EXPANDING THE IMPACT OF BEHAVIORAL STAFF MANAGEMENT: A LARGE-SCALE, LONG-TERM APPLICATION IN SCHOOLS SERVING SEVERELY HANDICAPPED STUDENTS

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Experimental evaluations of behavioral staff management procedures usually have been limited to relatively small-scale demonstration studies. We evaluated a large-scale, long-term application of a staff management program designed to improve the functional utility of educational services for severely handicapped persons. The intervention, involving a brief in-service program followed by supervisory prompts and feedback, was implemented by three principals in four schools involving 21 classrooms. Implementation of the management procedures was consistently accompanied by increases in student involvement in functional educational tasks in each classroom. Further, the improved services continued throughout a 2-year follow-up period. Staff responses to a questionnaire indicated a high degree of staff acceptance of the management program. Results are discussed in terms of expanding the use of behavioral supervisory procedures from experimental demonstrations to actual adoption by existing human service agencies.

DESCRIPTORS: severely handicapped, staff management, maintenance, organizational behavior management

Since the early 1970s, the effectiveness of behavioral staff management procedures in human service settings has been documented repeatedly. Strategies for enhancing a wide range of staff work performances have been developed, focusing on such topics as staff training proficiency with clients (Page, Iwata, & Reid, 1982), administrative responsibilities (Repp & Deitz, 1979), and personal care of dependent clients (Iwata, Bailey, Brown, Foshee, & Alpern, 1976). Similarly, staff management programs have been applied in a variety of human service settings, including residential facilities (Dyer, Schwartz, & Luce, 1984), schools (Koegel, Russo, & Rincover, 1977) and community mental health centers (Elder et al., 1984).

Although progress has occurred in the use of behavioral staff management procedures, this area of research has received criticism (Reid & Whitman,

1983). One shortcoming that has been noted frequently is the restricted focus of investigations (Frederiksen, 1984; Mayhew, Enyart, & Cone, 1979). That is, with few exceptions (e.g., Dyer et al., 1984), behavioral management research has targeted only a small portion of an agency's staff (Christian, 1983) and typically has involved limited time periods (Kunz et al., 1982). In short, reports of behavioral interventions with staff performance generally have been restricted to small-scale demonstration projects (Frederiksen, 1984). Where larger scale applications have been reported, the experimental rigor with which the applications were evaluated has been limited (due in large part to practical reasons) such that conclusions regarding functional control must be qualified (Christian, 1983). Consequently, research is warranted to evaluate experimentally behavioral management procedures when applied comprehensively with a human service agency's staff over extended time periods. Such research should promote the incorporation of behavioral supervision procedures into routine practices by human service agencies.

The research reported herein evaluated a large-scale, long-term use of a behavioral staff management program. The investigation represents the lat-

est in a series of studies designed to improve the appropriateness of educational services provided to severely handicapped students. The line of research was initiated in response to professional criticism (Bates, Renzaglia, & Wehman, 1981; Brown et al., 1981) regarding the predominance of inappropriate, nonfunctional educational tasks in classrooms serving the severely handicapped—tasks that have no apparent utility for students in their routine living, work, and recreational environments (Brown et al., 1979).

Following the applied research strategy described by Stolz (1981) for the development (or application) of a behavior change technology, four studies were completed. First, a normative study was conducted involving 43 classrooms to document empirically the lack of purposeful educational tasks for severely handicapped students (Green, Reid, et al., 1986). Second, we demonstrated on a small scale the effectiveness of a staff management strategy for improving the functional utility of educational tasks provided in three classrooms (Reid et al., 1985). The second study also socially validated the criteria used to identify functional tasks. Third, the generality of the supervisory program was assessed by demonstrating its effectiveness in three other classrooms serving a different type of severely handicapped population (Green, Canipe, Way, & Reid, 1986). Finally, the current study was conducted on a much broader scale and involved four school programs to evaluate further the effectiveness, generality—and especially the large-scale applicability—of the supervisory program. The intent was to extend the behavioral management research by demonstrating that behavioral management procedures can be effective throughout an agency's staff population over an extended time period. Additionally, due to the lack of measurement of staff acceptance of behavioral management procedures in most staff investigations (Mawhinney, 1984), a staff acceptability measure was included.

METHOD

Setting and Participants

The study took place in three schools and in one classroom located in a residential living unit,

involving 39 education staff and 152 students. The students were severely handicapped using criteria of the U.S. Office of Education (Van Etten, Arkell, & Van Etten, 1980, chap. 1) and were primarily profoundly mentally retarded.

Five classrooms from School A were involved, which served 37 ambulatory students. There was one certified special education teacher in each classroom with one or two teacher's aides, and an average staff-to-student ratio of approximately 1:5. School A functioned under the direction of a principal (experimenter) who had a master's degree in special education and several months of on-the-job training in behavior analysis.

Nine classrooms in School B were involved, serving 52 ambulatory students. Each classroom typically included a teacher and an aide, or one or two aides (who were under the supervision of a certified teacher who was intermittently present). The ratio of staff to students was approximately 1:4. The principal (experimenter) had a master's degree in special education and 4 years experience in behavior analysis.

