

NATURAL RATES OF TEACHER APPROVAL AND DISAPPROVAL IN THE CLASSROOM¹

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Sixteen classroom observational studies were conducted to determine natural rates of teacher verbal approval and disapproval in the classroom. Rates of teacher verbal approval and disapproval were measured by the Teacher Approval and Disapproval Observation Record (TAD) over Grades 1 through 12. Teacher verbal approval rates dropped over grade, with a marked drop after second grade. In every grade after second, the rate of teacher verbal disapproval exceeded the rate of teacher verbal approval. These rates are interpreted in terms of reinforcement theory.

DESCRIPTORS: classroom reinforcement, teacher approval, teacher disapproval, natural rates

Since Gilchrist's (1916) study of the effect of praise on test performance, numerous investigations have demonstrated that experimentally manipulated teacher praise is an important tool for changing behavior (Hanley, 1970; Kennedy and Willcutt, 1964); for improving test scores (Witner, Bornstein, and Dunham, 1971); for altering motor behaviors (Harris, Wolf, and Baer, 1964); for changing behavior in elementary classrooms (Becker, Madsen, Arnold, and Thomas, 1964; Madsen, Becker, and Thomas, 1968; Thomas, Becker, and Armstrong, 1968); in special classrooms (Zimmerman and Zimmerman, 1962); in secondary classrooms (McAllister, Stachowiak, Baer, and Conderman, 1969); for increasing students' study behavior (Hall, Lund, and Jackson, 1968); and, for improving student achievement (Hughes, 1973). How do rates of teacher verbal reinforcement operate to maintain or increase the school behavior of pupils? Perhaps the rates, if measured appropriately, would provide a clue to some of the learning problems accounted for by such constructs as poor motivation, lack of interest, poor ability to concentrate, or even skill deficits.

Although a number of studies have reported on the experimental manipulation of rates of

teacher verbal reinforcement, that is, on what might be called *manipulated rates*, little has been reported on rates of teacher verbal reinforcement as they actually occur in the classroom, that is, on what might be called *naturalistic* or *existing* rates. Research to date suggests little about the nature of these rates. A declining rate of teacher positive verbal reinforcement over grade had been predicted (Duker, 1972) as the most parsimonious explanation for the common observation that pupil learning behaviors declined in enthusiasm from first grade on. Furthermore, it was anticipated that the rate would decrease markedly during the third or fourth grade. Knowledgeable observers often use different terms to describe commonly noted changes in pupil behavior at this grade level, *i.e.*, such as "disenchantment", "loss of trust", "drop in creativity", or "loss of sense of joy in school". An observed decrease in the rate of teacher verbal reinforcement at this educational level might serve as the basis for stimulating an experimental analysis of the phenomena.

METHOD

Observational Instrument (TAD)

The rates of teacher verbal reinforcement in these studies were obtained through use of the Teacher Approval and Disapproval Observation

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Record (TAD) which was developed for administrative ease and reliability of recording (White, Beecher, Heller, and Waters, 1973). TAD requires the observers to record the following sequence: (a) all verbatim teacher verbal approval and disapproval that follow a pupil behavior, and (b) that preceding pupil behavior to which the teacher responded with verbal approval or disapproval. The observer sits to the rear or side of the classroom so as to observe pupils and teacher. Each observation is recorded by hand and timed by a stopwatch, as is the time for recording itself. All teacher verbal approvals and disapprovals that occur in response to a pupil behavior are recorded. The time of day for observation is varied between morning and afternoon classes in order to sample the major instructional subjects of reading, mathematics, science, and social studies. No recordings were made during special events, such as art, music, or gymnastics. Time for recording the verbatim a-b interaction required a standard 20-sec interval, an important aspect of the TAD instrument that makes it possible to deduct recording time from actual observational time. As a consequence, rates for teacher approval or disapproval are computed on actual minutes of observation, not on observation plus recording time. This is an important consideration because the more approvals or disapprovals a teacher emits, the more time would be spent by the observer in recording, and consequently proportionately more of the teacher's behaviors would go unrecorded. By deducting all recording time on TAD, all rates are based on actual observational time.

