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ABSTRACT

Data were collected on rate-per-minute of administering token reinforcement for one male and seven female teachers enrolled in a behavior modification seminar. The study was conducted in four self-contained and four open classrooms. In the observer-present condition, data were obtained during 15-minute classroom observation periods. In the observer-absent condition, data were taken from token record cards maintained by pupils. When observer-present and observer-absent conditions were compared, reinforcement rates indicated significantly higher rates of token delivery in the observer-present condition. It was recommended that the observer effect might have serious implications for those programs whose assessment procedures introduced an observer into the classroom to collect data on changes in targeted teacher behavior. (Author/BRB)

# Observer Effect on Teacher Use of Token Reinforcement

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Many programs designed to train teachers in the use of behavior modification procedures utilize an observer to collect data on changes in targeted teacher behaviors (e.g., Hall, Panyan, Rabon and Broden, 1968; Wasik, Senn, Welch and Cooper, 1969; Madsen, Becker and Thomas, 1968). To the extent these data indicate that the desired behavior changes have occurred, the program's objectives are judged to have been realized. However, the observer frequently serves additional functions. He gives the teacher support and encouragement, i.e., verbal reinforcement for attempting the appropriate behavior, serves as her consultant when she runs into difficulties, etc. Further, when the program involves university credit, the observer reports are directly relevant to the teacher's grade as well.

Such contingencies are not in effect in the observer's (O) absence. Presumably, improvements in child behavior will provide a contingency arrangement sufficient to maintain teacher behavior during O's absence. However, a study by Panyan, Boozer and Morris (1970) casts some doubt on this assumption. Panyan et al. presented evidence that for staff members in a state institution for retarded children, who had just been trained in the use of behavior modification techniques, changes in child behavior

were sometimes not sufficient to maintain the staff's training behaviors. This was particularly evident in those areas in which skills were more gradually and less dramatically acquired by the child. Daily charting of staff behavior by the unit psychologist was required to get the staff to utilize the procedures.

If feedback from O is a major reinforcer maintaining teacher behavior change, then O's presence is correlated with reinforcement for the teacher (T). When O is absent, T is, in effect, on extinction, or at least on an impoverished reinforcement schedule. Under these conditions, the probability that O will become a discriminative stimulus ($S^D$) for teacher use of operant behavior modification techniques seems high, and might produce differential rates of use of behavior modification techniques during O's presence vs. absence. To the extent that O becomes an $S^D$ for teacher use of behavior modification procedures, any assessment data I collect gives an erroneously high estimate of the effectiveness of the training procedures.

The present study was an attempt to determine whether or not the observer's presence or absence in the classroom results in differential use of token reinforcement by the teacher.

## Method

Subjects: One male and six female teachers enrolled during the spring 1972 semester served as subjects.

Setting: The study was conducted in four self-contained and four open classrooms in Tempe Elementary District No. 3, a university community

located in central Arizona. Over the past five years, a number of teachers from this district had participated in a behavior modification course offered as a regular part of the teacher education curriculum at Arizona State University. During the course of the class, teachers were required to institute some form of token economy.

## Procedure

Direct observation: Two weeks prior to the date teachers were to begin the token reinforcement procedures in their rooms, observations were conducted for 15-minute periods three times per week. These observations were conducted primarily so that teacher and pupils would habituate to the presence of an observer recording behaviors in the classroom. This observation schedule was maintained after the token system began operation; however, teachers were observed only every other week. This observation schedule appears in Table 1.

Each observation period was divided into fifteen one-minute intervals. The observer tallied tokens awarded on a minute-to-minute basis. Interobserver agreement was assessed by having a second member of the instructional staff make simultaneous recordings at least once a week, and then checking interobserver agreement interval by interval. The percentage of agreement was calculated by the formula (Number of agreements x 100 / Number of agreements + Number of disagreements). Percent agreement ranged from a low of 67% to a high of 100%, with a median of 94%. Rate per minute of awarding tokens in the observer present condition (OP) was calculated from these observation records.