Six classrooms (46 students) from School C were included, each of which served the same types of students and was staffed in the same manner as School B. The principal of School B was also the principal of School C.

The classroom in the residential living unit served five nonambulatory, profoundly mentally and physically handicapped students and was staffed by two teacher's aides under the supervision of a certified teacher. The principal (experimenter) had a doctorate in educational administration and several months of on-the-job training in behavior analysis.

The school classrooms were selected because they represented the staff and student populations within the school programs. Classrooms were excluded if they had participated in the earlier demonstration studies or they experienced turnover among education staff or changes in student assignments across classrooms that prohibited an evaluation of the intervention.

Behavior Definitions

The behavior definitions have been described earlier (Reid et al., 1985). Two categories of stu-

dent performance were targeted: on-task and functional task involvement. *On-task* was defined as a student working independently on an assigned task, interacting with a staff person, or receiving an interaction from a staff member. Examples of on-task included a student being physically guided to wash his or her hands or listening to a teacher's instruction on how to operate a tape player. If a student was manipulating materials, the materials had to be used in the manner for which they were intended or as instructed by the staff member to be considered on-task.

Behaviors not included in the on-task category were *self-care activities* such as a student's nose being wiped by a staff member, *transition activities* such as movement between classrooms, and any activity involving an *interaction with volunteers* who were occasionally present. Student activities that were not on-task, self-care, or transition and did not involve a volunteer were considered off-task.

Behaviors recorded as on-task were further categorized as functional or nonfunctional, with each categorization involving two components: *materials* and *activities.* For materials to be considered functional, they had to be the same as those encountered in a student's nonclassroom environment or be used by nonhandicapped persons of the same age group as the student (e.g., elementary, high school) in a nonclassroom situation. The importance of using materials similar to those used in natural nonclassroom settings is shown by the problems severely handicapped people experience in applying learned skills across different stimulus situations (Reid et al., 1985). Therefore, functional materials for training a young man to zip his pants, for example, would be the zipper on his pants in contrast to a zipper on a busy box.

For classroom activities to be functional, they had to meet the criteria for one of the five following skill domains (see also Brown et al., 1979) in that (a) the activity would be likely to occur among a nonhandicapped population of the same age group as the student during leisure time (leisure domain); (b) the activity was part of a vocational task that, once mastered, would be a skill for which the student could be paid to perform in at least a partial

employment situation (vocational); (c) the activity was part of an interpersonal interaction that the student would perform, once mastered, at least weekly outside of the classroom, or it represented an interaction that would not be unusual for a nonhandicapped person of the same age group to perform weekly (communication/social); (d) the activity was part of an event that, once mastered, would be likely to occur among a nonhandicapped population of the same age group in a normal community setting outside of the home (community living); or (e) the activity would be performed by someone for the student outside of the classroom if the student did not perform the task for him or herself (domestic/self-help).

Using these definitions, teaching a severely retarded woman to put on her coat, for example, would be a functional activity in the self-help domain. On the other hand, teaching the woman to place a paper coat on a flannel board figure when the teacher asks "What do we wear?" would not meet the criteria of a functional activity (in this case the materials would also be nonfunctional). Similarly, teaching a profoundly retarded adolescent to put pegs in a pegboard would not be functional (the materials and activity would be nonfunctional), whereas teaching him how to activate a cassette recorder would be functional in the leisure domain (materials and activity would be functional). In short, for an educational task to be considered functional, the student had to be engaging in a *functional activity* and using *functional materials,* if materials were needed. Elaboration on the criteria (and validity) of functional teaching tasks is available elsewhere (Reid, Green, McCarn, Parsons, & Schepis, 1986).

Observation System

Observations were conducted by the experimenters, staff members, and a student intern. Observers were trained to an overall 80% criterion (see *Reliability*) using a written handout of the definitions, practice observations, and feedback from a senior experimenter. As a control against observer bias and drift, two observers were not trained until the study was approximately 50% completed and were not informed regarding which classrooms were

in baseline versus postintervention condition (Kazdin, 1977).

Upon entering a classroom, the observer identified the students following a left-to-right view of the classroom. Next, the observer monitored the behavior of the first student for 10 s. On-task was scored on a partial interval basis. Functional tasks were recorded only if on-task was scored *and* the functional criteria were met during the *entire* time the student was on-task. After the student's behavior was monitored once, the process was repeated for three consecutive 10-s intervals with that student. This same process was conducted across students until each student had been observed for at least four 10-s intervals up to a maximum of 88 intervals. Classroom staff were aware that observations would occur but very rarely knew in advance on which weeks or days the observations would take place, nor at what time the observations would be conducted.

The monitoring system just described was used before and after the staff management intervention. After all classrooms had participated in the intervention, the monitoring was altered for all classrooms in School A and the classroom in the living unit. The revised monitoring system differed from the original system in that students were observed one after the other in sequence every 15 s until a total of 20 samples had been collected in a classroom. The revised monitoring system required only approximately 5 min to complete per classroom. After the implementation of the revised monitoring system, the original monitoring system was used intermittently in four School A classrooms to evaluate whether the data obtained with the revised system was comparable to what was obtained with the original system.

