Changing Behaviors by Changing the Classroom Environment

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What impact does the classroom environment have on overall class behavior and learning? Many teachers face disruptive behavior in their classrooms. How can they target and change problem areas in the classroom environment? By collecting data on students' engagement during instruction, disruptive behavior, and teacher observations, teachers can identify which physical aspects of their classroom need to be improved. Changing the classroom environment can increase academic engagement and decrease disruptive behavior.

One challenge teachers face is disruptive behavior in their classrooms. In a 2004 survey, 75% of teachers noted that they would spend more time teaching and teaching effectively if they had less disruptive behavior in their classrooms (Public Agenda, 2004). Disruptive behavior (e.g., speaking without permission, getting out of seat) often interferes with students' engagement in the learning process. Another challenge for teachers is to find classroom management strategies that are proactive, preventative, and relatively easy to implement, and which provide minimal disruption to the classroom.

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Figure 1. Steps to Changing the Classroom Environment

Researchers have investigated the relationship between the classroom environment, student behavior, and academic engagement (Hood-Smith & Leffingwell, 1983; Visser, 2001). A well-organized classroom permits more positive interactions between teachers and children, reducing the probability that challenging behaviors will occur (Martella, Nelson, & Marchand-Martella, 2003). Additionally, modifying the classroom environment may serve as a direct intervention for children who demonstrate ongoing disruptive behavior (Conroy, Davis, Fox, & Brown, 2002). Although the well-designed classroom has proven benefits, there is little research on the impact environmental modifications have on behavior and learning (Guardino, 2009; Schilling & Schwartz, 2004).

Environmental modifications are a preventative, whole-class approach (Emmer & Stough, 2001) that may decrease chronic behavior problems, prevent behavior problems for students who are at risk, and allow children with minimal or no problem behavior to access learning without interruption. Although environmental modifications are an essential part of classroom management, many teachers are not aware of the process of implementing them. Assessing the classroom environment as to its impact on student behavior and implementing changes to that environment is a three-stage process (see Figure 1). The first step is for the teacher to observe the students within the classroom environment, noting where and when disruptive behavior is occurring and how different areas of the classroom are utilized. For example, are students unable to work without

Figure 2. Ms. Thompson's Classroom: "Before" and "After" Environmental Changes

distraction from peers and the environment? Are students interrupting the lesson because materials are unorganized and inaccessible?

After observation, the teacher should review possible options for modifying problem areas in the classroom. Classroom space can be modified in a variety of ways (Bullard, 2010; Guardino, 2008; Lawry, Danko, & Strain, 1999), including

- Arranging classroom furniture to define learning areas.
- Improving accessibility and availability of materials.
- Delineating traffic patterns.
- Improving organization of materials.

For example, if students are distracted by peers, the teacher could use desk carrels (see Figure 2); if the outside environment causes distractions, desks can be rearranged so students' desks don't face the windows. If materials are inaccessible, each student may need individual storage space (e.g., chair bags, desks with compartments; see Figure 3).

Are students unable to work without distraction from peers and the environment? Are students interrupting the lesson because materials are unorganized and inaccessible?

After modifying the classroom environment, teachers should self-critique using the follow-up questions in Figure 1. When teachers ask themselves questions such as "Are my students consistently using desk carrels during individual work time?" or "Do the students have all the materials they need throughout the day in their individual storage space?", they are able to understand what modifications are working and if they need to implement additional changes.

Case Study: Ms. Thompson's Inclusive Classroom

Ms. Thompson teaches at an elementary school in an urban area of the southeastern United States. Of the school's nearly 1,000 students, about 90% are eligible for free or reduced lunch. The school has failed to make annual yearly progress, as required by the No Child Left Behind Act of 2001, for the past 6 years. In addition, according to state standards the school has performed below average (receiving a D or F grade) the past 2 years.

Ms. Thompson's fourth-grade inclusive classroom had high levels of disruptive behavior: She would report disruptive behaviors three or more times a week to school personnel. Of the 17 students in her classroom, one received special education services and several students were awaiting referrals for special education assessment. The students in the classroom exhibited high levels of disruptive behavior such as calling out answers and profanities, throwing objects, hitting, and pushing,

Figure 3. Examples of Possible Environmental Changes in the Classroom

Note. Possible environmental changes in the classroom include chair bags for personal belongings; modifying the computer area to reduce distractions; using shelving (in this case, a combined storage space and bookcase) to create separate group space areas; and setting the teacher's desk at an angle and adding shelves to increase personal space.

as well as complete disregard for teacher direction or instruction. Several of the students received in-school and out-of-school suspensions during the duration of the study.

