

# The Effect of Classroom Lighting on Student Attention

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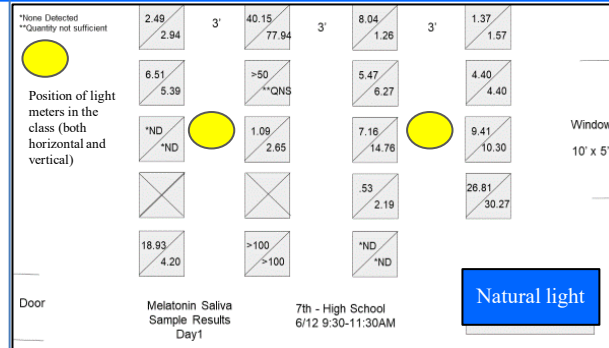
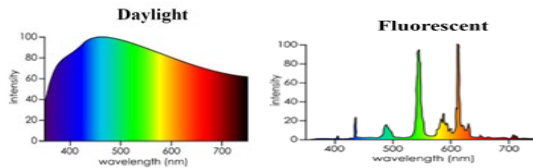
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## Introduction

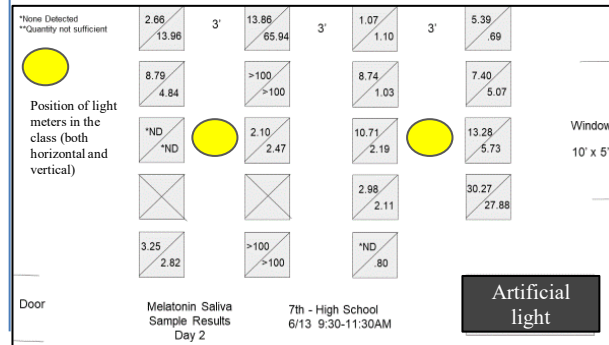
Manipulating light quality so that it optimizes maximum student performance in the classroom is an important variable in the indoor environmental quality equation. For our research, we compared the effects of natural and artificial lighting on student melatonin production in seventeen students in grades ranging from sixth to high school during two days of summer school.

## Method

A total of four saliva samples were taken from students ages 11-17, seated three feet apart on two consecutive days. The first sample was taken at the first of class and the second was taken two hours later. Only natural light from windows was used in class on the first day, and only artificial light was used on the second day. In addition, Two light meters were set up in the classroom in order to record both horizontal and vertical light levels. Vertical to gage the non visual light received and horizontal to gage the visual light received.



**Results:** Melatonin levels of students taken at the first of class (top number) then after two hours (bottom number). Day one only natural light and Day two only artificial (cfl) light.. Window was facing south.



## Results

Only three out of seventeen students showed a decrease in melatonin levels in the natural light, while nine out of seventeen students showed a decrease in melatonin in the artificial light. While most differences were marginal, there were a few that were worth considering. It could be due to the fact that the intensity of the CFL lighting was intense.

## Other Considerations

There was some cloud cover on the day when we used natural light, blocking the full sun at times. These tests were administered during the second week of summer school. Some students admitted to not getting the full amount of sleep on nights prior to testing. There were also students whose melatonin levels reached 100 pg/m, a level that would indicate other contributors besides lack of sleep. Interviewing students who participated in this study further might reveal the reason for this abnormal data.

## Acknowledgements

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