Affecting Disproportional Outcomes by Ethnicity and Grade Level: Using Discipline Data to Guide Practice in High School

TERRANCE M. SCOTT¹, REGINA G. HIRN¹, and HOUSTON BARBER²

¹University of Louisville, Special Education, Louisville, KY, USA
²Jefferson County Public Schools, Louisville, KY, USA

Teachers report that the behaviors that they are forced to deal with on a daily basis are not typically violent or intense but are frequent and usurp great amounts of instructional time. Office discipline referrals provide a well-established method of tracking student behavior problems across the school, allowing for deeper analysis of contextual predictors of problem behavior. In this case study, an average-size Midwestern high school created and implemented a referral system that identified disproportional referral rates for freshmen and minority students. This article describes the process by which faculty members identified contextual predictors and agreed on simple rules, routines, and physical arrangements across the school. The authors used continuous data analysis to refine prevention measures and resulting data showed steady and consistent decreases among freshmen and minority students. Implications for considering disproportionality in the context of future research are discussed.

Keywords: behavior, disproportionality, freshmen, high school, referrals

In U.S. public schools, classroom teachers deal with a variety of challenging student behaviors. Teachers report issues related to challenging student behavior as the most difficult and stressful aspect of their professional lives (Furlong, Morrison, & Dear, 1994; Hemmeter, 2006; Kuzsman & Schnall, 1987; Safran & Safran, 1988). Although instances of violence and crime in schools garner popular media attention, the most common disciplinary referrals are for truancy and tardy, followed by general disobedience (McFadden, March, Price, & Hwang, 1992; Morgan-D’Atrio, Northrup, LaFleur, & Spera, 1996). Similarly, teachers report that the behaviors that they are forced to deal with on a daily basis are not typically violent or intense but are frequent and usurp great amounts of instructional time (Sawka, McCurdy, & Mannella, 2002; Sprague & Walker, 2000). Of concern is the degree to which frequent mild behavioral difficulties affect the amount of time in which students are engaged with instruction.

Given the long history of findings in support of the strong relationship between academic engaged time and achievement (Brophy, 1988; Brophy & Good, 1986; Farberman & Kaplan, 2005; Wang, Haertel, & Walberg, 1993), identification of contextual predictors, early identification of at-risk students, and an awareness of disproportional exclusion practices are key to the development of school and classroom settings that predict success across all students. The literature supports collection and analysis of office disciplinary referral data as a valid method of assessing contextual predictors of student misbehavior (e.g., Irvin et al., 2006; Irvin, Tobin, Sprague, Sugai, & Vincent, 2004; Metzler, Biglan, Rusby, & Sprague, 2001; Spaulding et al., 2008; Tobin, Sugai, & Colvin, 2000). Analysis of such data has shown that (a) behavior problems are largely predictable by location and time (e.g., Leedy, Bates, & Safran, 2004; Luiselli, Putman, & Sunderland, 2002; Metzler, Biglan, & Rusby, 2001; Spaulding et al., 2008), (b) individual student referrals can be used as a means of early identification of students prone for larger problems (Sugai, Sprague, Horner, & Walker, 2000), and (c) referral and suspension of African American students has consistently been at a higher rate than that of Caucasian students (Mendez & Knoff, 2003; Rausch & Skiba, 2006; Skiba et al., 2008; University of Oregon PBIS Workgroup, 2010; Wallace, Goodkind, Wallace, & Bachman, 2008). Because failure tends to predict future failures, there is an important and urgent need to attend to these data as a means of predicting and preventing problems. Together, these data provide a snapshot of the culture of the school—the manner and effectiveness with which students and adults...
interact. For example, among African American students, Vavrus and Cole (2002) found that (a) office referrals leading to school suspension were less often the result of serious disruption than the result of student/teacher authority struggles and (b) minority students were most likely to be singled out in this process. Such information should be looked upon as the impetus and starting point for change.

