Effective Classroom Management: An Air Traffic Control Analogy

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Abstract
Teachers address a wide range of student behavior by teaching expectations and routines and by responding proactively and constructively to misbehavior, while simultaneously holding all students, including those with emotional or behavioral disorders, to high academic standards. It can be a challenge for educators to effectively communicate their expectations to students and provide the structure that some will need in order to function in the classroom. Using the job of an air traffic controller as an analogy may help teachers clearly communicate the strategies they will employ in the instructional environment and help students with and without disabilities remain academically engaged in meaningful learning activities. Empirically supported critical features of effective classroom management include strategies that maximize structure and predictability and fit nicely within the analogy. This article describes these strategies.

Keywords
classroom management, behavior, behavioral strategies, discipline, inclusion

Schools are addressing an increasingly complex and diverse student population. While facing a wider range of student behavior, teachers are expected to respond proactively and constructively to misbehavior while simultaneously holding all students, including those with emotional or behavioral disorders (EBD), to high academic standards. How do teachers accomplish all of this and still retain their sanity?

Some students may engage in a variety of disruptive surface behaviors, such as refusal to comply with rules, blaming and arguing with others, annoying and bothering classmates, seeking attention, talking out in class, and not completing work. Teachers must be prepared to respond effectively and efficiently to these behaviors and at the same time be aware that their own behavior may contribute to the reinforcement of inappropriate behaviors (e.g., Barbetta, Norona, & Bicard, 2011).

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Although teachers have a repertoire of behavior management strategies for students with and without disabilities, these may not be incorporated into a planned system of responding to behavioral challenges. As a result, teachers may respond with ineffective, intrusive, or more restrictive interventions that not only fail to teach the appropriate alternative but actually serve to escalate the problem behavior. For example, teachers reinforce disruptive behavior if they provide more attention for misbehavior than for more appropriate behaviors (Zirpoli, 2008).

It is a challenge for educators to communicate their expectations to students and, at the same time, provide an effective, creative structure that some of them will need in order to be successful in the classroom. Using the work of air traffic controllers as an analogy can help teachers communicate the strategies they will employ in the instructional environment and provide an interesting framework that will encourage students with and without disabilities to remain academically engaged in meaningful learning activities. It may also help teachers link intervention research with their classroom practice.

Why the analogy? Air traffic controllers provide direction to pilots during taxiing, takeoff, and landing, as well as guiding them in flight. They provide separation intervals between arriving and departing aircraft at their airport, direct planes coming into their airspace, and are responsible for the transition of planes from their control tower to another. In essence they are responsible for the safe and efficient movement of aircraft maneuvering in the airport environment or en route. Whereas the margin for error in the classroom is considerably higher than that for air travel, teachers must manage transitions within their classroom (e.g., between subjects and activities) and between the classroom and other school settings (e.g., gym and lunchroom). They are required to attend simultaneously to the needs of multiple students, including those with EBD, and never to lose sight of any single child. That is, they have got to manage all the students in their care, all the “blips” on their radar screen. Empirically supported critical features of effective classroom management include strategies that maximize structure and predictability (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008) and fit nicely within an air traffic controller analogy. Although there are many classroom behavior management strategies that could be connected to the work of controllers, we describe three of these here: (a) Prepare a Flight Plan; (b) Ensure a Smooth Flight; and (c) Bring Them in Safely.

**Prepare a Flight Plan**

It is crucial for an air traffic controller to set clear limits for what pilots can do and where they can go. The same is true for a teacher in an inclusive classroom; setting limits is an essential strategy for managing behavior. Teacher precorrection, which is a method of setting limits that involves presenting directions or activities prior to students entering into a situation where problem behavior may occur, can be effective in reducing behaviors such as noncompliance, out of seat, interrupting, and yelling (DePray & Sugai, 2002; Stormont, Smith, & Lewis, 2007). In addition, establishing classroom rules as part of an intervention to decrease disruptive or disengaged student behavior can have strong positive results (Johnson, Stoner, & Green, 1996), and a highly structured classroom creates an organized and productive learning environment (Cartledge, Singh, & Gibson, 2008; Conroy, Sutherland, Snyder, & Marsh, 2008; Simonsen et al., 2008). Just as safe air travel begins with pilots knowing what they can and cannot do, an effective learning environment for students with EBD is established only after students know the boundaries of appropriate classroom behavior.

