Using Active Supervision and Precorrection to Improve Transition Behaviors in an Elementary School

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Schools often identify settings in which transitions occur, such as hallways and cafeteria, as major problem behavior areas. School psychologists may be called on to assist in bringing problem behaviors during transitions under control as a consulting resource for general education, or as a form of behavioral support for students with behavior problems in special education. This study was designed to investigate the effect of a school-wide intervention plan, consisting of precorrection and active supervision strategies, on the social behavior of elementary students in major transition settings. Three transition settings were targeted in an elementary school: (a) entering the school building, (b) moving to the cafeteria for lunch, and (c) exiting the school building. A multiple baseline design across the three transition settings was used. An analysis of baseline data indicated high rates of student problem behavior, especially running, hitting, and yelling, and low rates of precorrection and active supervision behaviors by staff. Results showed increases in precorrection and active supervision behaviors by staff with concomitant, substantial reductions in student problem behavior. Details of the methodology and results, and practical implications and directions for future research are described and discussed.

The need for school psychologists to assist in the development and evaluation of school-wide behavior support systems is derived from two concerns. First, consistent with their traditional role as consulting resources for special educators, school psychologists consult with educators regarding the behavioral supports necessary to improve the participation of students with social, emotional, or behavioral

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problems in the events and activities of the school. Thus, by changing the contexts that occasion problem behavior, school-wide behavior support systems can assist in maintaining students with special needs in general education settings and preventing special education referral (e.g., Fuchs, Fuchs, Harris, & Roberts, 1996; Morrison, Furlong, & Morrison, 1994). Second, with the increasing emphasis on school reform to improve the educational and social performance of children (e.g., Knoff & Batsche, 1995; Shinn & McConnell, 1994), administrators and general education teachers are more likely to request assistance in managing problem behaviors for all students (e.g., Stephens, 1994). To provide and direct this assistance, school psychologists need simple and efficient skills and procedures to provide school-wide behavior support, especially when the need to assess and manage problem behaviors is increasing and the available resources for both general and special education are diminishing.

In the context of a call for improved outcomes and an increase in requests for assistance, school psychologists are being asked increasingly to expand their role in assisting general and special educators. For example, in a report on psychology’s role in reforming America’s schools, the APA Center for Psychology in Schools and Education (1995) stated that, “In collaboration with educators and other concerned groups and individuals, psychologists are working to build a nation of learners and productive citizens for the twenty-first century and enhancing opportunities for students and school staff to thrive in the spirit of America’s evolving education reform” (p. 1).

Gallup polls of community concerns have always ranked problem behavior as one of the major challenges facing public schools (Elam, Rose, & Gallup 1996). The situation is accentuated by alarming increases in violence in communities and schools (Biglan, 1995; Mayer, 1995; Walker, Colvin, & Ramsey, 1995; Walker, et al., 1996). For their part, public schools must become much more proactive and assertive in their efforts to address and prevent these rises in antisocial behavior. These efforts must begin with the development and implementation of effective school-wide discipline or management plans, which serve as the foundation for positive school climate, high academic achievement, and efficient staff communication and collaboration (Colvin, Kameenui, & Sugai, 1993; Sprick, Sprick, & Garrison, 1993). In addition, classroom teachers must have strategies enabling them to prevent and control behavior so that teaching and learning can continue without disruptions or distractions.

In developing school-wide behavior support systems, non-classroom settings are a key area of consideration. About 50% of the problem behaviors reported to the school office for action originate from non-classroom settings, such as cafeterias, hallways, buses, and playgrounds (Taylor-Greene, et al., 1997; Nelson & Colvin, 1996; Nelson, Smith, & Colvin, 1995). In non-classroom settings, supervision (rather than instruction) is emphasized, activities are less structured, and independence or self-managed behaviors are expected. Educators are becoming more concerned about problem behaviors that occur in these non-class-
room settings because of the severity of the problems and because the problem behaviors are often carried into the classroom from the outside. Thus, educators must include non-classroom settings when addressing school-wide discipline or behavior support systems (Sugai & Horner, 1994; 1996; Taylor-Greene, et al., 1997). Non-classroom settings include, for example, common areas like hallways (Nelson & Colvin, 1995), recess and playgrounds (Nelson, Smith, & Colvin, 1995), and buses (Sprick & Colvin, 1992).