Positive Behavior Interventions and Support

Given the connection between environment and behavior, systems that focus on assessing and intervening in these connections seems most logical. Positive behavior interventions and support (PBIS) is a systemic or schoolwide approach to the identification and prevention of problem behaviors in the school. Systems of PBIS can be conceived of as four distinct components that include (a) using data to identify predictable problems/students/contexts; (b) development of logical and realistic plans for prevention via effective instruction and environmental arrangement; (c) creation of systems to support consistent implementation across staff, students, and time; and (d) continued use of data to monitor goals and inform future planning decisions (Irvin et al., 2006). This process is continually repeated for students who are not responsive, and each failed intervention likely results in more intensive assessment and intervention.

A second and more intense interaction with the four-step process is focused on students for whom data show that schoolwide rules, routines, and arrangements have been insufficient to prevent failures. Secondary system interventions are tailored and implemented to the needs of these students. Further data collection and analysis will identify students who still have not successfully responded despite this secondary level of intervention. These students are identified as those at greatest risk of larger failure and warrant the most intensive strategies and interventions. At the schoolwide or universal level, office referral information generally provides a broad base of data to evaluate the success of schoolwide and secondary interventions. For example, office disciplinary referral data, when sufficiently detailed, provide evidence of the times and locations most predictive of student misbehavior and provide a context for schoolwide rules, routines, and arrangements (Irvin et al., 2004). At each level, procedures are developed with thought to the specific students most likely to fail in these contexts and how student demographic and cultural factors may be considered in the development of the most effective strategies.

Although the literature has demonstrated the effectiveness of the PBIS process with a range of schools, these examples have largely been at the elementary-age level, with few exceptions (e.g., Bohanon, Flannery, Malloy, & Fenning, 2009; Flannery, Sugai, & Anderson, 2009), focused primarily on problems schoolwide rather than with specific groups, and have not addressed disproportionality or specific age groups as a part of the problem or solution. The purpose of this case study is to describe how we used formative analysis of office disciplinary referral data to identify and respond to high school referral patterns that were disproportional by ethnicity and grade level.

Method

This study was undertaken in a 1,450-student urban high school in a large Midwestern city in the United States. The student body comprised 47% minority students (41% African American students) and 54% qualified for free and reduced-price lunch—an indicator of poverty status. Further, the stability rate for the school was 85.9%, indicating the percentage of students who remained at the school the entire academic year. The faculty and staff comprised 97 persons, 9.3% of whom were minorities (all African American) and 80% of whom had at least a master’s degree.

Faculty members had voiced concern with what they perceived to be challenging student behaviors across the school. In the fall of 2009, the school faculty received a 30-min overview of PBIS. Although the faculty did not agree to full PBIS implementation at that time (they did not wish to form PBIS team or conduct fidelity assessments), from this initial contact plans were made to begin a process of better describing the predictability of student behavior problems. The principal and assistant principal collaborated with the authors to plan a process of collecting and analyzing data to for the purpose of developing a more systemic and proactive discipline system that, although not a fully implemented PBIS system, would mirror the key features of assessment to identify predictors of student problem behavior, targeted interventions to prevent, schoolwide agreement to consistent implementation, and evaluation of progress.

Referral process and data summary

In attempting to assess the school’s current needs, we determined that existing data on behavior were inadequate. The existing referral form included only date, student name, incident, and referring teacher. Further, data were not summarized other than by total number of referrals. Thus, no information was available as to the predictability of problems by location, time, or any other contextual variable. As a first step, the referral form was revamped to include information regarding the time, location, grade level, and ethnicity (minority students, Caucasian students) for each separate incident. This revised form was presented to all staff at a faculty meeting, and discussions were undertaken to achieve consensus on (a) the precise definitions of those behaviors warranting referral, (b) a protocol for writing and delivering referrals, and (c) decision rules for the type
and degree of behavior warranting a referral as opposed to teacher intervention.

Faculty members confronted student misbehavior and wrote referrals as they always had. The differences were in the degree to which locations and incident definitions were agreed upon and the inclusion of additional contextual information on the referral form. All referral forms were submitted to a designated assistant principal who entered the information into the discipline referral database. An Excel spreadsheet was created to hold the referral information. This consisted of a set of columns representing the date, student’s name, referring teacher, ethnicity, and each of the various descriptors making up the categories listed on the form. Data entry involved typing the identifying information (date, student, teacher) and then simply placing a “1” in the column corresponding to the appropriate descriptive information for ethnicity, location, time of day, incident, and outcome.