One way to establish limits is to focus on the physical arrangement of the classroom environment. Environments that are overcrowded, with excessive noise and distractions, can directly hinder a student’s ability to stay on task. Teachers should be aware of things such as physical space, noise, lighting, and temperature when designing their classrooms (Brownell & Walther-Thomas, 2001; Burke & Burke-Samide, 2004; Smith & Bondy, 2007). In the language of air traffic controllers, when the runway is cleared and quiet has been established, pilot concentration can begin.

Even in the best-designed classroom, some children seem to fly around the room, but they and the other students are much better served by well-defined parameters, rather than fruitless admonitions such as “sit in your seat!” or “stop moving around.” Filing an effective flight plan in the classroom, then, means to set reasonable and concrete limits on the spatial movements of the children.

For children given to wandering, the teacher can establish a flight zone by placing colored tape on the floor creating a rectangle extending out about one foot beyond all sides of the student’s desk. It may be necessary to begin with a larger taped area and decrease the size gradually. Students are told that this marked area represents their personal space and that they now own that space. Student can move about at will within the space but cannot leave without the teacher’s permission, and other students cannot enter the space without the direct consent of the student. Other areas of the classroom can also be marked, such as a small group instruction area while the teacher is working with another group of students that are outside a student’s flight plan, creating “no-fly zones.” Just as a pilot must obtain clearance to leave one airspace and enter another, students can be required to remain in their space until the teacher gives them permission to move outside or to enter a no-fly zone.
Ensure a Smooth Flight

**Alpha Commands**

Air traffic controllers use a calm, controlled voice even under stressful conditions. They provide sufficient information, describe the specific action the pilot needs to take, and do not judge or moralize. Similar qualities can improve the effectiveness of teacher directives. They should be concise (10 words or fewer) and specific. Vagueness, repetition, and complication can muddle a student’s understanding and thus interfere with compliance (Smith & Bondy, 2007). Teachers whose “Don’t” requests exceed their “Do” requests not only create negativity in the classroom; they may actually see a reduction in compliance to the “Do” requests (Rhode, Jenson, & Reavis, 1993). Teachers making more stop than start requests need to adjust their behavior. Instead of asking a student to stop talking, for example, ask him to work on his assignment, and when he complies, provide praise (Barbetta et al., 2005).

**Check Your Flight Status**

To ensure a safe and efficient plane ride, pilots refer to their flight plan and instrument readings and update their information during flight. Similarly, it is helpful for students to monitor their behavior and academic progress to make the most of the instructional time. Often students are not really aware of how they are doing from week to week or assignment to assignment, even though most teachers provide some form of regular feedback. Because of this, students may not know in which areas they are failing or succeeding. Although it is critically important for teachers to collect data on the performance of students with EBD (Barbetta et al., 2005; Cook, 2005; Smith & Bondy, 2007), most teachers do not have time in a busy classroom to record every student’s behavior and to provide them all with specific and immediate feedback. There is an effective solution to the problem, as some students, even at a very young age, can learn to self-monitor or record their own behavior, and this skill in itself can have a highly positive impact (Daly & Ranalli, 2003; Gumpel & Golan, 2000; Hutchinson, Murdock, Williamson, & Cronin, 2000). For example, self-management strategies such as graphing and self-talk have helped not only to reduce problem behavior but also to increase the accuracy of math assignments and to improve written expression skills in a number of students with and without disabilities in multiage, inclusive classrooms (Rock, 2005; Stotz, Ito, Konrad, & Albert-Morgan, 2008).

In regard to behavior, if a teacher is frequently correcting a student for talking out without permission, interrupting others, or making irrelevant remarks, the student may be instructed to self-monitor using a form designed to present a clear picture of targeted behaviors. Limits can be set on the behavior by creating a red zone directly on the form indicating when the student has exhibited too many instances of the target behavior and has had to color in too many boxes.

Applied to academic progress, self-monitoring can be incorporated using a score chart modified for use with spelling, math, or any subject with regular quizzes or graded activities. If, for example, 20-question quizzes are given at weekly intervals, students can make a simple graph to plot their own scores week-to-week, using either raw scores or percentages. If a given student gets 17 correct answers on the first test, for instance, and then scores of 14, 16, 12, and 19 the following weeks, these can easily be plotted as the scores themselves, or as percentages, with the student drawing a line from one score to the next, creating an easy-to-read graph of performance.