Reliability

Reliability checks were conducted during 23% of all observations across 20 classrooms, with 59% of the checks occurring while classrooms were in the baseline phase and 41% in the intervention phase. Reliability was calculated on an interval-by-interval basis for overall, occurrence, and nonoccurrence agreement (Bailey & Bostow, 1979), using the formula of number of agreements divided by agreements plus disagreements and multiplied by 100. For on-task, reliability averaged 93% for overall (range, 68% to 100% across observations), 85% (39% to 100%) for occurrence, and 85% (33% to 100%) for nonoccurrence. Respective averages for functional educational tasks were 92% (68% to 100%), 70% (0% to 100%), and 89% (42% to 100%). The lower agreement percentage for occurrence of functional tasks was due to a low frequency of occurrence during baseline such that a small number of disagreements deflated the average.

Experimental Procedures

Baseline. During baseline, the educators conducted their usual classroom routines which typically involved implementing training programs according to each student's individual program plan. Individual and group instruction strategies were used and common student activities included putting pegs in pegboards, working with four-piece puzzles, stacking plastic circles on stack rings, and stringing toy beads. Prior to the observations, the classroom staff were informed that observations would be forthcoming as part of a project to improve school services. The educators were accustomed to observers and the principal entering the classrooms for purposes independent of this study.

Teacher in-service and supervision. The in-service and supervision program that previously had been effective on a small scale (Green, Canipe, Way, & Reid, 1986; Reid et al., 1985) was implemented in the four schools. The program consisted of three main components, beginning with an instructional in-service component in which the principal met with the staff in small groups to discuss the rationale for changing to a more functional curriculum. The definitions of functional tasks were discussed using a three-page handout (available from the authors) that included examples of functional and nonfunctional activities and materials. Then, using a participative management approach (Burgio, Whitman, & Reid, 1983), the principal encouraged the staff to determine how to increase functional activities and materials in their

classrooms using the handout as a guide (i.e., in contrast to the principal making the decisions). The principal asked the staff to work on new ideas and then jointly set a time for a follow-up meeting. During the second meeting, staff presented their ideas for new tasks and the principal gave approving or corrective feedback and then scheduled another meeting to review further the plans if needed. Once the tasks devised by the staff met the functional criteria, a target date for incorporating the new tasks into the classroom routine was established. Each of the in-service meetings required less than 1 hr.

The second component of the program, which began after the initial in-service meeting, was supervisory prompting. The principal visited the classroom unannounced at a variable frequency averaging approximately once per week and asked questions regarding the staff's plans for incorporating functional activities and materials into the classroom. The prompting interactions required only a few minutes to conduct. The prompting interactions also afforded the opportunity to implement the third component of the program—feedback. Verbal feedback was provided to staff by the principal during intermittent visits to the classroom and was based on the new tasks that the principal observed. The majority of the feedback was positive in nature although corrective feedback was also provided. Feedback sessions typically lasted only a few minutes and initially occurred weekly. After the first several weeks, the schedule for feedback was gradually faded to once every 3 to 4 weeks on the average.

Observations were discontinued during the in-service component and resumed after the target date for having the new tasks in place and after the supervisory prompts and feedback had begun. Initially, postintervention observations usually were taken within at least a few weeks of each other and then the time spans between successive observations were extended across months.

Because part of the program involved the use of more functional materials, classroom materials had to be replaced. For the most part, replacements were obtained from existing school supplies or from the institution where the students lived. For ex-

ample, if an educational task involved fine motor skills such as buttoning, a student's shirt may have been used to replace using buttons on a toy button board. Some new materials were also purchased through the existing school budget once the staff determined the materials they wanted. However, staff had the same access to purchasing materials throughout all phases of the study, and no increase in the budget was provided.

Acceptability Survey

A questionnaire (Green, Canipe, Way, & Reid, 1986) was used to assess acceptance among staff of the management practices used by the principals to change to functional tasks. The questionnaire, which also assessed acceptance of the focus on functional tasks, consisted of five questions with responses reported on a 5-point scale. The questionnaires were presented to a sample of staff ($N = 29$) attending a regularly scheduled meeting in the schools. Staff completed the questionnaires anonymously and returned the forms to the school offices.

Experimental Design

The experimental design consisted of a series of A-B systematic replications. Although an A-B design is a rather weak experimental design for demonstrating functional control of an intervention, a series of independent A-B designs, when considered in total, significantly strengthens a demonstration of functional control (Hersen & Barlow, 1977, chap. 9). In the current case, 21 independent A-B designs were conducted across classrooms.