**Monthly data sharing with all staff**

On a monthly basis beginning at the end of January 2009, the first author (T.M.S.) visited the school and assisted the school’s administrative team to summarize their monthly data in a process similar to those described in numerous descriptions of PBIS procedures (e.g., Tobin et al., 2000). For the first month, referrals were summarized and graphed by time, location, ethnicity, and incident. These graphs were shared with the full faculty and staff at a monthly meeting and predictor conditions (times, locations, incidents, students, etc.) were identified. This led to discussions on (a) why problems might be particularly predictable in identified contexts and (b) simple strategies (e.g., rules, routines, and arrangements that might be logical for reducing these most predictable problems. With continued prompts to keep proposals simple, discussions yielded to consensus and then voting and the meeting ended with a set of simple strategies to be implemented in a consistent manner across all faculty and staff. For example, data indicating that problems were particularly predictable in the hallway prompted a discussion of the rules for hallway behavior, how those rules would be communicated to students, and how faculty/staff would position themselves in the hallway during passing times and remind students of the expectations. However, no deeper analysis was done with regard to why certain variables were predictable, resulting in interventions largely focused on the schoolwide process rather than on specific populations or contexts. This process alone was used on a monthly basis for the remainder of the school year.

At the start of the second year, the process was altered so that predictable variables were disaggregated and analyzed on a monthly basis. For example, when ethnicity was seen as a predictor (i.e., overrepresentation), all referrals for minority students were sorted into a separate sheet and analyzed alone to determine the specific problems, times, locations, and so forth, for this population. Graphs were produced for the identified problem conditions and faculty/staff used these data as a means of targeting interventions to the most predictable contexts and conditions. When problems subsequently decreased, the strategies largely stayed the same and when no effect was demonstrated, the faculty/staff commenced a discussion of alternative strategies to be implemented for the coming month. Thus, all strategies were developed on the basis of data, agreed upon by faculty, implemented across the school, and then reevaluated at the end of each month.

**Identified disproportional discipline outcomes**

Of particular note in the school were identified disproportional numbers of referrals for freshmen (of all ethnicities) and minority students (of all ages). Freshmen made up less than 30% of the student population but accounted for 44% of the total referrals between January and May of 2009. Minority students made up approximately 40% of the student population but accounted for 73% of the total referrals between January and May of 2009. These areas were identified as being of particular concern and became the focus of the school’s efforts in this process over the remainder of the school year.

In the case of overrepresentation of freshman and minority students, the 2009–2010 school year represented a change from the previous year (data collected only January through May in the 2008–2009 school year). Beginning in the fall of 2009, data were disaggregated for these groups and further analyzed in an attempt to better predict and understand these issues. Discussions focused on data-based predictors for behaviors, locations, and times. Next, interventions involving rules, routines, and arrangements were tailored to prevent rather than react to problem behaviors.

**Freshmen hypotheses and interventions.** From January through May of 2009, little attention was given to the identified freshman issues. Faculty members stated that freshman had always had more problems and largely dismissed the issue as something to be expected from students during their first year in high school, and there was no consensus to intervene in any particular manner. However, the principal insisted that a freshman orientation day immediately before school the following year. During this orientation, only freshmen were in attendance, and they were carefully guided to the rules in each of the areas of the school and showed how to best move from class to class according to their assigned schedule. In addition, disaggregation of the data to focus solely on freshmen problems highlighted a couple of contextual predictors. First, freshman problems were most likely to occur immediately before first period. In contrast, among all other students this was the least likely time for problem behaviors. Further analysis revealed that these problems typically occurred in the hallways and outside of the building. A subgroup of faculty members
looking at these data suggested that orientation specifically targeted these key predictors and provided explicit instruction (i.e., rationale, modeling, guided practice, feedback) as to appropriate behaviors and choices in these contexts. As the 2009–2010 school year continued, data continued to be disaggregated for freshmen and presented to the faculty. For example, on the basis of freshman data from August and September indicating hallway as a predictor, the faculty discussed at a faculty meeting and agreed that further prompting would be necessary immediately before and during passing times and rule reminders would be presented during class. There was a vote with more than 80% of faculty opting to implement this prompting intervention, and it became policy. Table 1 summarizes predictable problems and school solutions related to freshmen.

