Context and motivation

In recent years, the methods of education have gone through significant transformations that were driven by technological advancements. The rapid evolution of AI (Artificial Intelligence) has opened many opportunities for enhancing the learning experience, and with its outstanding popularity, ChatGPT being able to gather 1 million users in just 5 days [1], it is safe to say to it was well received by the public. While traditional learning methods often fail to accommodate the learners needs, paces, and preferences of individual students, AI can learn from the learner and adapt itself for optimal learning potential. Although Large Language Models (LLM) such as ChatGPT can be useful for educational purposes, they were not designed purely for education and may lack some important features for peak learning performance. So, what does LLM miss?

Scenario-based learning (SBL), “is the use of scenarios as a vehicle for the teaching and learning process, providing students with the opportunity to learn from and apply their learning to realistic experiences” [3]. There have been studies that confirm that creating situations that mimic realistic experiences can help self-efficacy in students [4], and with the help of AI the potential to create dynamic, adaptive learning environments that respond in real-time to student input, offering personalized guidance and support. By integrating AI into education, we can provide learners with customized experiences that are not only engaging but also pedagogically sound, allowing for deeper understanding and more effective knowledge retention.

This research stems from the need to bridge the gap between traditional instructional methods and the increasing demand for individualized learning solutions. As education continues to shift toward digital platforms, it is crucial to develop tools that can accommodate a wide range of learners, each with unique abilities, learning speeds, and preferences. Current educational frameworks often lack the capacity to deliver such personalized experiences, leaving some students disengaged or overwhelmed.

By leveraging the power of AI, this educational agent aims to guide students through carefully designed educational scenarios, acting as a tutor capable of providing real-time assistance, answering questions, and adapting to each student's progress. The goal is to create a more engaging, effective, and interactive learning experience that goes beyond static, one-size-fits-all approaches.

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