ABSTRACT

Revised Bloom's Taxonomy is one of the educational identification standards used to improve questions based on the cognitive level. Revised Bloom's Taxonomy is the result of a review of Bloom's Taxonomy with the hope of gaining relevance between teachers and students in the 21st century. Revised Bloom's Taxonomy can be implemented in e-Learning question banks to produce questions by their competency achievements. In this study, Revised Bloom's Taxonomy will be implemented on quiz questions for the Data Warehouse and Business Intelligence (DWBI) study program for the S1 Information Systems Telkom University batch 2018.

This study will compare the classification performance of two algorithms, namely Support Vector Machine (SVM) and Naive Bayes (NB). This study will also discuss how to handle imbalanced data based on case studies. The method used to handle imbalanced data is the oversampling method with SMOTE (Synthetic Minority-Over Sampling Technique). This study will also compare datasets that apply and those that do not apply the SMOTE oversampling method.

From the classification results, the results of the classification performance of the Support Vector Machine algorithm with SMOTE oversampling have the highest accuracy of 98%. The Naïve Bayes algorithm with SMOTE oversampling has an accuracy of 92%. Then Support Vector Machine algorithm without SMOTE oversampling has an accuracy of 77%, and the last is Naive Bayes algorithm without SMOTE oversampling has an accuracy of 73%.

*Keywords***— *question classification, DWBI, SVM, NB, oversampling, SMOTE***