### Hypotheses and interventions related to minority students.

From January through May of 2009, much attention was given to the predictors specifically identified for minority students. Pressure from the school district and community fueled this attention, and the data simply provided a concrete reminder. Still, faculty made some of the same assumptions and statements with the ethnicity issue as they had with the freshmen. It was stated in one faculty meeting that these were simply difficult kids from difficult backgrounds and that such behavior should be expected. Rather than asking more in-depth questions about predictors, the staff were tended to proffer broad hypotheses, each in turn disproved by a closer look at the data. The first monthly consensus from a meeting of the faculty was that these students had more problems with academic core content. Yet, the lead author (TMS) further disaggregated the data and returned a month later to show that noncore academic times were more predictive of problems (see Figure 1). At this second monthly faculty meeting, the consensus was that overrepresentation was largely the result of having a young and inexperienced group of faculty members who had not yet mastered discipline. Yet, the lead author again engaged in further disaggregation by years of experience of referring teachers and returned the following month to show faculty that experience was not predictive of differences (see Figure 2). During this third (and most uncomfortable) faculty meeting, discussion focused on whether the ethnicity of faculty was a factor in referrals. While the staff discussed this in a respectful and honest manner, the underlying question of racism was left unsaid. Still, there was tension regarding this issue, and faculty became much more reluctant to discuss. Again, the lead author spent the next month further disaggregating the data by staff ethnicity and returned to the fourth meeting to present analyses demonstrating that all faculty, regardless of ethnicity, referred minority students at similar rates (see Figure 3). Although the failure of each of these hypotheses...
to prove true might seem like wasted time, the process itself helped bring the faculty to the point of considering the contexts associated with problems and they began asking questions regarding the predictability of referrals for minority students. In May 2009, the fourth month of looking at data, the faculty became engaged in asking specific questions regarding the data and were led through disaggregation to answer their questions about possible predictors. The most obvious distinguishing predictor when looking the data aggregated by student ethnicity was time. Problems for minority students were most likely to occur between 9:00 and 9:30 AM, which was the lowest problem time for Caucasian students (see Figure 4). When these data were displayed at the faculty meeting, discussions arose about why this might be the case and how it might be approached. Further disaggregation and analysis clearly showed that referrals at this time typically emanated in the classroom and were often written for tardy. Although in general, faculty members were unable to explain why minority students were more likely to receive referrals under these conditions, they moved forward with plans to prevent. Despite the fact that 60% of the student population did not have predictable referrals under these conditions (time, place, problem), staff determined that immediately preceding transition times, all students would receive both extra prompts about being on time to their next class and verbal reminders in the hallways about hallway expectations. Further, staff agreed to encourage and praise appropriate behavior in these contexts. That is, the staff voted with better than 80% consensus to initiate prompting and praise in these contexts.

Because data indicated that minority students were more likely to receive a referral for incidents of disrespect, the staff was prompted by the principal to engage in a discussion of the definition of respectful interaction. This involved a discussion of how cultural differences may lead students to act in ways that they do not mean to be disrespectful but which are taken as such by faculty. The process also set the occasion for the diverse faculty themselves to discuss specific culturally relevant behaviors that should be considered respectful and disrespectful for all students. In contrast with past discussions of ethnicity, which had been uncomfortable, this discussion was straightforward and focused on how appropriate behaviors might be defined and taught to all students. Keys to the success of this discussion were that (a) the faculty worked collaboratively to develop what they believed to be culturally relevant definitions and (b) consensus decisions led to plans for teaching and modeling with the students. For example, respectful behavior was defined as polite, quiet, and calm—and a range of examples were modeled for the students. Table 2 summarizes predictable problems and school solutions related to minority students.

