

THE UNIVERSITY OF MANITOBA

TRAINING ELEMENTARY STUDENTS TO PROMPT
TEACHER PRAISE AND REINFORCEMENT

by

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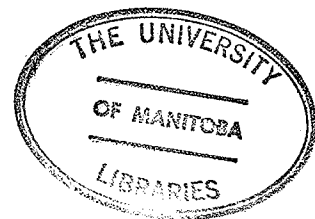
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ABSTRACT

The effects of a training program teaching six fourth grade students to recruit reinforcement from an existing natural reinforcement community, such as the praise available from their classroom teacher, was studied using a multiple-baseline-across-groups design. Since appropriate positive environments to maintain specific academic behavior may not always exist, skills allowing students to prompt teacher praise and modify previous environmental contingencies would be beneficial to those experiencing low rates of positive teacher feedback. The training procedure required students to complete portions of an academic exercise, evaluate the quality of completed work, and prompt or cue the trainer for positive feedback. Generalization to the classroom indicated inconsistent increases in the percentage of appropriate opportunities cued with the introduction of training; generalization programming resulted in further and more consistent increases in four of six subjects.

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INTRODUCTION

Conventional classroom research has treated teacher behavior as the independent variable and student behavior as the dependent variable (O'Leary and O'Leary, 1972). However, acknowledging that a dyadic system of stimulus interchange is operating (Bell, 1968; Baltes and Reese, 1977), student behavior as it effects teacher behavior has also been subjected to analysis. A greater emphasis on students assuming a more active role as behavior change agents has resulted. The influence of student behavior on teacher behavior suggests the reinforcing potential of students, such that they may contribute to improvements in teaching behavior (Klein, 1971; Sherman and Cormier, 1974).

Klein (1971) studied the influence of student behavior on teaching behavior of university instructors. During a one hour lecture period students were instructed to behave normally during control periods and to respond either negatively or positively during appropriate treatment periods. Results indicated a change in instructor behavior with a change in student behavior. Instructors responded more positively (i.e. smiling, providing student assistance) during periods of positive and normal student behavior than during periods of negative student behavior. Similarly, Berberich (1971) demonstrated the reinforcing properties of a child's correct responses on adult behavior. Adults increased those teaching behaviors which were contingent upon a child's correct responses on a marble sorting task. Sherman and Cormier (1974) recorded teacher's reactions to students as a

function of student behavior. The data indicated that as appropriate student behavior increased, teacher's attention to appropriate behavior and positive verbal comments increased, and scores ranking degree of student disruptiveness and irritation to teacher decreased. An increase in inappropriate student behavior during the reversal phase corresponded with a decrease in teacher's appropriate attending responses and positive verbal feedback, and an increase in scores ranking degree of student disruptiveness and irritation to teacher. Sherman and Cormier suggested that students have certain reinforcing properties for teachers and should be trained to be effective students.

Training students as behavioral engineers has been successful not only in increasing positive teacher attention, but also in modifying the reciprocal interactions of student and teacher (Graubard, Rosenberg, and Miller, 1971; Sherman and Cormier, 1974; Polirstok and Greer, 1977). Graubard, Rosenberg and Miller (1971) trained students as behavioral engineers, based on the rationale that students within the educational system did not view themselves in a position of power, but rather the opposite. It was speculated that such feelings were even more prevalent among students in special education classes. Students were instructed in behavior modification techniques for the purpose of increasing positive teacher attention. Techniques taught included making eye contact with teachers, asking for extra help, directing reinforcing comments to teachers, emitting reinforcing behaviors (i.e. sitting up straight) all contingent upon teacher performance. In encountering negative teacher contact, students were taught to break eye contact and ignore provoking

statements. The study demonstrated that positive teacher contacts increased during the intervention period while negative contacts decreased.

Similar results were obtained by Polirstok and Greer (1977) who worked with an eighth grade student labelled as a disciplinary problem. The student was taught to approve of non-critical teacher behavior both verbally (i.e. phrases such as "thank-you", "I appreciate that.", "right-on") and nonverbally (i.e. attending to teacher, smiling, head-nods). The training procedure resulted in an increase in approval rates for three of the four teachers and a decrease in the rate of disapproval for all four teachers.

Research conducted with preschool children, both normal and deviant in terms of their academic and behavioral repertoire, has indicated that students can be taught to prompt or cue their teachers for positive feedback about completed work, thereby increasing positive teacher-student interactions (Stokes, Fowler and Baer, 1978). The researchers noted that students labelled deviant, by having the necessary skills in their repertoire, may be able to modify teacher interaction in a more positive direction and possibly counteract the negative effects of labelling.

The present study trained six fourth grade students to recruit praise and reinforcement from their classroom environment upon independent completion of an academic exercise. Recognizing that appropriate positive environments to maintain specific academic behavior may not always exist due to the absence or misapplication of reinforcement contingencies, a possible approach to increase the frequency of positive teacher attention would be to train the student to prompt the teacher for positive

feedback. Such an approach has been effective with adolescent offenders in a vocational training setting (Seymour and Stokes, 1976) as well as with preschool children (Stokes, Fowler and Baer, 1976). In general the skills may also be beneficial to students in classrooms experiencing very low rates of positive teacher feedback.

The purpose of this study was to evaluate the effectiveness of cueing with a different population (fourth graders) in an open area classroom, who were experiencing academic difficulties. An additional purpose was to determine the minimal requirements for response generalization from the experimental to the classroom setting.

