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Active Supervision, Precorrection, and Explicit Timing: A High School Case Study on Classroom Behavior

TODD HAYDON and STEPHEN D. KROEGER

University of Cincinnati, Cincinnati, OH, USA

One proactive approach to increasing student engagement in schools is implementing Positive Behavior Intervention and Support (PBIS) strategies. PBIS focuses on prevention and concentrates on quality-of-life issues that include improved academic achievement, enhanced social competence, and safe learning and teaching environments. This study is a replication of a study that investigated the combination of active supervision, precorrection, and explicit timing. The purpose of the study was to decrease student problem behavior, reduce transition time, and support maintenance of the intervention in the setting. Results show that active supervision, precorrection, and explicit timing decreased student problem behavior, decreased the duration of transitions in two instructional periods, and the intervention was maintained in the setting. Implications, limitations, and future research are discussed.

Keywords: active supervision, explicit timing, Positive Behavior Intervention and Support, precorrection, urban education

Positive classroom management practices with a primary emphasis on forms of positive reinforcement have been discussed in the literature (Ahearn, 2010; Beaman, & Wheldall, 2000; Van Houten, Nau, MacKenzie-Keating, Sameoto, & Colavecchia, 1982). Furthermore, proactive classroom management strategies such as active supervision, precorrection, and explicit timing have been linked to positive student outcomes, including increased student academic engagement and decreased disruptive behavior, and transition time (Bohanon, 2008; De Pry, & Sugai, 2002; Franzen, & Kamps, 2008; Haydon, DeGreg, Maheady, & Hunter, 2012; Kazdin & Klock, 1973; Warren et al., 2003). Systematic classwide interventions that are efficient and comprehensive allow teachers to attend to the needs of the entire classroom while preventing further behavioral problems from occurring.

A strong evidence base has shown that teacher reprimands increase disruptive behaviors (Beaman, & Wheldall, 2000; Madsen, Becker, Thomas, Koser, & Plager, 1968; Stormont, Smith, & Lewis, 2007; Thomas, Becker, & Armstrong, 1968; Van Houten et al., 1982). One solution to reduce negative responses such as reprimands is for teachers to implement positive practices for managing unwanted classroom behavior (Sidman, 2001). The combination of active supervision, precorrection, and explicit timing is one such positive practice.

The present study is a demonstration of the effective use of active supervision, precorrection, and explicit timing and contributes to the existing knowledge base in several ways. The results of the study demonstrate that teachers can be trained to learn the intervention in a short amount of time (i.e., 30 min) and implement the intervention package with a high degree of treatment adherence. In addition, the results of the study provide more evidence of the successful implementation of the intervention by using a novel classroom setting (a ninth-grade co-taught classroom), a different school setting (urban setting) and using a new content domain (English and social studies).

Active Supervision

De Pry and Sugai (2002) defined a flexible four-step process of active supervision, including (a) moving among students with a special focus on problem areas, (b) scanning the environment to look for both appropriate and inappropriate behavior, (c) interacting with a variety of students (e.g., having conversations, providing precorrections, teaching appropriate behaviors), and (d) providing frequent positive comments for observed appropriate behaviors. Johnson-Gros, Lyons, and Griffin (2008) included additional components of active supervision such as (a) arriving at the classroom on time, (b) remaining in the setting throughout the entire transition period, (c) moving toward groups of congregating students in the classroom or hallway, and (d) physically escorting students throughout the entire transition. Closely related to active supervision is the use of a precorrection procedure to support positive behaviors.

Address correspondence to Todd Haydon, College of Education, Criminal Justice, and Human Services, University of Cincinnati, ML 0022 Teachers College, Cincinnati, OH 45221, USA.
E-mail: todd.haydon@uc.edu

Precorrection

The use of precorrection procedures provides the kind of prompting needed to move effectively from one activity to another within a classroom, or from one place to another (i.e., classrooms to cafeterias, entering or leaving a school building). Johnson-Gros, Lyons, and Griffin (2008) defined precorrection as an antecedent intervention that reduces predictable problem behaviors and increases appropriate replacement behaviors through the daily review and reminders of specific rules before being released into that setting (Colvin, Sugai, Good, & Lee, 1997). The objective of precorrection is to cue the student to engage in a more appropriate behavior before the problem behavior ever occurs (Johnson-Gros et al., 2008; Lewis, Colvin, & Sugai, 2000). In addition to precorrection, monitoring the time needed to transition through the use of establishing a time limit (i.e., explicit timing) can be a supportive procedure.

