Patent Search

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Abstract:

MACHINE LEARNING–BASED ADAPTIVE FRAMEWORK FOR ENHANCING EFL LEARNERS' READING SKILLS IN HIGHER EDUCATION The present invention provides a machine learning–based adaptive framework to improve the reading skills of English as a Foreign Language (EFL) learners in higher education. The system collects learner data such as reading speed, comprehension, vocabulary knowledge, and engagement, and processes it using machine learning models. Based on this analysis, the framework delivers personalized reading materials, vocabulary exercises, and comprehension tasks suited to each learner's level. Learners receive real-time feedback and recommendations, while instructors access a dashboard with performance insights, predictive alerts, and suggested interventions. The system is scalable across institutions and continuously improves by retraining its models with updated learner data. By combining adaptive content, predictive analytics, and personalized feedback, the invention enhances learner engagement, comprehension, vocabulary development, and overall English proficiency. FIG.1

Complete Specification

Description:MACHINE LEARNING–BASED ADAPTIVE FRAMEWORK FOR ENHANCING EFL LEARNERS' READING SKILLS IN HIGHER EDUCATION

Technical Field

[0001] The embodiments herein generally relate to a method for machine learning–based adaptive framework for enhancing EFL learners' reading skills in higher education.

Description of the Related Art

[0002] The present invention belongs to the field of educational technology integrated with artificial intelligence (AI), with a particular emphasis on applying machine learning techniques to improve learning effectiveness and outcomes in the domain of language education. More specifically, this invention is directed toward the development of an intelligent and adaptive learning framework that supports English as a Foreign Language (EFL) learners in higher education. The framework is designed to continuously monitor learner performance, analyze their strengths and weaknesses, and adapt learning pathways accordingly. Through the combination of personalized content delivery, dynamic adjustment of reading materials, real-time feedback mechanisms, and predictive learning models, the system creates an individualized learning environment that enhances reading comprehension, vocabulary acquisition, and overall language proficiency. This invention not only addresses the diverse needs of learners but also provides instructors with valuable insights into learner progress, thereby bridging the gap between traditional teaching methods and modern AI-driven adaptive learning technologies.

[0003] In the modern era of globalization, English proficiency has become a fundamental requirement for students pursuing higher education, as it serves as the primary medium for accessing academic resources, research publications, and international collaboration.

[0004] However, for learners originating from non-English-speaking backgrounds, the process of acquiring strong reading skills in English presents significant challenges

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