This approach also has implications for generalization programming. The presence of naturally occurring reinforcement contingencies is considered a programming mechanism for generalization in the maintenance and development of a new skill. The transfer of the target behavior from an experimental setting to another setting without further intervention might be facilitated by such reinforcement contingencies. In the presence of somewhat dormant, but potential sources of reinforcement, students who have been taught the necessary skills to recruit praise are in a position to have a new behavior plus cueing maintained by praise evoked, with cues in turn maintaining adult praise. As noted by Stokes and Baer (1977) the procedure logically appears to be able to enhance generalization by: "teaching the subject a means of 'recruiting' a natural community of reinforcement to maintain that generalization".

METHOD

Subjects and Setting. Six fourth grade students were selected by the classroom teacher on the basis of parental willingness to have their children participate in the research project. All students were from the same open area classroom, and were divided into two groups consisting of one female and two male students per group. The class was a mixed third and fourth grade with the latter characterized as below grade level. Student characteristics appear in Table 1, with students one to three forming group I and the remaining students forming group II. Student

Insert Table I about here

participation was on a voluntary basis such that students could decline to participate at any point in the study. They were also informed that training session attendance would not have any academic repercussions.

The classroom teacher agreed to remain experimentally naive until the completion of the study and was informed only that the purpose of the study was to examine the generalization of work skills from the experimental or training setting to the classroom or generalization setting and that some data would be taken on her interactions with the students. Details of the training procedure were explained at the study's termination.

The training setting was adjacent to the class area in a preparation room (4.25m X 2.14m) which provided a large enough desk area for three students to work comfortably.

Apparatus. Training sessions were taped with a portable cassette recorder

Table 1
Subject Demographic Characteristics

| Age | Sex | Years in Open Area | General Performance Level in Reading and Mathematics | |
|----------------|-----|--------------------|--|--|
| S ₁ | 9 | F | 2.0 | Below grade level in reading |
| S ₂ | 8 | M | 3.0 | Below grade level in mathematics |
| S ₃ | 8 | M | 3.0 | Average student |
| S ₄ | 9 | F | 3.0 | Average Student |
| S ₅ | 8 | M | 1.5 | Below grade level in reading |
| S ₆ | 9 | M | 2.0 | Below grade level in reading and mathematics |

which was unobtrusively situated in the training setting and operating before students entered. Two additional cassette recorders were used by observers in the classroom to cue interval changes via a bug-in-ear device.

Classroom Observations. All classroom observations were made by trained observers using a 10-second interval recording procedure over a 20-minute period. Observers were introduced as guests at the time of initial contact with the class which was approximately four to six school days prior to training session attendance. The class and target students remained unaware of the true nature of the visits and of the observers association with the trainer. Observations commenced once the class period had begun (i.e. teacher introduction of class activity) with observers positioned to the side of the classroom with both teacher and target students in view. The observers did not interact with students nor interfere with classroom routine. There was generally two observers present; observers collected data on group I for the first 20-minutes and on group II for the latter 20-minute period. Each observer collected data on two students during each observation period, which provided a measure of interobserver reliability for the majority of sessions. Observations occurred during Language Arts or Social Studies classes. Data was obtained on student cues, defined as statements made by the student and directed to an adult (i.e. teacher, teacher aide) requesting positive feedback on completed academic assignments or general behavior (i.e. "How is this work?", "Did I finish quietly?") and teacher praise, defined as a verbal statement made by an adult indicating approval or a positive evaluation of the student's academic or general behavior (i.e. "Good job.", "You're working very well.").

Interobserver reliability was obtained on 50% of the experimental days resulting in two reliability assessments, one per group. There were only 3 experimental days where a reliability score was obtained for only one of the groups. Occurrence reliability was computed on praise and cueing data by dividing the number of agreements about occurrences by agreements plus disagreements, and multiplying by 100. The overall percentage of interobserver reliability on cues and praise was 81%. Reliability scores for three out of 16 observational periods was 0%; the remaining scores were 100%.

It was felt that a functional analysis of cueing could only partially be achieved relying on measures of cues and praise emitted. Therefore, collateral data on cue appropriateness was recorded for every 10-second interval in relation to teacher behavior in order to evaluate opportunities for student cueing and response appropriateness. Intervals suitable for cueing were recorded when the teacher was directly interacting (i.e. demonstrating, assisting, communicating) with the target student in a small group or one-to-one situation and/or teacher was within the immediate area of the target student (1 metre or less) and not involved with classroom duties (i.e. grading papers, operating movie projector), instruction, or interaction with another student(s). Interaction had to be either verbal or related to the demonstration or assistance with an academic exercise or manual skill. The absence of such teacher behavior for the full 10-second interval resulted in the interval being scored as inappropriate for cueing.

Data on student behavior provided an additional measure of cue

appropriateness by indicating whether student behavior emitted competed with work completion. Student responses were recorded for every 10-second interval; responding was scored as inappropriate with the occurrence of any of the following; inattentiveness, defined as not attending to stimuli relevant to the academic activity; non-compliance, consisting of not following teacher instructions within 5-seconds of the initial instruction; and disruptiveness, defined as knocking objects off desks, table tops, display areas or being out of seat without permission. All other classroom behavior was scored as appropriate. Inappropriate responses had to persist for the full interval length before scored as such. Interobserver reliability for cue appropriateness was calculated by dividing the number of agreements by agreements plus disagreements, and multiplying by 100. The overall percentage of interobserver reliability was 87%. The reliability score for one out of 33 observational periods was 0%; the remaining scores ranged from 81% to 100%.

