Predictive Analytics Algorithms: Mitigating Academic Institution Dropout Rates

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Abstract

Multiple studies show student dropout rates exist across undeveloped, developing, and developed countries. With the development of machining learning, various learning institutions have initiated Predictive Analytics Algorithms approaches to solving this issue. However, there is limited knowledge on how this strategy has been employed to optimize retention rates. The objective of the research is to conduct a comprehensive review of PAAs Strategies and demonstrate how they have been effectively implemented in optimizing retention rates with a case study focusing on North America. The study employed a quantitative research methodology and thematic study design to review the existing literature. The result shows that learning institutions used a combination of data mining classifiers such as k-Nearest Neighbor, Neural Networks, Decision Tree, and Naive Bayes to categorize student dropout rates to optimize retention rates. The PAAs approach has been utilized by various educational institutions across North America, using a combination of multiple predicting algorithms to ensure efficiency.

Keywords: Predictive analytics algorithms, mitigating dropout rates, retention rates, classifiers, Learning institutions, North America