RESULTS

Functional Task Involvement

Results of the training and supervision program in School A (Figure 1) indicated that during baseline, percentage of observations (intervals) of student on-task that involved functional educational tasks was low and variable across classrooms, averaging 36% (mean range, 8% to 66% across classrooms). Following implementation of the program, percentage of functional task involvement averaged
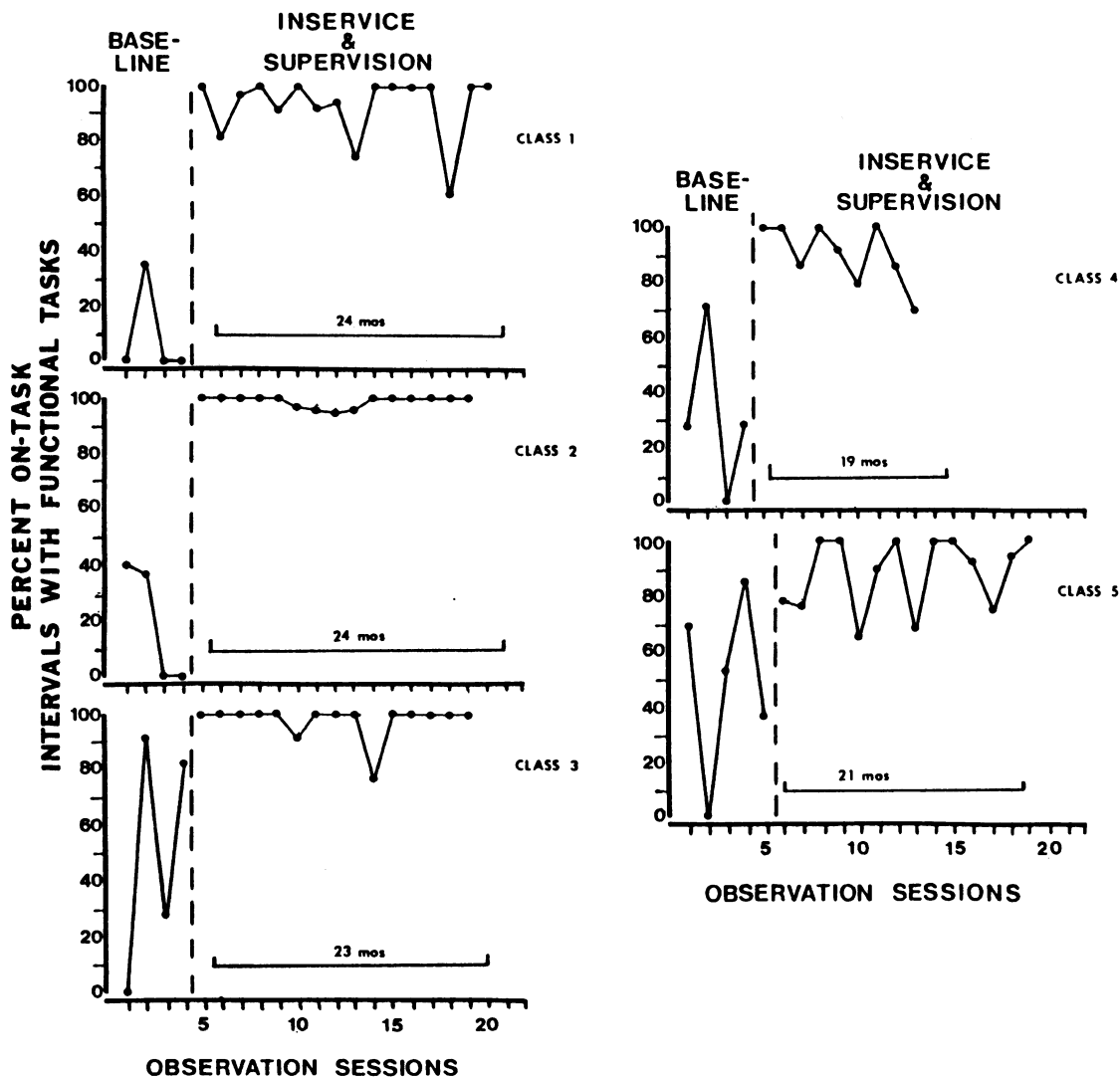
School A

Figure 1.   Percentage of observation intervals with on-task student behavior that involved functional educational tasks for each classroom during both experimental conditions in School A.

92% across classrooms (range, 84% to 97%). The increased involvement was maintained for each classroom for periods ranging from 19 to 24 months (although there was a slight decrease for Classroom 4).

Analysis of the results obtained with the revised observation system versus the regular monitoring system revealed essentially no differences in the data produced by the two systems. Across classrooms,

the mean level of functional task involvement differed less than 5% between the two observation formats.