General Procedure and Design

The study employed a multiple-baseline-across-groups design whereby conditions were sequentially introduced to evaluate effects from the training to the classroom or generalization setting. Two groups of three students were formed on the basis of proximity to one another in the classroom to facilitate observation and data collection. Students attended daily training sessions in their assigned group for a period of 15-minutes. Upon termination of each session students returned to their classroom and classroom observations began. Training sessions were scheduled so as not to interfere with regular classroom activity yet allow for

a 20-minute observation period subsequent to each session (group II sessions followed group I).

Baseline: Classroom Setting: A baseline of student cues, teacher praise and appropriate cueing intervals was obtained approximately 1 week prior to students introduction to the trainer and training setting.

Baseline: Training Setting. A baseline of cues emitted by students in the training setting followed when all classroom baseline data had been collected. Although the trainer was present, no formal training occurred at this time; students worked independently on academic exercises (e.g. reading comprehension, creative writing) obtained from the teacher prior to each session. The rate of reinforcement per student approximated that which occurred in the classroom setting during baseline. Classroom observation followed these sessions and provided additional baseline data in the classroom setting, which is referred to later as Classroom Baseline 2.

Training Sessions. Sessions commenced with the completion of baseline data collection. Students worked independently on academic assignments provided by the teacher and practised the following sequence: completing a portion of an academic exercise; evaluating the quality of work completed; and directing a cue to the trainer. The dimensions of work quality involved completing part of an assignment (approximately $\frac{1}{4}$ of the questions) quietly and accurately and correcting any errors made. Students were also required to raise their hand before cueing the trainer which was consistent with classroom procedures related to directing questions to the teacher. The trainer provided feedback and praise related to the student's work completion skills. An optimal time to request feedback

from the trainer was when students judged their work as having been done correctly. Requests for evaluation consisted of a number of different cues such as: "Can you check this?", "How is this work?", and "Can you look at this?". Cues were suggested by the students during their first session. Students were prompted to avoid repetition of cues by suggesting that they say something different next time and to cue only when the trainer was in close proximity to their work area (approximately 1 metre) and not busy grading a paper, working with another student, etc. To facilitate cueing, a self-recording device (wrist counter) was used by each student to indicate number of cues emitted. Use of the wrist counter was limited to the training setting. Training sessions involved the use of instructions, role-playing, feedback, social reinforcement and self-recording. Each session ended with a review of the "rules" for cueing, after which students returned to the class to continue their assignments with the teacher. Classroom observations subsequent to these training sessions assessed for spontaneous generalization of cueing to the classroom setting. Rate of cueing was monitored to ensure that the students' ability to evoke praise allowed for independent work without becoming a nuisance or pest to the teacher.

Two probes were implemented when generalization failed to occur (for group I) and when effect size was small (for group II) in an attempt to program for generalization.

Probe 1. Training sessions proceeded as previously outlined. However, at the end of the session, the student was instructed to practise cueing in the classroom twice. The suggested frequency of cueing took

into consideration baseline cueing data as well as being based on consultation with teachers instructing a similar grade level in an open area, to determine an acceptable rate.

Probe 1 and Probe 2 were separated by a 3 week period due to the Christmas break.

Probe 2. The second probe was introduced one week after the Christmas break. Due to time constraints the remaining four experimental days attempted to demonstrate control over cueing with an abbreviated ABA design. Two additional days of classroom data were first obtained under conditions outlined in probe 1, with the one modification being training session length. Students proceeded to the training setting in their groups, but remained only long enough for the trainer to review the "rules" of cueing and to instruct them to practise cueing in the classroom. Then the second probe required students to come to the training setting in their designated group, briefly review when cues could occur, and receive not only instructions to cue, but also the wrist counters previously used during the sessions. Students were asked to use the counters to record how often they cued in class. Counters were returned at the end of the class. An additional feature of this condition was that classroom data was collected by the trainer. This was the trainer's first appearance in the generalization setting. Thus, the effect of two potential mediating stimuli, counters and trainer, on response generalization was assessed. On the final experimental day students were returned to Probe 1 and again received only instructions to cue in class when they arrived at the training session and on returning to the classroom, and the data was obtained

by an observer other than the trainer.

RESULTS

The mean number of cues directed to the trainer during baseline in the training setting was zero for all subjects. The mean number of cues during training sessions where the correct procedure for cueing was trained and practised increased to 3, 3.2, 1.8, 1.8, 2.4 and 1.9 for subjects one to six respectfully. For two subjects a minimal number of prompts from the trainer were initially required, during the first two training

Insert Figure 1 about here

sessions, in addition to the general instructions to practise cueing. Prompts occurred only if no cue had been emitted after approximately one-quarter of the subject's work had been completed. A single occurrence of inappropriate cueing was recorded for one subject through out the duration of training (i.e. cue given to trainer during trainer's interaction with another subject).

Cues to teacher were analyzed in terms of the percentage of appropriate opportunities in which cueing occurred. An appropriate cueing opportunity, scored as a function of teacher activity and proximity to student, was defined as one 10-second interval or a number of consecutive 10-second intervals which had been scored as appropriate for cueing. Data indicated that the percentage of appropriate opportunities cued increased on some of the experimental days once training sessions commenced (see Figure 2).

