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(57) 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

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