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Abstract

The delivery of adaptive instructional materials to learners is a good way of achieving effectiveness in learning session. Fitting teaching material varies from one student to another based on students' knowledge level, that is, cognitive status and ability to learn. This study proposes a model for selecting appropriate learning materials to learners. The proposed model was formulated using the K-means Clustering Algorithm and represented using Unified Modelling Language (UML). The adaptive model was simulated using the K-Means Clustering Algorithm to train and test the adaptive model using the historical data collected from a developed e-Learning system for Undergraduate students taking Introduction to FORTRAN programming Language course. The evaluation results showed that the system had precision of 0.7143, 0.6667, 1.000 and 0.2942 for learning object 1, learning object 2, learning object 3 and learning object 4 respectively. Also, the recall results were 0.6250, 0.8889, 0.6667 and 0.3864 for learning object 1, learning object 2, learning object 3 and learning object 4 respectively. The system can be used to effectively and successfully assign learning materials to learners based on their cognitive level.

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Keywords

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