TABLE 1

Experimental Design: Observer-Present/Observer-Absent Sequencing

| Teachers | Weeks | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | OP* | OA** | OP | OA | OP | OA | OP |
| 2 | OA | OP | OA | OP | OA | OP | OA |
| 3 | OP | OA | OP | OA | OP | OA | |
| 4 | OA | OP | OA | OP | OA | OP | |
| 5 | OP | OA | OP | OA | OP | OA | |
| 6 | OP | OA | OP | OA | OP | | |
| 7 | OP | OA | OP | OA | OP | OA | |

* observer-present

** observer-absent

Indirect observation: Data for calculating rate-per-minute of token delivery when the observer was not present in the room were obtained from token cards maintained at the students' desks.

Two such observer-absent rates were calculated: An unobserved rate-per-minute for the remainder of those days when the observer had been present ($OA_1$), and for those weeks the teacher was not observed at all, a rate-per-minute for those days of the week the teacher was ordinarily observed ($OA_2$).

## Results and Conclusions

Comparisons of each teacher's rate of token delivery under observer-present and observer-absent conditions are shown in Figure 1. Comparison of observer-absent rates (see Table 2) using the Wilcoxin Matched-Pairs Signed-Ranks Test indicated that the two rates did not differ significantly ($T = 10, p = .29$). The two measures were therefore combined to yield a single rate-per-minute for each teacher under the OA condition.

However, teacher rate of token delivery under the observer-present condition was significantly different from rate under the observer-absent condition. A one-tailed test using the Wilcoxin Matched-Pairs Signed-Ranks ($T = 1$) permits the rejection of the null hypothesis at the .025 level.

These data indicate that observer presence in the classroom can result in higher rates of token delivery by teachers. Training programs in behavior modification should take the observer effect into account when planning assessment procedures.

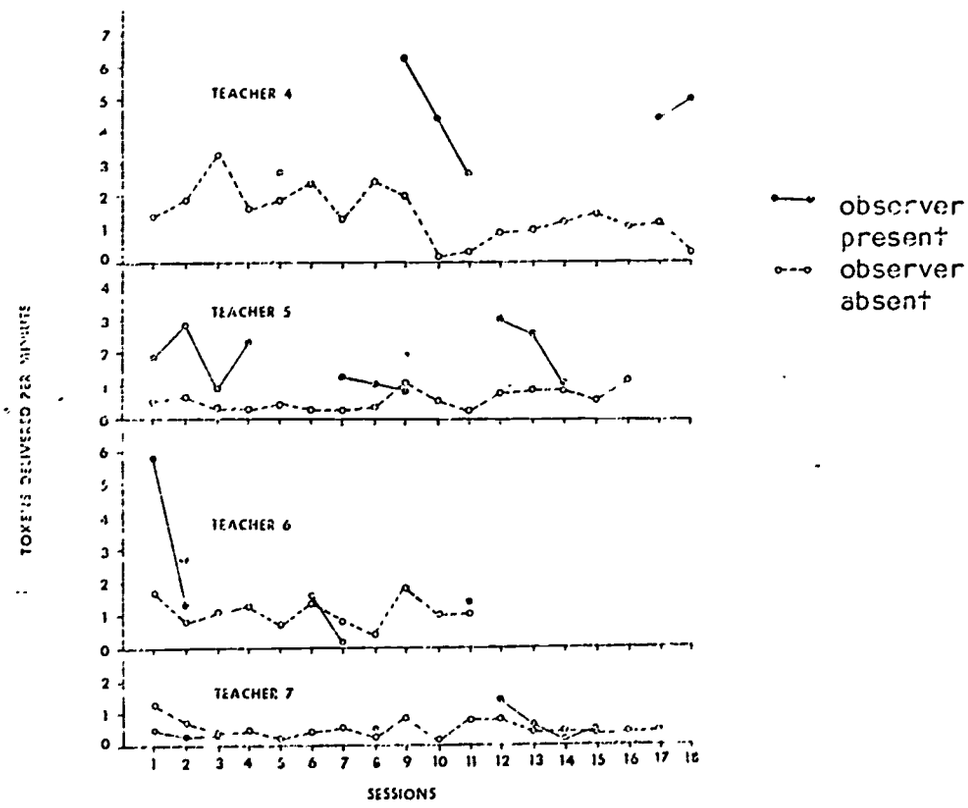


Figure 1

Rate of token delivery under observer present-observer absent conditions.