In particular, transitions may set the occasion for problem behavior in many schools. Transition problem behaviors are observed as teachers and students move from one activity or place to another, for example, from recess to the classroom, from the classroom to the music room, from physical education in the gym to lunch in the cafeteria, or from inside to outside the building. Students and teachers frequently have difficulties making transitions, in part because physical features, staff supervision routines, student and teacher routines, and behavioral expectations differ across settings. Unless appropriate transition behaviors have been directly taught and firmly established, these setting differences can occasion problem behavior. Transitions are especially important because of the severity of problem behaviors that occur. For example, principals report that serious problem behavior, such as fighting, harassment, theft, and vandalism often arise during transitions and students indicate feeling intimidated and unsafe when transitions are unsupervised (Taylor-Greene, et al., 1997; Nelson & Colvin, 1996; Nelson, Smith, & Colvin, 1995). Transitions also are important because of the impact of transition behavior on instructional time. For example, teachers report that students require more non-instructional time to get settled at the beginning of class when physical excesses (e.g., running, pushing, screaming, and horseplay) are exhibited during transitions (Colvin et al., 1996);

The purpose of this study was to examine the effects of two school-wide strategies, active supervision and precorrection, on the problem behavior of elementary students during three problematic transition settings and to examine the implications of the results for school psychologists as a consultant resource in general education. "Active supervision" is defined as specific and overt behaviors (scanning, escorting, interacting) displayed by supervisors designed to prevent problem behavior and to promote rule-following behavior. A "precorrection" is defined as an antecedent instructional event designed to prevent the occurrence of predictable problem behavior and to facilitate the occurrence of more appropriate replacement behavior (Colvin & Sugai, 1988; Colvin, Sugai, & Patching, 1993). Precorrections consist of verbal reminders, behavioral rehearsals, or demonstrations of rule-following or socially appropriate behaviors that are presented in or before settings where problem behavior is likely. For example, if students predictably enter the classroom from recess shouting at each other and running into the classroom, a precorrection might consist of a brief role play of walking into class and using a quiet voice before the students begin recess. This study examined the effects of precorrection and active supervision on the problem behavior of students...
in an elementary school during three transitions: (a) coming into the school building at the start of the school day, (b) leaving class and going to the cafeteria, and (c) leaving class and exiting the building at the end of the school day.

**METHOD**

**Subjects and Setting**

This study was conducted in a rural/suburban community on the outskirts of a city of 125,000 in a Pacific Northwest state. The neighborhood was characterized as working class by school personnel. The participating school was one of five elementary schools in a district having a total enrollment of approximately 4500 students. The school was comprised of 475 students (kindergarten through fifth grade) and 42 staff members (24 certified, 18 classified, one principal). Thirty-three percent of the students qualified for free lunches and forty-four percent qualified for a reduced-fee lunch. All students in the school participated in this study.

The school building was designed so that all classroom entrances opened into a common courtyard area within the school yard. Students entered the school building through a single entrance, entered the common area, and proceeded to their classrooms. Within this arrangement, three specific transitions in the school building were targeted by staff as having high rates of problem behavior.

**Transition 1 (Entering the Building at the Beginning of the Day).** At the beginning of the school day, the majority of the students used the front entrance to enter the school building. They proceeded through the front entrance, crossed a courtyard, and continued to their respective classrooms. The first problem setting was defined by the courtyard area, which was demarcated by the doors at the building entrance, cafeteria doors, and hallway entrance. Observations were conducted in the courtyard area for five minutes in the morning (8:35 a.m.–8:40 a.m.).

**Transition 2 (Classroom to Cafeteria).** The second problem area involved the transition made by students from classrooms, through the courtyard, and to the cafeteria. The setting was defined by two doors located at the entrance to the cafeteria and four classroom doors leading to the courtyard. Observations were conducted in this courtyard area for five minutes at lunch (11:57 a.m.–12:02 p.m.).

**Transition 3 (Exiting the Building at the End of the Day).** The third problem area involved the transition made by students from classrooms, through the courtyard, and to the building exit doors. The transition area was bounded by the hallway exits, cafeteria, and building exit. Observations were conducted in this courtyard area for five minutes at the end of the school day (2:47 p.m.–2:52 p.m.).

**Independent Variable**

After baseline data were collected for each of the three transitions, supervisory staff members were trained to use precorrection strategies and to increase their use of
active supervision strategies across the three problem transition settings in a
time-lagged manner. All procedures were developed, implemented, and facilitated
by a school-wide discipline team, which included the principal, grade-level represen-
tatives, and support staff representatives. Led by the team, all staff members
initially identified the major problem behaviors exhibited by students in each of
the three problem transition settings. Examples of problem behaviors included
running, pushing, hitting, yelling, screaming, and crossing prohibited areas (e.g.,
gardens and shrubbery areas). Next, all staff identified those behaviors that students
should display instead of the problem behaviors, that is, expected or replacement
behaviors. Three common expected behaviors were listed for all three transition
areas: (a) walk, (b) keep hands and feet to self, and (c) use a quiet voice.

