

ABSTRACT

Digital transformation is currently being done within various fields, including on education and learning fields, which is usually known as e-learning system.

e-learning is a learning process using Information and Communication Technology (ICT) which was the outcome of a systematic integration between learning components with regard to quality and learning resources. It has a unique characteristic where learning interactions are being done across space and time. The critical part of this digital transformation is learning analytics. Right now, learning analytics that already existed only contain logs and records of the students' learning processes, for example, page views, activities done, and learning outcomes.

Whereas with currently existing technologies, learning analytics could also provide prediction and classification features. The goal of this program is to develop a learning analytics system that provides a prediction of the students' learning outcome based on their data logs and records, and also classifies the students according to their capacity and achievements.

Supervised learning method is used for prediction and classification. There are several models that will be used, the model that yields the best and most accurate outcome will then be chosen. Models that will be used for prediction process are, linear regression, logistic regression and support vector machine, while for classification, there are decision trees, naïve bayes and K nearest neighbors. The dashboard for this models will be made using Tableau Public software.

The expected results of this project include predicting students at risk of failing, determine the variables that greatly affect the outcome of a learning process, giving recommendations to the students according to their classification, etc.

Keywords: Digital Transformation, e-learning, Learning Analytics, Prediction, Classific