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DATA ON THE DATA: A METHOD FOR IMPROVING THE FIDELITY OF OFFICE DISCIPLINE REFERRAL COMPLETION

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Abstract As behavior problems increase within public schools, attempts at intervention are most effective when accurate data are available for planning and assessment. The current investigation examined the relationship between predictive variables impacting the completion of office discipline referrals (ODRs); moreover, this investigation sought to demonstrate the effectiveness of a coding system developed by the researchers as a method of measuring and improving the fidelity of the completion of ODRs in a school utilizing School Wide Positive Behavior Support (SWPBS). These findings shed light on the "coding" process as a potentially viable data source.

Keywords: behavior management, discipline, referrals, positive behavior support, office discipline referrals

Introduction

Safe and orderly schools and classrooms provide structure that is critical to improving student achievement. Student misbehavior is disruptive to the learning environment and impacts student performance as critical instruction time provided by teachers is redirected toward behavior management (Musti-Rao & Haydon, 2011). Wresting (2010) suggested "there may be no greater hurdle in public schools today than that presented by students who exhibit challenging behavior" (p. 48).

As a result, the need for school-wide proactive and systematic behavior management systems such as school wide positive behavior support (SWPBS) has emerged (Childs, Kincaid, George, & Gage, 2015). Thus, as part of a continued improvement process for promoting a positive learning environment, schools must establish consistent practices of collecting and monitoring data. As such, accurate office discipline referrals (ODR) data is a key component to the successful application of SWPBS interventions (Kincaid, Childs, Wallace, & Blasem 2007).

Theoretical Perspective

Constructs fundamental to School Wide Positive Behavior Support (SWPBS) and that are known to influence a teacher's completion of a formal written office discipline referral (ODR) are grounded in the theory of applied behavior analysis (ABA; Skinner, 1953). Behavior analysis is used to improve socially significant behaviors (Morris, Smith, & Altus, 2005).

SWPBS is systematic framework for teaching and reinforcing adaptive behavior within the school setting (Flannery, Fenning, Kato, & McIntosh, 2014). Within the SWPBS system, evidenced-based strategies and interventions are selected based on student outcomes within a three-tiered framework to problem solve and reduce the frequency of maladaptive behavior (Bradshaw, Mitchelle, & Leaf, 2010).

Literature Review

Office Discipline Referral. Office discipline referrals (ODRs) are a typical source for measurement of school-wide behavior and the impact of primary interventions in schools utilizing SWPBS (Bradshaw et al., 2010). ODRs are used to report student violations to administration (Irvin, Horner, Ingram, Todd, Sugai, Sampson, & Boland, 2006). As part of the SWPBS discipline procedures, teachers are required to document an ODR for each instance a student is removed from the classroom as a result of previously defined misbehavior that has become unmanageable in the classroom, or what SWPBS terms office managed behavior (Irvin et al., 2006).

Researchers have found that students who receive an ODR lose approximately 45 minutes of instruction per referral (Muscott, Mann, & Lebrun, 2008). However, research has shown

that schools that use ODRs to implement SWPBS interventions consistently lower student misbehavior (Childs, Kincaid, George, & Gage, 2015). Thus, ODR data can play a critical role in identification and remediation of issues which impacts student achievement.

Some researchers recognize ODRs as an efficient and increasingly standard source of data collection for monitoring SWPBS (Flannery, Fenning, Kato, & Bohanan, 2011). However, other researchers have cited a variety of limitations that result either in the underestimation or overestimation of remediation (i.e. ineffective data entry, inconsistent ODR submission, teacher bias and/or tolerance of misbehavior, over-reporting of minorities; etc.) and suggest additional data sources should be used (Childs, Kincaid, George, & Gage, 2015; Martinez, McMahon, & Tregor, 2015; Rusby, Taylor, & Foster, 2007; Sugai, Sprague, Horner, Walker, & Hill, 2000).

School Wide Positive Behavior Support. School wide positive behavior support (SWPBS) intervention program puts into place a support system to aid behavioral change of students who display negative behaviors. There is a wealth of research that shows the use of SWPBS has a positive impact on reducing problem behavior in the classroom and in increasing student achievement (Mcintosh, Bennett, & Price 2011).