Initial interobserver reliability of TAD was established by White, Beecher, Heller, and Waters in 1972 through 17 classroom observations, each observation recorded by two observers simultaneously for 20 min in public classrooms from kindergarten to twelfth grade. Reliability was calculated as the percentage of agreement between each pair of observers of all recorded teacher approvals and disapprovals. Overall interrater agreement ranged from 0.80 to 1.00, with a mean percentage of 0.90; the range for

high school was 0.80 to 1.00, with a mean of 0.90; for elementary school 0.82 to 1.00, with a mean of 0.90. Subsequent observers for the present study were required to reach the criterion of 0.90 through the same procedure with one of the initial authors at the grade level appropriate to their studies reported in Table 1. All the TAD data reported here were collected in classrooms from mid-October to mid-December in two successive years.

Definitions of teacher verbal reinforcement. Teacher approval was defined as a verbal praise or encouragement, and teacher disapproval as a verbal criticism, reproach, or a statement that indicated that the student's behavior should change from what was unacceptable to acceptable to the teacher. A complete list of examples for these two categories are given in TAD (White *et al.*, 1973). Teacher verbal responses that did not fall into either of the above categories were regarded as neutral and were not recorded.

Rates for teacher approval (or disapproval) were arrived at by dividing the number of approvals by the "actual" time the teacher was observed. "Actual" time observed was calculated by subtracting the time spent in recording, which consisted of a standard 20-sec interval for each instance recorded, from the total time spent observing the teacher. "Actual" time represented the true time spent in observation. The formula for computing the rates was:

$$\text{Rate of teacher approval} = \frac{\text{Number of teacher approvals}}{\text{"Actual" time observed}}$$

Subjects

As part of a systematic attempt to record rates of teacher verbal reinforcement over grade, 16 observational studies were carried out by Beecher, deBary, Fish, Heller, Jackson, Loehfelm, Nacson, and Waters. These studies focused on different grade levels, with more than one study at three grade levels, as shown in Table 1. Total observation was 8340 min, and 104 teachers were observed. In all studies except that by Heller, all teachers were observed who taught

in a particular school system at the grade level cited. (Heller's study required observation of those teachers who taught both "fast" and "slow" classes.) The studies were conducted in public schools except for one (Loehfelm), conducted in a parochial school. Twelve studies were completed in a large suburban public school district where the median family income in 1970 was \$16,500, somewhat higher than the median national income of just under \$10,000 in 1970. The school district had a black population of 15% compared with the national average of 11%. The mean years of schooling completed was 13.2 compared to the national average of 12.1 yr. The Heller studies were conducted in an urban junior high school.

RESULTS

Table 1 summarizes the 16 studies, depicting the rate of total approval and disapproval, followed by a division of these two categories with the subcategories of "instructional" and "managerial" rates, which will be discussed below.

The overall teacher rate of approval over grade shows more relatively high rates in first and second grades, the highest being a teacher approval rate of 1.3 approvals per observed minute. After second grade the rate declines sharply and continues to decline into high school, where it seems to stabilize at about one teacher approval every 5 or 10 min. This means that in a typical class of 40 min, the teacher emits four to eight approvals during the entire class period.

The rate for total disapproval in Table 1 shows a similar configuration, with an initially higher rate in the primary grades, followed by a declining rate over the later grades.

In Grades 1 and 2, teacher approvals occur more frequently than the teacher disapprovals. But in every grade thereafter, the rate of total teacher disapproval is higher than the rate of approval.

For purposes of analysis, pupil behaviors were divided into two categories, "Instructional" and "Managerial". Each pupil behavior recorded on TAD was categorized into one of these two cate-

Table 1
Summary of Studies of Rates of Teacher Verbal Reinforcement per Observed Minute

