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## **Salient Classroom Management Skills: Finding the Most Effective Skills to Increase Student Engagement and Decrease Disruptions**

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### **Classroom Management and Student Achievement**

Effective teaching requires a complex skill set. Teachers must deftly deliver academic instruction while maintaining efficiently managed classrooms to ensure student engagement and few disruptions. The bottom line is that students cannot learn if they are not engaged and paying attention to instruction. Therefore, successful classroom instruction is contingent upon effective classroom management to maintain appropriate student behavior, engagement, and, subsequently, academic achievement (Evertson & Weinstein, 2006). In a recent study of elementary teacher effectiveness based on value-added models, classroom management was the only significant predictor of difference between the top-quartile and bottom-quartile teachers (Stronge et al., 2011), supporting the contention that effective teachers are effective classroom managers.

A growing empirical research base supports the direct relationship between classroom management and reduction of disruptive behavior. Oliver, Wehby, and Reschly (2011) completed a meta-analysis on the impact of classroom management on disruptive and aggressive behavior for the Campbell Collaborative (<http://www.campbellcollaboration.org>). Their findings indicate that high-quality classroom management has an average effect of 0.80 ( $p < 0.05$ ), almost a full standard deviation reduction of classroom disruptive and aggressive behavior. An earlier meta-analysis by Marzano, Marzano, & Pickering (2003) also found a large average effect size for classroom management on the reduction of disruptive and aggressive behavior ( $d = 0.90$ ,  $p < 0.05$ ) but also found a significant and positive effect size of 0.52 ( $p < 0.05$ ) for academic achievement. Taken together, it is clear that classroom management is a critical component of effective instruction (Scott, 2017).

Although the evidence supports the impact of classroom management on student outcomes, research also indicates that many teachers struggle to implement successful classroom management. For example, teachers indicate that they consider classroom management to be the most challenging aspect of their job (Barrett & Davis, 1993; Reinke et al., 2011), that they receive very little training in classroom management (Freeman et al., 2014; Oliver &

Reschly, 2010), and that many exiting the teaching profession within their first five years indicate that classroom management is their primary reason for leaving (Wei et al., 2010). In addition, direct observation research has found, based on more than 3,000 teacher observations, that most teachers do not demonstrate the skills necessary to effectively manage their classrooms (Scott et al., 2011).

Limited training and demonstration of evidence-based skills in classroom management is germane for all students, but particularly for students with, or at-risk for, emotional and/or behavioral disorders (EBDs). Research has established that students exhibiting elevated levels of behavioral problems in the classroom are regularly excluded from classroom instruction, either by being sent to the office (Sugai et al., 2000) or being placed in restrictive settings (McLeskey et al., 2012), and that they continue to fall further behind their peers academically. This issue has been noted as a major concern by the U.S. government. In July of 2015, the U.S. Departments of Education and Justice hosted superintendents, principals, and teachers from across the country to a day-long “Rethink Discipline” conference focusing on the reduction of the well-documented overuse of school suspension and expulsion (<http://www.ed.gov/news/press-releases/educators-gather-white-house-rethink-school-discipline>). Research suggests that the first step to reducing suspensions and increasing access to classroom instruction for students with EBDs is universal implementation of high-quality, evidence-based classroom management (Evans et al., 2013). Further, high-quality, effective classroom management has been noted as a core component for establishing a multitiered Interconnected Systems Framework (ISF; Barrett et al., 2013), a model for integrating positive behavior supports and mental health interventions to significantly improve outcomes for students with EBDs.

A handful of systematic reviews of the literature has identified a number of classroom management skills (CMS) that have sufficient evidence to support their effectiveness. These skills include antecedent-based, instruction-based, and consequence-based skills (Conroy et al., 2013; Oliver et al., 2011; Scott & Anderson, 2011; Simonsen et al., 2008). Simonsen and colleagues (2008) identified 20 classroom management skills that have evidence of effectiveness and aggregated them into five domains that: (1) maximize structure and predictability; (2) post, teach, review, monitor, and reinforce expectations; (3) actively engage students in observable ways; (4) use a continuum of strategies to acknowledge appropriate behavior; and (5) use a continuum of strategies to respond to inappropriate behavior. Lewis and colleagues (2004) identified evidence-based classroom management skills that directly affect students with, or at-risk for, EBDs, including (1) teacher praise, (2) high rates of teacher-directed opportunities to respond during instruction, and (3) clear instructional strategies (i.e., direct instruction). Across all of these (see Conroy et al., 2013 for a review), three classroom management skills were consistently noted:

- Individual and group teacher-directed opportunities to respond (TD-OTR);
- Praise and behavior-specific praise (BSP); and
- Prompting for expectations, including pre-corrections.