Results for School B (Figure 2) were similar to results for School A in that implementation of the in-service and supervision program was accompanied by increases in student functional task involvement for all classrooms (although Classrooms 1, 3, 4, and 5 had a small number of observations
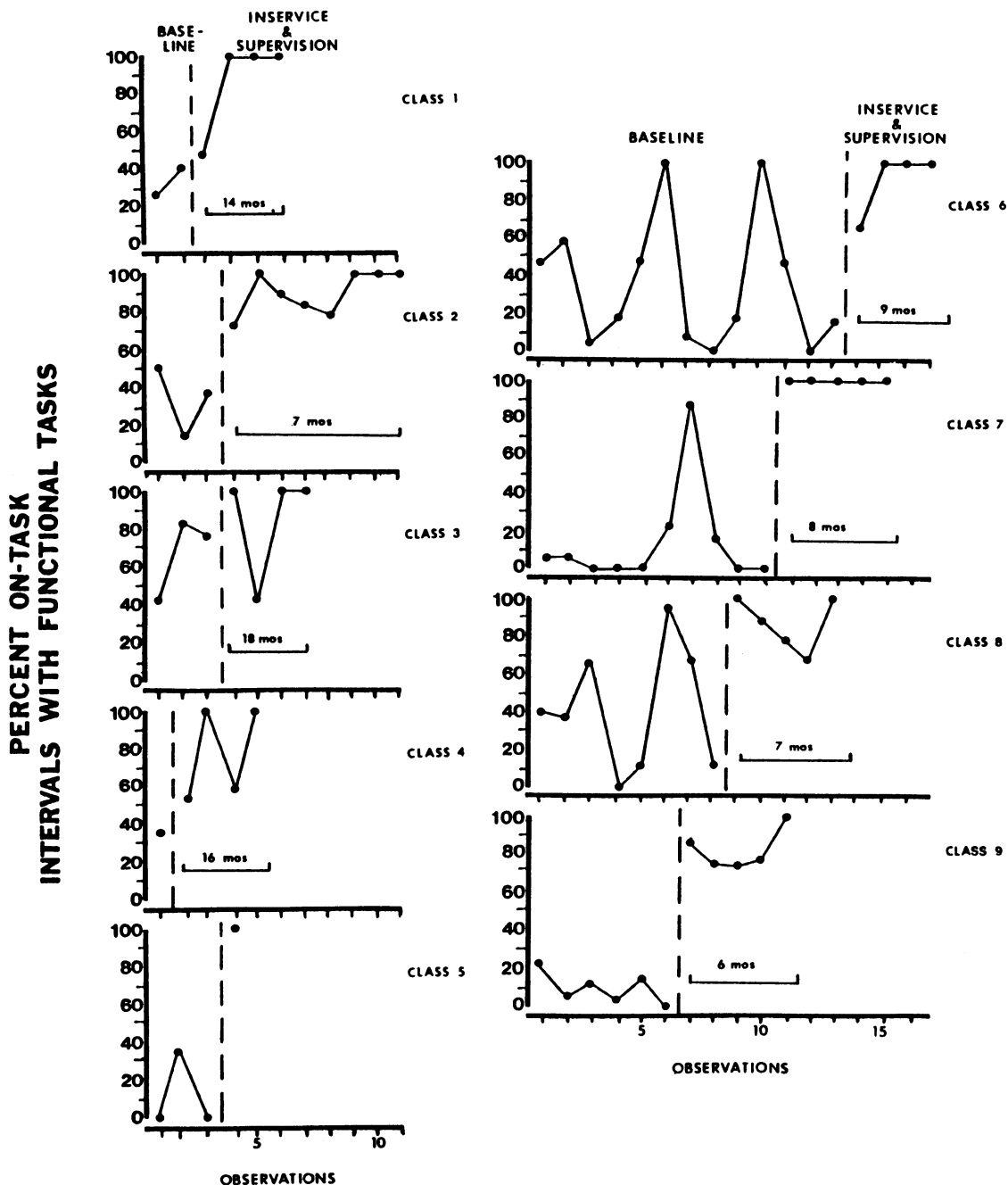
SCHOOL B

Figure 2. Percentage of observation intervals with on-task student behavior that involved functional educational tasks for each classroom during both experimental conditions in School B.

and/or variable data). The average level of functional task involvement was 35% during baseline (9% to 71%), and 89% (76% to 100%) following implementation of the program. Results also indicated that the increased levels were maintained across intervals of up to 18 months.

Results for School C (Figure 3) were consistent with results for Schools A and B in that increases in student involvement in functional tasks occurred in all classrooms following implementation of the program (although only one postintervention observation with Classroom 5 renders conclusions in this case more reserved). The average level of functional task involvement increased from 30% (9% to 68%) during baseline to 92% (78% to 100%) during the program, with the increases being maintained over a 22-month period.

Results for the classroom located in the residential living unit were similar to results for the classrooms in the three schools (Figure 3). Functional task involvement increased from an average of 30% during baseline to 99% after the management program was initiated, with no decrease across a 16-month period.

The increase in functional task involvement across classrooms was due to increases in both functional materials and functional activities. The use of functional materials increased 62% on the average across classrooms during postintervention relative to baseline, whereas the provision of functional activities (defined independently of the particular materials used) increased 52% on the average.

On-Task

The increased levels of functional task involvement during the intervention were not accompanied by decreases in student on-task behavior. For Schools A, B, and C and the classroom in the living unit, mean levels of on-task during baseline averaged 53%, 36%, 55%, and 40%, respectively, whereas during the intervention respective levels were 68%, 53%, 56%, and 62%.

