

## USING MUSIC TO REDUCE NOISE AND MISBEHAVIOR IN A SCHOOL LUNCHROOM

**Myrna R. Olson**

University of North Dakota, Grand Forks

**Lynne C. Chalmers**

University of North Dakota, Grand Forks

---

### Abstract

**The purpose of this article was to investigate the effects of playing music in an elementary school lunchroom. Several implications and approaches are recommended that indicate that playing music in the lunchroom has positive results.**

---

I walked into my seven-year-old son's lunchroom one day to give him a message and found him with his head lying on the table and his hands cupped over his ears. Thinking he was ill, I rushed to his side to see what was wrong. He said, "I'm just trying to block out the noise, Mom!"

Indeed, it was noisy in my son's lunchroom; the decibel level (I was to learn later) was close to that produced by a passing subway train. Four supervisors were circulating among the children dealing with misbehaviors such as yelling, hitting, and throwing food. For the first time, I understood why my son was so eager to have "home lunch!"

Returning to the university campus where I teach, I talked with a colleague about ways to reduce noise and misbehavior in a school lunchroom. Lynne had used music to create a "relaxed environment" in her colleges classes and suggested we find a school that would let us try playing music in its lunchroom to see if we could achieve these goals. The remainder of this article is devoted to a description of the related literature, the design of our study, the results we achieved, and the recommendations we have for others interested in improving school lunchroom environments.

### **Related Literature**

Supermarkets, department stores, product marketers, and parade officials are just a few of the entities that have used music over the years to program human behavior. Both rhythm and melody have been used as a powerful force to make people move faster or slower, to entice people to make purchases, to encourage people to yell and clap, and to help people relax (Roter, 1981).

There is the suggestion that we humans have a physical response to music, because our biologic being is a rhythmic entity. Our breathing, our peristaltic movements, even our individual cells appear to have an intrinsic rhythmicity as does our nervous systems and brains (Purdy, 1994).

It is believed that music stimulates the brain at lower levels, especially the emotional brain, to stabilize impulse control. Gunter (1995) contends that music is best for relaxation when delivered at 60 beats per minute, since that is the rate one's heart beats when it is relaxed. Studies conducted with youth who are behaviorally disordered have yielded mixed results. Some have reported that music has had a positive effect on reducing behavior problems, while others have found that music had no effect (positive or negative) on the undesirable behavior of behaviorally-disordered youth (McIntyre, Cowell-Stookey, & Brulle, 1993).

### **Purpose of the Study**

The purpose of this study was to determine the effects of playing music in an elementary school lunchroom. Specifically, it was of interest to note the effect that music might have on the noise level in the lunchroom and on the behaviors of children requiring intervention by supervisors.

### **Design of the Study**

The two of us spent 21 days across the course of a three-month period in an elementary school lunchroom in the upper midwest. This rectangular lunchroom held nine picnic-style tables with attached benches and seated 120 children from grades 3, 4, and 6. The noise level in this lunchroom was recorded by one of us with a handheld decibel meter, while the number of behavior corrections given by lunchroom supervisors was counted by the other. Of the 25-minute lunch period chosen for the study, 20 minutes were used for the purpose of recording noise level at five-minute intervals and the cumulative number of behavioral corrections occurring throughout this time period.

A reversal design (as described by Alberto & Troutman, 1995) was used to measure the effect of music on noise level and behavioral corrections given. The steps are described below:

1. For five lunch periods, we measured noise level and counted behavioral corrections given by lunchroom supervisors to establish a baseline.
2. For five lunch periods, classical piano music at 60 beats per minute (by Lamb, 1992) was played on a portable tape player in the center of the lunchroom, while the noise level and number of behavioral corrections continued to be counted.
3. For three lunch periods, we removed the music and returned to recording the noise level and behavioral corrections to establish a second baseline.
4. For five lunch periods, we returned to playing music on the portable tape player but this time played popular music that had slow to moderate tempos taped for us by a local radio station. This change in music was made because several children re-

quested that we “improve” our music! We again recorded noise level and behavioral corrections.

