copying generated essays, bypassing communicative practice, or submitting AI-produced output as one's own learning product. This distinction is not optional; it is central to academic integrity and to the validity of assessment. The fourth issue is equity. AI-based differentiation can widen gaps if access to devices, internet quality, or digital skills is uneven. A methodology that assumes ideal infrastructure will collapse in ordinary classrooms. Therefore, teachers need adaptable implementation models, including blended strategies where AI use is periodic, teacher-mediated, or group-based rather than fully individual and device-dependent. In some contexts, a single teacher-controlled AI interface projected in class may be more realistic than fully personalized student-level access. The fifth issue is teacher competence. The success of this methodology depends less on the sophistication of the software and more on the teacher's methodological literacy. Teachers must know what kind of differentiation is needed, what linguistic outcome is targeted, how to evaluate AI suggestions, and how to maintain educational control. Without these competencies, the classroom becomes a glittering machine with a loose steering wheel. The sixth issue is assessment. If students learn through differentiated AI-supported pathways, assessment must also be designed carefully. Standardized identical tasks may ignore the learning process, while completely individualized assessment may undermine comparability. The solution is balanced assessment: common core criteria combined with varied task formats and levels of support. For instance, all students may be assessed on the same communicative objective, such as expressing opinion or summarizing information, but may demonstrate it through different modes or scaffold levels. This respects both fairness and differentiation. From a broader perspective, the methodology also reshapes the concept of English language teaching itself. It moves the classroom away from static textbook sequencing toward adaptive pedagogical design. It increases the importance of formative feedback, learning analytics, and learner reflection. It encourages teachers to focus more on instructional orchestration and less on repetitive material production. Yet this transformation should not be romanticized. AI will not fix weak objectives, vague lesson planning, poor classroom discipline, or incoherent curricula. It amplifies what is already present. In a well-designed lesson, AI can sharpen differentiation. In a poorly designed lesson, it can magnify confusion. That is the decisive tradeoff. Therefore, the methodology is most effective when introduced gradually, beginning with one or two functions such as differentiated vocabulary tasks or AI-supported writing feedback, and only later expanding into broader adaptive systems. Controlled integration is methodologically stronger than enthusiastic overload. In English language classes, where communicative authenticity,

interaction, and confidence matter greatly, technology should remain a servant of pedagogy, not its director.

### **Conclusion.**

The study has shown that organizing differentiated instruction in English language classes through artificial intelligence tools is both pedagogically promising and methodologically demanding. The key conclusion is that AI can significantly enhance differentiation when it is embedded in a coherent instructional framework that begins with diagnosis, continues through tiered task design and guided technological support, and ends with formative evaluation and pedagogical reflection. Artificial intelligence expands the teacher's capacity to adapt content, vary learning processes, personalize feedback, and manage different learning paces within one classroom. This is especially important in English language teaching, where student differences in proficiency and communicative readiness are often pronounced. At the same time, the study demonstrates that successful implementation depends on several non-negotiable conditions: precise lesson objectives, functional rather than fashionable tool selection, teacher verification of AI output, ethical regulation of use, and alignment between technology and learning outcomes. The article argues that artificial intelligence should not be understood as an autonomous teaching force, but as a methodological resource under the control of the teacher. Its value lies not in automation alone, but in its ability to support more responsive, flexible, and equitable instruction. The proposed methodology contributes to the development of modern English language pedagogy by integrating principles of differentiation with the adaptive potential of AI tools. Its practical significance lies in offering teachers a structured model that can be adapted to different age groups, proficiency levels, and institutional contexts. Future research may expand this work through experimental studies, classroom observations, learner perception analysis, and comparative evaluation of specific AI-supported differentiation strategies. Nevertheless, even at the present stage, one conclusion is clear: when used critically and methodically, artificial intelligence can become an effective instrument for organizing differentiated instruction and improving the quality of English language education

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