There is evidence that supports the validity of Benchmarks of Quality (BOQ) as a fidelity measure based on a SWPBS teams estimation of implementation (Childs, George, & Kincaid, 2011), a primary measure for assessing SWPBS and the impact on student behavior continues to be the use of ODRs. However, while touted as an efficient data source, Sugai et al. (2000) cautioned that the accuracy of the ODR collection and monitoring systems is critical to the application of ODRs as an effective measure for informing school-based intervention.

Research Questions

The purpose of the study was to search for workable solutions to more accurately measure student behavioral issues and the impact of interventions within the school setting. In addition, this investigation sought to examine the relationship between predictive variables impacting the completion of office discipline referrals. The following research questions drive the study:

1. What is the frequency of teachers who formally document office discipline referral forms?

2. What is the average ratio or percentage of teacher submissions of a behavioral infraction code to actual ODR written documentation?

3. To what degree does one's teaching experience, training hours in behavioral modification and ease of coding (covariates) correlate with the teachers' documentation of student's misbehavior in written form using the office discipline referral form?

4. Which covariates (teaching experience, training hours and/or ease of coding) is statistically significant in predicting a participant's likelihood of formally documenting an ODR.

Methodology

Design.   A participatory action-research approach was utilized for this study. This type of design provides the framework for applying a systematic approach in order to study a problem when seeking to augment performance within the context of specific educational settings. However, participatory action research is small scale and not generalizable even though it is often used by educators to identify a problem, collect data, analyze the data, and develop an action plan to solve the problem (Stringer, 2013).

Setting and Participants.   The study took place in a mid-sized central Florida Title I elementary school in a predominantly low-income area. The participants were 40 female classroom teachers. The average age of participants was 38.4 years (Range: 22–63), the average years teaching was 10.2 (Range: 1–43), the average hours of university coursework enrolled in by participants that pertained to behavior management, 96.0 (Range: 0–384), and the average hours of training with which participants were credited post-university graduation pertaining to behavior management was 23.6 (Range: 3–150).

Training Received. At the beginning and middle of the school year, staff (teachers, office secretaries, counselors, school psychologist, and administrators) received training about both 1) behavioral management and 2) how to request administrator assistance. Calling for an administrator was common practice within the targeted school and most elementary schools within the district when teachers had student behavioral problems that could not be handled. During the behavioral management portion, staff received information about the importance of effective classroom management as well as the range of differentiated strategies that could be used for responding to student misbehavior, such as praising students on task and ignoring inconsequential behavior (Reinke, Herman, & Sprick, 2011).

During the session where teachers learned to call for administrator assistance, they learned about the SWPBS plan, as well as: (a) school-wide expectations, (b) rules, (c) reward systems, and (d) discipline referral process and procedures. Teachers were taught the only purpose of "calling a code" was to obtain assistance with managing severe or repeated instances of disruptive behavior, or to obtain assistance with medical emergencies; it was not to be used as a threat to the student (e.g., "Stop that or else I will call a code"). In addition, teachers were taught the coding procedures developed by the investigators and told to request assistance from administrators when behavioral problems escalated to office managed behaviors by using the following three codes:

1. Code 1: Continuous Aggression or Self-Injury or High Intensity Property Destruction. Identified an emergency situation where the student presented an immediate physical danger to self or others.

2. Code 2: Continuous High Magnitude Disruption or Low Intensity Property Destruction. Identified a situation where a student was continuously disrupting the classroom environment. Lower magnitude behaviors were identified as talking out while high magnitude behaviors was yelling and physical contact.

3. Code 3: Out of Assigned Area. Identified a situation where a student intentionally left their assigned area or had taken flight from the school.

Collecting Data.   The office discipline referrals (ODRs) were the unit of analysis to determine the predictive ability of variables influencing a teacher's completion of the ODR forms. A structured survey recording approach was used to obtain data from the ODRs and was examined using the three predictor variables: (a) years teaching, (b) codes; code/ODR ratio, and (c) training hours focused on student behavior management and discipline processes.

The codes, talked about in the training section above, were only necessary for the office to know how to manage the "call for help." All codes were recorded (i.e., time, location, code, student, staff calling the code, staff responding, and the staff logging the data) by a designated dispatcher into an Excel database. The dispatcher, who was the front desk clerk who routinely communicated requests for assistance from the teacher to the administrator, was trained to obtain verbal confirmation that an administrator was responding.

