Review on Generative Transformer Approach to Learner-Centric Education: Content, Assessment and Feedback Automation

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Abstract: *Generative AI has leveraged modern Learning Management by getting the smart responses with flexibility and automation. This study shows a review of previous research, exploring and understanding the ideas behind a learning management system powered by GenAI. It shows that the main learning tasks such as study materials creation, evaluation based on quiz or test and personalized feedback for adaptive learning for learners.*

Exploiting the Large Language Models such as GPT-4 and LLaMA modles where, teachers can upload their video materials using suggested setup which converted into organized text summaries. The system further tests skills using quizzes or handson coding tasks. Additionally, the platform adaptively groups students into categories like fast,slow and moderate learner based on their interactions, engagement, and performance analytics.

This adaptive learning cycle gives personalized tailored lessons to each learner without adding extra load on teacher's workload. By integrating new recent AI advancements with the educational technology updates, this study helps to highlight the emerging new trends and foundational principles for building the next-generation modern learning environments where education springs with modern adaptive feedback.

Keywords: Generative Transformers, Adaptive Learning, Educational AI, Assessment Automation, Learner Profiling, LLM-based Tutoring