Although these three skills do not encompass all classroom management skills, they have an ever-growing evidence base. It is also worth noting that these skills are typically

incorporated into most evidence-based classroom management interventions and programs, including the Good Behavior Game (Barrish et al., 1969), the Responsive Classroom (<https://www.responsiveclassroom.org>), BEST in CLASS (Vo et al., 2012), and the Incredible Years Teacher Classroom Management (Reinke et al., 2014).

## Study Purpose

Although evidence-based classroom management skills have been delineated in the literature, the most salient among them have not been identified. Certainly all three should be in place to effectively manage classroom behavior, but identification of the most effective classroom management skills can inform professional development efforts targeting single classroom management skills to increase the likelihood that they are implemented at a priori determined levels with fidelity (Gage et al., 2016). This study therefore examines direct observation data of teachers' implementation of classroom management skills across 25 consecutive school days. Specific research questions asked were:

- What classroom management skills significantly predict student engagement during large group instruction?
- What classroom management skills significantly predict student disruptive behavior during large group instruction?

## Study Setting and Sample

We recruited 12 elementary school teachers from two elementary schools in the southeastern United States. One school was a university laboratory school serving students in grades K-12 in which approximately 80% of those students performed at or above state benchmarks in reading and math. The second school was a Title I elementary school (K-5), in which 84% of the students received free or reduced lunch, 70% of the students were black, and fewer than 40% of the students were at or above state benchmarks for reading and math. The teachers at the university lab school requested classroom management assistance from the second author of this article, and the assistant principal at the Title I elementary school reached out to the first author for classroom management professional development.

Eight of the 12 teachers taught kindergarten or first grade; two taught third grade; one taught second grade; and one teacher taught fifth grade. All but one teacher was Caucasian and the average years of experience were 5.5 years (range 1:17 years). Eight of the 12 teachers had a master's degree in education; one teacher was dual certified to teach special and general education. Most (54%) reported receiving classroom management training during their preservice coursework.

We randomly observed three different students during each observation to capture an estimate of overall class-wide performance. Data collectors were instructed to choose three students at random at the beginning of each observation and to exclude students who had been observed during the previous observation. The data collectors would observe the teacher and the first student for the first five minutes of the observation, followed by the

second student and the third. No student-level characteristics were collected. Overall, we collected 195 observations of teachers and students.

## Study Measures

### Teacher Behaviors

We collected frequency data on teachers' use of the three classroom management skills identified across the classroom management literature reviews. The operational definitions for individual and group TD-OTR, BSP, and prompting for expectations are provided in Table 1. Operational definitions were congruent with those used in two large-scale direct observation studies of teachers' class management behavior (Kern et al., 2015; Scott et al., 2011).

### Student Behaviors

In addition to collecting teacher data, we noted the duration of time that students were academically engaged and the frequency of disruptions during each observation. Academic engagement was defined as follows:

Target student is engaged with instructional content via choral response, raising hand, responding to teacher instruction, writing, reading, or otherwise actively completing an assigned task (e.g., typing on computer, manipulating assigned materials) or the student is passively attending to instruction by orientation to teacher, peer, or materials if appropriate but is not required to do anything other than listening or observing.

Disruptions were defined as follows:

Student displays behavior that does or potentially could interrupt the lesson in such a way that it distracts the teacher and/or other students (e.g., out of seat, makes noises, talks to peer, makes loud comments, and makes derogatory comments). Behaviors can range from low intensity (distracting another student by whispering something to him/her) to high intensity (making threatening statements or destroying property).

## Study Procedures

Following institutional review board approval, we invited all kindergarten and first-grade teachers at the university lab school and five teachers requesting classroom management professional development at the Title I school to participate in the research study during a faculty meeting. All teachers invited consented to participate by completing and returning a written consent form after the meeting. The teachers were informed that a trained data collector would observe their instruction daily for up to three months in order to validate the direct observation system and that, based on their data and need, professional development would be provided in the fall.

### Direct Observation Procedures

We collected 15-minute direct observations of each teacher during large group instruction, defined as the teacher leading direct instruction for all students in a class at the same time. Each teacher was asked to identify a 20-minute time period when she consistently provided large group instruction in either reading or mathematics. A trained graduate research assistant or hired hourly data collector (undergraduate or graduate student) would stand near the rear of the classroom and quietly observe the teacher without distracting from instruction. Data collectors used Dragon Touch I8 8" Quad Core Windows Tablet PCs loaded with the Lily data collection application, part of the Multi-Option Observation System for Experimental Studies (MOOSES; Tapp et al., 1995). MOOSES is a direct observation system for collecting real-time event recordings of teacher and student behaviors on either a frequency or duration scale. All data collectors received a two-hour group didactic training and conducted periodic observer drift checks to ensure the accuracy of the observations.