Explicit Timing

A good proportion of instructional time can be lost when the amount of transition time in a classroom is not carefully monitored (Haydon et al., 2012). The use of an explicit timing procedure may provide the kind of monitoring needed to move from one activity to another or from one place to another. For example, Campbell and Skinner (2004) investigated a sixth-grade teacher's implementation of an explicit timing procedure to reduce transition time between classes in a rural public school. A digital stopwatch was used to measure transition times, and a chart was drawn to record the date and spaces to record the number of seconds taken in a given transition. The procedure included informing the students that it was time to perform the given transition activity such as lining up or waiting for students to be quiet and seated at their desks. Explicit timing procedures were taught to the class and practiced. Daily public posting of the amount of transition time was recorded on a chart. Immediately after the implementation of the intervention, students showed a substantial decline in the average amount of time taken for transitions.

Haydon and colleagues (2012) used an ABCBC withdrawal single-case design to compare the effects of the combination of active supervision and precorrection with and without an explicit timing procedure on the number of teacher redirections and number of minutes during transition before a seventh-grade health science class. The baseline phase (A) lasted nearly 2 weeks; during this phase, the teacher typically responded to inappropriate behavior by using consequences. The first intervention phase (B) lasted nearly 3 weeks. In this phase, the teacher implemented active supervision and precorrection. The second intervention phase (C) lasted 1 week. Here, the teacher implemented a combination of active supervision, precorrection, and explicit timing. The teacher used a digital timer and placed the timer on an overhead projector and reminded the students they had 2 min to be seated at their desks and then be ready to start the first classroom activity. The return to the second (B) phase lasted nearly 2 weeks and the reintroduction of the second (C) phase

also lasted 2 weeks. In addition, the researchers used a maintenance check 8 days after the second intervention phase. Results indicated that the teacher had fewer redirections and decreases in the number of minutes of transition time when active supervision, precorrection, and explicit timing were in place. The present study is a replication of Haydon and colleagues' (2012) study. The following are the primary questions that guided this research:

1. What is the effect of active supervision, precorrection, explicit timing procedure on the level of student problem behavior?
2. What is the effect of active supervision, precorrection, explicit timing on the duration of transition?

Method

Setting and Participants

This study was conducted at an urban high school (Grades 9–10) with an average daily attendance of 517 students. The high school was located in a large school district in a Midwestern U.S. state and had programs focusing on science, technology, engineering, and mathematics. The school had a Positive Behavior Intervention and Support initiative with a leadership team comprising an administrator and teachers from various grade levels (Rhodes, Stevens, & Hemmings, 2011).

Proficiency test results on the Local Report Card for the school included 9th- and 10th-grade reading, writing, mathematics, science, and social studies achievement. With the state requirement being 75%, 10th-grade results included 82% on reading, 89% on writing, 70.3% on mathematics, 55.2% on science, and 65.1% on social studies. The student population in the school was Black non-Hispanic (86%), multiracial (3.4%), and White non-Hispanic (9.4%). Eighty-four percent of the students received free or reduced-price lunch, and 26% were identified with disabilities. The student population in the classroom in which the study took place was 100% Black non-Hispanic.

As part of ongoing consultation with the local university the high school's ninth-grade team contacted the first and second author to help with transitions. Observation data confirmed the need to positively support student transitions from the hallway to learning tasks, and transition was especially problematic after the return from lunch. The remaining teachers on the team indicated that they did not need assistance with transitions and observational data verified their perception.

Three teachers participated in this study. The lead teacher had 21 years of teaching experience in the school district and was certified by the National Board for Professional Teaching Standards in English language arts. The co-teacher had 13 years of teaching experience in the district and was certified in secondary social studies. The student teacher was in his second and final year of obtaining a master's degree in secondary education. The lead teacher, co-teacher, and the student teacher shared the responsibility of planning

instruction. The teachers co-taught two subjects (history and English) in an interdisciplinary fashion in 200-min blocks. Each subject had 60 students in one large room.