Self-monitoring is one way for students to track their own behavior and/or academic performance that provides a clear indication of how they are doing over a period of time—to themselves as well as to teachers and parents. This information will be especially effective if the students with EBD are prompted to use the graph to evaluate their own behavior and/or academic performance and make appropriate adjustments. An air traffic controller sends notices of weather conditions to pilots during their flights, and pilots can monitor that information and use it to steer clear of storms, which makes for smoother flying. Just so, students monitoring their own performance can find ways to make their time in the classroom more productive.

**Visual Prompts**

Pilots use readings from their instruments as well as feedback from the air traffic controller to maintain an appropriate course. In the classroom, many times students have trouble staying “on course,” particularly when it comes to working on written material throughout an entire class period. How can teachers help students remain on task and, at the same time, see instant feedback on how much written work they have accomplished?

Visual prompting is one strategy to provide students who demonstrate challenging behaviors with a frame of reference as they complete these assignments, and it has long been used to help increase their acquisition of academic skills (Mayfield, Glenn, & Vollmer, 2008; Peterson, McLaughlin, Weber, & Anderson, 2008; Rivera, Kooralnd, & Fuego 2002) as well as behavioral skills (Ganz, Kaylor, Bourgeois, & Hadden, 2008; Wheeler & Carter, 1998). To implement one simple yet extremely effective prompting strategy, the teacher circulates among the students who are working independently at their desks and makes a line with colored ink under the last bit of work the students have completed. Students are told that their goal is for performance beyond the line.
This colored line gives the teacher and the student a reference point from which to judge how much work that student has completed at any point in the period. A one-second glance at the student’s paper reveals the volume of work the student has been able to do and serves as a strong visual prompt that helps to identify a concrete goal—continuing progress beyond the line.

Control Radio Contact

Pilots need to keep in touch with an air traffic controller, but it would be annoying and unhelpful if they called in every 5 minutes. In the classroom, some students come up to the teacher for reaffirmation or reassurance much too often because of the insecurities in their lives, their need for high levels of teacher attention, or for reasons unknown to the teacher. If teachers keep responding to inappropriately frequent questions and requests for reassurance, not much work will get done, and other students may not receive the attention they deserve. This is a difficult situation that requires just the right balance between providing necessary attention to all students and helping them develop an appropriate level of independence without increasing insecurity or frustration. One solution is a limited hold contingency, in which reinforcement is available only for a set amount of time, and is typically added to variable-interval schedules of reinforcement to speed up responding (Pierce & Cheney, 2004). In this case, it could be used to limit the amount of attention the student may request from the teacher and simultaneously reinforce behaviors that result in the child’s receiving attention from a peer or solving the problem alone (Cooper, Heron, & Heward, 2007; Filcheck, McNeil, Greco, & Bernard, 2004).

For elementary school students, a bag of small items (e.g., plastic airplanes; stickers; cardboard pictures with different shapes, sizes, and colors) of varying value can be used. Red airplanes, for example, could be worth two points, blue airplanes five points, and yellow airplanes 10 points (the same classification can be devised according to size or shape). It may be helpful to laminate and post a price list of the number of points attached to each item. At the start of each week, students are given a predetermined number of items, but must forfeit an item every time they seek attention for something that is not part of the normal routine. The more frivolous the reason (at teacher discretion), the higher the value of the item that must be given back. When students purchase a reward at the end of the week or month, having more points leads to a better reward that can be purchased.

It is helpful in the beginning to remind students of alternative behaviors to seeking attention from the teacher. A problem-solving list can be created that includes things such as “ask a friend,” “look in the dictionary,” or “first ask yourself how this problem was solved last time.” This strategy is only going to work if the teacher provides meaningful, consistent rewards for students. It is designed to give students some ownership of the times they ask for assistance and to reward them for increasing their own independent functioning.