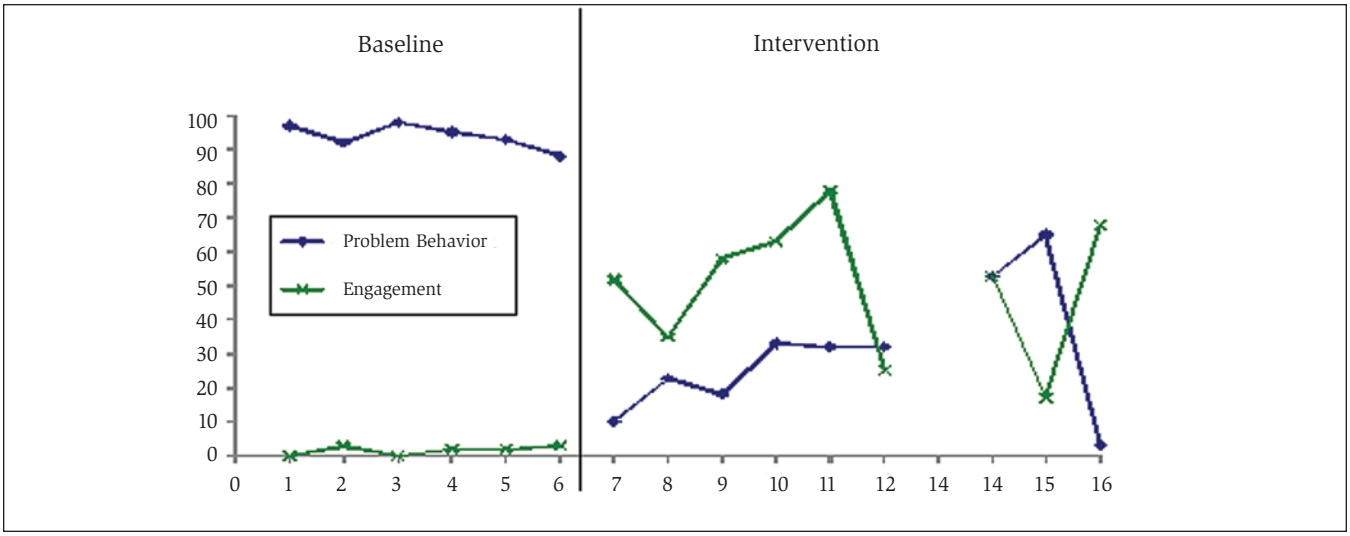
Phase 1: Baseline

During the baseline phase, we collected data for overall classroom academic engagement and disruptive behavior. The first step was to interview Ms. Thompson to identify the areas in the classroom where and when disruptive behaviors occurred, the types of disruptive behaviors, and the best time to observe an academic lesson.

With Ms. Thompson's input, we defined *academic engagement* as purposeful attention such as raising a hand, answering a question, working independently, or watching the teacher conduct the lesson (Downer, Rimm-Kaufman & Pianta, 2007; Lane, Smither, Huseman, Guffey, & Fox, 2007). *Disruptive behavior* would comprise behavior that did not follow Ms. Thompson's classroom rules: speaking without permission, getting out of seat, making unwanted physical contact, or noncompliance to teacher direction. For example, a student was disruptive if he did not follow the teacher's request to sit down at his desk and work on the assigned task. After the interview and establishing the data we needed to collect, we took "before" pictures of the classroom (see Figure 2).

During 2 weeks of data collection, we measured academic engagement and disruptive behavior by direct observation during the class's "reader's workshop": Ms. Thompson would direct a mini-reading lesson, after which students worked independently. Each observation session was 15 minutes long; during this time, we noted any instances where one or more

Figure 4. Observation Data: Academic Engagement and Disruptive Behavior



students was not academically engaged during any 15-second interval. (Likewise, we noted if disruptive behavior occurred anytime during the 15-seconds.)