Response Definitions and Measurement

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 pushing, shouting, throwing, and/or whistling (Colvin et al., 1997). *Pushing* was defined as any time a student used his or her arm or body to make physical contact with another student, resulting in that student being unbalanced or moved. *Shouting* was defined as any occurrence in which a single student's voice could be heard noticeably above the normal conversation level present in the classroom. *Throwing* was defined as any time a student picked up and tossed an object (i.e., pencil, book or other objects) at other students. Last, *whistling* was tallied if the production of short, high-pitched sound by means of carefully controlling a stream of air flowing through a small hole of one's lips was heard.

Transition time within the class served as the secondary dependent variable. Transition time was defined as, after the sounding of the school bell, the number of seconds it took for all students to be seated at their desks, writing in response to a warm-up prompt, composing sentences with new vocabulary, sharing examples with a peer, or with eyes on their binder, materials or teacher. When all students were demonstrating these in-seat behaviors (i.e., according to the lead teacher's expectations and criteria), the transition period was defined as over. Data were collected starting at the beginning of each observation period. Transition time was measured by using duration recording. Student problem behaviors were measured using an event recording method. Observers systematically scanned the room during 20-s observation periods for 12 min, moving from left to right. Observers used event recording and indicated on their observation sheet if they observed an incident of student problem behavior during the interval. The two data collectors were seated in the side of the classroom where they had an unobstructed view of the classroom.

Teacher Training

Before the study began the lead teacher, co-teacher, and student teacher identified the major problem behaviors exhibited by the students during the two transition periods. Examples of problem behaviors included hitting, pushing, whistling, and yelling. Next, the lead teacher, co-teacher, and student teacher identified those behaviors that students should display instead of problem behaviors. The first two authors, the lead teacher, co-teacher, and student teacher then developed all procedures during a 30-min morning meeting. The goal for the transition was to have a 4-min transition, starting when the time the bell rang and ending with all students demonstrating the defined in-seat behaviors. Each student upon entering the room was asked to be seated and have materials on the desk within 1 min; as a classroom, all students were

prompted to begin a warm-up posted on the screen and be ready to learn within 4 min. These expectations and a warm-up prompt were posted daily on a slide presentation.

Next, the first two authors trained the lead teacher, co-teacher, and student teacher on the implementation of three major components, active supervision, precorrection, and an explicit time procedure, in a 30-min training session. The intervention was modeled by the investigators during the training and questions and comments about the intervention were addressed. After the second author demonstrated the interventions, the teachers verbally indicated that they understood each component of the intervention and that they were satisfied with having the procedures explained verbally and the specific behaviors modeled and so the training was concluded.

Active Supervision

The first and second authors provided the lead teacher, co-teacher, and student teacher with a definition of active supervision. In *active supervision*, a teacher (a) circulates around the classroom, (b) scans the classroom, (c) interacts with students, and (d) acknowledges demonstrations of expected academic and social behaviors as part of instruction. The second author role-played each component of active supervision with the teachers to establish what the intervention looked like (e.g., circulating throughout the classroom from the four corners and the center of the room, visually sweeping the classroom), taking attendance, and making positive comments to students who were working on the assigned task.

In addition, the second author role-played a nonexample of active supervision by standing in one location of the classroom. At the request of the teachers the two researchers provided a script of the behaviors to follow for accurate implementation of the intervention (see Table 1).

Precorrection

The first and second authors, along with the lead teacher, co-teacher, and student teacher, developed a precorrection procedure that provided prompts and reminders when the students entered the room in the following manner: The teachers were instructed to remind students of desired behavior before entering the room as part of the precorrection strategy. Specifically, they reminded the students to enter and focus, remain seated, have a pen and binder, and complete the warm-up in silence.

Explicit Timing Procedure

All three teachers were trained in the implementation of the explicit timing procedure that consisted of (a) announcing to the students when they entered the classroom that they had a 4-min time limit ("On the clock") (b) telling the classroom they had "one minute" left to start working on the warm-up, and (c) prompting the students with statements such as "It's time," or "Ready to go," to indicate the end of transition time and the start of the warm-up activity. At the end of the training the two researchers provided the lead teacher, co-teacher, and the student teacher with a script of the behaviors

Table 1. Sample Script for Active Supervision, Precorrection, and Explicit Timing