5. Finally, we removed the music for a third baseline measurement of noise level and behavioral corrections.

To bring closure to the study, we polled the students on their desire to have music in their lunchroom and asked for any further ideas they had for improvement of this environment.

### Results of the Study

Figure 1 shows that the decibel level of noise in the lunchroom remained fairly stable across the three baseline periods. When classical music was played, the noise level dropped an average of 6 decibels (7%). The decrease in noise while popular music played was slightly greater (10 decibels or a 12% drop).

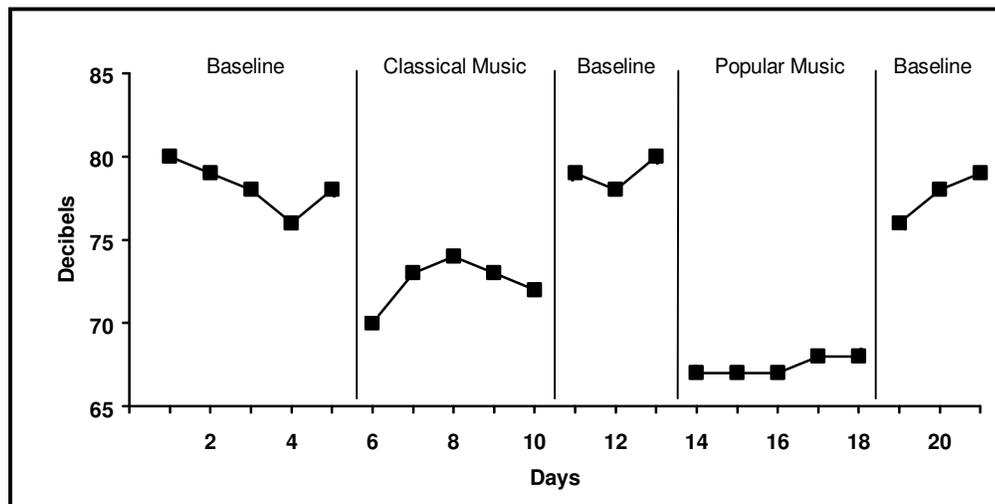


Figure 1: Decibel Level in the Lunchroom

Figure 2 illustrates a clear decline of behavioral corrections while music of either kind was played in this lunchroom, although averaging the decreases reveals a greater reduction in behavioral corrections while classical music was used as the intervention (65% compared to 55%). Baseline counts of behavioral corrections given averaged 20 per lunch period or approximately one per minute. During the intervention periods, it can be seen that behavioral corrections dropped to an average of seven per lunch period or approximately one every three minutes. The period of playing popular music revealed fewer behavioral corrections on three days than was achieved by playing classical music. On the remaining two days, however, the behavioral corrections rose considerably and exceeded those recorded during the classical music intervention period. It is important to note that these two days occurred just prior to the Thanksgiving holiday, which we felt impacted students’ behavior more than the music intervention under study.

When asked if they liked music in the lunchroom, 103 of 116 students present indicated that they did. of the 89% supporting music, 92% preferred that the music played be the popular radio music rather than the classical piano music. The most frequent suggestions for improving the lunchroom can be seen below:

