

Abstract

Repeating courses generally can have an impact on student academics, such as not graduating on time, or even the student must leave the university where students study. Students who have a high probability of experiencing academic failure are referred to as at-risk students. Studies to predict at-risk student have been done several times with different machine learning methods, parameters, and objectives. However, these studies depend heavily on academic achievement and ability. On the other hand, according to some research, the factors that influence academic success, in addition to academic abilities, are learning motivation, suitability of interest in the courses taken, social, psychology, economics, and family. Factors other than this academic ability are called non-academic factors. In this final project research has been conducted on the prediction of at-risk student using the Naïve Bayes method. The study was conducted to find out how the influence of non-academic factors on at-risk student prediction results. In addition, studies were conducted to determine non-academic factors that provide the best predictive accuracy of at-risk student when combined with academic factors. Testing is done by predict at-risk student using all existing factors as parameters in classification, and predict at-risk student using only academic factors as parameters. Then at-risk student prediction is done by predict using various combinations of non-academic factors plus all academic factors as parameters. From the test results, it is known that non-academic factors influential in improving the prediction accuracy, but not all non-academic factors influential in the increase. In addition, there are 7 non-academic combination of parameters that provide the highest accuracy when combined with academic parameters, with accuracy is 84.545455%.

Keywords: at-risk student, non-academic factors, combination of parameters, Naïve Bayes, prediction