Criteria for implementation

1. Identify major problem behaviors exhibited by students during transition periods.
 - a. Pushing, shouting, throwing, and whistling
2. Identify positive replacement behaviors.
 - a. Enter and focus
 - b. Remain seated
 - c. Must have pen and binder
 - d. Remain silent during warm-up
3. Design procedures for the transition period.
 - a. Determine the amount of transition time based on the number of students (4 min)
 - b. Post expected behaviors in the classroom
4. Practice teacher behaviors before implementation.
 - a. Active supervision: scan and interact with students
 - b. Precorrection: remind students of expected behaviors
 - c. Explicit timing: display a timing device that all students may see

Measure	Situation	Example
Active supervision	As students enter the classroom.	Scanning: teacher looks over the length of the area to be supervised
Active supervision	While students are walking toward their desks. While students sit at their desks.	Interacting: circulating around the classroom; talking to a student or engaging a student nonverbally; smiling, signaling, prompting, acknowledging expected (on-task) behavior
Precorrection	As students enter the classroom.	Verbal reminders such as “Check the board for rules about how to enter class and get started”; “As you enter class, remember, we have four minutes to begin quiet work”; and “You are on the clock”
Explicit timing	During the transition period.	Display a timing device on a overhead projector, or PowerPoint presentation for all students to see; convey verbal reminders such as “One minute”; “It’s time”; and “Start the warm-up”

to follow for accurate implementation of the intervention (see Table 1).

Daily Data Review

Throughout the study, the researchers presented daily feedback in the form of visual graphs and brief notes on the frequency of problem behaviors as well as the amount of transition time. Feedback was sent via e-mail by the second author to the lead teacher, co-teacher, and student teacher. The lead teacher, co-teacher, and student teacher acknowledged the receipt of the daily e-mails and were provided opportunities to respond to daily feedback via e-mail or face to face at the next observation period.

Interobserver Agreement

The second author served as primary observer and the first author, two school psychology doctoral students, or two senior undergraduate students, who had taken an applied behavior analysis class, acted as secondary observers and independently recorded data. The secondary observer also completed the treatment integrity checklist at the end of each session. During each session, there were two observers in the classroom, except during 15% of the sessions a third observer was used to calculate interobserver agreement on integrity.

All observers were blind to any phase of the study in that the place on the coding sheet to indicate the session remained blank, nor did any of the secondary observers ask what phase the study was in. The secondary observers also completed the

interobserver agreement for transition time were calculated by dividing the number of agreements, sessions where both observers were within 5 s (the time it took to observe the last student in their seat and then record that behavior) by the total number of sessions and multiplying by 100. Interobserver agreement for student problem behavior was calculated using same method as the Haydon and colleagues (2012) procedure. We first divided each session into 20-s intervals and counted the number of problem behavior in each interval. We then divided the total number of agreed-upon intervals by the total number of intervals and multiplied by 100%. An agreement was counted when both observers recorded that the behavior occurred or did not occur in the same interval. This was a more rigorous method of demonstrating interobserver agreement and reduced potential bias in the data collection procedure. Interobserver agreement scores were calculated for 44.4% of the observations for each phase of the study. Interobserver agreement averaged 93.7% (range = 88.4–100%) for student problem behavior and 100% for transition time.

Across phases, the interobserver agreement percentages were calculated. During the initial baseline, interobserver agreement was 92.6% in the morning classroom and 88.4% in the afternoon classroom. During the first intervention phase, interobserver agreement was 100% in both the morning and afternoon classrooms. During the withdrawal phase, the interobserver agreement was 93.0% in the morning classroom and 95.0% in the afternoon classroom. During the second intervention phase, the interobserver agreement was 92.3% in

the morning classroom and 91.0% in the afternoon classroom. During the maintenance phase, the interobserver agreement was 91.0% in the morning classroom and 90.5% in the afternoon classroom.

Procedures

Baseline

During baseline, the lead teacher, co-teacher, and student teacher typically positioned themselves in one part of the classroom (i.e., side, doorway, front, and back) and raised their voice to reprimand problem behaviors such as running, hitting, whistling, and having loud conversations. The lead teacher usually stood in the doorway and told the students to “take a seat” as they entered the classroom. Next, he took attendance from the side of the classroom while the other teacher stayed near his desk at the front of the room and the student teacher stayed near his desk at the back of the room. Classroom rules were not posted in the classroom and observations indicated that the teachers did not engage in positive interactions (i.e., praise statements). Typically, as one teacher quieted the students in the front of the room, students in the back of the room began shouting, talking, and laughing.

