Targeted Professional Development: A Data-Driven Approach to Identifying Educators' Needs

Shanna E. Hirsch, Clemson University
Emily Ely, Mary Baldwin University
John Wills Lloyd, University of Virginia
Deanna Isley, Clark Elementary School

ABSTRACT: Educator professional development (PD) is critical for improving instruction and student achievement. However, there are few frameworks for developing and designing PD based on educators' needs. We report the findings from a case study highlighting how an elementary school and university collaborated to address teachers' needs in the area of classroom management. From our experience, we provide key recommendations and resources for school and university partners.

NAPDS 9 Essentials Addressed: 4. A shared commitment to innovative and reflective practice by all participants; 5. Engagement in and public sharing of the results of deliberate investigations of practice by respective participants; and 8. Work by college/university faculty and P–12 faculty in formal roles across institutional settings.

The 2015 reauthorization of US federal law governing elementary and secondary education, called Every Student Succeeds Act (ESSA, 2015), emphasized continuing education for teachers as well as other school faculty members. ESSA requires professional development (PD) for administrators, school leaders, paraprofessionals, and other school support personnel (e.g., counselors, librarians) who work with students. Schools must provide evidence-based PD for all subjects (not just core academic subjects, as was the case under its predecessor, the No Child Left Behind Act of 2001). PD should be collaborative, data-driven, and evaluated regularly (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005).

Regrettably, educators have endured long-standing limitations when it comes to PD. In a recent survey of 10,507 teachers and 566 school leaders, only 40% reported that PD was a good use of their time (The New Teacher Project, 2015). The majority of school-based PD is characterized as train-and-hope practice (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). With this common approach, a workshop is delivered over a short period of time, often as a lecture, on a topic that may or may not be relevant to the participants (Hill, 2007). For example, the content of a workshop is often based on providers' knowledge rather than the needs of teachers (Hill, 2007). The PD expert usually hopes the participants learn enough about the specific topic during the brief didactic session that it will influence their practice and students' outcomes (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Unfortunately, PD of this sort rarely leads to gains in teacher' skills and students' learning (Darling-Hammond, Hyler, & Gardner, 2017). One explanation for this gap in learning is unfocused content.

To facilitate better PD, school districts and professional organizations may outline important topics for PD sessions. However, topics such as classroom management are often too broad and may lead to the dissemination of irrelevant content for educators rather than content-focused PD (Darling-Hammond et al., 2017). Classroom management issues that are important to some teachers are not relevant to others. Thus, educators need a process to identify specific subtopics for PD that both address educators' specific needs and align with the legislative mandate of ESSA.

Legislators, educators, and researchers recommend coordinated, systematic training to improve the adoption of evidence-based instructional strategies (e.g., Desimone, 2009; ESSA, 2015; Wei et al., 2009). In a 2017 review of PD programs, Darling-Hammond and colleagues recommended that effective PD (p. 4; paraphrased) implement the following components simultaneously:

1. Focus on content associated with specific teachers' needs;
2. Incorporate active learning utilizing adult learning theory;
3. Support collaboration, typically in job-embedded contexts;
4. Model effective practices;
5. Provide coaching and expert support;
6. Offer opportunities for feedback and solicits reflection, and
7. Occur over a sustained duration.

The framework described by Darling-Hammond et al. (2017) is well aligned with the Professional Development School movement (Zenkov, Shively, & Clark, 2016). For example, two National Association for Professional Development Schools "Essentials" overlap: A shared commitment to innovative and reflective practice by all participants (#4) and engagement in and public sharing of the results of deliberate investigations of

practice by respective participants (#5). Together, these models informed our approach to developing a school-university partnership to support one school's goal of providing systematic PD to support development of teachers' skill and students' learning.

The purpose of this paper is to describe how PD providers can use data to develop targeted PD content. In the following sections, we provide a brief rationale to support the use of data to assist PD providers in creating PD. Next, we present case study results of an elementary school that used data to drive school-wide PD in the area of classroom management. We conclude with implications for future research and practice.

Data-Driven PD: A Path Forward

Recognizing that educators are not a homogenous group, PD creators must eschew traditional one-size-fits-all approaches. As sensible teachers do not expect all students in one classroom to be at the same place academically or need the same instruction (Tomlinson, 2008), PD creators should not expect that all educators in one school require identical PD. By gathering insight into teacher need, PD providers—who may not be teachers, but rather administrators, instructional coaches, central-office consultants, or others—can differentiate the training to provide content that tightly aligns with relevant topics and teacher knowledge. As Darling-Hammond et al. (2017) argued, it is important for PD to (a) focus on content that is consistent with teachers' and other participants' needs, (b) have strong practical components, and (c) include coaching.