After problem and expected behaviors were identified, the school-wide disci-
pline team trained all supervising staff and all teaching staff in ways to increase
their active supervision and use of precorrections.

Active Supervision. Supervisory staff were trained in the critical features of
reminders and active supervision during one 15-minute meeting with the supervi-
sors of the target areas and in one 10-minute segment of a faculty meeting with all
school staff. At the staff meeting, a rationale for using reminders was provided. In
addition, examples of reminders were presented, such as: “Ok, everyone, I want
you to remember our three rules for going to lunch: walk, keep your hands and feet
to self, and use a quiet voice.” Staff were also provided role plays to demonstrate
what active supervision looked like. The trainer modeled each active supervision
component (i.e., moving around, looking around, talking with students). Role plays
followed modeling to show positive and negative examples for each active supervi-
sion component. For instance, two supervisors moved continuously around an
area of the room in which training was conducted. In contrast, one supervisor sat
down and chatted at length with another supervisor. In addition, examples of
interactions were provided (e.g., greeting students, smiling, waving to them,
commenting on their good behavior or clothes).

During the course of the study the team also provided brief (3–5 minutes)
reminders about active supervision behaviors at each staff meeting (twice a month).
Training pinpointed the three supervisor behaviors that define active supervision,
specifically:

1. Move around. Physically vary your positions and avoid standing in one
   place.
2. Look around. Scan all areas, especially distant areas.
3. Interact with the students. Provide greetings, chat briefly with the students,
   provide gestural signals, comment on items of interest, and inform students
   when they are violating rules of expected behavior, provide praise for
   following the rules. Avoid lengthy or sustained conversations with individual
   students. If students violate rules, state the rule that has been broken, and
   send the student back to the starting point for the transition to start again.
Precautions. All teaching staff and transition area supervisors also received training from the school-wide discipline team on reminding students of desired behavior before entering the problem transition settings. These reminders were called "precautions." Specifically, all staff were asked to remind students to walk, keep hands and feet to self, and use a quiet voice, just before they entered the transition areas.

Procedure. In Transition 1, three paraprofessionals were involved in supervising students as they entered the school building. The paraprofessional who opened the doors to let the students into the building was asked to remind students of the three rules after they had lined up at the front doors of the building and before they were allowed to enter the school.

In Transition 2, four classroom teachers who escorted their students to the cafeteria were asked to remind their students of the three rules just before they exited the classroom to proceed to the cafeteria. In addition, for the first week and on an intermittent basis for the next two weeks, the principal made the following announcement over the public address system, "Excuse me teachers. I wish to ask you to remind the students of the three rules in going to the cafeteria." This announcement by the principal was a component of the precaution plan for Transition 2.

In Transition 3, on a daily basis for the first week and then two to three times weekly, the principal made the following announcement over the public address system, "Excuse me teachers. I wish to ask you to remind the students of the three rules in leaving the school." No staff member was assigned to supervise students in the courtyard at the close of the school day. The principal was present in this area approximately one in five times.

Measures

Three major types of data were collected in this study: (a) setting characteristics, (b) supervisor behavior, and (c) student behavior. An experienced observer was situated in each transition area so problem behavior could be heard and seen clearly.

Setting Characteristics. Throughout the study, the number of designated supervisory staff who were present during the five-minute observation interval occasionally varied for each of the three target transition settings. At times supervisors were absent, and on some occasions additional staff members were present. The number of supervisor staff present was recorded to examine its effect on the number of problem behaviors in the transition. The number of students present during the five minute sample also varied, so estimates of the number of students present during the transition were made. Observers indicated one of the following as best representing the number of students present during the five minute sample: 1-10, 11-20, 21-30, 31-40, and 41+. These estimates were collected to control for the effect of the number of students making a particular transition on the problem behaviors displayed.
Supervisor Measures. To determine the extent to which supervisors were actively supervising student behavior in transition areas, three supervisor behaviors were directly observed and recorded. Escorting was defined as whether the staff person physically accompanied students over the entire length of the transition area. Escorting was coded as either occurring or not occurring. Scanning was marked as occurring or not occurring during the five-minute sample if the supervisor turned his or her head to look over the length of the area to be supervised. Interacting was defined as talking to a student or engaging a student nonverbally (e.g., smiling, signaling, prompting). An interaction was tallied each time a supervisor had an interaction with an individual student, regardless of the length of the interaction.