Intervention

The lead teacher carried out the active supervision procedure while the co-teacher and student teacher carried out the precorrection procedure. The lead teacher circulated around the entire length and four corners of the classroom, interacting with students, and reinforcing expected academic and social behaviors by saying, “This group is working well.” The other teacher and student teacher stood in the door way as students entered the classroom and reminded students of the expected behaviors. The following behaviors were listed on the slide and projected on the screen: “Enter and Focus,” “Remain Seated,” “Must Have Pen and Binder,” and “Silent Warm-Up.” These prompts were projected on the screen throughout the study and remained there for the first 15 min of each period.

In addition to taking attendance and using active supervision, the lead teacher conducted the explicit timing procedure by using a stopwatch and announcing a 4-min time limit, “You are on the clock.” Next, the lead teacher informed the students, “You have one minute.” Then, he stated that there were “thirty seconds” left. Last, he provided a countdown from 10 to 1. At the end of the countdown, the teacher prompted behavior with “It’s time,” “You are working,” or “Ready to go” to indicate the end of transition time and the start of the warm-up activity.

Experimental Design

A concurrent multiple baseline across two instructional periods with a brief withdrawal phase was used (Kennedy, 2005). During the brief withdrawal phase, the teachers did not use any components of the intervention package. Withdrawal constituted the removal of all active supervision, precorrection features, and explicit timing procedures. Daily data

review to the teachers continued. Because of the high rate of student problem behavior, the teachers indicated that they would like to reintroduce the intervention after one session. Therefore, the intervention was reintroduced after the collection of one data point.

A maintenance phase of the study was implemented to determine whether the teachers would continue to use the intervention. Approximately 3 weeks after the end of the last intervention phase, and the first day back from winter break, data were collected on students’ problem behaviors in the morning and afternoon sessions. Unannounced maintenance checks were completed once per week for 8 weeks. During maintenance, data were collected on the rate of student problem behavior and the amount of transition time in observation time periods (morning and afternoon) during the beginning of class. Daily data review was provided using the same procedures as in the earlier phases of the study.

Treatment Integrity

Direct measurement of the independent variable, implementation of the lead teacher’s active supervision procedure (i.e., scanning, moving, interacting with students) and explicit timing procedure, as well as the co-teacher and student teacher precorrection procedure was conducted as a measure of treatment integrity for 100.0% of the sessions of observations. In addition, during 15% of the sessions a secondary observer was used to calculate interobserver agreement on integrity. Although calculating interobserver agreement on integrity is not typically done (Yarbrough, Skinner, Lee, & Lemmons, 2004), doing so provides more support for the claim that the treatment was implemented as intended (Noell & Witt, 1998).

A checklist was used to record the occurrence or nonoccurrence of each step of the intervention package. For active supervision, the checklist included (a) moving around the four corners of the room as well as the middle of the room, (b) interacting with students (the teachers used a microphone so all verbalizations could be heard). For the explicit timing procedure, the checklist included announcing (a) 4-min time limit, (b) 1-min time limit, (c) 30-s time limit and (d) the countdown from 10 to 1. The checklist for the precorrection procedure included the step of reminding the students of the classroom rules as they entered the classroom.

Social Validity

The lead teacher, co-teacher, and a student teacher completed a nine-item social validity assessment at the end of the study. A 4-point Likert scale ranging from 4 (*strongly agree*) to 1 (*strongly disagree*) was used to determine the social validity and the teacher’s perceptions of the educational effectiveness of the interventions. Teachers rated statements using a 4-point Likert type scale ranging from 1 (*not at all*) to 4 (*very much*). The rating scale consisted of four categories: (a) teacher’s perceived ease of implementing the intervention, (b) teacher’s perceived effectiveness of the intervention, and (c) teacher’s likelihood of using the intervention in the future and (d) how likely they would recommend the intervention to other teachers.

Results

Figure 1 displays the frequency of student problem behavior as well as the amount of transition time for both the afternoon and morning sessions.

Student Problem Behavior

Baseline (BL) data for observation period 1 (afternoon) are highly variable with a mean occurrence frequency of 18.83 (range = 4–29) in general. Following the implementation of active supervision, precorrection, and explicit timing (IV1), there was an immediate change in level resulting in a mean frequency of problem behavior of 3.0 (range = 0–7). The brief withdrawal phase (W) resulted in an immediate increase in student problem behavior that was followed by an immediate reduction in the level of student problem behavior (mean frequency = 1.75; range = 0–3), a stable trend and little variability when the intervention was reintroduced (IV2). The frequency of student problem behavior remained at low levels during the maintenance phase (M), thereby demonstrating the sustainability of this intervention.

