ABSTRACT

Lighting is an important factor in obtaining a sense of security and comfort which is closely related to human productivity at work, especially in classroom lighting which must have good lighting conditions in order to provide comfortable teaching and learning activities. Good lighting will allow people to see objects around them that work accurately, quickly, and clearly. However, in the use of electricity in the classroom, students often use it excessively so that a lot of electrical energy is wasted and the cost of using electricity increases. Therefore, it is necessary to make an automatic lighting system for classrooms in order to minimize the use of electrical energy and the cost of using electrical energy. The tool system is made using a light sensor array consisting of six light sensors, an Arduino board based on an ATMega 2560, and COB 2B5C LED lamp as an actuator. The light sensor is placed as a sensor array with a 3x2 configuration. The sensor array is a collection of sensors placed in a certain geometric pattern, which functions to collect and process ambient light values from various predetermined points which will be processed by the microcontroller.

The sensor array used in this final project can produce light lux values from the readings of the six sensors and can reach the set point values that have been determined in each mode. Based on the test results, each sensor has a different error value with an average sensor error value of 7.525% and has an average light lux accuracy value of 92.438% so it can be concluded that the BH1750 sensor can work well as expected.

Keywords: *Lighting System, Lux Sensor, Array Sensor*