Investigator	Grade	No. of Teachers	Minutes Observed	Rate of Total		Rate of Instructional		Rate of Managerial	
				Approval	Dis-approval	Approval	Dis-approval	Approval	Dis-approval
1. Waters	1	10	600	0.39	0.46	0.38	0.14	0.03	0.32
2. Beecher	1	6	1200	0.27	0.17	— ¹	—	—	—
3. Loehfelm	1	17	1020	0.95	0.89	0.83	0.37	0.12	0.52
4. Fish	2	3	180	1.3	0.69	1.21	0.26	0.01	0.43
5. Waters	3	10	600	0.38	0.47	0.37	0.20	0.01	0.27
6. Fish	4	3	180	0.32	0.64	0.25	0.20	0.07	0.44
7. Waters	5	10	600	0.35	0.45	0.33	0.11	0.02	0.34
8. Fish	6	3	180	0.30	0.45	0.25	0.11	0.05	0.34
9. Heller	7	4	720	0.34	0.58	0.34	0.12	0.00	0.46
10. deBary	8	3	180	0.21	0.37	0.20	0.06	0.01	0.31
11. Heller	8	4	720	0.29	0.47	0.29	0.12	0.00	0.35
12. Jackson	9	12	720	0.21	0.27	0.21	0.05	0.00	0.22
13. Heller	9	2	360	0.17	0.49	0.17	0.10	0.00	0.39
14. Nacson	9	12	720	0.06	0.17	0.05	0.02	0.01	0.15
15. deBary	10	3	180	0.12	0.13	0.11	0.00	0.01	0.13
16. deBary	12	3	180	0.14	0.19	0.10	0.03	0.04	0.16
Total		104	8340						

¹This study compared first grade with pre-school classes in which instructional and managerial comparisons were not appropriate.

gories. "Instructional" means any pupil behavior related to the on-going instructional activity in the classroom. "Managerial" means any pupil activity that involved classroom management, such as requests to leave the room, talking about noninstructional matters, misbehavior, *etc.* Table 1 shows teacher response (both approval and disapproval) to the instructional behaviors of pupils. Especially significant is the teacher approval rate for instructional behavior, which is higher than the teacher disapproval rate in every grade, even in Grade 9 if the pairs of rates within each observational study are examined carefully.

Table 1 also depicts teacher approval and disapproval rates for managerial behavior. It is apparent that teacher response over grade is predominantly approving of pupil instructional behavior, but predominantly disapproving of pupil managerial behavior. What may be of even more interest is the almost nonexistent rate of teacher approval for managerial behavior.

DISCUSSION

Assuming that teacher verbal approval and disapproval act as reinforcers, as appears to have been demonstrated in earlier studies, then the results of these observations suggest some potent relationships at work in the classroom: (1) pupils received more total teacher disapproval than total teacher approval over grade; (2) for instructional behavior alone, teacher approval rate was higher than teacher disapproval rate, a discrepancy that was particularly marked in the primary grades; (3) for managerial behavior alone, teacher disapproval far outweighed teacher approval. Teacher approval for managerial behavior was almost nonexistent. Pupils almost never heard a teacher say such things as: "How nice, you are on time!"; "I like the way you are sitting."; "You are behaving so well!".

Assuming that these samples of classroom behavior are reasonably representative, and that teacher approval is important in maintaining learning behaviors, it appears that teachers are

not fully utilizing a very important tool of reinforcement, except perhaps at the primary grades. After third or fourth grade, oral expressions of teacher approval decrease to a rate of one or two approvals for each 3 or 5 min of observation time.

These findings can be interpreted in several ways. The first interpretation is that teachers are using their oral reinforcers very efficiently. In the early grades, the pupil receives an initially higher rate of reinforcement, especially for instructional behavior. After the primary grades, teacher approval moves to a low-rate intermittent reinforcement schedule that maintains the learning behavior.

One argument can be advanced against this interpretation, however, on grounds that the drop in teacher approvals leads to a rate of reinforcement that is not optimal for maintaining (or increasing) learning behaviors. After the primary grades, the potent reinforcement may not come from the teacher primarily, but from home, peers, and self. A second argument lies in the preponderance of teacher disapproval over teacher approval. No well thought-out reinforcement system would deliberately set such rates if the objective is to increase or perhaps even to maintain learning behavior, unless, of course, teacher disapproval serves as a positive reinforcer, which is a possibility for certain pupils.

An alternate interpretation is that teacher approval starts out at an appropriately high rate as children start their formal schooling, but from about third grade, teachers dry up as a primary source of positive verbal reinforcement.

Why do teachers behave this way? Why do they not use approval more often, disapproval less often? The most reasonable hypothesis is that these observed rates are, in themselves, reinforcing to teachers. Disapprovals often terminate misbehavior immediately (although often temporarily) so that teachers are rewarded immediately in their role as classroom manager, even though their use of disapproval at these comparatively high rates is not likely to decrease inap-

propriate managerial behaviors in the long run. Giving approval for appropriate pupil instructional behaviors may not be particularly reinforcing for teachers, because the giving of approval does not result in any outcome that is obviously due to the immediate effectiveness of the teacher. If a pupil learns, he is, after all, doing what he is supposed to do because he wants to learn, or because he is well taught. Learning is largely a long-term affair, not the kind of behavior where a teacher teaches and instantly the pupil learns, except perhaps in first or second grade, which may account for the higher rates of teacher approval in those grades.