Acceptability Survey

Given the focus of this investigation on the staff management strategy used, the question of primary interest on the acceptability survey (Table 1) is the third question. Responses to the third question indicated that staff were pleased with the management strategy relative to preexisting supervisory strategies used in the schools in that over 75% of the staff reported that the management approach was more acceptable to them than preexisting approaches and no staff member reported that the management strategy was less acceptable. Responses to other questions indicated that staff accepted the focus on functional tasks.

DISCUSSION

Results of this investigation indicate that a behavioral staff management program that heretofore had been effective on an experimental demonstration basis was similarly effective when applied on a comprehensive basis within the ongoing operation of an applied setting. The program was accompanied by increases in student functional task involvement in 21 classrooms involving four schools, and the effects were maintained across a 2-year period. Further, staff opinion of the management program was quite favorable. These results offer strong support for the utility of behavioral supervisory programs on a large-scale basis in existing applied settings.

The improved educational services were maintained throughout a number of typical sources of variance in school programs, including staff turnover, mastery of training goals by students, and the establishment of new training programs. These maintenance results are noteworthy in light of criticism that research on behavioral interventions with staff has been short-term. Of course, because of the multicomponent format of the in-service and supervision program, it cannot be determined what accounted for the maintenance results. However, one factor that may have been important was that the regular staff supervisors (principals) were the behavior change agents who conducted the program. Hence, once the program was initiated by the supervisor, the supervisor then represented a naturally present prompt to the staff as well as a readily available source of feedback. In this regard, although the principal for Schools B and C had
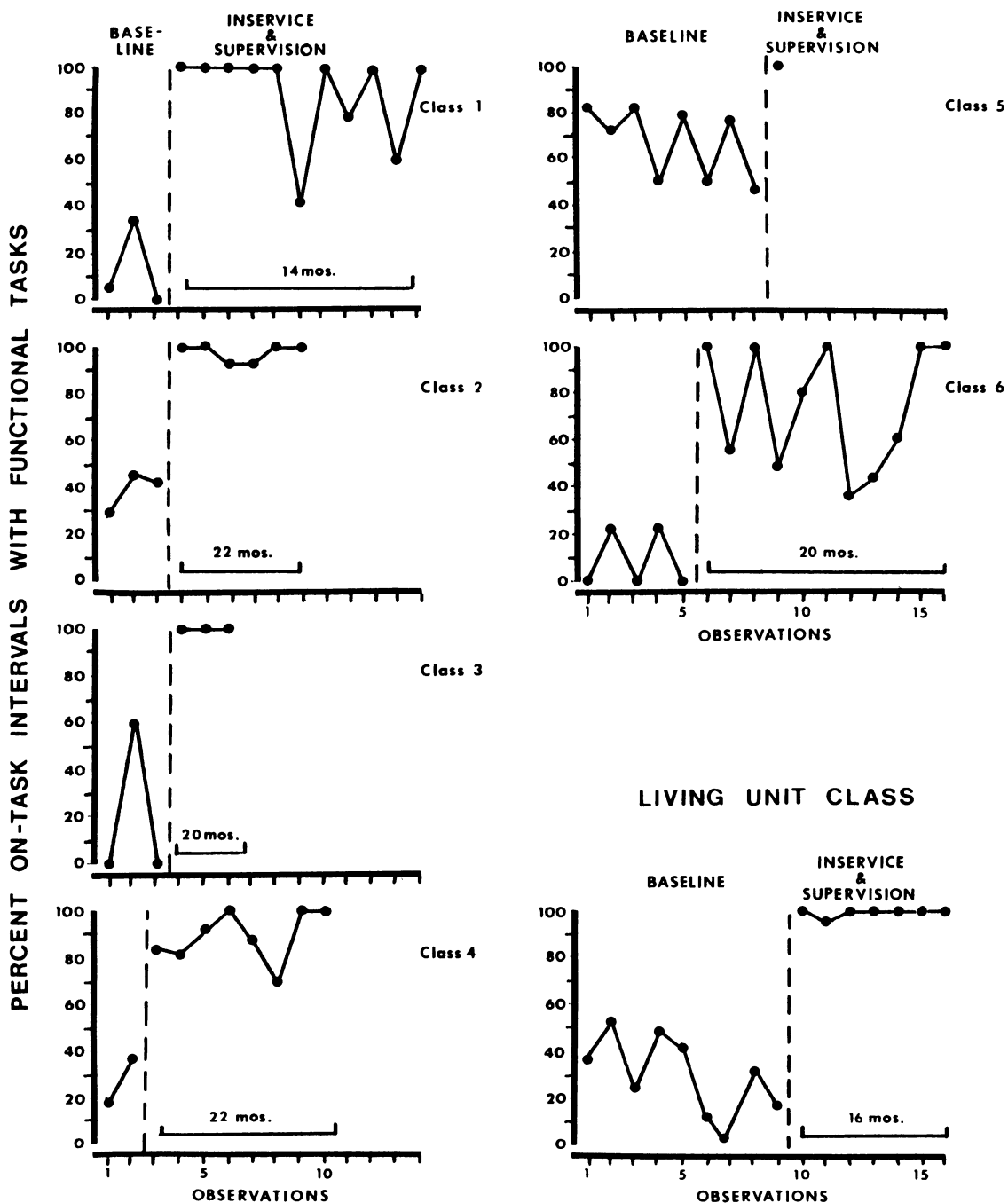
SCHOOL C

Figure 3.   Percentage of observation intervals with on-task student behavior that involved functional educational tasks for each classroom during both experimental conditions in School C and the classroom in the residential living unit.