Practice-based professional development (Ball & Cohen, 1999) is a promising model of PD that not only has these features but has been contextualized for different educators' needs (Harris et al., 2012). That is, data are reviewed to pinpoint possible areas to strengthen. To target need and focus PD appropriately, practice-based professional development requires that PD providers collect data on educators' knowledge and current practices before designing PD. Providers can also identify school needs by reviewing trends across data (e.g., student-level academic measures, office discipline records, teacher-level evaluations), observational walkthrough data, and faculty surveys. These data can pinpoint practices that are not used consistently and identify teachers with similar PD needs.

Identifying a topic can be accomplished using various tools, including direct (e.g., observation) and indirect (e.g., teacher self-assessment survey) measures. When gathering data through direct observation to assess teacher practices, time must be devoted to visits during classroom instruction (Reinke, Herman, & Newcomer, 2016). For example, midway through the fall semester, PD providers could visit classrooms and complete a checklist of the practices they witnessed during the observation period. Administrators could also complete surveys of their faculty members (based on previous observations). These data are aggregated at the school, classroom, or subject-level.

PD providers can gather indirect measures at any time during the school year. Gathering information through surveys and assessments can help providers align PD with educators' needs (Mathur, Estes, & Johns, 2012). For example, during teacher induction, a self-report survey could provide providers with helpful information. A teacher survey can also be administered during a faculty meeting or sent to teachers electronically. Anonymous electronic surveys have the advantage of securing candid feedback, free from fear of reprimand or administrator evaluations.

Each of the previously described methods has benefits and drawbacks. For example, direct classroom observations take a significant amount of time (e.g., 15-60 minutes per classroom). These observations can also be challenging to schedule. In regards to indirect assessment, a drawback of asking faculty members to complete an anonymous survey is that providers cannot link—and, therefore, compare—the direct observations to teacher surveys, which could identify individual teachers who need additional support. Providers can, of course, allow for voluntary self-disclosure of participants' identities. Though even with knowledge of their identities, some participants (particularly novice teachers, for example) may not accurately identify areas of growth that would result in the greatest impact in their practice. Together these concerns should prompt PD providers to consider compiling multiple sources of data when creating PD topics.

A multiple-source, multi-informant, approach can be helpful for several reasons. First, conducting an observation before providing PD will help the provider gain insight into the current practices and facilitate a discussion (Reinke, Herman, & Sprick, 2011). Second, gathering self-report data helps the provider determine whether the teachers view a certain practice as socially important, which can influence their adoption of a practice (Carnine, 1997). Third, teachers' self-reports of implementation may be inflated compared to external observer reports (Lane, Kalberg, Bruhn, Mahoney, & Driscoll, 2008). Finally, gathering different perspectives may reveal potential challenges or roadblocks, which would inform a need for PD.

Despite the benefits of the multiple-method, multi-informant, approach, few PD providers aggregate multiple sources of data while designing PD topics (Hill, 2007). Prior research highlights the need to look beyond one source as the only avenue through which PD topics are selected (Darling-Hammond et al., 2017). Using multiple sources promotes the views of different school-based stakeholders (i.e., administrators vs. teachers). In addition, observations combined with self-evaluation can reinforce a specific need.

A Case Study: Classroom and Behavior Management PD

Given the argument that PD would be improved by having prior knowledge of the participants' needs, we provide an example of the benefits of creating PD based on combining teachers' self-reported needs and external observers' direct observations. At the beginning this line of work, the school administrator contacted the university team and asked for support in the area

of classroom management. Classroom management is a vital topic for all teachers (Pindiprolu, Peterson, & Bergloff, 2007). There is extensive evidence about the importance of teachers implementing effective management practices (e.g., Oliver & Reschly, 2007) and there are a plethora of evidence-based management strategies available that produce salient student gains (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008). However, determining which practices are in a teacher's current repertoire can be difficult. Classroom management checklists have been developed to measure the implementation of management practices at the individual teacher-level (e.g., Lane, Menzies, Bruhn, & Crnobori, 2011; Reinke et al., 2011) and to inform targeted PD (MacSuga & Simonsen, 2011); however, to our knowledge, previous studies did not compare teachers' self-evaluation with direct observation to develop PD.

We examined the relationship between the two measures of teacher need. To help improve the focus on training needs of teachers and make efficient use of their PD time, we asked the following research question: What is the relationship between teacher-reported (i.e., self-assessed) and independently observed classroom management practices?