To ensure fidelity with the coding procedures, the primary investigator monitored the radio, verified the code was logged once assistance was requested, provided constructive feedback to correct errors, and verbally praised the dispatcher for implementing the procedure correctly. This process was repeated for the backup dispatcher, and then faded to random checks twice weekly. Since office managed behavior required the completion of an ODR as a critical element of SWPBS, each code called was required to be accompanied by a referral. In addition, teachers were responsible for contacting the parent/guardian and documenting the contact on their classroom parent contact log as part of the school's and district's expectation.

Data Analysis.   To review and analyze data, the investigators used existing ODR data from the district database input by teachers, code data input into the school's Excel program by the front desk clerk, and data from the survey distributed to teachers at an all-staff meeting by the primary investigator. The ODR data source utilized the Skyward System, a licensed private software, to examine data. The Skyward discipline database was customized to allow schools the ability to capture and graph aggregate data necessary for assessing and problem solving within a SWPBS structure. ODR data aggregated within the Skyward System allowed users to track major behavior infractions and resulting discipline referrals weekly, monthly, and yearly by individual students, targeted groups, or school-wide.

The first two research questions were addressed by an array of descriptive statistics for comparative purposes. Measures of central tendency, variability, and percentages were utilized to illustrate the nature and distribution. Research question three was analyzed by the Pearson Product-Moment Correlation Coefficient (*r*) employed to determine the strength of relationship between the predictor variables and the criterion variable. The fourth question, which focused on the predictive abilities of the predictors on the criterion, was determined by a multiple regression.

Results

Research Q1 and Q2. The ratio of ODR written documentation instances per participant registering of behavioral infraction codes was 34%. In other words, approximately one third of teachers calling in codes to the office also completed the ODR. The range of ratios with the 40 participants was 0-100%, with the most occurring at 0% (*n* = 14; 35% of the total participant group). Moreover, the variability of code registration data to subsequent written ODR data among the 40 participants was statistically significant (*t* = 5.45; *p* < .000).

Research Q3. The correlation coefficients for the predictor variables of "Years Teaching" and "Hours of Training" represent very weak, inverse relationships with the criterion variable (Written ODR). Moreover, both correlations were not statistically significant (*p* = .229; *p* = .402). The relationship between codes formally registered by participants and the criterion variable of written ODR is moderately high (*r* = .535), and statistically significant (*p* < .000).

Table 1: Matrix of Relationships Among Three Variables

Correlations		ODR write-up	Teaching years	Codes registered
Pearson correlation	ODR	1.000	-.121	.535
	Teach	-.121	1.000	-.106
	Codes	.535	-.106	1.000
	Training	-.041	.178	.034
Sig. (1-tailed)	ODR	.	.229	.000
	Teach	.229	.	.258
	Codes	.000	.258	
	Training	.402	.136	.417

In general, when two variables under investigation yield correlation coefficients of .70 and beyond, it is thought to complicate the precise measurement and predictive power of each individual variable in the Multiple Linear Regression analysis. Collinearity statistics (VIF Mean = 1.032; Tolerance Mean = .969*)* affirm the avoidance of collinearity issues that may have affected the current model of multiple predictors (Menard, 1995). Table 1 shows the correlation coefficient for the three variables under investigation.

Research Q4. Participant formal registration of a behavioral infraction code was the most robust and only statistically significant predictor of the likelihood of formal written ODR documentation (B = .072; t = 3.76; $p < .001$). The other two predictor variables (Years of Teaching; Training Hours) were not statistically significant predictors of the likelihood of participant written documentation of an ODR (B = -.019; $t = -.390$; p = .699 and B = -.006; t = -.341; p = .735).

The focus of this investigation examined the predictive abilities of three predictor variables thought to impact a teacher's likelihood of documenting an office discipline referral (ODR) in written form. The results revealed that follow-through in the written documentation process were largely inconsistent. Moreover, the variability of participant ratio of coding to written ODR was statistically significant ($p < .000$).

The consequence of this lack of action on the part of many participants is, at the very least, counter-productive to the process of initiating meaningful intervention as a result of unreliable data. It was the researchers' contention that the closer the ratio of formal written ODRs is to the registered behavioral infraction codes, the greater the probability that timely and effectual remediation of respective issues of misconduct will be enacted.

However, participants manifested a ratio of slightly over one third (34%). The data shows the need for formalized follow-up training on the importance of teachers' consistent use of formal written ODR documentation in the wake of registering a behavioral infraction code to enhance the fidelity between the two actions. Ideally, the ratio should be as close to 100% as possible if meaningful intervention and positive change is to take place in the redirection and amelioration of maladaptive behavior.