Insert Figure 2 about here

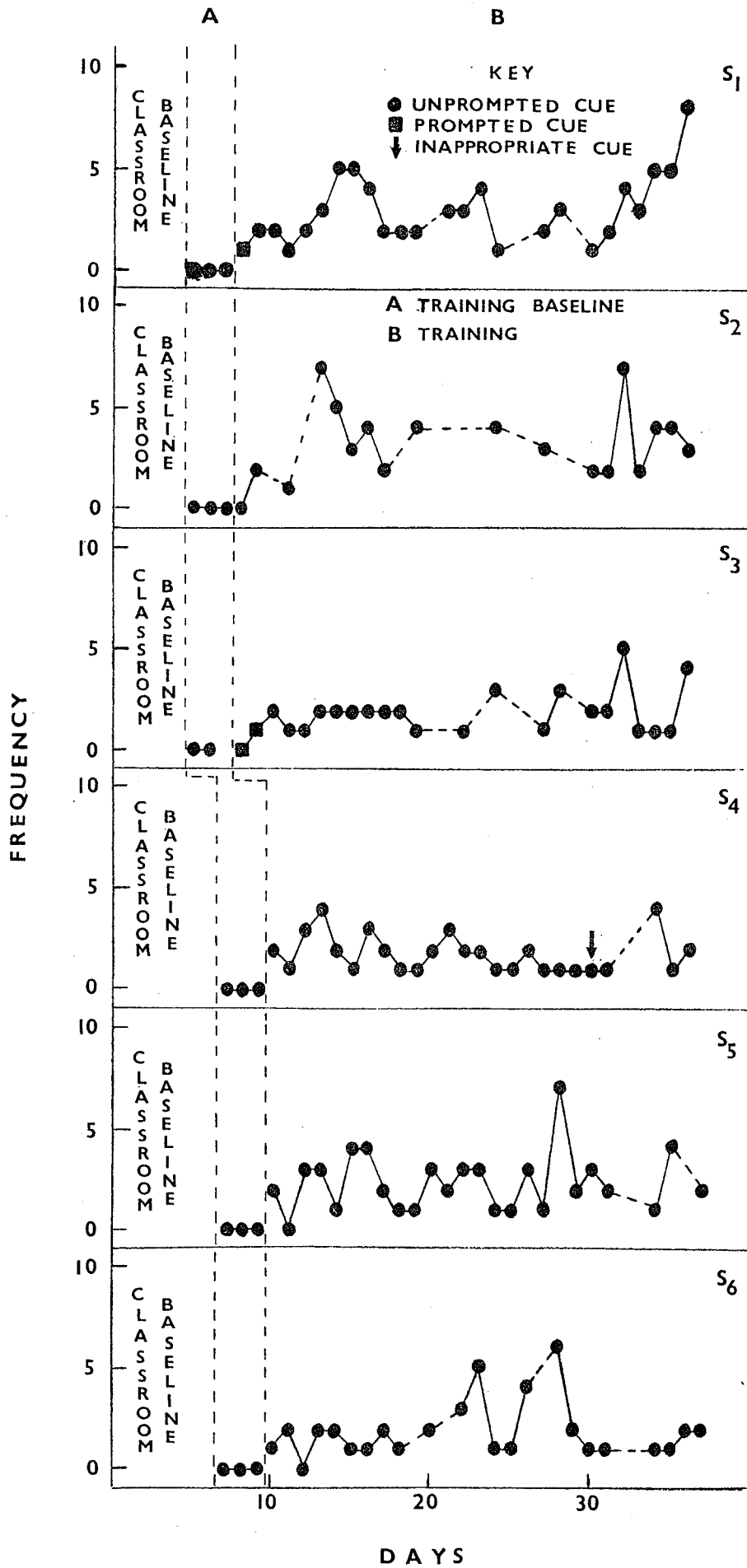


FIGURE I. FREQUENCY OF CUES TO TRAINER.

