

ABSTRAK

Munculnya kebijakan penghapusan Ujian Nasional membawa dampak pada meningkatnya kedudukan Ujian Sekolah Berstandar Nasional (USBN). Hasil USBN digunakan sebagai salah satu pertimbangan penentuan kelulusan peserta didik dan sebagai evaluasi pembelajaran bagi guru maupun sekolah dalam upaya peningkatan mutu pendidikan. Oleh karena itu, dilakukan penelitian untuk memprediksi nilai USBN berdasarkan nilai rapor, dimana nilai tersebut merupakan rekam jejak siswa dalam menempuh pendidikan. Penelitian ini menggunakan teknik *data mining* dengan menerapkan metode *Modified K-Nearest Neighbor (MKNN)* yang merupakan pengembangan dari metode *K-Nearest Neighbor (KNN)*. Dataset yang digunakan, yaitu nilai rapor kelas X sampai kelas XII, dan nilai ujian sekolah berstandar nasional siswa SMA BOPKRI 1 Yogyakarta yang lulus tahun 2019. Uji akurasi penelitian ini menggunakan *cross validation* dan *confusion matrix*. Pada penelitian ini, dilakukan percobaan pada data dengan membagi menjadi beberapa dataset tiap mata pelajaran dengan *3-fold* dan menggunakan jumlah tetangga terdekat 1,3,5,7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27 29, 31, 33, 35, 37, 39, 41. Dari hasil percobaan didapatkan akurasi tertinggi pada dataset mata pelajaran Bahasa Inggris aspek keterampilan sebesar 88.5789% diperoleh ketika $k = 5,7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41$. Akurasi terendah didapatkan pada mata pelajaran Sosiologi rata-rata penilaian aspek pengetahuan dan keterampilan sebesar 45.4545% diperoleh ketika $k = 3$.

Kata kunci: prediksi USBN, nilai rapor, *data mining*, *modified k-nearest neighbor*.

ABSTRACT

The emergence of the National Exam elimination policy has had an impact on the increasing standing of the National Standardized School Exam (USBN). USBN results are used as one of the considerations of the determination of the graduation of students and as a learning evaluation for teachers and schools in an effort to improve the quality of education. Therefore, research was conducted to predict USBN value based on the value of the report, which is the track record of students in education. This research uses data mining techniques by applying modified K-Nearest Neighbor (MKNN) method which is the development of K-Nearest Neighbor (KNN) method. The dataset used, namely grade X to grade XII, and national standard school test scores of BOPKRI 1 Yogyakarta High School students who graduated in 2019. The accuracy was obtained by using cross validation and confusion matrix. In this study, experiments were conducted on data by dividing into several datasets per subject with 3-fold and using the number of nearest neighbors 1,3,5,7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27 29, 31, 33, 35, 37, 41. The highest accuracy of 88.5789% is obtained from English subjects aspect skills at values of 5,7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27 29, 31, 33, 35, 37, 39, 41. The lowest accuracy of 45.4545% is obtained from Sociology subjects averaged an aspect assessment of knowledge and skills at values of 3.

Keywords: USBN prediction, report value, data mining, modified k-nearest neighbor.