AI Based IT Training System

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Abstract: *Retaining learner engagement is a major challenge in online learning environments, which is even more intensified with learning spaces increasingly built by combining resources from multiple independent sources. Narrative-centric learning experience has been found to improve learner engagement by several researchers. Towards this end, we propose an AI-based approach that generates auxiliary learning content called narrative fragments which are interspersed into the learning pathways to create interactive learning narratives. The proposed approach consists of the automatic generation of two types of narrative fragments– overviews of the learning pathway segments and reflection quizzes or formative assessments from learning resources in any format including open educational resources. The pipeline for the generation of the narrative fragments consists of various components based on different semantic models and a natural language generation (NLG) component based on a pre- trained language model GPT-2 (Generative Pre-trained Transformer 2). Automation enables the generation of narrative fragments on the fly whenever there are changes in the learning pathway due to the need for reiteration of concepts, pre-requisite knowledge acquisition, etc., enabling adaptability in the learning pathways. The proposed approach is domain agnostic which makes it easily adaptable to different domains. The NLG model is evaluated using ROUGE scores against several baselines. Automatically generated narrative fragments are evaluated by human evaluators. We obtained encouraging results in both cases.*

Keywords: Personalized Learning Paths, Adaptive Content Delivery, Interactive Learning Tools, Real-time Feedback and Support, Predictive Analytics for Learning Outcome