To test the ratio of ODRs to codes, a combination of Binary Logistic Regression and ROC Curve statistical techniques was used, in a post hoc fashion, to assess the predictive prowess of the ratio with regard to the likelihood of a teacher's registration of a formally written ODR. Results from this exploratory post hoc analysis confirmed the notion that the ratio of registered infraction codes to actual written ODR may represent an even more critical datum than the actual registration of the code itself. This information is critical for administrative staff to understand the relationship between these variables and ultimately how it affects the classroom dynamics. The "Ratio" is a statistically significant predictor of a teacher's probability of formally writing the ODR ($p < .001$; R^2 = .81). From an "Odds Ratio"

or "ExP(B) perspective with regard to the Binary Logistic regression analysis, a one percentage increase in the ratio percentage increases the probability that a teacher will formally write an ODR by 10%. This in-turn increases the probability that the behavioral incident will be addressed.

The Code/Written ODR ratio represented the only statistically significant predictor of a teacher's likelihood to register a written ODR (p <.002) when compared together in the regression model (model = p < .000; R^2 = .828; Hosmer & Lemeshow = .723).

Receiver Operation Characteristics (ROC) Curve Analysis. The ROC curve analysis is performed when a researcher wishes to heighten the "sensitivity" and "specificity" of prediction. In the current investigation, ROC curve analysis confirmed the findings of the binary logistic analysis, further asserting the predictive prowess of the ratio of code registration and written ODR with regard to a teacher's likelihood of committing to the writing of a formal ODR (Area Under the Curve/AUC= .973; p < .000-all other predictor variables AUC ranging from .515 to .615).

Discussion and Implications

The major area of emphasis of the current study involved the identification of predictor variables (covariates) that might accurately predict the likelihood of a teacher completing formal written documentation of an ODR. It was the researchers' contention that once variables are identified that may serve as accurate predictors of the written ODR considerable effort could then be devoted to professional development activity. Years of teaching, hours of post-university training in the area of behavior management, and teacher registration of formal behavioral infraction codes were selected as the prime predictor variables (covariates) in the study. An additional variable thought to be a possible predictor of written documentation of an ODR was the age of the teacher. However, to ensure clarity and uniqueness of prediction in the study, we chose to omit the variable "age" due to its high level of relationship to the variable of years in the teaching profession (r >.70).

Results of the regression analysis conducted on the three selected predictor variables highlighted the superior predictive ability of a teacher's registration of a behavioral infraction code (B = .072; t = 3.762; p <.001). The relationship between the coding and the actual result of a written ODR was positive, approaching "strong" (r =.54, p <.001). Years of teaching and hours of post-university training included in the study for predictive purposes manifested a very weak relationship with the written ODR, thus were not very effectual as predictors of a teacher's likelihood of producing a written ODR. The Multiple Linear Regression analysis results, along with relevant descriptive data obtained in the current study, strengthen the case for the importance of the role that the actual registering of behavioral infraction codes plays in the series of events that precede actual intervention and, in turn, bring clarity in defining the process itself. It would appear, from the results of the current study, that professional development energies would be best dedicated to instructing and nurturing teacher awareness and discipline in committing to greater levels of

fidelity in registering behavioral infraction codes and following that action closely with written documentation of an ODR.

Limitations

There were several limitations inherent in this investigation. One limitation concerned self-reporting in relation to college credits and training hours earned in classroom or behavior management. If participants did not provide accurate information in regard to their training history, outcomes may not be reflective of the actual relation between the covariates. To minimize this threat, teachers were provided their documented training hours logged in the districts data warehouse. Additionally, the quality of professional development and its design – such as, job-embedded, conducted over a period of time, and including practice, observations, and feedback – or "one-shot, sit-and-get" presentations – were not part of the study. Not all "training" for teachers on behavior management techniques is equally useful.

Another limitation deals with historic school goals in relation to reducing misbehavior that may have impacted the results. The school of study had been provided additional behavioral supports like the development and training in calling codes that likely impacted the fidelity of SWPBS implementation. In addition, teachers were aware that ODRs were closely measured through the coding process, which may have impacted teacher behavior in regard to ODR documentation.