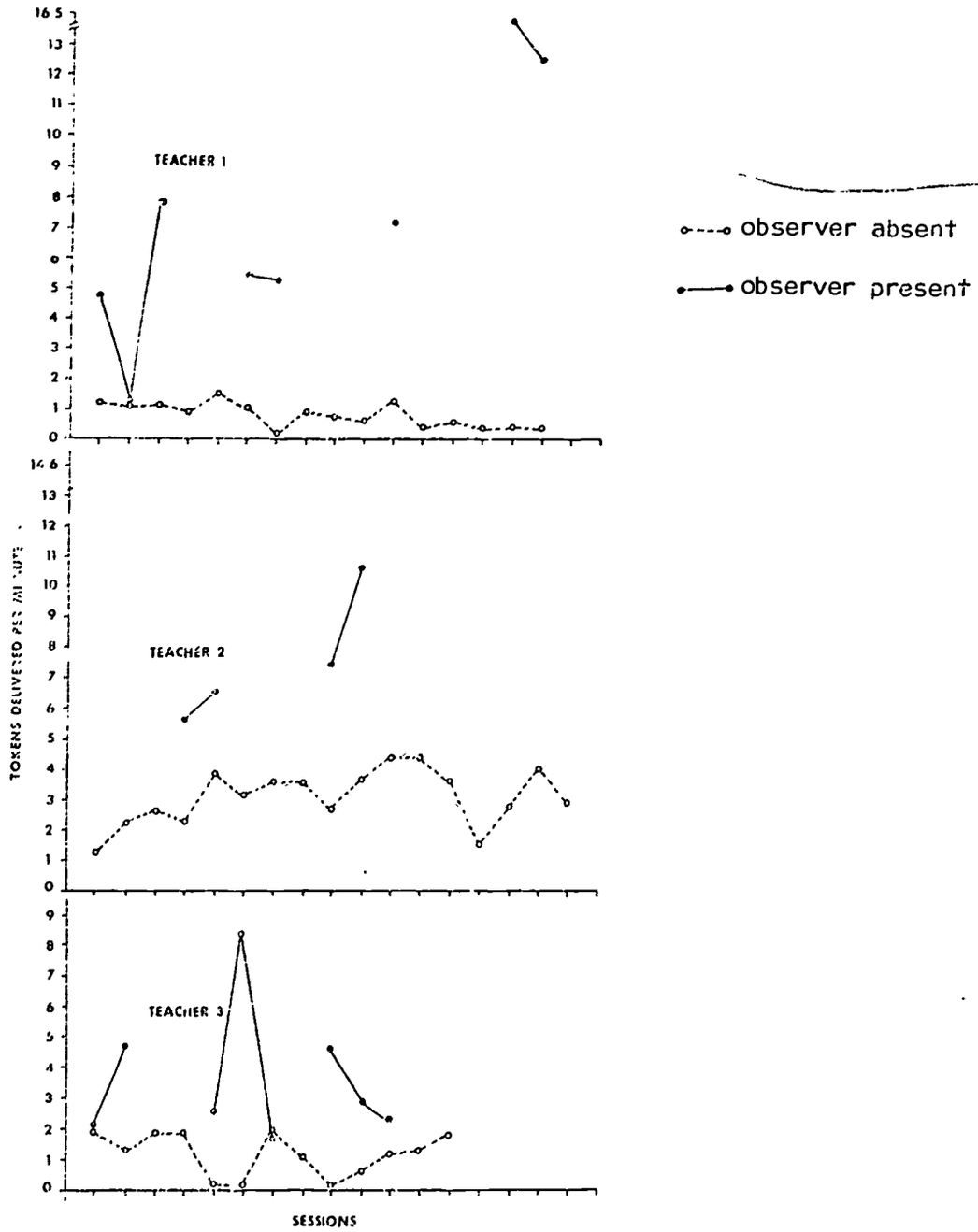


Figure 1

Rate of token delivery under observer present-observer absent conditions.

TABLE 2

Rates of Token Delivery Under Two Observer-Absent Conditions

| Teachers | $OA_1$ | $OA_2$ |
|---|---|---|
| 1 | 1.04 | .74 |
| 2 | 2.85 | 3.25 |
| 3 | .88 | 1.62 |
| 4 | 1.02 | 1.71 |
| 5 | .61 | .55 |
| 6 | 1.24 | 1.11 |
| 7 | .63 | .50 |

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