As we previously noted, faculty members were not in favor of a more formalized PBIS implementation process and thus did not form a team to analyze data. All data analysis

Table 2. Minority Student Referral Predictors and Prevention Strategies

<table>
<thead>
<tr>
<th>Referral predictors</th>
<th>Prevention Strategies</th>
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<tbody>
<tr>
<td>Time: 9:00–9:30 AM, 12:00–12:30 PM (highest but others also high)</td>
<td>Additional prompts across all students immediately preceding transition times and verbal reminders in the hallways about being on time to class</td>
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<tr>
<td>Location: Classroom</td>
<td>Encourage and praise students who are on time to class</td>
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<tr>
<td>Behavior: Tardy, disrespect</td>
<td>All faculty engage in development of culturally responsive definitions for respectful and disrespectful</td>
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<tr>
<td></td>
<td>Teach, encourage, model and acknowledge these behaviors</td>
</tr>
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was done either by the lead author or by the faculty as a whole during faculty meeting time. Further, no systematic plans for assessing the fidelity of implementation was developed or implemented. Faculty simply made agreements to engage in specific behaviors and then met monthly to assess the effect.

Results

As a part of the continuing move toward more systematic and proactive discipline system, the staff were guided to collect, graph, and discuss student discipline referral data, predicting failures as part of the data-based decision making. This collection and analysis of data contributes to the first of the four essential components of PBIS—predicting student failure by context—and to the last—evaluating intervention. In this respect, data served a dual purpose of assessment for and evaluation of intervention. Thus, outcomes reported here were collected by the school as a part of the office discipline referral monitoring process from January 2009 through May 2010.

Schoolwide outcomes

Schoolwide problem behaviors decreased from a rate of 20.8 referrals per day from January through May 2009 (Year 1) to a rate of 7.4 referrals per day from January through May 2010.
through May 2010. For the entire 2009–2010 school year (Year 2), the average rate of referrals per day across the school was 11.1. Because areas such as hallways had more problems from the beginning, the total decrease in referrals was greater. However, the percentage change was fairly equal across all times, locations, and behaviors. Of particular note, the most problematic contexts of tardy, hallways, and before/after school by themselves accounted for 58% of the total decrease. Using 20 min as an average time that a student misses class because of a referral (Scott & Barrett, 2004), comparing Spring 2009 with Spring 2010, the school saved approximately \(((20.8 - 7.4) \times 91 \text{ days}) \times 20 \text{ min}\) 408 school hours for freshman students across the school during this period.

**Outcomes for freshmen**

Freshman referral rates during January through May 2009 in Year 1 averaged 9.2 per month. As is presented in Figure 5, the average dropped to 4.8 referrals per day over the entirety of Year 2 and was calculated at 3.1 referrals per day from January through May 2010. Using the 20-min average for class time missed, the school saved approximately 203 school hours for freshman students from January through May 2010.

**Outcomes for minority students**

Daily referral rates for minority students varied at rates between 2 and 3.64 per 100 students from January through May 2009 in Year 1, averaging 2.75 per month. As is presented in Figure 6, the average dropped to 1.42 daily referrals per student over the entirety of Year 2 (range = 0.45 to 2.5) and was at 0.94 daily referrals per 100 students from January through May 2010. In comparison, Caucasian students averaged 0.39 daily referrals per 100 from January through May 2009 in Year 1 and held steady at 0.24 during the entirety of Year 2. Using the 20-min average for class time missed, comparing actual monthly referral averages of Spring 2009 with those of Spring 2010, the school saved approximately \(((15.1 - 7.9) \times 91 \text{ days}) \times 20 \text{ min}\) 218 school hours for minority students across the school during this period.
Discussion

Results show positive effects in terms of reduced office referrals for both of the identified overrepresented groups. Freshmen saw a sharp decrease in average referrals per month and maintained a decreasing, although variable trend. In terms of minority students, comparing Spring 2009 (of Year 1) with Spring 2010 (of Year 2) there was a 65.8% decrease in referrals. Further, the steady decrease in referral rates for minority students is atypical of the fairly flat trends found in high schools with similar ethnicity enrollment (University of Oregon PBIS Workgroup, 2010). However, daily referrals per 100 minority students in this school, even at the low spring rate of 0.94 is still well above the national figure of 0.42 for schools with similar enrollment (University of Oregon PBIS Workgroup, 2010) and remains disproportionate at more than five times the rate of Caucasian student referrals. But this case study does demonstrate how a high school might use data to identify disproportionality, analyze the contextual predictors, and develop a consensus schoolwide plan for prevention.