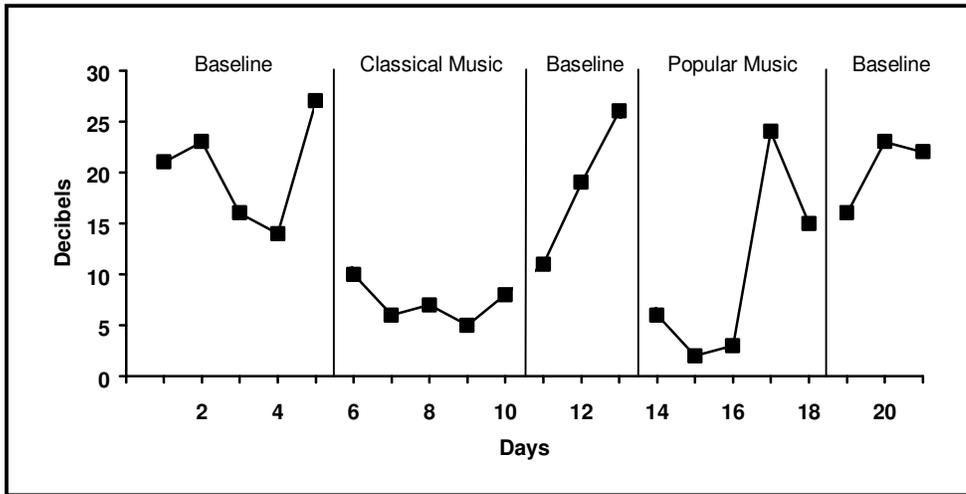


Figure 2: Directives given in the lunchroom

1. Allow students to sit where they choose.
2. Replace benches attached to tables with round tables and individual seats.
3. Decorate the lunchroom walls.
4. Serve better food (items given as examples were pizza, hot dogs, macaroni and cheese).

### Discussion

While playing music lowered the noise level only 6-10 decibels, this drop was significant. Baseline noise levels were in the range of light traffic or factory noise, while intervention noise levels approached the range of conversational speech (White, 1975). More impressive than the reduction in noise level was the drop in behavioral corrections by lunchroom supervisors (55%-65%). This reduction in behavioral corrections may have had as much to do with the "more relaxed state" of the supervisors as it did with the "better behaved" students. It appeared to us that supervisors may have been more tolerant of minor infractions when music was being played than when it was not being played.

Our music was delivered by a single portable tape player in the center of a rectangular lunchroom holding 120 children. We believe that the impact of the music played may have been more positive had the music delivery system been of higher quality and distributed more evenly throughout the room.

We noted that certain other factors besides music (or the lack thereof) impacted student behavior. When students liked the food served, they tended to their eating and were busy earning "seconds" instead of engaging in misbehaviors. Mondays, Fridays, and days before holidays were generally noisier, and students more often engaged in behaviors requiring correction on those days.

Some of the supervisors in our study were more positive when "re-directing" behavior than others. The supervisors who had this skill consistently gave fewer reprimands for misbehavior, because children responded to the positive contact.

### Implications

We believe that music has enough potential to “calm” lunchrooms that it should be tried by schools. The music ought to be “calming” yet “pleasing” to students so that they will gain a sense of well-being from hearing it.

While lunchroom supervisors may not be easy to recruit, selecting individuals who understand the developmental needs of students in a particular setting will most likely make the lunchroom a better place. Training lunchroom supervisors to establish rapport with students and to re-direct potentially disruptive students in a positive manner may also be beneficial.

Our survey of students indicated that they had several ideas regarding ways to improve their lunchroom. They wanted to make it a better place and welcomed the chance to take ownership. One place to start would be to form a parent/student advisory council to consider lunchroom rules, lunchroom environments, and lunchroom menus.

### References

- Alberto, P., & Troutman, A. (1995). **Applied behavior analysis for teachers**. Englewood Cliffs, NJ: Prentice Hall.
- Gunter, E. (1995). **Superlearning 2000**. Enchitas, CA: Cyrus Press.
- Lamb, G. (1992) **Watching the night fall**. Santz Cruz, CA: Golden Gate Productions.
- McIntyre, T., Cowell-Stookey, K., & Brulle, A. (1993). *The effect of music on the classroom behavior of behaviorally disordered youths*. In R. Rutherford, & S. Mathur (Eds.), **Severe behavior disorders of children and youth. Monograph in behavioral disorders, 16**, 24-28. (ERIC Document Reproduction Service No. ED 370 301)
- Purdy, W. (1994). *Code blue: The blues as medicine*. **Journal of Poetry Therapy**, 7(4), 179-185.
- Roter, M.J. (1981). *Music, a therapeutic intervention for emotionally disturbed youth*. In F. Wood (Ed.), **Perspectives for a new decade: Education's responsibility for seriously disturbed children and youth: Selected papers based on presentations from the CEC/CCBD National Topical Conference on the Seriously Emotionally Disturbed** (pp. 154-161). (ERIC Document Reproduction Service No. ED 202 184)
- White, R. (1975). **Our acoustic environment**. Somerset, NJ: John Wiley and Sons, Inc.