

AN INTELLIGENT INQUIRY BASED LEARNING ENVIRONMENT USING ONTOLOGY DRIVEN APPROACH



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Discovering Knowledge

By

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Abstract

Inquiry based learning (IBL) has different inquiry levels that can lead to different results in a given topic of interest at any education level. IBL is a pedagogical approach in which the learners goes through self-exploratory process of gaining knowledge about any particular topic in different topic of interest. Inquiry levels are the levels of guidance provided to the learners while conducting a learning activity in indoor and outdoor setting.

Using these inquiry levels in the mentioned settings are previously explored individually. This thesis is providing an environment Multi-Inquiry Level Ontology System (MILOS) for learners to automatically perform multiple inquiry levels. To validate MILOS it has been compared to a non-inquiry based learning application Sololearn which is an online application to learn programming concepts. Therefore, the aim of this thesis is to provide a MILOS environment for learners to perform multiple inquiry levels. Thus, this thesis explores how can learners perform multiple inquiry levels automatically in inquiry based learning environment MILOS using ontology driven approach?

After identifying the mentioned gap, Activity Oriented Design Methodology steps and toolkit is utilizing to the discovery of the above mentioned research question. An experimental design was carried out to determine the feasibility of the proposed application environment by using meso and mirco level of M3 Framework and conducting a quasi-experiment with Sololearn.

Analysis of results are on the basis of ISO standard of usability aspects for evaluating the operability of the final design of proposed application environment MILOS and learnability & understandability for comparison purpose. The results indicate the proposed application environment MILOS learning experience is better than Sololearn application on the basis providing proper hints instead of direct hints for MCQs.

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