### Inter-Observer Agreement Procedures

We collected inter-observer agreement (IOA) data for 52% of all observations. The two observers stood near each other but did not talk or interact during the observation except to start the observation at the exact same time. Inter-observer agreement was calculated in MOOSES using the point-by-point method with a three-second window. Across all classroom management skills and student behaviors, the average IOA was 90.1% (range from 82% to 97%).

### Data Analysis

In analyzing the data, we first summed the individual and group TD-OTR frequencies together for each observation so that we had a total number of TD-OTRs per observation. Next, we divided all four classroom management skill values by the number of minutes the teacher was observed (i.e., 15 minutes) so that the scale of each variable was rate per minute. We followed the same procedure to calculate the rate of disruptive behavior per minute. To address the two research questions, we estimated a series of three-level random-effects models—also known as hierarchical linear models (HLMs; Raudenbush & Bryk, 2002)—to evaluate the relationship between teachers' rates of classroom management skills and student behavior. We used three-level models to estimate student behavior nested in time (repeated observations) nested in teacher. First, we estimated a fully unconditional (null) model to calculate the intra-class correlation coefficient (ICC) for time and teacher. The ICC is the percentage of variance in student behavior attributable to time and to teacher. Next, we modeled full models with teachers' classroom management skills predicting students' percentage of time academically engaged and their rate of disruptive behavior. All analyses were conducted in the lmer4 package (Bates et al., 2015) in R (R Core Team, 2013) and estimated using restricted maximum likelihood (REML).

## Study Results

### Descriptive Statistics

Prior to modeling, we examined the descriptive statistics for the full sample and for each teacher across all classroom management skills and student behaviors (see Table 1). The average rate of TD-OTR was approximately 2 per minute during large group instruction. Although the full sample average was close to recommended TD-OTR rates (i.e., about 3 per minute during large group direct instruction; MacSuga-Gage & Simonsen, 2015), there was considerable variability among teachers, with a range of average rates between 0.76 per minute and 5.12 per minute. The average rate of BSP per minute was 0.44, whereby teachers delivered approximately 6 BSP statements per 15-minute observation. Again, there was significant variability among teachers, evidenced by the standard deviation value greater than the sample average. Lastly, the average rate of prompting for expectations, including pre-corrections, was 0.22, or about 3 per 15-minute observation.

Across all observations and teachers, students were academically engaged 80% of the time. Similar to the teacher classroom management skills, there were large differences between teachers in the average percentage of time students were academically engaged. Two teachers' students were academically engaged, on average, 68% of the time, while one teacher's students were academically engaged only 48% of the time. Disruptive behavior was not frequent, with an average of just under two disruptions per observation per teacher. A few teachers had almost no disruptions, although one teacher had an average of almost six disruptions per observation.

### Three-Level Random-Effects Models

We estimated four three-level random-effects models, two for each student behavior, to identify the most salient classroom management skills. The ICC results for the academic engagement model suggest that only 2% of the variance was attributable to time, indicating that there was very little variability across time. However, 30% of the variability was within teacher within time, suggesting that there was some variability by time and teacher, supporting the use of the three-level model. The ICC results for rates of disruptive behavior were the same for time, but much smaller for teacher ( $ICC = 0.13$ ), indicating that the rate of disruptive behavior was consistent within time and within time by teacher.

Next, we estimated fully conditional models to identify the most salient of the three evidence-based classroom management skills. The average percentage of time a student was academically engaged, assuming the three classroom management skills were zero, was 76%. Of the three classroom management skills included in the models, only BSP was statistically significant and positive, suggesting that increased use of BSP had a corresponding positive impact on student engagement. Results for students' rates of disruptive behavior were similar, with an average rate of 0.13 disruptions, assuming the three classroom management skills were at zero. Again, BSP was the only significant predictor, with a negative coefficient indicating that more BSP was predictive of fewer student disruptions.