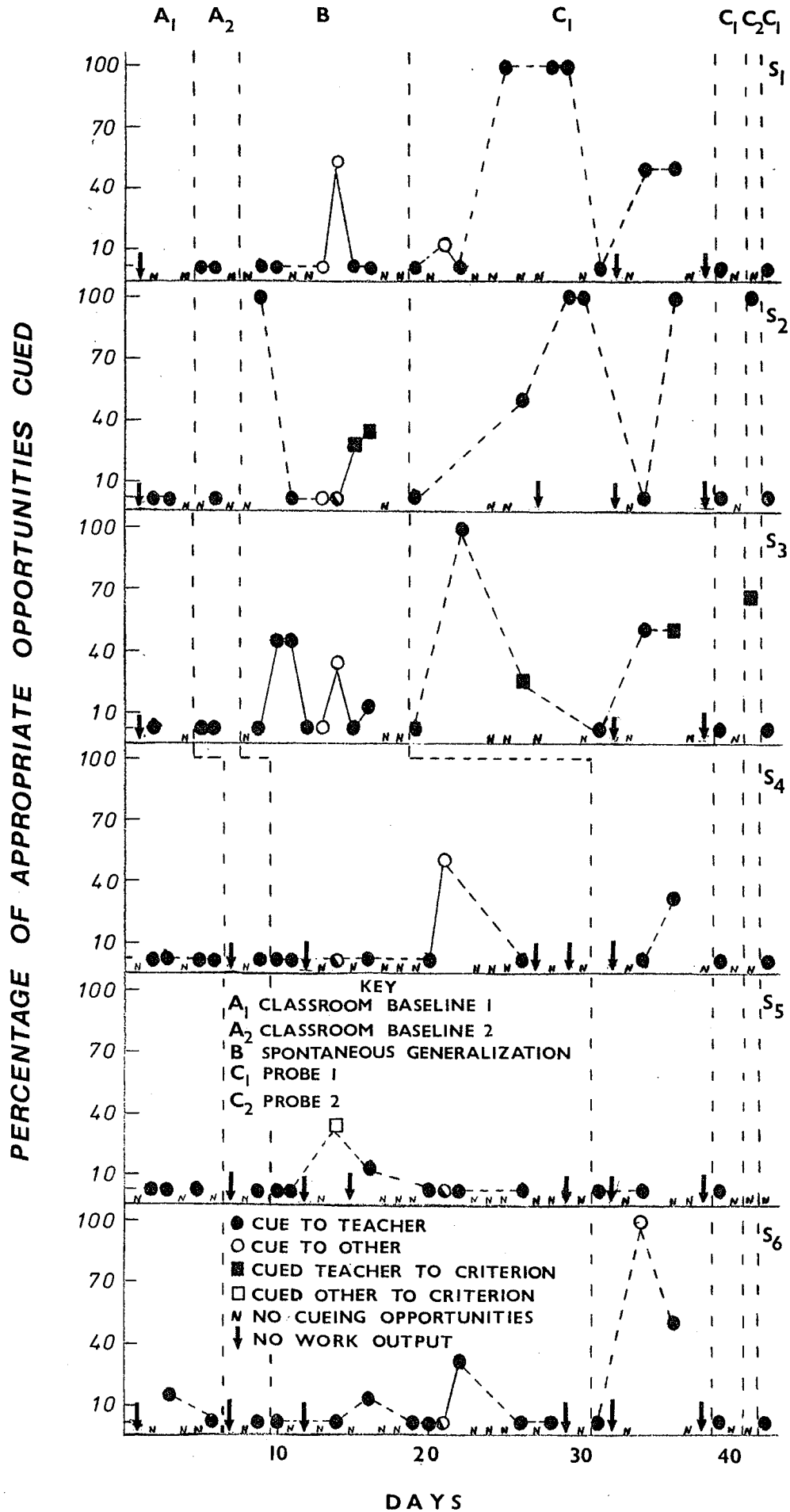


FIGURE 2. PERCENTAGE OF APPROPRIATE OPPORTUNITIES CUED.

The overall mean during the spontaneous generalization condition was 10%, 27% and 18.4% for subjects one to three respectfully (group I) and 7.1% and 5.9% for subjects four and five respectfully compared to 0% during baseline conditions. Subject six showed no change in the mean percentage of appropriate opportunities cued from baseline ($\bar{x} = 5.7$) to spontaneous generalization ($\bar{x} = 5.9$).

Further increases in the percentage of appropriate opportunities cued occurred for four of the six subjects with the introduction of Probe 1 (see Table 2 and Figure 2).

Insert Table 2 and Figure 2 about here

When Probe 1 was reinstated after a 3 week period for group I, data indicated that no cues were emitted during this condition. The introduction of Probe 2 for one day increased the percentage of appropriate opportunities cued to 100% for subject 2 and 66.7% for subject 3. Although subject 2 did not cue during all possible opportunities, the cueing criterion was attained (i.e. two cues per observation period). Subject 1 emitted one cue even though an opportunity to cue in terms of teacher proximity had not occurred. The percentage of opportunities cued again returned to zero for all three subjects with the re-introduction of the Probe 1 condition; the number of cueing opportunities also decreased. Insufficient data obtained for group II following the 3 week break did not allow for any meaningful comparisons.

The overall percentage of inappropriate cues emitted was 18%, 21%

Table 2

Overall Percentage of Appropriate Opportunities Cued in the Classroom
with the Mean Number of Appropriate Cueing Opportunities in Parentheses

| | Group I | | | | Group II | | | |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|--|--|
| | S ₁ | S ₂ | S ₃ | S ₄ | S ₅ | S ₆ | | |
| Baseline ₁ | N/A (0) | 0 (3.0) | 0 (1.5) | 0 (2.5) | 0 (3.7) | 8.5 (7.5) | | |
| Baseline ₂ | 0 (3.5) | 0 (6.0) | 0 (2.5) | 0 (2.0) | 0 (3.0) | 0 (2.0) | | |
| Spontaneous Generalization | 10 (3.5) | 27 (3.7) | 18.4 (2.6) | 7.1 (2.1) | 5.9 (4.6) | 5.9 (3.6) | | |
| Probe ₁ | 45.8 (2.3) | 58.3 (2.0) | 37.5 (3.0) | 16.5 (2.0) | 0 (2.0) | 50.0 (1.3) | | |
| *Probe ₁ | 0 (1.0) | 0 (2.0) | 0 (1.0) | 0 (1.0) | 0 (5.0) | 0 (3.0) | | |
| *Probe ₂ | + N/A (0) | 100.0 (3.0) | 66.7 (3.0) | N/A (0) | N/A (0) | N/A (0) | | |
| *Probe ₁ | 0 (1.0) | 0 (1.0) | 0 (1.0) | 0 (1.0) | N/A (0) | 0 (1.0) | | |

* Based on one data point obtained after Christmas Break.

+ No appropriate opportunity, but cue emitted.

