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AI, IOT and DTN - A Novel Approach for an Innovative Learning Environment

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Abstract

A new era with new challenges in the learning environment in University context is already happening. The approach for innovating learning practices is crucial to involve the student in learning process and this way providing a faster learning curve. These article focus on the following research topics: blending of Internet-of-Things (IoT) and Artificial Intelligence (AI) to enhance the learning process and providing the means to a resilient learning environment even under severe constraints such as catastrophic scenarios or countries underdevelopment. We plan to demonstrate that merging IoT, AI and Delay Tolerant Networks (DTN) provide the best scenario to a positive disruption of the education approach. The integration of IoT and AI in educational settings, encompassing both physical and virtual classrooms, offers a myriad of advantages that can significantly enhance the learning experience, optimize pedagogical approaches, and streamline administrative tasks. This synergistic blend creates an intelligent and adaptive learning environment that caters to individual needs and promotes deeper engagement, such as: Adaptive Learning Paths; Intelligent Tutoring Systems; Immersive and Interactive Content; Real-time Feedback and Assessment and Accessibility and Inclusivity. At last, DTN will enable connectivity even under severe communication learning environments. In order to support this article a survey was conduct over one University to understand the student's perception about the proposed solution. An extensive bibliography search was also conducted and a novel approach is presented to enable a much richer and robust learning environment.

Keywords: Smart Education Systems, Resilient Pedagogical Models, Adaptive Learning Technologies, Intelligent Tutoring and Assessment, Connectivity in Educational Contexts