Early Alert of At-Risk Students: An Ontology Driven Framework

by

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Abstract

As higher education continues to adapt to the constantly shifting conditions that society places on institutions, the enigma of student attrition continues to trouble universities. Early alerts for students who are at-risk academically have been introduced as a method for solving student attrition at these institutions. Early alert systems are designed to provide students who are at-risk academically a prompt indication in the term so that they may correct their performance and make progress towards successful semester completion. Many early alert systems have been introduced and implemented at various institutions with varying levels of success. Currently, early alert systems employ different techniques for identifying students that may be at-risk. These techniques range from using machine learning algorithms for predicting students that may become at-risk to more manual methods where the professors are responsible for assigning at-risk tags to students in order to notify the student.

This composition will introduce an ontology driven framework for early alert reporting of students at-risk. To be more precise we will determine early alerts for
students who are at-risk with an ontology driven framework employing situational awareness. Ontology driven frameworks allow us to formalize situations in a way that is similar to the human interpretation of situational awareness. The ontology presented will be constructed using OWL the Web Ontology Language. The use of this language will facilitate the description and reasoning of the situation as it is a commonly supported programming language with computable semantics. In this piece we will consider factors such as advisor notes, learning management system interaction, as well as other factors that contribute to student attrition to assign at-risk tags to students who may be at academic risk.