N/A - appropriate cueing opportunities not available.

and 33% for subjects 1, 3 and 5 respectfully. Cues were inappropriate due to the absence of teacher proximity to the subjects. However, cues emitted under these circumstances were not necessarily defined as inappropriate by the teacher, as it was acceptable for students to raise their hand and initiate verbal interaction independent of where the teacher was in the room. All such cues were followed by praise with the exception of one cue from each of subjects 3 and 5. The one cue unsuccessful in evoking praise for subject 5 occurred in the absence of teacher proximity and was preceded by four intervals of inappropriate student responses. Responses which competed with work output for that period were recorded for 38% of the total number of intervals. No inappropriate cues were noted for the remaining three subjects.

The distribution of all cues throughout the observation period in the classroom indicated cues to be well spread out for group I and generally occurring during the middle of the period for group II (see Figure 3).

Insert Figure 3 about here

Cues directed to the teacher were followed by praise 91%, 83% and 79% of the time for subjects 1 to 3 respectfully and 100%, 67% and 60% of the time for subjects 4 to 6. Praise occurred within 10-seconds of all cues successful in evoking praise (see Figure 4).

Insert Figure 4 about here

Figure 4 also shows that the frequency of uncued praise exceeded cues



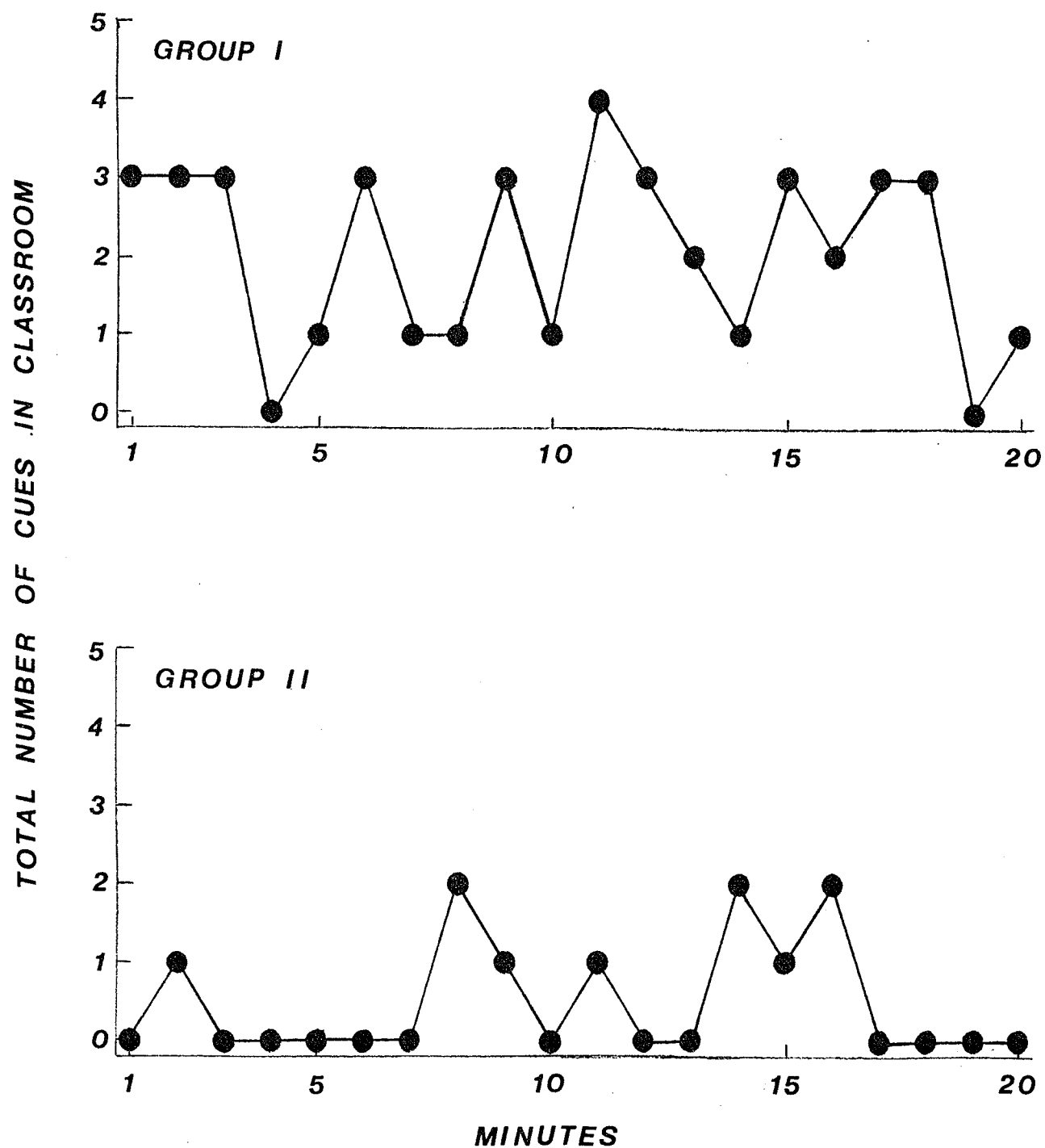


FIGURE 3. DISTRIBUTION OF CLASSROOM CUES.

