INVESTIGATION OF ACADEMIC PERFORMANCE OF E-LEARNING ENVIRONMENTS WITH DATA MINING

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ABSTRACT

Data mining is field enables researcher to investigate patterns in huge amount of data. It is also used for analysis of student-course interaction, students’ behaviors, and students’ success factors especially in e-learning environments. Nowadays, school directors want to have more meaningful information to determine which courses should be offered, decide which students should be supported and encouraged for graduating, guide their alumni and so on. In order to answer such questions, informational gaps emerging by lack of deep information originated from planning, evaluation and consultation steps in education process should be determined and accomplished. Therefore, data mining techniques should be employed on students’ behaviors data which are kept track of in web-based learning environments to extract meaningful information for better educational and technical medium.

The aim of this study is to determine students’ behaviors patterns in e-learning environments related to their ages, sexuality, disciplines and program level. In order to accomplish this study, Learning Management System (LMS) belongs to Atatürk University Open Education Faculty is examined. This management system keeps track of 30000 distance education students including eight different programs and four different levels.

By employing data mining techniques including clustering and decision trees on these data, we have some classes of student about LMS using patterns. Preliminary results shows us that social programs students have a tendency to read and upload their assignment earlier while medical students have a tendency to leave assignments to the last minutes. Our further analysis are kept going and will be reported in full paper version of this study. These and to procured result will be used for re-design our LMS for new students and have a chance to personalize our learning environment by using age, sexuality, and discipline and program level information to improve educational addiction.

Key Words: Data mining, e-learning, learning analytics, student behavior pattern, distance education