Student Measures. The primary dependent variable for this study was the frequency of student problem behaviors. Problem behavior was defined as any event in which a student was observed running, pushing, shouting, sliding, throwing, and/or displaying other rule violation behaviors. Running was defined as any time a student was seen taking at least three steps in which both feet were off the ground at the same time. Pushing was defined as any time a student made physical and forceful contact with another student. In contrast, a touch was not forceful and did not cause the person being touched to be unbalanced or moved. Shouting was defined as any event in which one student’s voice could be heard clearly above the normal noise coming from the other students present in the transition area. Sliding was defined as any time a student was seen up on the handrails of the steps and moving down. Throwing was defined as any time a student picked up and tossed dirt, stones, or other objects at other students. Finally, other was tallied if any inappropriate rule-violating behavior not listed in the previous behavior categories was observed, for example, riding a bicycle in the courtyard, walking in the flowerbeds.

Reliability. Reliability measures were taken on at least one third of all observation opportunities and was calculated using the formula, 100 × agreements + agreements + disagreements. A second observer collected observational data from a location that provided the same visual access as the primary observer. The average overall percent agreement across all settings and measures was 88% with a range of 76% to 96% agreement. Most disagreements occurred on the “shouting” measure. Given the high level of ambient noise present during the transitions, shouting was defined as an individual voice level that could be heard anywhere in or across the courtyard.

Design

A multiple baseline design across the three target transition settings (entering the building, classrooms to cafeteria, exiting the building) was used to evaluate the effects of the active supervision and precorrection intervention on the occurrence of student problem behavior (Gast & Tawney, 1984). This design relies on the repeated measurement of targeted behaviors and the controlled replication of effects across baselines to support statements about possible functional relationships between the independent and dependent variables (Johnston & Pennypacker, 1980; Tawney & Gast, 1984). Because many of the same children would be
exposed to the intervention, a multiple baseline design was selected to monitor for possible carryover effects across transition effects. After intervention was introduced in the first setting, subsequent introduction of the intervention in the remaining transition settings was initiated once stable data patterns were observed.

Data Analysis

Within the multiple baseline design, three levels of analyses were conducted. In the first level of analysis, standard visual analysis procedures were applied to the data patterns displayed in the multiple baseline design. In general, changes in variability, level, and trend within and between phases (baseline and intervention) were examined. In the second level of data analysis, Pearson product-moment correlations were calculated to make probability statements about the relationship between the number of supervisor interactions with students, and the frequency of problem behavior exhibited by students during transitions. In the third level of analysis, a hierarchical linear modeling procedure was used to evaluate the relative contributions of active supervision and precorrection in reducing the incidence of problem behavior in school transitions. Active supervision was introduced and examined before precorrections because direct observation data were collected on active supervision behaviors displayed by supervisors. Because staff could provide precorrections at multiple and varied opportunities (e.g., before transitions, during class time, before/after school), systematic direct observations were not possible. Thus, the use of precorrections by staff could not be assessed reliably.

RESULTS

The purpose of this study was to examine the effects of active supervision and precorrection on the transition behavior of students in an elementary school during three transitions: (a) coming into the school building at the start of the school day, (b) leaving class and going to the cafeteria, and (c) leaving class and exiting the building at the end of the school day. A multiple baseline design across these three transition areas was used to evaluate the effects of active supervision and precorrection on problem behavior.

Visual Analysis

The graph in Figure 1 displays the effect of systematically staggering the introduction of the intervention package in each setting on the frequency of problem behavior. In general, data patterns during baseline phases indicated relatively high levels of problem behavior in all three settings. In the entering school transition, problem behaviors averaged 40 incidents per session (i.e., about 8 problem behaviors per minute). In the classroom to cafeteria and exiting school transitions, problem behavior averaged 25 and 23 incidents per session, respectively. During baseline, a slightly increasing trend in problem behavior in Transition 1, a variable but overall stable trend in Transition 2, and a slight decreasing trend in Transition 3 were observed.
Following staggered implementation of the active supervision and precorrection intervention, clear level changes in problem behavior were observed in all settings. On average, 8 problem behavior incidents in Transition 1, 12 in Transition 2, and 11 in Transition 3 were observed. Observation of these level changes when and only when the intervention was introduced in individual transition settings supports a possible functional relationship between student problem behavior, transition setting, and intervention package.