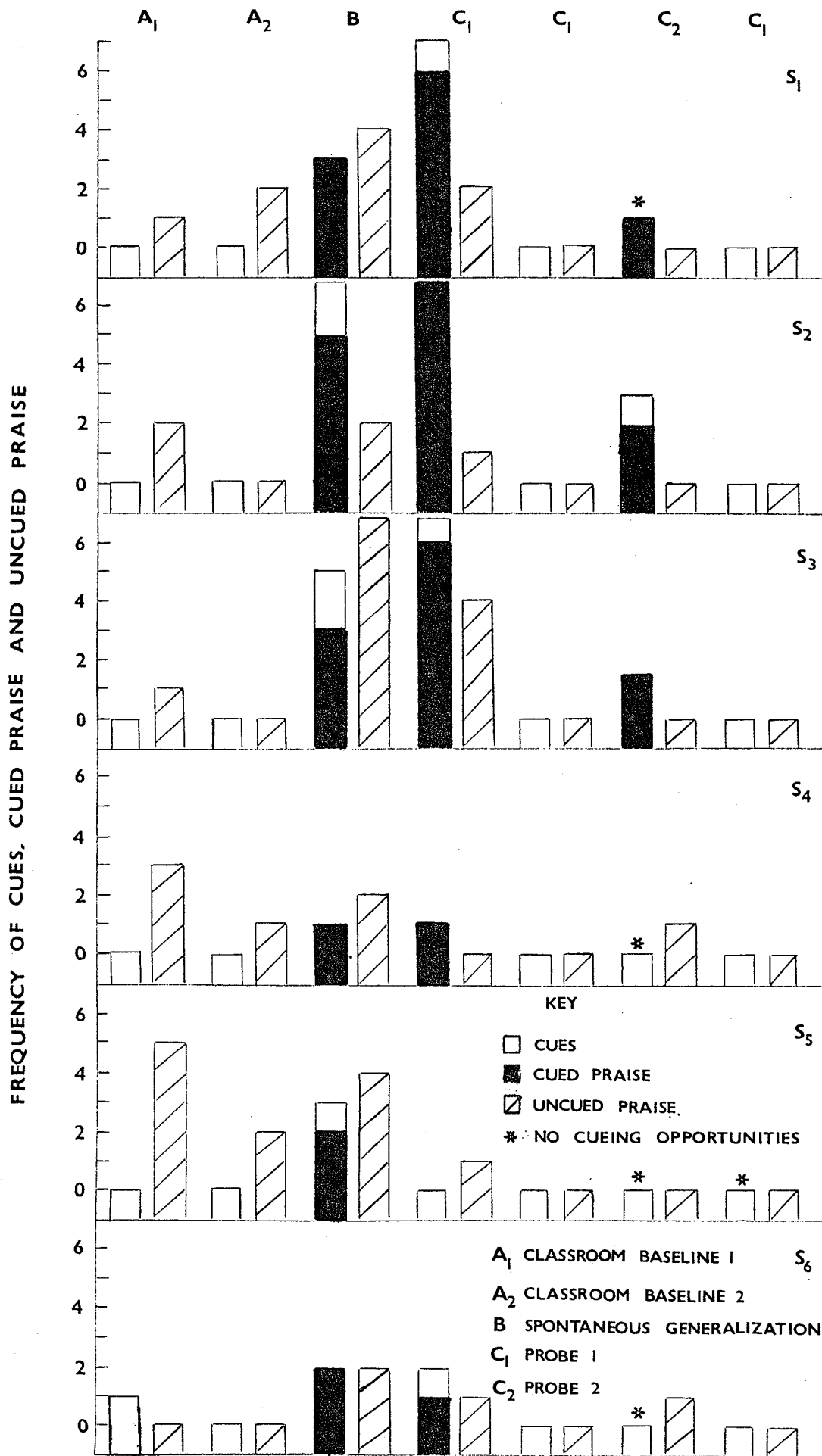


FIGURE 4. FREQUENCY OF STUDENT CUES, CUED PRAISE AND UNCUED PRAISE.

during spontaneous generalization for four of six subjects, remained the same for one, while the inverse was true for the remaining subject. The introduction of Probe 1 inverted this relationship for all but one subject. Effect size was again smaller for group II. The data does not indicate if the increase in cues resulted in lowering the frequency of uncued praise or if the drop in uncued praise resulted in increasing cues.

DISCUSSION

Training session data clearly indicated that skills to cue or prompt an adult for feedback were readily acquired and effectively used with minimal misapplication. The frequency of cues in both the training and classroom setting was not only effected by the availability of cueing opportunities, but also by the type of academic exercise assigned. Creative writing assignments, for example, required a greater time expenditure before a student evaluation of work quality could be made and teacher feedback cued. If cueing opportunities occurred infrequently and at a time when sufficient work output had not occurred, cueing may not have been possible. Despite the tendency for cueing opportunities to decrease somewhat from the Spontaneous Generalization condition to the Probe 1 phase for five of six subjects, the percentage of appropriate opportunities cued increased. Cues also generalized to adults other than the classroom teacher, such as student and substitute teachers.

Teacher anecdotal reports indicated that cues occurred during classes which did not follow the training sessions; observers also noted a variable topography of cues emitted in class which indicated that a variety of cues were being used and that subjects did not restrict themselves to cues

suggested and practiced during training sessions.

A low rate of cueing to be practised in the classroom was suggested by the trainer, but it appeared that subjects could discriminate between class activities where a lower or zero rate of cueing would be more appropriate. On several occasions after receiving instructions to practice cueing in the class, subjects indicated that it just would not be possible during that period. No cues were recorded for those activities where no written output occurred or where no appropriate cueing opportunities occurred for the duration of the class activity, with the exception of subject 1 during the Probe 2 phase.