Table 1
Distribution of Staff Responses to Acceptability Questionnaire

			4	7	18
Working with your students with the new functional materials is *more* or *less* preferable to using the previous, traditional materials?	considerably less preferable	somewhat less preferable	equal preference	somewhat more preferable	considerably more preferable
		2	5	15	7
How much input do you have in the determination of what functional activities to implement with your students?	no input	a little input	a moderate amount of input	a considerable amount of input	a large amount of input
			6	10	13
The manner in which your supervisor went about making the changes in functional activities was *more* or *less* acceptable to you than the manner in which other changes have occurred at the facility?	considerably less acceptable	somewhat less acceptable	equal acceptability	somewhat more acceptable	considerably more acceptable
11	6	7	4	1	
The change to functional activities has made your job *more* or *less* difficult?	considerably less difficult	somewhat less difficult	equal difficulty (as before)	somewhat more difficult	considerably more difficult
			1	12	16
The functional activities are *more* or *less* beneficial to your students than previous activities?	considerably less beneficial	somewhat less beneficial	equal benefit	somewhat more beneficial	considerably more beneficial

extensive experience in behavior analysis prior to this project, the other two principals had minimal or no background in behavior analysis before participating in this line of research. The latter principals easily acquired the prompting and feedback skills necessary to implement the program, which again attests to the applicability of behavioral management procedures. Overall, the results suggest that a useful approach for making large-scale changes in an agency is to work closely with a senior-level manager and help this manager implement behavior change procedures with staff, although more research is warranted to make definitive conclusions regarding the role of the manager versus other components of the current program (e.g., the participative management feature).

Due to the large number of intervention sites, a detailed monitoring of the precision with which the intervention was applied was beyond the available resources for the project. Consequently, it cannot be concluded that some drift from the intended intervention application did not occur (cf. Peterson, Homer, & Wonderlich, 1982). However, each of the three school principals was involved in at least one of the previous, smaller scale evaluations of the in-service and supervision program (Green, Canipe, Way, & Reid, 1986; Reid et al., 1985) in which the intervention application was monitored carefully, and each principal was thoroughly familiar with the intervention procedures. This familiarity as well as their awareness of the importance of applying the prescribed procedures should have en-

hanced compliance with the intended experimental intervention. Nevertheless, we expect that as procedural applications are extended from tightly controlled demonstration studies to large-scale applications, some loosening of procedural rigor will occur. Research would be useful to determine the extent to which procedural variation can occur without seriously detracting from an intervention's effectiveness.

As in many studies that rely on human observation, the possibility of reactivity to the overt observations existed in that the classroom staff may have changed what they were doing only while being observed (especially when the staff knew what the observers were looking for after the intervention). In the current study, reactivity could have occurred because school principals (i.e., staff supervisors) conducted some of the observations and because observations were relatively unusual events with long time spans between successive observations. However, a number of features would argue against reactivity in this case. First, most observations were conducted by nonsupervisory personnel. Second, the classroom staff were accustomed to various persons entering the classroom for a variety of observation purposes. Third, and most importantly, staff were unaware for the most part (and particularly during the postintervention period) on which weeks, days, or times of the day that observations would occur. Given the nature of the changes in teaching activities and materials observed from baseline to postintervention (see examples of functional versus nonfunctional tasks under *Methods*), it would have been almost impossible for staff to change from nonfunctional to functional teaching activities and materials immediately upon the entrance of an observer into a classroom.

Although the focus here was on the evaluation of a large-scale, long-term management program, the results also seem relevant from an educational perspective. That is, normative data (Green, Reid, et al., 1986) and professional opinion (Bates et al., 1981) indicate that there is pervasive use of nonfunctional tasks in school programs for severely handicapped students. The results obtained here across 21 classrooms suggest that more purposeful

tasks can indeed be provided and maintained and subsequently, a more appropriate educational program is obtainable for the severely handicapped.

REFERENCES

Bailey, J. S., & Bostow, D. E. (1979). *Research methods in applied behavior analysis.* Tallahassee, FL: Copy Grafix.

Bates, P., Renzaglia, A., & Wehman, P. (1981). Characteristics of an appropriate education for severely and profoundly handicapped students. *Education and Training of the Mentally Retarded, 16,* 142–149.