Pearson Product-Moment Correlation Analysis

A Pearson product-moment correlation was calculated for the number of interactions between the supervisors and students and the frequency of problem behavior exhibited by the students in Transition 1. A significant correlation of -.83 was found, which indicates a strong inverse relation between the two measures, $p < .05$. 
In effect, the more times supervisors interacted with students, the fewer problem behaviors students exhibited. A visual display of this relationship is presented in Figure 2. Although the effect is not as pronounced, the same relationship is evident in Transition 2 data patterns. Given that a supervisor was not present on most occasions, the results in Transition 3 are inconclusive.

The means and standard deviations of the setting variables, number of students and number of staff, are reported in Table 1. The number of students observed in the transitions was fairly constant, displaying no variability in 3 of the 6 transition-by-phase conditions. In all conditions, the mean rating for number of students was between 4.6 and 5, indicating that in most conditions more than 30 students were present. The number of staff members present differed across the transitions. In Transition 1 and 2, the number of staff present did not differ significantly (means of 2.6 and 3.0, respectively), but significantly fewer staff members were present for Transition 3, (exiting school) (mean = 0.74, p < .05). No significant phase or
<table>
<thead>
<tr>
<th>Variable</th>
<th>Entering school</th>
<th>Cafeteria</th>
<th>Exiting School</th>
<th>Transition</th>
<th>Phase</th>
<th>Transition*Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline (n = 8)</td>
<td>Interv. (n = 12)</td>
<td>Baseline (n = 13)</td>
<td>Interv. (n = 8)</td>
<td>Baseline (n = 18)</td>
<td>Interv. (n = 4)</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Number of students</td>
<td>5.00 (0.00)</td>
<td>5.00 (0.00)</td>
<td>4.62 (1.12)</td>
<td>4.63 (1.06)</td>
<td>4.83 (0.38)</td>
<td>5.00 (0.00)</td>
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<tr>
<td>Number of staff</td>
<td>2.63 (0.00)</td>
<td>2.50 (0.00)</td>
<td>2.69 (0.00)</td>
<td>3.25 (0.00)</td>
<td>0.72 (0.00)</td>
<td>0.75 (0.00)</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Escorting</td>
<td>0.00 (0.00)</td>
<td>1.00b (0.00)</td>
<td>0.15 (0.38)</td>
<td>0.75b (0.46)</td>
<td>0.00 (0.00)</td>
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<td>Scanning</td>
<td>0.00 (0.00)</td>
<td>1.00b (0.00)</td>
<td>0.23 (0.00)</td>
<td>1.00b (0.00)</td>
<td>0.6 (0.24)</td>
<td>0.50b (0.50)</td>
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<td>Number of interactions</td>
<td>5.75 (2.96)</td>
<td>14.29b (3.96)</td>
<td>1.15 (0.80)</td>
<td>3.63 (2.77)</td>
<td>0.17 (0.51)</td>
<td>1.00 (2.00)</td>
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<td></td>
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<td>Adjusted mean</td>
<td>40.28 (8.24b)</td>
<td>8.74 (77.9)</td>
<td>15.06b (27.79)</td>
<td>23.36b (14.38)</td>
<td>8.64b (23.39)</td>
<td>9.25 (9.25)</td>
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<tr>
<td>Unadjusted mean</td>
<td>40.88 (9.33)</td>
<td>27.08 (14.38)</td>
<td>23.39 (27.08)</td>
<td>9.25 (27.08)</td>
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</table>

Note. *Adjusted mean is controlling for number of students in the final model.

bBaseline to intervention difference is significant, p < .05.

*p < .05; **p < .01.
transition-by-phase effects for the number of staff members or the number of students present were found. Thus, phase effects cannot be explained by increases in the number of staff supervising the transition or by decreases in the number of students observed.

If the active supervision intervention was implemented as designed, significant increases in scanning, escorting, and interacting should be observed. Although a significant phase effect was obtained for each indicator, a significant interaction between transition and phase for each variable also was found. This interaction finding suggests that the increase in active supervision was inconsistent across the three transition settings. Follow-up pairwise comparisons using the Bonferroni additive inequality to control family-wise Type I error were used to evaluate the significance of between phase (baseline-intervention) differences for each transition. Although active supervision increased on all variables for all transitions, the increase was significantly larger for Transitions 1 and 2 compared to Transition 3. The increase in active supervision was insignificant for escorting and the number of interactions in Transition 3, which is consistent with the lower number of staff supervising that transition. This pattern of differences between baseline and intervention phases indicates that the intervention was implemented with greater integrity in Transition 1 and 2, and with less integrity in Transition 3.

In all transitions, a significant reduction in the frequency of problem behavior occurred. However, the reduction was largest in the Transition 1 and smallest in Transition 3. This pattern of differences is consistent with and parallel to differences in integrity of implementation noted for the active supervision component of the intervention.