Baseline data patterns for observation period 2 (morning) demonstrated an upward trend with less variability than observation period 1 (mean frequency = 7.9; range = 4–13). The initial intervention phase (IV1) resulted in an immediate change in level and a decreasing trend for student problem behavior (mean frequency = 2.4; range = 0–9). Data in the brief withdrawal phase indicated an immediate change in frequency for student problem behavior. The reintroduction of the intervention phase was characterized by an immediate change in level for student problem behavior with a mean frequency of 0.75 (range = 0 to 3), a slight decreasing trend and little variability. During the maintenance phase, the frequency of student problem behavior remained at low levels, thereby demonstrating the sustainability of this intervention.

Transition Time

Baseline data for observation period 1 (afternoon) indicate that mean transition time was 8 min, 54 s (range = 3 min to 12 min, 58 s). After the implementation of active supervision and precorrection, the amount of transition time was reduced to an average of 3 min, 42 s (range = 1 min to 4 min, 24 s).

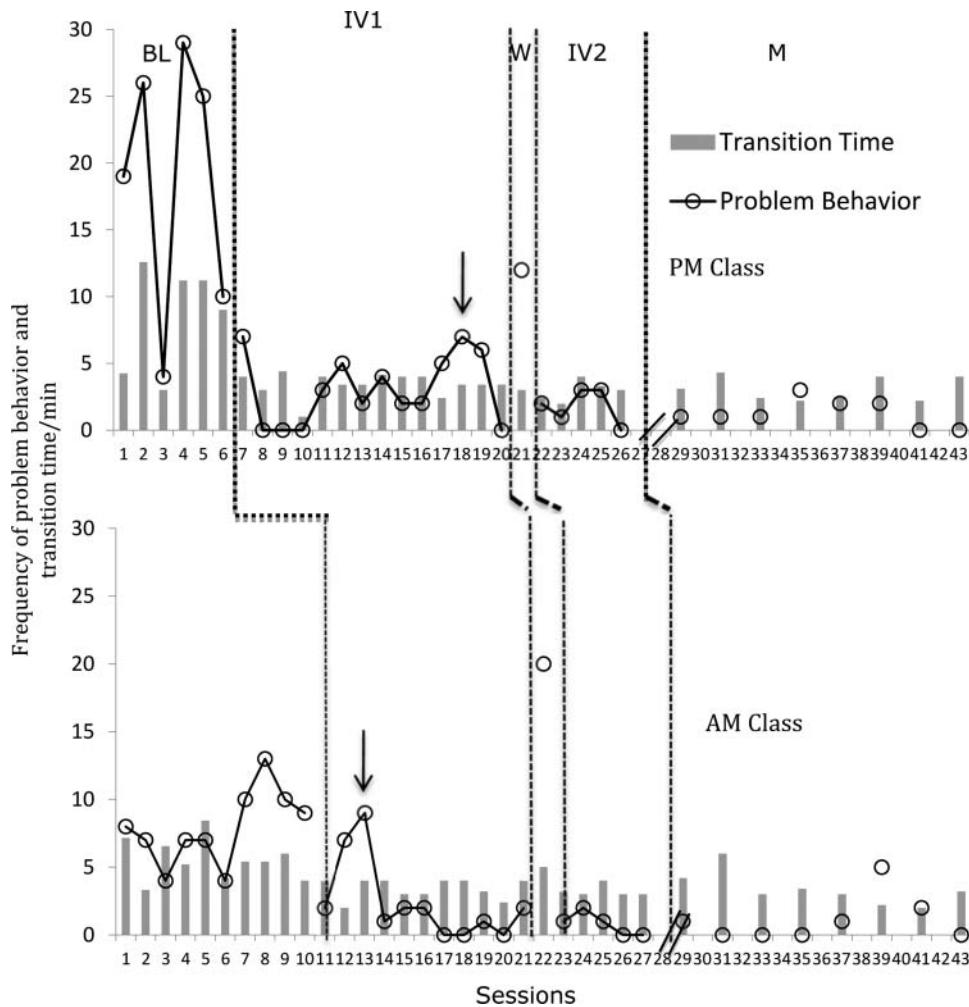


Fig. 1. Frequency of student problem behavior and the amount of transition time for afternoon and morning sessions.