Brown, L., Branston, M. B., Hamre-Nietupski, S., Pumpian, I., Certo, N., & Gruenewald, L. (1979). A strategy for developing chronological-age-appropriate and functional curricular content for severely handicapped adolescents and young adults. *Journal of Special Education, 13,* 81–90.

Brown, L., Pumpian, I., Baumgart, D., Vandeventer, P., Ford, A., Nisbet, J., Schroeder, J., & Gruenewald, L. (1981). Longitudinal transition plans in programs for severely handicapped students. *Exceptional Children, 47,* 624–630.

Burgio, L. D., Whitman, T. L., & Reid, D. H. (1983). A participative management approach for improving direct-care staff performance in an institutional setting. *Journal of Applied Behavior Analysis, 16,* 37–53.

Christian, W. P. (1983). A case study in the programming and maintenance of institutional change. *Journal of Organizational Behavior Management, 5,* 99–153.

Dyer, K., Schwartz, I. S., & Luce, S. C. (1984). A supervision program for increasing functional activities for severely handicapped students in a residential setting. *Journal of Applied Behavior Analysis, 17,* 249–259.

Elder, J. P., Sundstrom, P., Brezinski, W., Waldeck, J. P., Calpin, J. P., & Boggs, S. R. (1984). An organizational behavior management approach to quality assurance in a community mental health center. *Journal of Organizational Behavior Management, 3,* 19–35.

Frederiksen, L. W. (1984). Discussion—"If it's not implemented, it can't work." *Journal of Organizational Behavior Management, 6,* 45–52.

Green, C. W., Canipe, V. S., Way, P. J., & Reid, D. H. (1986). Improving the functional utility and effectiveness of classroom services for students with profound multiple handicaps. *The Journal of the Association for Persons with Severe Handicaps, 11,* 162–170.

Green, C. W., Reid, D. H., McCarn, J. E., Schepis, M. M., Phillips, J. F., & Parsons, M. B. (1986). Naturalistic observations of classrooms serving severely handicapped persons: Establishing evaluative norms. *Applied Research in Mental Retardation, 7,* 37–50.

Hersen, M., & Barlow, D. H. (1977). *Single case experimental designs: Strategies for studying behavior change.* New York: Pergamon.

Iwata, B. A., Bailey, J. S., Brown, K. M., Foshee, T. J., & Alpern, M. (1976). A performance-based lottery to

improve residential care and training by institutional staff. *Journal of Applied Behavior Analysis, 9,* 417–431.

Kazdin, A. E. (1977). Artifact, bias, and complexity of assessment: The ABCs of reliability. *Journal of Applied Behavior Analysis, 10,* 141–150.

Koegel, R. L., Russo, D. C., & Rincover, A. (1977). Assessing and training teachers in the generalized use of behavior modification with autistic children. *Journal of Applied Behavior Analysis, 10,* 197–205.

Kunz, G. G. R., Lutzker, J. R., Cuvo, A. J., Eddleman, J., Lutzker, S. Z., Megson, D., & Gulley, B. (1982). Evaluating strategies to improve careprovider performance on health and developmental tasks in an infant care facility. *Journal of Applied Behavior Analysis, 15,* 521–531.

Mawhinney, T. C. (1984). Philosophical and ethical aspects of organizational management: Some evaluative feedback. *Journal of Organizational Behavior Management, 6,* 5–31.

Mayhew, G. L., Enyart, P., & Cone, J. D. (1979). Approaches to employee management: Policies and preferences. *Journal of Organizational Behavior Management, 2,* 103–111.

Page, T. J., Iwata, B. A., & Reid, D. H. (1982). Pyramidal training: A large-scale application with institutional staff. *Journal of Applied Behavior Analysis, 15,* 335–351.

Peterson, L., Homer, A. L., & Wonderlich, S. A. (1982). The integrity of independent variables in behavior analysis. *Journal of Applied Behavior Analysis, 15,* 477–492.

Reid, D. H., Green, C. W., McCarn, J. E., Parsons, M. B., & Schepis, M. M. (1986). *Purposeful training with severely handicapped persons: A trainer's guidebook.* Morganton, NC: Western Carolina Center.

Reid, D. H., Parsons, M. B., McCarn, J. M., Green, C. W., Phillips, J. F., & Schepis, M. M. (1985). Providing a more appropriate education for severely handicapped persons: Increasing and validating functional classroom tasks. *Journal of Applied Behavior Analysis, 18,* 289–301.

Reid, D. H., & Whitman, T. L. (1983). Behavioral staff management in institutions: A critical review of effectiveness and acceptability. *Analysis and Intervention in Developmental Disabilities, 3,* 131–149.

Repp, A. C., & Deitz, D. E. D. (1979). Improving administrative-related staff behaviors at a state institution. *Mental Retardation, 17,* 185–192.

Stolz, S. B. (1981). Adoption of innovations from applied behavioral research: "Does anybody care?" *Journal of Applied Behavior Analysis, 14,* 491–505.

Van Etten, G., Arkell, C., & Van Etten, C. (1980). *The severely and profoundly handicapped: Programs, methods, and materials.* St. Louis: C. V. Mosby.