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РОЛЬ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В ИНДИВИДУАЛЬНОМ ОБУЧЕНИИ

Аннотация. *В данном концептуальном обзоре рассматривается, как искусственный интеллект может поддерживать индивидуальное обучение с помощью адаптивных заданий, формирующей обратной связи и сопровождения со стороны преподавателя. Для различения устоявшихся приложений и предлагаемых практик в классе были сопоставлены три отобранные публикации. Синтез выявляет возможности для отзывчивого обучения, а также проблемы точности, зависимости обучающихся от технологий и неравного доступа. Предлагается контролируемый преподавателем цикл диагностики, адаптации, обратной связи и независимой оценки, а в статье делается вывод, что персонализация должна укреплять самостоятельность обучающихся и демонстрируемое понимание материала. Оригинальный эксперимент со студентами не проводился.*

Ключевые слова: *искусственный интеллект, индивидуальное обучение, персонализированное обучение, адаптивное обучение, формирующее оценивание.*

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THE ROLE OF ARTIFICIAL INTELLIGENCE IN INDIVIDUAL EDUCATION

Abstract. *This conceptual review examines how artificial intelligence can support individual education through adaptive tasks, formative feedback, and teacher guidance. Three selected publications were compared to distinguish established applications from proposed classroom practices. The synthesis identifies opportunities for responsive instruction alongside concerns about accuracy, learner dependence, and unequal access. A teacher-supervised cycle of diagnosis, adaptation, feedback, and independent assessment is proposed, and the article concludes that personalization should strengthen learner autonomy and demonstrable understanding. No original student experiment was conducted.*

Keywords: *artificial intelligence, individual education, personalized learning, adaptive instruction, formative assessment.*

Introduction

Individual education responds to differences in learners' prior knowledge, pace, and support needs. In this article, the term refers to personalized instruction within a shared curriculum. A common classroom difficulty is providing timely assistance while maintaining meaningful challenges for students who progress more quickly. Artificial intelligence (AI) offers tools for adjusting practice and generating explanations, but educational value depends on how these tools are integrated into teaching.

Methods

A focused narrative review compared three purposively selected sources: a systematic review of AI applications in higher education [1], a meta-analysis of intelligent tutoring systems [2], and UNESCO guidance on generative AI [3]. Selection reflected complementary coverage of educational applications, evaluated tutoring interventions, and governance. This was not an exhaustive systematic search, and no pooled effect size was calculated.

Results

The synthesis identified three complementary functions. First, adaptive practice can connect task selection to evidence of understanding. A learner who repeatedly struggles with a prerequisite concept may need a simpler worked example before attempting a more demanding problem. Such adaptation requires a clear curriculum sequence and reliable checks of mastery. This classroom example illustrates a proposed use rather than an observed outcome.

Second, tutoring and feedback can make individual assistance more available. The meta-analysis by Ma and colleagues examines learning outcomes across intelligent tutoring studies and considers differences in systems and comparison conditions [2]. Its relevance is that effectiveness must be evaluated against a specific alternative. Evidence about structured tutors cannot automatically establish the effectiveness of an unrestricted chatbot.

Third, learner information can support teacher decisions. The reviewed higher education literature identifies profiling and prediction among major application areas [1]. In the proposed framework, teachers would use indications of difficulty to initiate a conversation or revise instruction. An automated label would remain a provisional signal requiring contextual interpretation.

Discussion

A practical implementation can begin with a short diagnostic activity. The teacher then assigns a common learning objective while allowing different

practice routes. AI may provide hints or alternative explanations, followed by a task completed without assistance. Comparing supported and independent work helps reveal whether students have understood the concept or merely reproduced an answer. Students should explain their reasoning and identify which assistance they used.

UNESCO emphasizes human agency, privacy, and pedagogical validation in the use of generative AI [3]. Applied here, these principles imply teacher review of instructional outputs, limited collection of learner information, and accessible alternatives when students cannot use a tool. AI literacy activities should also ask learners to identify incomplete explanations and verify claims against course materials.

The framework has limitations. Three selected sources cannot represent the entire research field, and policy guidance does not demonstrate causal learning gains. Future classroom evaluation should compare equivalent groups, measure prior knowledge, and assess delayed independent performance. Participation, accessibility, and teacher workload should be examined alongside achievement. These measures would help determine for whom an intervention works and under which conditions.

Conclusion

AI can support individual education by connecting learner needs with suitable practice and feedback. Its contribution should be judged through independent understanding and equitable participation. The proposed cycle offers a basis for classroom evaluation, while teachers retain responsibility for objectives, interpretation, and assessment.

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