

## CONSERVATION OF ELECTRICITY ON A COLLEGE CAMPUS\*

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### ABSTRACT

This study investigated the extent to which posters requesting that lights be turned off in classrooms would increase energy conserving behaviors. A multiple baseline design was used with two groups of eleven classrooms. Results indicated that with onset of the intervention phase, moderate increases in energy conserving behaviors occurred in both clusters of classrooms. These findings indicate that prompting techniques are an effective strategy for getting lights turned off in classrooms.

The conservation of electrical energy can be approached from two different perspectives: increasing the efficiency of equipment which is operated by electricity and the installation of automated equipment to eliminate waste on the one hand, and the modification of behavior patterns of people with respect to energy consumption. For maximum effectiveness, both approaches – the technical and the behavioral – have to be combined.

While solely informational procedures have had only negligible effects on energy saving [1], incentive payments reducing energy use [2], and regular feedback seem to be strong behavioral procedures for inducing energy conservation [3]. One area where different strategies have been infrequently implemented is in college classrooms.

Winett, in a study of conservation in a classroom, reported that a large two foot by three foot sign was effective in reducing the per cent of lights turned off

\* Poster presented at the Association for Behavior Analysis, Milwaukee, May 1982.

in the university classroom [4]. Since only one classroom was used in this study, the generalizability of the findings is limited. Luyben recently reported that letters to professors resulted in a significant increase in lights being turned off in one group of classrooms but not in another [5]. Subsequently, when posters were introduced into the first group of classrooms, the per cent of lights turned off increased.

The present study was directed at investigating the effect of a low cost, attention-getting poster in prompting the turning off of lights in college classrooms. Two groups of classrooms were used in a multiple baseline design.

## METHOD

### Subjects

The subjects consisted of twenty-two classrooms, in three separate buildings of a major university located in a large midwestern city. Classrooms were observed between fifteen and thirty minutes after the last class of the day had ended. The dependent variable was whether the lights were on or off. Observations were conducted by two upper-level undergraduate students who served as raters. Inter-rater reliability of 100 per cent agreement was established during two sessions.

### Procedure

During the study, raters daily checked each classroom fifteen to thirty minutes after the last class of the day had ended. Raters marked whether the lights were on or off and, if on, whether or not the room was still occupied. The percentage of classrooms with lights left on was calculated for each day. Classrooms that were still occupied by one or more students were eliminated from the daily analysis.

After a two week period of collecting baseline data, the classrooms were randomly assigned to one of two groups, with eleven classrooms per group. A t-test revealed no significant difference between the two groups in terms of the per cent of days the lights were left on during the baseline period. The classrooms in Group I received an electricity conservation poster at this point; Group II classrooms received the same poster one week later.

The posters, 8½" × 11", were placed as close to the light switch as possible. The light switches were located by the main entrance to the classroom. For visual impact, the printed legend utilized black one-half inch lettering on yellow posterboard. The legend read: "CONSERVE ENERGY. PLEASE TURN OFF CLASSROOM LIGHT. THANK YOU." Classes at this university meet on either Mondays, Wednesdays, and Fridays, or Tuesdays and Thursdays. Each individual poster specified the time of the last class in that specific room.

