

## COMPARING THE PERFORMANCE OF DATA MINING ALGORITHMS IN THE PREDICTION OF TEACHER'S PERFORMANCE

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### ABSTRACT

Teachers are the most significant part of the educational system in terms of improving student learning and ensuring their future success. Teacher's performance has a direct impact on student learning and student progress. The performance of a teacher in the classroom is based upon various factors such as Lecture preparation, teaching method/communication ability, Utilization of teaching aids, Coursework and day-to-day living are inextricably linked, distribution of Study materials, Subject-matter expertise, Completion of the curriculum preparation Punctuality and regularity, Class control and behavior with students. The aim of this paper is to predict a teacher's performance by using various Machine learning algorithms. For prediction of teacher's performance, we develop models using Decision tree (CART), k nearest neighbor(KNN), Naïve Baye's Classifier, Support Vector Machine (SVM) and Artificial Neural Network (ANN). We consider above 10 Independent variables to develop models. We collected primary data from students by designing a questionnaire which is called feedback form. Data analysis was done by using R studio. This study observe that Artificial Neural Network (ANN) had higher accuracy than other algorithms.

**Keywords:** *Decision tree, KNN, Naïve's, SVM, Artificial Neural Network(ANN).*

### Introduction

Teachers are responsible for developing knowledge and culture in children. God is the creator of the entire world, and a teacher is the creator of a whole nation, a teacher is a precious gift from God. A teacher is a pivotal factor in a student's life since his knowledge, devotion, and love shape the student's entire life. A teacher utilizes creativity in the classroom to help students focus on their studies.

The teacher shapes the future and present of the students. He also contributes to a good society by being a good student throughout his life. In order to acquire quality objectives related to students, teachers play a crucial role in the education sector. As a result, all educational institutions are concerned about teacher performance.

A proper system for evaluating a teacher's performance has yet to be developed, and there has been little related work done to examine the performance. Using various ways, they are aiming to construct a good evaluation system for the same.

Teachers can educate to assist students in understanding knowledge and concepts that are not included in the textbook. Students will have a better understanding and awareness of the subject if teachers connect with them using relevant, real-life examples, occurrences, and so on. They can apply their learning to a variety of subjects while using real-life examples. Sample of 100 teachers' were used for this study according to 10

questions teacher's performance was evaluated and categorized. For prediction purpose machine learning algorithms like Decision tree, KNN, Naïve Baye's, SVM, Neural network algorithms were used. Neural network algorithm shows greater accuracy rather than other algorithms.

### Literature Review

Patil V V. et.al. (2019) have used Naive Bayes classifier technique for prediction of teacher's performance and also estimates accuracy of the model. Bansal et.al (2018) has developed models using machine learning algorithms to detect Dementia and then compare those algorithms by their accuracy of classification. Huapaya et.al (2020) focuses on the classification of machine learning algorithms and the determination of the most efficient algorithm with the help of accuracy and precision.

### Objectives

1. To predict a teacher's performance by using various Machine learning algorithms.
2. To find the best predictive machine learning model for the prediction of teacher's performance.

### Methodology

For evaluation of Teacher's performance college collect feedback of teachers from students. A questionnaire type feedback forms are given to