Conclusion

Given the increase in evidenced-based practices within public education over the last decade, valuable discipline data continue to be aggregated and analyzed to support student needs and growth. As a result, the effectiveness of SWPBS, when implemented with fidelity (Mcintosh, Bennett, & Price 2011), cannot be repudiated as objective data are used to drive decision-making processes (Bradshaw et al., 2010); however, additional research is needed to increase the variety of accessible measures used within the SWPBS systems. Martinez, McMahon, and Treger (2015) recommended increased research to examine the differences in ODR rates by teacher as related to teacher training and other contextual influences. This investigation, while seeking to bridge the gap in literature, has highlighted a process beyond the BOQ (Childs, George, & Kincaid, 2011) as a measure of the fidelity regarding the documentation of ODRs. Considering the importance of data assessment and evaluation measures to district-based administrators, principals, teachers, and parents, increasing the breadth of data resources offers an opportunity for schools and districts to continue refining their processes by embedding the coding process utilized within this investigation. While research exists that demonstrates the modest validity and reliability of the ODR process (Irvin et al., 2006), a question arises as to whether this process is consistently the best measure to support the SWPBS process. Use of the coding process has the potential to increase the reliability of ODR data. As of 2016, no research has investigated predictors of ODR completion or demonstrated a potential source of data and measure of fidelity as reflected in this study through the coding process.

Lessons Learned. After the investigation, following the premise of action research, code data was used by the assistant principal to measure ODR documentation and prompt teachers to completion when necessary. Specifically, teachers whose ODR data paralleled the code data were sent emails praising them for inputting the ODR; teachers who had a code recorded but did not have a corresponding referral were prompted through an email to input an ODR. This process resulted in a 100% completion of ODRs as measured by the recorded codes. Although the immediate impact on the completion of ODRs is outstanding, to ascertain the long-term implications of this, a follow-up data analysis is required.

The current investigation was a preliminary endeavor to augment the existing body of SWPBS literature for the purpose of informing assessment and evaluation methods of practitioners who implement SWPBS. Research on school-wide behavior management has demonstrated that students who receive an ODR lose approximately 45 minutes of instruction per referral (Muscott, Mann, & Lebrun, 2008). The correlation between lost academic time and behavioral issues deserves increased focus in an environment where the need for reducing the achievement gap is at the vanguard of educational initiatives. Since, ideally, the ratio between ODRs and coding process demonstrated in this investigation should approximate 100% as much as possible, use of codes within schools where teachers call for assistance or "student pick-ups" when office managed behavior occurs may provide a very efficient yet highly meaningful data source to support the SWPBS process.

As a result of the findings and feedback model, we have developed the key "take-aways" that will be used in the school:

1. Teachers will be trained to call codes for students who meet office managed behavior.

2. Office staff or those who acknowledge calls for assistance will be trained to log data in a database.

3. Administrators or designees will be taught to compare the code data with ODR data.

4. Administrators or designees will be taught to praise or prompt ODR input based on the ODR to code ratio.

Future Research. Future research efforts relevant to the topic of the current study should be engaged in further development of a comprehensive profile of behavioral infraction coding and written documentation of an ODR. One suggestion for continued research efforts might center on a broader, more stratified sample of participants. The current study was comprised of participants teaching at Title I schools. Students enrolled at Title I schools, on average, tend to manifest more behavioral infractions than regular general education environments and are not reflective of a "normal" distribution.

Another research path that may be taken in light of the importance of behavioral infraction coding could involve the establishment of internal reliability benchmarks and measures of

the accuracy of the coding itself. The magnitude and variability of coding is an area that was not addressed in the current study, but warrants attention from researchers in the time ahead.

From a phenomenological perspective, future research might address a possible change in participant behavior in the coding/ODR process related to formal observation by researchers. Is reactivity a consideration in establishing the validity of participant response, and if so, does it tend to increase or decrease participant response in the coding/ODR process?

Future investigators might seek to use qualitative data by interviewing those teachers who did write formal discipline referrals and those teachers who "called the code" but who did not write formal discipline referrals. This insightful qualitative data may potentially help researchers make greater sense of their quantitative data.

Lastly, and perhaps the most meaningful of research paths that might be taken on the topic of the current study would involve an investigation of predictor variables that may have a mediating or moderating effect in regression analysis upon the likelihood of a teacher's engaging in the written documentation of an ODR. The focus of the current investigation was the initial identification of predictor variables that might serve as accurate predictors of that likelihood. However, it would be helpful to determine if a specific predictor variable or variety of variables have been playing a significant role in the written documentation of an ODR or the decision not to do so.

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