Limitations

This article presents a case study of one school’s efforts to identify and decrease disproportional outcomes. As a case study, the results serve only as an example of the process and cannot be generalized. Further, although data are presented across time and students, several limitations must be considered. First and foremost, the actual interventions undertaken by the school in response to identified disproportionality focused on only the most obvious predictors. For example, although minority students had inequitably high rates of office disciplinary referrals during every time period (see Figure 4), agreed-upon interventions were focused only on the most predictive times rather than as more systemic interventions across the day. This was done in an attempt to force the faculty to focus interventions within contexts where any effects would be most obvious and thus reinforce continued efforts. Despite such a limited focus, formative data collection showed consistently positive results across locations and times. Thus, it is difficult to connect changes in referral patterns to any one particular intervention strategy. Rather, outcomes can only be discussed as related to the entire process and may be as much related to simple consideration of the plight of overrepresented groups as to the individual strategies. One might argue that success in one area creates a type of momentum that spreads into other times and conditions. Still, there is no way of breaking out these possibilities from the available data.

It is not clear that the procedures described herein would be equally effective if used (a) in schools with less...
agreeable faculty or in cases where a desire to address disproportionality did not exist before intervention, (b) in the absence of PBIS coaching support provided by the authors, or (c) in elementary schools or schools in a less diverse setting. Second, as the lone dependent measure in this study, office discipline referrals are only as accurate as the information provided by the adults who complete the referral forms. Because we did not assess reliability of measurement, it is possible that different adults maintained idiosyncratic definitions and decision rules for student referrals and form completion. Similarly, given that interventions consisted mainly of simple environmental arrangements and prompting, there is no measure of the fidelity with which faculty actually followed through with their decisions.

Last, the procedures described focused on environment-based prevention after it was determined that the cause was not the result of inequitable course content, experience, or race. It is not clear whether or how this process would play out had the data demonstrated that disproportional referrals were the result of the manner in which adults deliver referrals. As has been noted, the outcomes at the end of this case, although trending in a positive direction, are still disproportional and require further work.

**Suggestions for future study**

This case study provides descriptions of and evidence for a process that can be used to identify and evaluate disproportionality in discipline referrals. Given the case study nature of this work, replication is a priority. Direct replication should focus on repeating the procedure with a range of high schools, from a range of locations, and across a range of diverse conditions. More systematic replications should undertake to repeat the procedure in elementary schools, in middle schools, in alternative and special schools, and across a range of conditions such that the predictors of disproportional outcomes emanate from a variety of conditions and contexts.

In addition to replication of the procedures described, there is a need to delve into some larger issues regarding the necessity and sufficiency of procedures associated with the larger systems of PBIS. In the current example the school was not interested in going through all the steps to become a PBIS school. Rather, they asked for assistance with only data collection. However, positive outcomes were observed despite the absence of a representative leadership team, implementation or readiness self-assessments, and schoolwide reinforcement or acknowledgement systems. A question worthy of further study and discussion is whether
there is a minimum set of procedures that must be undertaken in order to predict positive outcomes from PBIS. If there are conditions under which simply collecting data and using them to make formative programming decision is sufficient, what are those conditions and how might we prescribe effort to match outcome?

Conclusions

There is little argument that, as institutions, high schools differ from middle or elementary schools in multiple ways. First, high school are typically larger in size, creating issues for the degree to which faculty establish relationships with students and are able to monitor students across settings (Newman, Lohman, Newman, Myeres, & Smith, 2000; Siskin, 1994). Second, the faculty members in high schools are more likely to be departmentalized and to be unaccustomed to working with most of the faculty members school-wide (Siskin, 1994). Third, high schools must be concerned not only with student performance in the school but also with dropout and disproportional failure among different groups of students. Addressing these needs has proven to be difficult and a priority in many schools. Although issues of poverty and social disadvantage play a role, they do not sufficiently explain disproportionality in terms of disciplinary referral and action (Skiba, Poloni-Staudinger, Simmons, Feggeois-Aziz, & Chung, 2005). This case study demonstrates how the collection and analysis of office discipline referrals can help schools identify and prevent the most predictable problems across different identified populations in the school. Key features of PBIS (prediction, prevention, consistency, and evaluation) provide a framework for completing this process and a blueprint for replication.

References


