

IMPLEMENTATION OF CLUSTERING ALGORITHM IN DETERMINING THE VARK LEARNING STYLE

(Case Study : STMIK Dharma Wacana Metro)

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ABSTRACT

The term "learning style" refers to the approach preferred by individuals to acquiring knowledge. Fleming and Mills introduced an interesting method called VARK (Visual, Audio, Read/Write, Kinesthetic) to observe learning styles. VARK has been widely used in numerous studies to understand how students prefer to receive information. This research aims to identify clusters of student learning styles in order to enhance the quality of education. E-learning enables students to learn in a manner similar to traditional classrooms, even without the presence of teachers or educators. The study collected data from 138 students attending 16 meetings on campus. Based on the findings and discussions, the following conclusions can be drawn: the Split Validation accuracy test indicates that the K-Means algorithm has a Davies-Bouldin Index (DBI) value of 0.475, the X-Means algorithm has a DBI value of 0.478, and the K-Medoids algorithm has a DBI value of 0.699. The K-Means algorithm yields the best result, with a DBI value of 0.475, which is considered good as it is the smallest value obtained. A smaller DBI value or a value closer to zero indicates a more accurate cluster. Based on the visual results, students predominantly exhibit a preference for the VISUAL and AUDIO learning styles, as recommended by the K-Means algorithm.

Keywords : Learning Style, K-Means, Clustering