The brief withdrawal phase resulted in transition time of 3 min followed by an average transition time of 2 min and 54 s (range 2 min to 4 min) when the intervention was reintroduced. During the maintenance phase, 7 out of 8 sessions met the criteria of no more than 4 min of transition time.

Baseline data for observation period 2 (morning) indicate that mean transition time was 5 min and 56 s (range = 4 min to 8 min 43 s). After the implementation of active supervision and precorrection, the amount of transition time per session was reduced to an average of 3 min and 36 s (range = 2 min to 4 min). The brief withdrawal phase resulted in transition time of 5 min followed by an average transition time of 3 min and 24 s (range = 3 min to 4 min) when the intervention was reintroduced. During the maintenance phase, 7 out of 8 sessions met the criteria of no more than 4 min of transition time.

Treatment Integrity

Treatment integrity data were collected for each teacher to assess the implementation of each component of the intervention. The lead teacher implemented the two-step active supervision procedure as well as the four-step explicit timing procedure with 100% integrity. In addition, the co-teacher and student teacher implemented the precorrection procedure with 100% integrity.

Social Validity

One week after the collection of the last maintenance data point, the three teachers completed the social validity questionnaire. Mean scores for each question were calculated by totaling each teacher's response and dividing by three. Mean scores ($M = 3.0$; range = 2 to 4) on teachers' perceived ease with the study's procedures suggested that the three teachers implemented active supervision and the precorrection procedure with a fair amount of ease. In response to how effective and efficient the intervention was on reducing behavioral incidents all three teachers gave the highest score of 4.0. High mean scores ($M = 4.0$) suggested that teachers found the intervention to be very successful and that they would continue to use the intervention in the future and recommend the intervention to other teachers.

Discussion

Developing clear expectations and establishing common routines is an important process in any classroom, whether co-taught or in a classroom with a single instructor. Taylor-Greene and colleagues (1997) concluded that schools need to combine systems of schoolwide behavioral support, individual student support, classroom behavioral strategies, and specific setting procedures to address a wide range of behavioral challenges. This study aimed to systematically replicate an earlier investigation using active supervision, precorrection, and an explicating timing procedure (Haydon et al., 2012).

The findings in this study indicate that there are a few similarities and differences with the earlier study by Haydon and colleagues (2012). For example, the combination of active supervision, precorrection, and an explicit timing procedure were implemented in both studies. However, in the earlier study active supervision and precorrection were compared with and without an explicit timing procedure. The present study made no such comparisons. Although transition time was a dependent variable in both studies, in the earlier study teacher behavior (redirections) was a dependent variable, whereas in the present study student behavior (disruptive behavior) was the dependent variable. Both studies included a maintenance phase. However, in the present study, the maintenance phase consisted of once a week probes for 8 weeks, while the earlier study used one maintenance probe 8 days after the last data point of the intervention. In the present study, three teachers were used to implement the intervention in a large co-taught ninth-grade classroom, whereas in the earlier study the intervention was implemented with one teacher in a seventh-grade classroom.

In a classroom with fewer students a teacher could be successful implementing a similar intervention with ease. For example, a single teacher could, remind students when entering the classroom of the expectations of the transition period, use active supervision while taking attendance, then give a 1-min reminder and tell students to start the warm-up activity.

The results of this study suggest that general educators with a small amount of training time (i.e., 30 min) can reduce student problem behavior and the amount of transition time by implementing a feasible intervention package consisting of active supervision, precorrection, and explicit timing. By using the intervention the teachers were able to provide supports for students during transitions by creating highly structured environments (i.e., class to class and cafeteria to class). Furthermore, the teachers implemented the intervention with a high degree of treatment adherence. An indication of the overall effectiveness and sustainability of the intervention was that the positive results of the intervention were maintained over a period of two months.

The results of this study also provide additional evidence that active supervision, precorrection, and explicit timing can be effective in decreasing the amount of transition time. The decrease in transition time may be associated with an increase in academic instruction time, although the study does not provide data, anecdotal reports indicate that academic instruction occurred earlier during the intervention than during baseline. These results are noteworthy because decreased student problem behavior has been associated with increases in on-task behavior and increases in instruction time thus providing environmental supports for student learning (Clark & Linn, 2003; Harn, Linan-Thompson, & Roberts, 2008).

