



Clocklight: Affecting Group Behavior Using Immediate Feedback

Richard P. West, Tim G. Smith, Richard B. Sanders, & Rikki K. Wheatley



Clocklight systems have been implemented in classrooms and common school areas to increase the amount of “on-task” behavior and decrease the number of problem behaviors. A clocklight instrument typically consists of an analog clock connected to a light, with both devices being controlled by a wireless remote device. The clock accrues time and the light is illuminated when clearly defined expectations are being met by the group. The entire group is eligible for a reward when goals for the amount of “clock time” are reached. The purpose of the following study was to measure the effectiveness of a clocklight system in controlling the noise level in an elementary school cafeteria.

Methods

Participants for this study were approximately 200 first- through fifth-grade students in a rural northern Utah elementary school.

Whereas other clocklight programs have used a scan/check method of measurement to determine when all students in the group were behaving appropriately, the dependent variable in this study was sound level (decibels). The clocklight apparatus measured sound level using an internal microphone and sound-level meter.

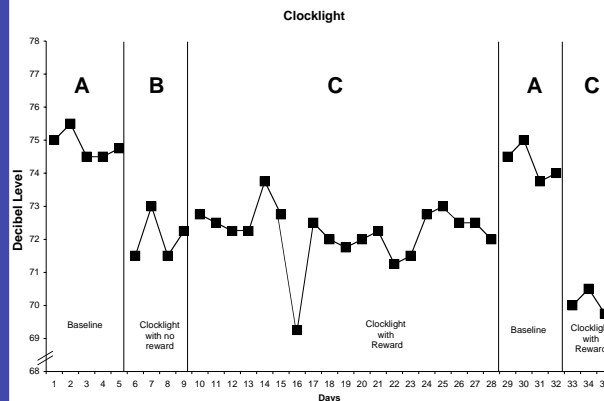
To provide descriptive signals to the group, this particular clocklight system employed a traffic light. The green light was illuminated when sound-level goals were met. When room noise reached a predetermined level, the light changed from green to yellow. If the noise was sustained for 5 seconds, the light changed to red. The clock accrued time only when the light was green.

In the intervention phase B, “clocklight with no reward,” time was recorded and used as the only reinforcer. In phase C, “clocklight with reward,” when enough time was accrued to meet the goal, the student body was given an additional reinforcer such as ice cream or extra recess.



Results

Sound-level readings were taken at 5 minute intervals throughout the lunch period. Readings were averaged to get a daily score. As shown below, the clocklight program successfully reduced the sound level in the cafeteria.



1. During baseline (first A), the sound level averaged 74.85 dB.
2. During the intervention phase (B and first C), the average sound level decreased to 72.18 dB.
3. During a return to baseline (second A), the average sound level increased to 74.31 dB.
4. When the intervention phase with reward was reinstated (second C), the average sound level decreased to 70.08 dB.

Discussion

In the current study, we succeeded in establishing clear experimental control, but produced only modest reductions in sound level as measured in decibels. These small differences can be explained in part by the logarithmic nature of the decibel scale, which tends to make large and noticeable differences appear small when represented graphically.

Furthermore, residual ambient noise may have obscured other reductions in sound level. While the clocklight intervention was effective, the value and practicality of reducing sound level in the cafeteria is in need of further investigation. At issue is not sound level *per se*, but behaviors (i.e., running, sitting inappropriately), which may contribute to the overall noise level. Because not all inappropriate cafeteria behaviors are noisy, behavioral observations may need to be used alongside sound level in future research.

These results may also reflect the difficulty of managing the behaviors of such a large number of persons in a single group (more than 200 students at a given time in common school areas compared to 25-35 students in a classroom). Thus, a further exploration of clocklights in other common, large group settings may explore their differential impact in various applications.

Recommended Readings

Greenwood, C. R., Hops, H., Walker, H. M., Guild, J., Stokes, J., Young, K. R., Keleman, K. S., & Willardson, M. (1979). Standardized classroom management program: Social validation and replication studies in Utah and Oregon. *Journal of Applied Behavior Analysis, 12*(2), 235-253.

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