Phase 2: Intervention

After completing our observations and data collection, we met with Ms. Thompson to discuss the types of environmental changes that might have the greatest impact on student behavior. These included changing the seating arrangement; creating group space; adding organizational materials such as shelves, hooks, and labels; creating clear pathways in areas of high congestion; adding plants and inspirational posters; providing chair bags to hold supplies needed for academic and sponge activities; and study carrels for each student. Fun and simple lesson-related tasks keep students busy in their seats. Sponge activities do not require teacher input or grading (e.g., crossword puzzles, number crunchers, coloring diagrams, journaling). Prior to modifying the classroom there was no distinction between group and individual space, supplies were not available, the arrangement of the computer area increased distractibility, pathways were not clearly defined, and keeping supplies on the teacher's desk caused congestion (see Figure 2).

We met with Ms. Thompson after school on a Friday, and the following Saturday morning, to implement the modifications. After modifying the classroom (see Figure 2), students had individual carrels (referred to as their "office") for independent work. We created three distinct group areas: one at the front round table, and two on the carpet separated by bookshelves. The students' chair bags would enable them to organize their supplies, and give them a place to keep their sponge work. The chair bags prevented the students from needing to leave their seats and come in physical contact with each other. Rather than having the computers face the students, we rearranged the area so the computers faced back to back and away from the general student body. We moved the supplies and independent reading books to the middle of the classroom to provide the students with a clear pathway and easy access to extra supplies and books.

Beginning the following Monday, we collected data for 4 weeks. Ms. Thompson also completed a questionnaire regarding her perception of the effectiveness of changing the classroom environment to improve student behaviors.

Results

Figure 4 shows the baseline and intervention data for the case study. Overall academic engagement was extremely low before intervention, with students engaged less than 3% of the time. After we modified the classroom, academic engagement increased immediately and stayed at or near 45%. Prior to intervention, overall disruptive behavior occurred approximately 90% of the time. After the intervention, disruptive behavior immediately decreased, but was inconsistent during the final observations.

Both the teacher questionnaire and a follow-up interview relayed Ms. Thompson's satisfaction with modifying her classroom environment to improve student behaviors. She reported that the intervention helped some of her students increase academic engagement and decrease disruptive behavior. She also intended to use the modifications and implement strategies learned during the study in future classrooms. She rated the intervention as "not at all" disruptive, and said she would "definitely" recommend this intervention to other teachers. Subsequently, Ms. Thompson shared that others in her school used her classroom as a model for environmental arrangement.

Final Thoughts

This case study explores the possibility of affecting classroom behaviors by modifying the classroom environment. Although this type of research previously has been conducted in self-contained special education classrooms (Guardino, 2009), this is the first study to explore modifications in an inclusive classroom. The results of this study

align with previous research: modifications to the classroom environment increased academic engagement and decreased disruptive behavior (Hood-Smith & Leffingwell, 1983; Proshansky & Wolfe, 1974; Visser, 2001; Wheldall & Olds, 1987; Zifferblatt, 1972). As noted previously, the effects of the classroom modifications decreased over time. We believe this was because the modifications were not used consistently.

Modifications to the classroom environment increased academic engagement and decreased disruptive behavior.

The results of this case study warrant additional research. Clearly, future studies should include a greater number of classrooms; beginning at the start of the school year would ensure modifications are preventative and proactive.

Teachers are not often trained in modifying the classroom environment to encourage academic engagement and discourage disruptive behavior. Providing a specific framework (i.e., Figure 1) enables them to do so in an organized fashion and increases the likelihood of a cohesive learning environment that positively impacts student learning.

Teachers should choose the modifications that they believe would most benefit their classroom. When teachers make evidence-based changes to their classroom environments, these modifications are a preventative and effective strategy (Abbott, Walton, Tapia, & Greenwood, 1999; Fullerton, Conroy, & Correa, 2009). Further, the amount of time spent learning and implementing a prevention strategy does not have to be time consuming or disruptive (Dobrinski, 2004).

Modifications to the classroom environment are a feasible, minimally intrusive intervention resulting in increased academic engagement and decreased disruptive behavior. Ultimately teachers have the freedom to design their classrooms; by incorporating evidence-based modifications, the end result is a more positive classroom environment for all.

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