Bring Them in Safely

Holding Pattern

There are times at busy airports when an air traffic controller must direct certain incoming flights to continue in a holding pattern before landing. This may allow the pilot to better prepare for landing under less demanding conditions. At the beginning of class, during other transitions, or when a teacher is preparing for the next activity or attending to other students, there may be times when a given student needs immediate attention. The student is becoming upset or agitated, and removal from the setting is necessary, but the teacher wants to intervene in a positive manner (Bacon, 1990). Antiseptic bouncing has long been recognized as an effective strategy for putting a student with EBD in a “holding pattern” so that problem behavior is prevented and the class can go on without disruption (Long, Morse, & Newman, 1980; Smith Myles, 2003; Walker, Colvin, & Ramsey, 1995).

In these situations, the teacher can avoid confrontation by sending the student on an errand, thereby giving him time to cool down. This should be done before the behavior escalates, and the teacher should make it a positive request (Braithwaite, 2001). The teacher can write the following message on a note, “This student needs to be out of my classroom for a short break. Please hold them in the office for 5–10 minutes and then send them back to my class with a red pen.” The note is sealed in an official-looking envelope on which “Please give the student a response” has been written. The student is told to take the letter to the office.

It is necessary, of course, to have prearranged cooperation of the school’s central office, or an arrangement with a colleague in another classroom. The important thing is that the student must be removed before any behavior warrants a negative consequence.

Match the Runway

An air traffic controller who asks the pilot of a 747 jet to land at the short runway of a small municipal airport has unreasonable expectations. Similarly, when students engage in mildly disruptive classroom behaviors, teachers cannot expect to eliminate those behaviors entirely or immediately. In these instances, it is not the behavior itself but the chronic rate of low-level disruption that can be exhausting. Having
expectations that are too high for students can promote failure rather than success and may breed other forms of acting out, particularly for students with EBD. Setting reasonable boundaries for behavior that are achievable can make teaching easier and give the student a sense of accomplishment at the same time. Realistic expectations pay off.

One realistic way to address a behavior that is acceptable in specific situations but problematic when it occurs too frequently is a strategy called differential reinforcement of lower rates of responding, or DRL. DRL may be used to reinforce an overall lower rate of behavior, or greater amounts of time that pass between its occurrence (Cooper et al., 2007; Zirpoli, 2008). For example, a DRL procedure has been used to reduce the rates of talking out among students in both special and general education classrooms to more tolerable and acceptable levels (Dietz & Repp, 1973).

This strategy can be implemented in any classroom. When students become frustrated during work time, for instance, they can be taught to request a break to replace other challenging behavior, such as getting out of their seats or bothering other children. However, if students request a break too often, they may be “on break” more than they are engaged in a learning activity, which is unacceptable. The first step in implementing a DRL procedure requires deciding on an appropriate reward that the student can earn (e.g., stickers or being first in line). Next, the teacher records the number of times a given student typically asks for a break during a specified period of time (e.g., during daily seatwork) for several days to establish a baseline. Then a starting goal is set just below baseline, and if the number of times the student asks for a break does not exceed this goal, the student earns a reward. The goal is then gradually reduced until the student displays the behavior at a rate that is more acceptable.

It is important not to decrease the allowance of behavior too quickly. The rate of decline will depend on the number of times the behavior is occurring in baseline and the final desired level of the behavior. If the student is asking for a break five times and the ultimate goal is to ask for no more than two, decreasing the level by one instance over many days would be appropriate. However, if the student is asking for a break 15 times during baseline, the number of breaks allowed may be reduced more rapidly.

**Conclusion**

All analogies have limitations, but teacher as air traffic controller is an especially appropriate and useful one in light of the call for students with and without disabilities to self-manage their behavior to improve academic outcomes (Brooks, Todd, Tofflemoyer, & Horner, 2003). Air traffic controllers do not fly the planes; rather, they guide the pilots to ensure safe flights. Classroom teachers do not control student behavior; they guide students to promote learning. Air traffic controllers use clearly articulated procedures that are understood and followed by pilots because they make flying more relaxed, efficient, and effective. Use of the analogy in classroom teaching is efficient and effective for the same reasons. It provides teachers with a novel and creative framework they can use to communicate their evidence-based behavior management strategies to students, particularly those with EBD. Even better, students like it. They get the point, and it is fun to make the connection with pilots and air traffic controllers. The analogy illustrates how specific strategies are implemented in the classroom and enhance the relationship between teacher and student by creating student understanding and willing participation in the process.

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