

ABSTRAK

Tes Potensi Akademik (TPA) adalah suatu tes yang bertujuan untuk memprediksi kemampuan calon mahasiswa dalam mengikuti proses perkuliahan dan lulus tepat waktu pada program studi yang dipilihnya. TPA di Universitas Sanata Dharma meliputi tes penalaran verbal, tes kemampuan numberik, tes penalaran mekanik, tes hubungan ruang, dan tes dasar bahasa inggris.

Memprediksi kemampuan calon mahasiwa sangatlah penting bagi seorang Dosen Pembimbing Akademik (DPA) yang akan membimbing calon mahasiswa tersebut. Memprediksi potensi akademik dapat dilakukan dengan salah satu ilmu komputer, yaitu penambangan data (*data mining*) menggunakan algoritma *Modified K – Nearest Neighbor*. Data penelitian ini berupa data nilai TPA mahasiswa Fakultas Keguruan Ilmu Pendidikan dan Fakultas Sains dan Teknologi Universitas Sanata Dharma angkatan 2015, 2016, 2017 dan 2018. Pengujian akurasi dilakukan menggunakan *5-fold cross validation* dengan tetangga terdekat sebanyak, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, dan 25 berdasarkan IPK 1 - 4.

Dari hasil percobaan didapatkan rata akurasi tertinggi pada dataset program studi PGSD, dengan akurasi tertinggi pada IPK 3 dengan tetangga terdekat sebanyak 3 sebesar 66,7%. Dengan demikian dapat disimpulkan bahwa metode *Modified K – Nearest Neighbor* tidak dapat diterapkan untuk mengklasifikasikan prestasi akademik mahasiswa berdasarkan hasil tes potensi akademik.

Kata Kunci : klasifikasi, tes potensi akademik, *data mining*, *Modified K – Nearest Neighbor*

ABSTRACT

Academic Potential Test is a test aimed to predict prospective students' competence in the future learning process so that they are able to pass the courses on time in the program they have chosen. Potential Test in Sanata Dharma University covers verbal reasoning test, numerical reasoning test, mechanical reasoning test, spatial reasoning test, and basic English test.

Predicting students' competence is important for Academic Advisors who will guide those students. Predicting academic potential can be done by applying one of the computer sciences, namely data mining using *Modified K – Nearest Neighbor* algorithm. The data taken in this research is the Academic Potential Test scores of Faculty of Education and Faculty of Science and Technology students in Sanata Dharma University class of 2015, 2016, 2017, and 2018. The accuracy is tested using *5-fold cross validation* with the nearest neighbors 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, and 25 based on GPA 1-4.

The result shows that the highest accuracy comes from PGSD program study dataset, with the highest accuracy at GPA 3 and the nearest neighbors are 3 with the amount of percentage 66,7%. Thus, it can be concluded that *Modified K – Nearest Neighbor* cannot be applied to classify students' academic achievements which are based on the result of academic potency.

Keywords: classification, academic potential test, data mining, Modified K – Nearest Neighbor