Hierarchical Linear Modeling Analysis

The relative contributions of the active supervision and precorrection components of the intervention were examined using hierarchical linear modeling procedures (summary in Table 2). First, a regression model (Model 1) was specified, predicting the frequency of problem behavior from setting characteristics that might account for differences in problem behavior unrelated to the intervention. Setting characteristics included the number of students, number of staff, and particular transition. Model 1 accounted for a small and nonsignificant percentage (3%) of the variance in problem behavior, \( F(4, 58) = 0.46, p > .05 \).

In the next step (Model 2), the direct measures of active supervision were added to the effects specified in Model 1. Model 2 accounted for a large and significant proportion (57%) of the variance in problem behavior, \( F(7, 55) = 10.63, p < .01 \). The 54% increase in variance accounted for corresponds to the contribution of active supervision to the reduction in problem behavior in these transitions. Generally, effects that account for 10% or more of the variance in the dependent variable are interpreted as important. Thus, active supervision appears to account for a large, significant, and important amount of the variation in problem behavior during school transitions.
<table>
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<tr>
<th>Model</th>
<th>Effects</th>
<th>df</th>
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<th>$R^2$</th>
<th>Change in $R^2$</th>
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<td>1</td>
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<td>4</td>
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<td>Model 1 effects plus number of interactions, escorting, scanning</td>
<td>7</td>
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<td>0.57</td>
<td>0.54*</td>
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<td>3</td>
<td>Model 2 plus phase and setting*phase</td>
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<td>6769.51</td>
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<td>0.14*</td>
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<td>4</td>
<td>number of students, transition, phase, transition*phase</td>
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<td>4</td>
<td>Error</td>
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<td>Corrected total</td>
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<td>9516.317</td>
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</table>

Note. *Change in variance explained is significant, $p < .05$, using the general linear $F$ test (Neter & Wasserman, 1974, pp. 87-88).

In the third step, Model 3 adds the effect of phase (baseline and intervention) to the effects specified in Model 2. Because phase represents the combined effects of all intervention components, including both active supervision and precorrecting, the additional variance explained by Model 3 over and above Model 2 can be inferred to correspond to the effects of precorrection on the frequency of problem behavior. The significance of the additional variance explained can be evaluated with the general linear $F$ test (Neter & Wasserman, 1974, pp. 87-88). Model 3 also explained a large, important, and significant proportion (71%) of variance in problem behavior, $F(10, 52) = 12.82$, $p < .01$. The 14% additional variance explained by Model 3 over Model 2 indicates that precorrecting makes an important and significant contribution to the reduction in frequency of problem behavior in school transitions, $F(3, 52) = 8.19$, $p < .01$.

Once the effects of the intervention phase are included in the regression model, other effects no longer added significantly to the explained variance.

In the final step, a more parsimonious model was specified that included only those effects contributing significantly to the prediction of problem behavior. Model 4 consisted of the number of students, transition, phase, and transition*phase effects. Whenever a more parsimonious model is considered, some loss of explained variance occurs. However, the loss of variance explained by Model 4 from the variance explained by Model 3 was small (2%) and insignificant, $F(4, 52) = 1.05$, $p > .20$.

Given the other variables in the final, parsimonious model (Model 4), the univariate relation of each variable with the frequency of problem behavior and the partial association of each variable with the frequency of problem behavior is summarized in Table 3. The comparison of univariate and partial association clarifies the effect of active supervision on problem behavior in transitions. All active supervision variables are negatively related to problem behavior in isolation. However, when the effect of intervention phase is partialed out, the unique
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Correlation</th>
<th>Percent of variance explained</th>
<th>SS given final model</th>
<th>Percent of variance explained</th>
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<td>4.83</td>
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<td>.15</td>
<td>2</td>
<td>295.18</td>
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<td>Number of staff</td>
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<td>.04</td>
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<td></td>
<td>563.52</td>
<td>6**</td>
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<tr>
<td>Number of interactions</td>
<td>4.25</td>
<td>5.68</td>
<td>-.37**</td>
<td>14</td>
<td>192.83</td>
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<td>Escorting</td>
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<td>-.50**</td>
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<td>46</td>
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<td></td>
<td></td>
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<td></td>
<td>9516.32</td>
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Note. Based on n = 63 observations. Final model includes the number of students, transition, phase, and transition-by-phase effects.

*p < .05; **p < .01

The contribution of each active supervision variable is negligible and nonsignificant. Thus, the active manipulation of active supervision in the intervention accounts for all of the relation between the active supervision variables and problem behavior. It is important to note that it is the *activeness* of the supervision that is important. The number of staff supervising the transition by itself was unrelated to the frequency of problem behaviors.