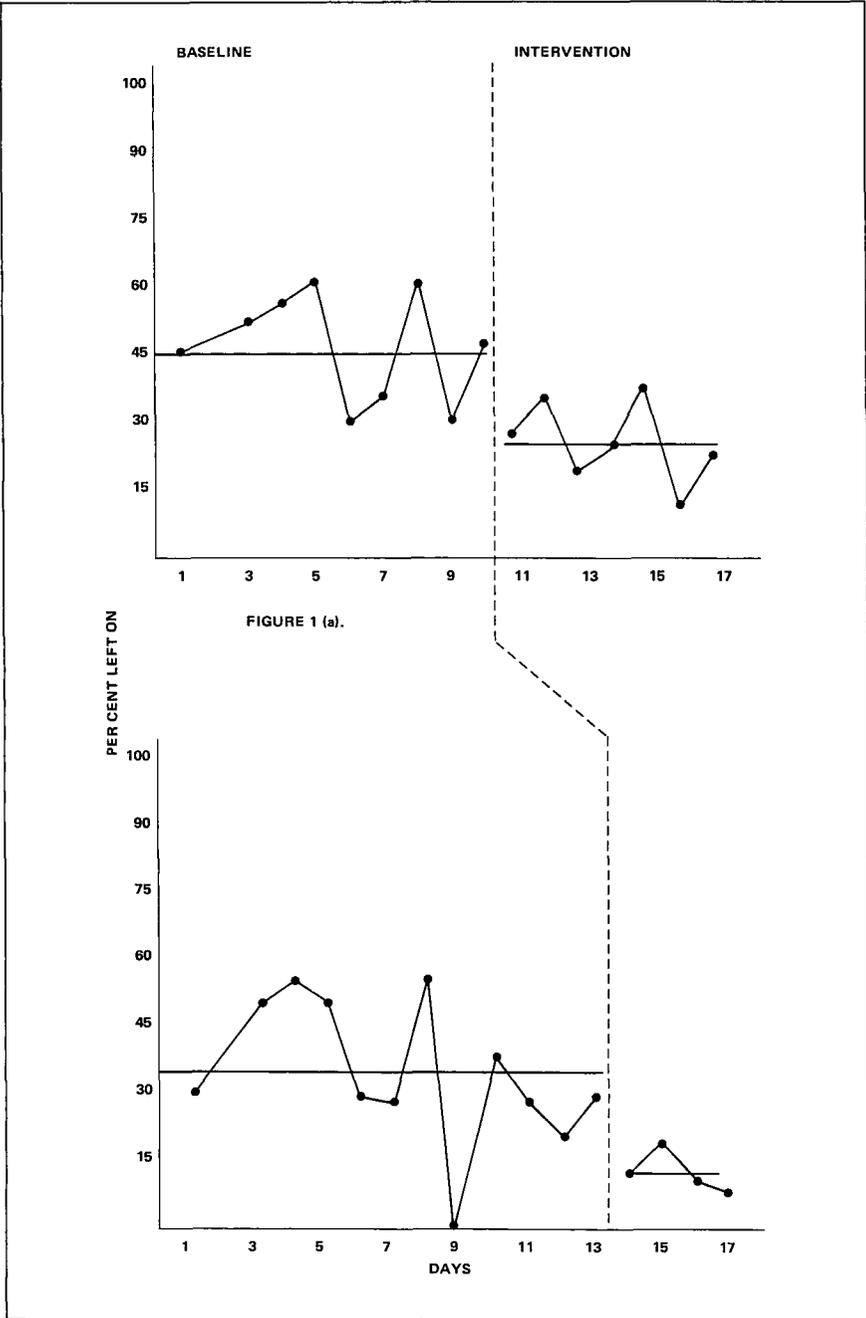


Figure 1.

## RESULTS

Figure 1(a) clearly reveals that the poster had an effect in Group I classrooms. During the baseline period, the mean for the percentage of lights left on was 44.5 per cent, whereas during the poster period the means was 25 per cent. Figure 1(b) also indicated that the poster in Group II classrooms had an effect in decreasing the consumption of electricity. During the baseline period, 33.9 per cent of the lights were left on and when the poster was introduced into the Group II classrooms, the mean decreased to 12.3 per cent of the lights being left on.

With the increases in university operating costs over the last several years, coupled with increases in tuition and decreases in faculty salary raises, both students and faculty have a vested interest in assisting in conserving university resources. Administrators should be encouraged to promote energy conservation on the part of faculty and students and their participation in conservation programs. The results of the present study indicate that the consumption of electricity can be reduced by placing posters which have a visual impact close to light switches located at exits to classrooms.

Since classes are conducted on an eleven-week quarter system, it was not possible to conduct another baseline period to ascertain the degree to which behavior change persisted in the absence of prompts. Further research should be directed toward this, as well as determining whether there is any generalization from classrooms which have posters to classrooms without posters.

## REFERENCES

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