Identifikasi Kesiapan Belajar Anak Berdasarkan Ekspresi Wajah Menggunakan Metode Local Binary Pattern (LBP) dan Local Ternary Patterns (LTP)

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Abstract
Children's emotions can affect the learning process, especially positive emotions, making them more focused on learning. In addition, in terms of identifying someone's emotions, we can represent them through facial expressions by combining the local binary pattern (LBP) and the local ternary patterns (LTP) method. The reasons for combining the two methods are that the LBP has proven to be very good at performing feature extraction, especially in describing textures. At the same time, LTP is adept at dealing with uniform motifs such as those on the face area. Subsequently, this study used the NIMH child emotional faces picture set (NIMH-ChEFS), which has five-class expressions: sad, neutral, happy, angry, and afraid. To achieve optimal results, this study set the LPB parameter as $P = 8, R = 8$ and the help of an 80×80 block window managed to get an accuracy of 89,40%. Then, combined with the LTP parameter threshold value of one managed to increase to 90.45% and with the results of the system performance achieving an accuracy of 92.51%.

Keywords: children, learning, face expression, LBP, LTP