BRIEF TECHNICAL REPORT

*CLOWNING AROUND TO STOP CLOWNING AROUND:
A BRIEF REPORT ON AN AUTOMATED APPROACH TO
MONITOR, RECORD, AND CONTROL CLASSROOM NOISE*

In the winter of 1970, four observers at an elementary school in a suburban Virginia community found that the teachers spent an average of two-thirds of their school day controlling disruptive classroom behavior, usually using punitive procedures. The teachers observed were fully certified and had been randomly selected from the school's teacher pool. These observational findings confirm educators' reports regarding the problems of maintaining effective yet humane control of disruptive classroom behaviors ("Discipline:", 1968).

Recent applied research in behavior modification has been directed toward the use of efficient, non-punitive techniques to minimize disruptive classroom behaviors. While behaviorists have rightly extolled the "functionality" of operant principles in reducing the frequency of a variety of classroom disruptions (Hanley, 1970), critics have cautioned that prescribing behavioral remedies to a teacher neither guarantees that she will want to employ such principles, nor that she will possess a psychological temperament conducive to learning and/or applying these principles (Abidin, 1971; Kauffman and Vincente, 1972). Indeed, it is common to find that behavioral principles can be learned most quickly and applied most reliably by those teachers who have the least need for such help.

Over the past several years, we have attempted to minimize classroom disruptions by using operant principles applied by simple electronic systems capable of monitoring and recording disruptive behavior accurately, and of furnishing pertinent visual feedback to the participating class. Similar to the applications of group contingencies demonstrated in studies controlling hand gestures and tattling (Sulzbacher and Houser, 1968), noise and out-of-seat behavior (Schmidt and Urich, 1969), attention (Packard, 1970), and noise (Wilson and Hopkins, 1973), the automated applications have addressed entire class disruptive outbursts.

An initial instrumentation attempt to control out-of-seat behavior in a first-grade class was successful, but its automated features needed considerable hu-

man implementation (Eleftherios, Shoudt, and Strang, 1972). A more sophisticated approach was piloted in a second-grade classroom where totally automated intervention was administered during a brief 10-session trial (Strang and George, 1973). As a result of this pilot study, the feedback component of the system was redesigned for the present study.

METHOD

Apparatus

The device consisted of two elements: a monitor-sender and a receiver-programmer console. The inconspicuous monitor-sender, housed in a 14 by 12.8 by 9 cm box, was fastened to a light fixture on the ceiling in the center of the classroom. It contained a voice-operated relay (VOR) that could be externally adjusted to operate at and beyond whatever level of classroom sound a teacher deemed noisy. VOR operation activated a radio transmitter within the unit that sent a wireless signal to the receiver-programmer, housed in a 132 by 46 by 41 cm console, and situated conspicuously in the room. Programming equipment within the console transduced received radio signals into electrical commands that (1) during monitoring sessions operated a lapse-time clock within the unit (thus affording a measure of noise duration) and (2) during intervention, activated a clock and controlled lights displayed on the exterior surface of the console facing the class. In its present form, the pattern of eight lights simulated the features of a clown's smiling face—i.e., teeth, eyes, and nose. Five additional lights simulated buttons on his coat. During intervention, as long as class sound remained below the teacher-determined noise threshold, a button light was lit every 20 sec. If noise had not been produced for a period long enough for all five buttons to have been lit, the class needed only remain beneath the noise threshold for an additional 20 sec to earn the illumination of a light on the clown's face. When a facial light was earned, all buttons immediately went out and the class had the opportunity to earn subsequent facial lights by not being noisy for the next six 20-sec intervals. If, however, during the ascent to a

Fig. 1. The automated clown.

facial light, noise occurred, the clown emitted an electromechanically produced gasp, all accumulated button lights (not facial) immediately went out, and the class had to start anew earning buttons. The ultimate reward was to "light up" the clown's face in a smile by earning all eight facial lights.

Subjects and Procedures

The animated device was field tested in two rural elementary classrooms: one, a first-grade class of 26 students, and the second, a third-grade class of 29 students. A standard AB experimental design was employed that included (1) scheduling a period of habituation to the equipment, followed by (2) establishing a baseline during which the per cent of noise time during each session was derived while the intervention feature of the apparatus remained idle, followed by (3) introducing the apparatus' automated intervention in the form of the light reinforcement contingency previously cited while recording each session's per cent of noise time. An attempt was made to limit daily sessions during baseline (A) and intervention (B) phases to average approximately 30 min. Also, sessions were scheduled for those times during the school day when the students would be engaged in seatwork activities. There was never more than one session per day.

RESULTS

In the first-grade class, the mean per cent of noise per session dropped from 39.4 during a 17-session

Fig. 2. Noise levels in a first-grade classroom during baseline and intervention.

Fig. 3. Noise levels in a third-grade classroom during baseline and intervention. *Teacher extended session 10 min into recess time.

baseline to 3.11 during a 42-session intervention period.

In an abbreviated replication in the third-grade class, the mean per cent of noise per session dropped from 44.0 during a 10-session baseline to 10.3 during a 24-session intervention period.

DISCUSSION

Even though the present research relied on an experimental design consisting of only a baseline followed by intervention, several reasons indicate that the automated intervention was not just correlated with, but was responsible for the decreases in noise. Not only was the intervention in both classes followed almost immediately by substantial reductions in noise, but numerous students reported to their teachers that they were trying not to be noisy so that the clown's face would light up in a smile.

In addition to demonstrating a large, immediate class response to the introduction of light intervention, the first-grade profile of the present study showed that such a response was not a short-lived effort produced by the novelty of exposure to electronic gadgetry, but a stable class behavior that could be maintained for over 40 sessions.

Winett and Winkler (1972) alleged that behavior modification has been directed toward shaping students into quiet, docile little souls. This was not our goal. It is our contention, however, that there are times in the classroom when excessive noise interferes with the educational process, and that many teachers' attempts to control such noise produce results that are ineffective and/or damaging to students' positive regard for themselves and for these teachers. It is on these occasions that we feel that application of procedures such as the present one can contribute to re-establishing classroom climates in which the

educational process can occur. Indeed, educational benefits of the intervention itself cannot be overlooked, for students are actively involved in a venture in which they will experience the rewards for cooperative group effort.

Finally, although anecdotal in nature, participating teachers reported that when the automated intervention was employed, students generally did not persistently attend to the clown but instead occupied themselves with seatwork, only occasionally checking to see how the clown's smile was progressing. A possible explanation for this phenomenon might be that the students' prior school exposure had established "quiet behavior" as a setting event for academic focus.

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