## Study Findings

Classroom management is a critical component of effective instruction and a prerequisite for classrooms hoping to successfully include students with, or at-risk for, EBDs. Classroom management is also a foundational and critical component of effective multitiered school behavior models, including school-wide positive behavior support and the ISF (Barrett et al., 2013). Without classroom management, implementation of evidence-based behavioral and mental health interventions for students with EBDs is less likely to be successful or to generalize to their general education classrooms. Although myriad classroom management skills and practices have been developed, researched, and reviewed, three skills have been identified as evidence-based and are typically included in most classroom management interventions and programs: (1) teacher-directed opportunities to respond (TD-OTR); (2) behavior-specific praise (BSP); and (3) prompting for behavioral expectations, including pre-corrections. This study has sought to identify which of these three classroom management skills was most salient so as to inform both practice and professional development models about which skill to focus on first. Essentially, our goal was to determine which of the three is the most effective at increasing appropriate classroom behavior during large group instruction. Results from both the academic engagement and rate of disruptive behavior models suggest that BSP was the only classroom management skill that significantly predicted positive student behavior.

Based on the descriptive statistics, the sample of teachers in this study appeared to implement the three classroom management skills at rates greater than those in other studies. For example, Scott, Alter, and Hirn (2011) found that teachers delivered less than one TD-OTR per minute and that their rates of positive feedback were less than 0.1 per minute. In fact, the teachers in this study implemented both TD-OTR and BSP at rates near those recommended in the literature, i.e., 3 TD-OTR per minute during direct instruction (MacSuga-Gage & Simonsen, 2015) and approximately 6 BSP statements per 15-minute observation (Simonsen et al., 2016). However, there was significant variability across the teachers, particularly between the two schools. Teachers in the university lab school had an average TD-OTR rate of 2.4 per minute, and the teachers at the Title I schools had an average TD-OTR rate of 1.2 per minute. Results were similar for BSP, with an average of 7.5 BSP statements per 15-minute observation at the university lab school compared with 4.7 BSP statements per 15-minute observation at the Title I school. Yet, the average rates of classroom management skills in the Title I school were still much larger than those found by Scott and colleagues (2011).

Results of this study indicate that BSP was the only significant predictor of student performance after controlling for the other classroom management skills. This finding does not indicate that increased TD-OTR and prompting for expectations, including pre-corrections, are not important. Other research has confirmed that each classroom management skill has a positive effect on student classroom behavior (see MacSuga-Gage & Gage, 2015). However, the results do suggest that, for the students in this study, BSP appeared to have a positive and statistically significant effect that was greater than that of the other classroom management skills. Therefore, when teachers are considering which classroom management skills they should focus on increasing, BSP is an ideal choice.

Similarly, a recent professional development model using a multitiered system of professional development (MTS-PD) has been developed, which focuses on teaching teachers to implement a single classroom management skill to an a priori level before teaching another classroom management skill. Prior research using the MTS-PD has focused on both TD-OTR (MacSuga-Gage, 2013) and BSP (Gage et al., 2016; Simonsen et al., 2016). The findings of this study suggest that starting with BSP may be the best approach to increase teacher buy-in because teachers may see greater increases in engagement and decreases in disruptive behavior as a result of increased BSP.

## Study Limitations

Although all efforts were made to ensure the accuracy and reliability of study results, a number of limitations should be mentioned. First, the study does not include all potential classroom management skills identified in the literature. Based on prior reviews, we included TD-OTR, BSP, and prompting for expectations, because they appeared to be the most common and widely researched. However, other relevant skills include error correction, general praise, decreases in negative feedback, high structure, and posting behavioral expectations, as well as behavior intervention systems, including token economies and self-management systems. Therefore, future research should evaluate the relative influence of BSP when other classroom management skills and programs are present.

Second, the authors did not follow individual students across the observations or target students with EBDs. The measured student behaviors represent the classroom average using three five-minute observations of random students per observation. Future research should examine the influence of evidence-based classroom management skills on students with EBDs. We believe implementation of high-quality classroom management is a prerequisite to increase the likelihood that students with EBDs can remain in the general education classroom, but we also know that classroom management alone may not be enough and that additional function-based interventions will be necessary for those students to remain in the classroom. We believe that a continuum of classroom management, function-based interventions, and mental health services leveraging the ISF framework (Barrett et al., 2013) may be the most effective approach to ensure that students with EBDs remain in the general education classrooms.

Last, our statistical models were limited by sample size and inclusion of student and teacher characteristics. Future research should leverage larger samples and include both teacher and student characteristics, including gender, ethnicity, years of experience, and other related variables to increase the precision and accuracy of the model parameters.

## Conclusion

Implementation of high-quality, evidence-based classroom management is critical for the success of all students, but particularly for students with EBDs. We sought to identify the most salient single classroom management skill in order to inform practice and professional development models as to which classroom management skill to target first. Our results



suggest that BSP may be the most effective classroom management skill to increase engagement and decrease disruptive behavior. That being said, there is no doubt that BSP alone cannot and will not change all students' behavior in the classroom. Instead, BSP can be used as a first target for improving classroom management and for, ideally, increasing the likelihood that all students, and particularly students with EBDs, will be engaged with instruction.

