

An AI-Assisted Adaptive Learning Continuity Model for Future-Ready Higher Education in Unstable Digital Environments

Nedal Jaabari

Palestine Technical University – Kadoorie, Hebron, Palestine

Abstract

Universities operating in unstable digital environments face persistent challenges in maintaining educational continuity. The efficiency of online and blended learning is negatively impacted by various issues, including inadequate internet connectivity, disruptions in electrical supply, restricted access to electronic devices, and disparities in digital preparation. The majority of the time, learning management systems like Moodle offer predefined instructional paths with limited adaptive support, although they support material distribution, evaluation, and communication.

A model for adaptive learning continuity that is helped by artificial intelligence is proposed in this research for use by higher education institutions that are constrained by technological and infrastructural limitations. Learner profiles, digital accessibility monitoring, suggestions assisted by artificial intelligence, adaptive material delivery, adaptive assessment, remedial learning pathways, and instructor intervention are all incorporated into the concept. It is designed as an adaptive layer that can be connected to an existing LMS. The paper presents the model architecture, main components, operational workflow, and a pilot implementation plan. The proposed model provides a practical foundation for supporting personalized learning, low-bandwidth alternatives, early risk detection, and targeted remedial support in constrained educational environments.

Keywords

Moodle, digital preparedness, adaptive learning, artificial intelligence in education, educational continuity, and learning analytics are some of the keywords that are associated with this topic.