Smart Room: Real-Time Feedback on Lecture Quality Based on Students Emotion (REFL-BSE)

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ABSTRACT

The enthusiasm of students and learners is one of the main factors in the success of learning. This enthusiasm is closely related to the emotional condition of the participants during the learning process. Of course, it is quite difficult for teachers to know and analyze the emotional characteristics of each participant. However, it is not impossible for this to be done. Technological developments are significantly capable of creating and optimizing predictions of participant enthusiasm from the learning process that occurs. Therefore, to achieve this, PUI PT developed a Smart Class Room with the support of artificial intelligent based Convolutional Neural Network (CNN) and Internet of Things methods which are able to accurately predict adaptive conditions. The design process for a Classroom Design based on AIoT (Artificial Intelligence of Things) starts from a needs analysis in the form of a group discussion forum (FGD) to obtain a design of the device and technology requirements used in the Classroom Design based on AIoT. Next, the process of designing the needs for AI-based smart devices implemented in Classroom based on AIoT is followed by determining the technology used on the smart devices. The mechanism continues with designing the overall class design which includes the class layout design, specifications for smart device requirements, and layout. The final step is an evaluation of the design results which is held in the form of a forum group discussion (FGD).
Technically, the development of the Smart Desk Motion product has a working principle for the product to detect students' emotions in the learning process starting from taking pictures or videos of students on a webcam that has been installed on the student's study desk. The captured image is then sent to a processor installed on the teaching staff's desk. The image is then processed on an emotion detection system that has been developed previously. The results of students' emotional conditions can then be monitored on the monitor display. A student emotional monitoring system will also be developed based on the Internet of Things (IoT), so that those who can monitor students' emotional conditions in real time are not only teaching staff, but can be various parties such as parents and school administrators.

Kata Kunci: *detection system, emotion, learning, smart class*