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**Table 1**

## Operational Definitions of Classroom Management Skills

Classroom Management Skill	Operational Definition
Group opportunity to respond (OTR)	Teacher provides class group with an opportunity to respond to a question or request related to the lesson. The required response to questions can be verbal or gestural (e.g., thumbs up). All OTRs must be related to the academic or behavioral curriculum. Rhetorical questions that are not meant to solicit a student response are not OTRs.
Individual opportunity to respond (OTR)	Teacher asks a question related to the lesson directed at an individual student. The required response to the question(s) can be verbal or gestural. All OTRs must be related to the academic or behavioral curriculum. Rhetorical questions that are not meant to solicit a student response are not OTRs.
Behavior-specific praise (BSP)	Teacher gives an individual student or whole class behavior-specific praise. Behavior-specific praise is a contingent verbal statement that communicates positive feedback to a student <i>and</i> explicitly tells student(s) what they did right (e.g., "Good job, I like that you raised your hand.")
Prompting for expectations	Prompts and pre-corrections are specific cues that provide students with information about the behavior desired in specific situations. Teacher-delivered prompts may be verbal, nonverbal, or both. For example, a teacher may prompt students to raise their hands by raising his or her hand (a nonverbal model) and saying: "Remember how to get my attention appropriately during a lesson." For a teacher-delivered cue to serve as a prompt for social behavior, it must be presented before the behavior is expected (rather than after), and it must specify the desired social behavior. A pre-correction 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. Pre-corrections 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 pre-correction might consist of a brief role play of walking into class and using a quiet voice before the students begin recess.

**Table 2**

Descriptive Statistics for the Full Sample and for Each Teacher

	Teacher Classroom Management Skills						Student Behavior					
	Teacher-Directed Opportunities to Respond		Behavior-Specific Praise		Prompt for Expectations		Academic Engagement		Disruption			
	M	SD	M	SD	M	SD	M	SD	M	SD		
Full Sample	1.96	1.83	0.44	0.53	0.22	0.22	80.58	20.29	0.12	0.23		
Teacher 1	1.29	0.57	0.46	0.22	0.32	0.19	91.37	5.73	0.03	0.06		
Teacher 2	1.77	1.23	0.29	0.19	0.37	0.28	85.90	13.35	0.08	0.21		
Teacher 3	1.00	0.74	0.37	0.31	0.13	0.12	68.03	25.39	0.21	0.29		
Teacher 4	1.77	0.68	0.38	0.22	0.17	0.12	85.88	13.89	0.13	0.20		
Teacher 5	2.35	1.47	0.33	0.15	0.12	0.15	89.01	13.94	0.09	0.16		
Teacher 6	0.76	0.77	0.56	0.65	0.11	0.09	75.13	21.88	0.12	0.16		
Teacher 7	0.77	0.76	0.43	0.51	0.05	0.09	48.31	29.42	0.39	0.53		
Teacher 8	1.03	0.49	0.25	0.18	0.42	0.27	81.36	15.14	0.02	0.06		
Teacher 9	5.12	2.98	0.30	0.22	0.35	0.23	82.22	11.30	0.04	0.13		
Teacher 10	2.68	1.06	1.86	0.82	0.08	0.11	91.43	14.18	0.05	0.12		
Teacher 11	1.76	0.57	0.28	0.18	0.24	0.17	84.63	14.67	0.08	0.19		
Teacher 12	0.77	0.60	0.13	0.13	0.11	0.11	68.08	27.10	0.23	0.26		

**Table 3**

Three-Level Random Effects Model of Teacher Classroom Management Skills Predicting Student Behavior

Parameters	Student Engagement		Student Disruptions	
	Estimate	SE	Estimate	SE
Fixed effects				
Intercept	<b>0.76***</b>	0.04	<b>0.13*</b>	0.05
TD-OTR	0.01	0.01	0.00	0.01
BSP	<b>0.07***</b>	0.03	<b>-0.09*</b>	0.04
Prompt expectations	-0.08	0.06	0.11	0.08
Random effects				
Time	0.001		0.001	
Teacher	0.013		0.007	
Residual	0.030		0.046	
Fit				
ICC (Residual)	0.68		0.85	
ICC (Time)	0.02		0.02	
ICC (Teacher)	0.30		0.13	
AIC	-92.59		-17.83	
BIC	-69.68		5.08	
Deviance	-106.60		-31.83	

Notes: Significant estimates are in boldface, with  $p < 0.05^*$ ,  $p < 0.01^{**}$ , and  $p < 0.001^{***}$ ; 195 observations, 25 time points, 12 teachers.