After first or second grade, a reinforcement interaction may develop in which (a) the pupil makes obvious progress more slowly, (b) and finds school learning less reinforcing than in the early grades, (c) so the teacher in turn finds her efforts less obviously rewarding, (d) so that both parties become mutually less reinforcing to each other.

These observational studies suggest certain hypotheses in need of testing:

1. Teachers find immediate disapproval of a managerial behavior more reinforcing for them as teachers than ignoring that behavior, or approving an alternate behavior.

2. A Law of Personal Effectiveness may be operating that would explain hypothesis one above, namely: teachers (and others) are highly rewarded by those behaviors of their own that have an immediate effect upon their environment.

3. Rates of approval and disapproval received by teachers from the school environment influence their emitted rates of approval and disapproval.

4. The slower the rate of demonstrated pupil learning, the lower will be the rate of teacher approval; the faster the rate of demonstrated pupil learning, the higher the rate of teacher approval.

5. Increasing the rates of teacher approval for instructional and for managerial behaviors in junior and senior high school will increase the

rate of learning and of appropriate behaviors in such students.

6. At the high-school level, student learning rates for social behaviors exceed the rates for academic behaviors. This is due to the higher rates of approval emitted by peers for social behaviors, as compared to the lower rates of teacher approval for instructional behaviors.

REFERENCES

- Becker, W. C., Madsen, C., Arnold, C., and Thomas, D. Contingent use of teacher attitudes and praise in reducing classroom behavior. *Journal of Special Education*, 1967, 1, 287-307.
- Beecher, R. *A comparison of teacher approval behaviors in prekindergarten, kindergarten, and first grade*. Unpublished doctoral dissertation, Teachers College, Columbia University, 1973.
- Duker, J. Informal communication, 1972.
- Gilchrist, E. The extent to which praise and reproof affect a pupil's work. *School and Society*, 1916, 4, 872-874.
- McAllister, L., Stachowiak, J., Baer, D., and Conderman, L. The application of operant conditioning techniques in a secondary school classroom. *Journal of Applied Behavioral Analysis*, 1969, 2, 277-285.
- Hanley, E. M. Review of research involving applied behavior analysis in the classroom. *Review of Educational Research*, 1970, 40, 597-625.
- Harris, F., Wolf, M., and Baer, D. Effects of adult social reinforcement on child behavior. *Young Children*, 1964, 20, 8-17.
- Heller, M. S. *Teacher approval and disapproval on ability grouping*. *Journal of Educational Psychology* (in press).
- Hughes, D. C. An experimental investigation of the effects of pupil responding and teacher reacting on pupil achievement. *American Educational Research Journal*, 1973, 10, 21-37.
- Kennedy, W. A. and Willcutt, H. C. Praise and blame as incentives. *Psychological Bulletin*, 1964, 62, 323-332.
- Madsen, C. H., Becker, W. C., and Thomas, D. R. Rules, praise, and ignoring elements of elementary classroom control. *Journal of Applied Behavioral Analysis*, 1968, 1, 1-12.
- Thomas, D., Becker, W., and Armstrong, M. Production and elimination of disruptive classroom behavior by systematically varying teachers' behavior. *Journal of Applied Behavioral Analysis*, 1968, 1, 35-45.
- Waters, V. *Rates of teacher verbal approval and disapproval for boys and girls*. Unpublished doctoral

- dissertation, Teachers College, Columbia University, 1973.
- White, M. A., Beecher, R., Heller, M., and Waters, V. *TAD: Teacher Approval and Disapproval Observation Record: Directions for use of TAD*. New York: Teachers College, Columbia University, 1973.
- Witmer, J., Bornstein, A., and Dunham, R. The effects of verbal approval and disapproval upon the performance of third- and fourth-grade children on four subtests of the WISC. *Journal of School Psychology*, 1971, **9**, 347-357.
- Zimmerman, E. H. and Zimmerman, T. The alteration of behavior in a special classroom situation. *Journal of Experimental Analysis of Behavior*, 1962, **5**, 59-60.

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