As noted by Stokes et al. (1978) no a priori guidelines exist to suggest appropriate cueing rates. Further research should therefore examine normative rates of cueing across grade levels, incorporating the necessary collateral data in order that optimal rates of cueing can be appropriately trained.

The degree of programmed generalization necessary before cueing will generalize to the classroom may vary across subjects. Simply instructing subjects to use the skills in the classroom may prove effective with some while stronger prompts may be required for others. Although an additional purpose of the study was to assess for the minimal requirements for response generalization across settings, definite conclusions regarding such requirements can not be drawn from the available data. It can not be determined that instructions alone had a durable effect over time (i.e. over the Christmas break) due to insufficient data collected during the re-introduction of the condition. Further research might investigate the

most effective and efficient procedure to obtain durable generalization across settings.

Subject differences related to the degree of programmed generalization necessary may be related to certain variables present in the classroom. The classroom seating arrangement, for example, may have been a contributing factor in the different effect size obtained for each group. Group I subjects all shared the same work area with two other classmates. A certain degree of modelling may have occurred between subjects seated this closely together. As well, one subject's cue to the teacher may have itself served as a prompt for the other subjects to cue. This was not the case with group II; subjects sat at three different work areas with one subject seated alone. One of the subjects from group II (subject 4) was seated adjacent to group I's work area, but did not appear to be affected by their cueing such that increases in cues from subjects 1 to 3 did not consistently correspond to cues emitted by subject 4.

Additional considerations relate to the potential problems associated with a multiple-baseline-across-groups design. Complete independence between multiple measures may be somewhat uncertain, because discussion between subjects after one group's exposure to an intervention may behaviorally influence subjects who have not yet been introduced to it. In general, variables which pose a potential threat to internal validity (Campbell and Stanley, 1966) should be carefully addressed by researchers.

In this experiment, the extent to which changes in student cueing behavior was a result of manipulations introduced must be considered in view of potential influencing extraneous variables. Substantial increases in

the percentage of appropriate opportunities cued from Spontaneous Generalization to the Probe I condition for group I were evident, although possible effects of modelling and student cues serving as prompts for other students to cue were not controlled for. However, since the introduction of Probe I had a similar effect for one subject from group II (subject 6), instructing students to practise cueing in another setting appeared to produce changes in the number of appropriate opportunities cued. As with subject 4, increases in group I cueing did not consistently correspond to cues emitted by subject 6 throughout the Spontaneous Generalization and Probe I conditions. Limited data obtained after the Christmas break for group I, suggested that the mediating stimuli may have had a greater effect on generalization programming than instructions alone as subject 2 cued during all available cueing opportunities and subject 3 cued to criterion. However, as this was based on one observation period, additional data would be required to substantiate this.

Perhaps normative peer cueing data obtained concurrently with target student cueing data may have provided some indication as to whether peers seated at the same work area were modelling cueing behavior of target students. Walker and Hops (1976) suggested that normative peer data can be used as a standard which would allow comparisons to be made to treatment effects as well as provide a measure of possible interfering situational variables.

Finally, this study indicated that research conducted in an applied setting involving the daily participation of both students and teacher for an extended period of time presents certain added difficulties before data

collection can begin. The researcher must be prepared to make the necessary contacts, clearly specifying commitments for participants, in order that approval be obtained from the appropriate school division, principal and parents of participating students. In order for a study to proceed to its conclusion it is imperative that the participating teacher(s) willingly commit themselves to daily classroom observations yet remain, for the most part, experimentally naive. It is also imperative that training sessions are scheduled to ensure minimal interference with class activities and student instructional time, yet allow sufficient time for subsequent classroom observation. This may mean that a compromise between ideal observation periods and a suitable time when students can be absent from the class be made, which may result in observations yielding "no data" due to variability associated with class activity. The final consideration must include an adequate number of observers. Subject number and the amount of data to be collected warrant two observers, especially during the initial stages when observers are becoming familiar with the recording procedure. In spite of issues raised, the study contributes to research concerned with the effects of student behavior on teacher behavior on teacher behavior and provides support for the potential of a training procedure allowing students to recruit praise and reinforcement from existing natural reinforcement communities.

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Appendix A

The procedure for training observers involved recording praise and cues from taped training sessions and responding to hypothetical situations related to teacher proximity and activity and inappropriate student behavior. Observers were students from an introductory psychology and a graduate level education course who chose to do classroom observations to fulfil a course practicum requirement. Training occurred either individually or in a group not exceeding three observers.

Praise and cues were recorded from taped training sessions, averaging 4-minutes in length, with one teacher and four preschoolers. Observers were required to record instances of teacher praise and student cues using a 10-second interval recording system. Observers attended two practice sessions where two or three different tapes were played on each occasion. Tapes were generally re-played and omissions noted.

An interobserver reliability score, based on occurrence reliability, was obtained between observer and experimenter. A minimum of 65% was required for at least two taped sessions from which data was collected. Previous observer training suggested that a reliability score of 65% was acceptable taking tape quality and preschooler's articulation into consideration.

The experimenter posed examples of hypothetical classroom situations involving teacher-student interactions and inappropriate student responses. Observers were required to state how an interval would be scored (i.e. appropriate cueing interval for subject 1). Incorrect responses

were discussed and an example of a similar situation was later presented. Observers demonstrated their understanding of the definitions for appropriate cueing opportunities and inappropriate student responses by correctly answering all 10 classroom examples or their variations.