The frequencies of problem behaviors over time for each transition (Transitions 1, 2, and 3) and each intervention phase (baseline and intervention) and the frequency predicted from Model 4 are illustrated in Figure 3. Some of the within-phase and within-transition variability is accounted for by differences in the number of students present during the transition. For example, on May 15 only 7 problem behaviors were observed, well below the within-phase mean of 27 for class to cafeteria transitions. However, that low frequency of problem behavior is largely explained by the observation that there were only 1 to 10 students present instead of the within-phase mean of 30 to 40 students.

**DISCUSSION**

Schools face significant challenges in their attempts to prevent and respond to problem behavior school-wide, in specific settings, and in classrooms. In particular, effective and efficient strategies are needed to address these challenges. Transitions have been identified by educators as a prime setting for problem behavior in
elementary schools (Walker, Colvin, & Ramsey, 1995). Moreover, if problem behavior occurs in the transition setting, the probability that these behaviors will spill over to the next setting is high. For example, in this study, three problematic transition contexts were targeted for improvement: entering school, entering the cafeteria, and exiting school. Improvement of behavior in these contexts was considered important because class periods following transitions were difficult to start and conduct when preceded by transitions having high rates of problem behavior.

In this study, we examined school-wide strategies designed to improve student behavior during activity transitions in an elementary school. Specifically, the purpose of this study was to examine the effects of two strategies—precorrection and active supervision—on the problem behavior of students in an elementary school during three transition settings: (a) coming into the school building at the start of the school day, (b) leaving class and going to the cafeteria, and (c) leaving class and exiting the building at the end of the school day. The actual intervention was relatively efficient and required little training time. Supervisors were asked to engage in two activities: (a) remind the students of the expected behaviors before they entered the transition areas (precorrection), and (b) to move around, look around, and interact with the students (active supervision).
A single, 15-minute staff training session was conducted by the school discipline team. Later, members of the discipline team gave a few reminders to help staff members implement the interventions.

The results suggest that student problem behavior in these transitions can be substantially controlled by a combined intervention comprised of precorrections and active supervision. Visual analyses of data patterns within the multiple baseline across settings design revealed changes in problem behavior concurrent with the staggered implementation of the intervention across the three transition contexts. Subsequent statistical analysis supported the visual analysis findings, and indicated that the *activeness* of supervisory behaviors is more important than the number of *supervisors*. In particular, students are more likely to display appropriate behavior during transitions if supervisory staff actively interact with students, that is, if supervisors move around, scan the area, and talk with students. Although increasing the number of supervisory staff is often used to increase behavioral control and supervision, the number of supervisory staff, which varied from one to six, was unrelated to changes in student transition behaviors in this study. Instead, behavioral changes may be accomplished more efficiently and effectively by increasing the active supervision behaviors utilized by staff.

In addition, results also highlight an interesting situation in which student and staff behaviors did not transfer across transition contexts. When training and interventions were initiated in Transition 1, decreases in problem behavior and increases in staff-active supervisory behaviors were observed. No concurrent changes were noted in the other two transition contexts, suggesting that generalized responding by students and staff did not occur. Similarly, when interventions were initiated in Transition 2, no changes in student and staff behavior were observed in Transition 3.

**Limitations**

When considering the outcomes of this study, several limitations must be addressed. First, the study was conducted over a relatively short period of time at the end of the year. The effects may have been idiosyncratic to the conditions and expectations associated with the last weeks of the school year. However, the fact that transition behavior could be improved at the end of the school year when schedules, activities, and expectations are more erratic and less predictable lends some credence to the strength of the intervention. Second, the stability and endurance of the effects on student and supervisor behavior over time were not assessed because the study ended on the last day of the school year.

Third, no direct observations were conducted to determine whether staff members actually implemented precorrection activities. Staff members were trained on the critical features of a complete precorrection (i.e., reminder or prompt), and reminded at various times to apply the procedures in their classrooms. Whether staff members actually conducted precorrection activities is unknown, and if they were conducted, the accuracy and appearance of the precorrection are unclear.
Fourth, although the number of interactions between the staff and students was coded, the quality of the interactions was not recorded. For example, although the discipline team emphasized the use of positive interactions, other interaction forms such as the following may have been used: reprimands, praise for following the expectations, smiles, greetings, and comments. Consequently, inferences about the impact of specific kinds of interactions on problem behavior cannot be made.