Another positive outcome from this study is that high social validity scores indicate that the intervention was implemented with ease and was perceived as being effective. The researchers hypothesized that ease of implementation may have been due to the fact that the intervention was built into the existing classroom routines. For example, the teachers were already taking attendance and there was only a slight teacher behavioral change, from leaning next to the counter

and commenting on negative student behaviors to walking around, interacting, and commenting on positive student behaviors.

A unique feature of the present study is that the intervention was implemented in an urban high school setting. High school settings can provide unique challenges where it may be more difficult for teachers to engage in an array of proactive behavioral support procedures. High schools are complex organizations and generally have multiple administrators, large numbers of personnel and students. Other challenges at the secondary level include students struggling with expectations of learning tasks, reading levels and textbook readability, including the introduction of significant levels of new vocabulary and content specific academic language (Armbruster & Anderson, 1988; Bean, Zigmond, & Hartman, 1994; Groves, 1995; Kinder, Bursuck, & Epstein, 1992).

When considering the results of this study, several limitations must be noted. First, the study was conducted in one ninth-grade classroom with three teachers in an urban high school. Therefore, the positive results of the intervention may be unique to this setting and may not generalize to other high schools. Furthermore, the teachers in this study self-identified the need for assistance and actively took steps to recruit university support. The fact that the teachers volunteered could have inflated the treatment adherence data. However, the positive effects of the intervention on student problem behavior give some indication that the intervention may be effective in other high schools. Third, because of teachers' preferences, a full withdrawal of the intervention was not possible; thus, threats to internal validity could not be ruled out (Campbell & Skinner, 2004). Even so, data in the brief withdrawal probe indicate high rates of student problem behavior. A fourth limitation of this study was that the researchers started the intervention when student baseline problem behavior in the afternoon group was improving (see Figure 1); thus, we cannot be confident that the intervention was responsible for the improvement. A third baseline condition could have addressed this limitation and demonstrated stronger experimental control (Boden, Ennis, & Jolivet, 2012; Hoyle, Marshall, & Yell, 2011). Fifth, because the teachers knew they were being observed, the scores on the treatment integrity checklists could have been inflated (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Last, because researchers completed the checklists, potential observer effects should be noted.

Future research should include continued analyses to determine the extent to which individual components of active supervision (moving, interacting, scanning), precorrection, explicit timing, and performance feedback contribute to the observed changes in student and school staff behavior. In particular, the positive and negative nature of these interactions should be investigated. Future research could examine the extent to which these components are necessary under various environments (e.g., classroom, hallway, cafeteria, recess). Future studies could include a more robust withdrawal phase. However, once teachers implement an effective practice they are understandably hesitant to remove it even for a short time. Future research could also investigate the effects of various components on reduced transition time and increased academic learning time.

Teachers may use active supervision, precorrection, and explicit timing as one method to improve student-teacher interactions. Rather than reprimanding students, teachers can create environments where little to no reprimands are necessary. As a replacement behavior teachers can recognize positive behavior and provide feedback in the form of behavior specific praise statements (Partin, Robertson, Maggin, Oliver, & Wehby, 2010). Furthermore, the combination of the strategies may also help teachers prevent serious behavior from escalating by providing reminders of classroom rules and expectations. For example, after a tough incident before class such as a fight in the hallway (as was the case in this study) teachers could provide reminders "Stay with the routine" and then provide feedback, "Great recovery."

Taken together, the present results document the feasibility and effectiveness of implementing active supervision, precorrection, and an explicit timing procedure during two transition periods in a ninth-grade classroom in an urban high school. Data indicated that student problem behaviors in the morning and afternoon sessions continued below baseline. The positive social validity ratings by teachers and sustained use give some indication of a good contextual fit because the teachers made only slight behavior changes to successfully implement the intervention.

Author Notes

Todd Haydon is an associate professor at the University of Cincinnati. His current research interests are effective teaching practices, students with behavioral disorders, and positive behavior and supports.

Stephen D. Kroeger is an associate professor at the University of Cincinnati. His current research interests are racial awareness development with prospective teachers as well as collaboration across teacher preparation programs.

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