Fifth, supervision behaviors during each transition were variable. Paraprofessionals supervising students entering the school building at the start of the school day were assigned specific areas to supervise, and they did not directly escort students. For Transition 2, entering the cafeteria, the supervisors (classroom teachers) escorted the students to the cafeteria and then left the area. For Transition 3, the principal sporadically supervised the area. These inconsistencies in the integrity of treatment implementation may have limited the effectiveness of the intervention.

Lastly, this study was conducted in one elementary school that may or may not have features (e.g., physical, routine, population, behavioral) similar to other schools. The results observed may be idiosyncratic to this particular school, and generalizations about the effectiveness and efficiency of active supervision and precorrection to other schools should be made with caution. However, we believe that the approach, principles, and procedures used in this study have utility in most elementary schools.

Recommendations

Given the limitations and cautions associated with the outcomes of this study, a number of recommendations can be made for school psychologists, teachers, researchers, teacher trainers, and policy makers.

School Psychologists. The methodology in this study illustrates practical and easy to implement strategies for school psychologists to use in their expanded role of a consulting resource to general educators. The five-minute behavior sampling of student and supervisor behavior could be used by a school psychologist to assess any common areas in a school where problem behaviors may occur (hallways, cafeteria, playground). The intervention used to train supervisors in active supervision, (scan, move around and interact with the students) is relatively simple and takes little time (approximately 15 minutes). Moreover, the school psychologist could readily prompt teachers to provide reminders to their students of expected behaviors for the target settings. In effect, the school psychologist can play an important role in: (a) assessing both the behavior of students and the level of active supervision by staff during transitions, (b) training staff in the three critical variables of supervision (move around, look around, interact with the students), and (c) training general education teachers to provide precorrection for the target transitions. In this way, school psychologists can assist general education teachers and students and at the same time help
establish a more orderly environment to support the behavior of special education students.

*Teachers.* The results of this study illustrate that teachers must be active in their supervisory activities in order to increase prosocial behavior and to discourage problem behavior. Clearly, interacting with students is crucial to the success of active supervision. Passive, distant, and indirect forms of supervision are not as effective as scanning, moving, and talking with students during transition contexts. Based on findings from this investigation, we recommend that teachers (a) use active supervision strategies when attempting to monitor and manage problem behaviors during transition contexts, (b) provide reminders to students about acceptable transition behaviors before these students enter the transition context, and (c) apply active supervision and precorrection procedures consistently across transition contexts because generalized response of acceptable transition behaviors cannot be assumed. In addition, not all students will respond completely and successfully to school-wide interventions. As in any school or large group of students, the behaviors of a few individual students will not be affected by a given intervention, and specialized or modified strategies may be required.

*Researchers.* This study represented an attempt to understand and affect a school building that involved many staff members and many students across multiple settings. We developed an intervention that was easy to train, implement, and monitor. A multiple baseline design was used successfully to demonstrate the effectiveness of this intervention. However, the results and conclusions from this study must be delimit by the students, teachers, school, etc. involved in this research. Future research should include replications of the procedures used in this study in elementary schools that vary in size, geographic location, level (middle school), and student and teacher demographic characteristics (SES, race). In addition, future research should investigate strategies that can increase the likelihood that generalized responding would be observed in both students and teachers across multiple settings or contexts. Finally, future research should include analyses designed to determine the extent to which individual components of active supervision (scanning, moving, talking) contribute to the observed changes in student and staff behavior. In particular, the positive and negative nature of these interactions should be investigated. In addition, the extent to which precorrection was actually used and contributed to the observed effects should be examined.

*Policy Makers.* The procedures examined in this study were developed and implemented school-wide primarily by a building team (discipline team) with consultation support. The team was established by the school building staff and administrator to implement their proactive school-wide discipline system. This team served many vital functions in the building—including, staff development, technical assistance, and behavioral support. One important function was policy making and implementation. With the support of the consultant and in collaboration with the entire building staff, the team established policies that reinforced the importance of positive and preventative approaches to school-wide discipline. The
results from this study suggest that policy makers should incorporate effective, systematic school-wide procedures in their discipline policies and procedures. In particular, the active supervision and precorrection procedures investigated in this study were easy to teach to staff, easy to implement by teams with staff, and were associated with important changes in both student and staff behavior. Individuals in policy making/implementation positions (e.g., building administrators, program supervisors) should consider incorporating a systems-level approach that incorporates effective and efficient practices.

The purpose of this study was to investigate the effects of two proactive strategies on the problem behavior of students in an elementary school during three transition settings. We learned that two relatively simple procedures, active supervision and precorrection, could be used to decrease the number of problem behaviors observed in these transition settings.

REFERENCES


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