Method

Participants and Setting

The principal of Averell Elementary School contacted the first author, a university member, to develop a partnership to provide PD on classroom management due to on-going difficulties managing behavior at the classroom-level. The school principal, assistant principal (fourth author), and other university members (first and third authors) met to discuss administrators' concerns and develop a PD plan. Following the meeting, the university members drafted a formal PD proposal with a research component; they shared the plan with the school administrators via email. The administrators provided recommendations about the PD timeline. Next, the university members submitted formal proposals to the university's institutional review board (IRB) and district research committee. Upon receiving approval from the IRB and district research coordinator, the university member worked with the school administrators; together, they set a date to discuss the plan with the faculty and request faculty members' consent to participate in the project.

Averell Elementary School included 362 students in grades PK-4 (Virginia Department of Education Report, 2016). The school was located in a small, urban district in the mid-Atlantic United States. At the time of the project, the student population of the school was 52% male and 48% female. The racial composition of the student body was 24.6% White, 52.5% Black, 14.6% Hispanic, 0.8% Asian, and 7.5% other (i.e., Hawai'ian, Am-Indian, two or more races). Eighty-three percent of the preschool through fourth-grade student population were eligible to receive free or reduced lunch. The average class-size was 13:1 students. The teachers included K-4 grade-level teachers along with specialists (i.e., physical education, music) and special education teachers. The school was in the second year of implementing school-wide positive behavior supports (PBIS; http://pbis.org) plan. As part of the PBIS plan, school expectations (e.g., be kind, be safe, be respectful, be responsible, be a thinker), were disseminated (via PBIS assemblies, posters, classroom lessons), reinforced (through PBIS tickets), and monitored. We did not collect data about the fidelity of implementation of the PBIS plan.

During a faculty meeting, we invited the faculty ($N = 24$) to participate in the project. Eighteen agreed to participate. We excluded six non-classroom teachers (e.g., afterschool enrichment, music, reading tutor coordinators, speech-language pathologists) because the unique nature of their settings made observations of their teacher-student interactions challenging. A cohort of 12 teachers was included in the analysis (grades: kindergarten, $n = 3$, first, $n = 3$; second, $n = 1$, third, $n = 3$, fourth, $n = 2$). Ten were female and two were male. Seven teachers had completed a classroom management course. Four teachers held a bachelor's level degree, seven held a masters-level degree, and one's academic preparation was unknown. The 12 participants had an average of 7.33 years teaching ($SD = 5.10$, Range: 0-15).

Project collaborators from the university included a doctoral student with five years of experience as a special education teacher and behavior analyst and four years of experience as a research assistant (now an assistant professor). In addition, another collaborator included a university professor with four years of experience as a teacher and reading specialist as well as four years of research experience. A third university collaborator included a professor with eight years of experience as a teacher and 30 years as a professor of special education. Averell's principal supported the efforts of the team throughout the process.

Measures

The initial goal of this project was to identify which key elements of classroom management practices were already in place at Averell Elementary School. The administrator and PBIS team said there was a need to support teachers in implementing the critical components of classroom organization and behavior management; however, they were unsure where to start. Thus we decided to identify a tool to gather information, which would then be used to create targeted PD. The team members examined tools (see Oakes, Lane, & Hirsch, 2017, for a list of alternative measures considered). Based on the utility and psychometrics, they opted to use a modified version of the *Classroom Ecology Checklist* (CEC; Reinke et al., 2011). Because they overlapped for our purposes, the university members modified the CEC to (a) prompt teachers to indicate a percentage of time rather than "no," "somewhat," and "yes" and (b) represent practices across four broad categories rather than six. To simplify the ratings, we merged the CEC "classroom structure" and "behavioral expectations" domains as well as the "interacting positively" and "respond to appropriate behavior."

Table 1. Teacher Survey and Observation Results (N=12)

Domain with Subtopics	Teacher M (SD)	Observation M (SD)	Significance Testing t-test
Classroom Structure*	84.72 (15.17)	88.89 (17.57)	$t(9) = 0.50, p = .630$
Traffic patterns allow movement without disrupting others			
Students can be seen at all times (across the classroom)			
Materials in the classroom are labeled and accessible			
System in place to turn in completed work			
Responding to Inappropriate Behavior	81.53 (16.74)	68.06 (19.97)	$t(11) = -1.68, p = .120$
If disruptions occur, teachers use a continuum of consequences (e.g., praising others, proximity)			
If disruptions occur, a system for documenting and managing specific violations is in place			
If disruptions occur, responses are consistent			
If disruptions occur, redirections are quick, calm, direct, and brief corrections			
Responding to Appropriate Behavior	84.61 (16.61)	60.00 (12.22)	$t(11) = -4.97, p < .05$
Classroom expectations are positively phased, defined, and visible.			
Positively-stated classroom expectations are taught and reviewed			
Formal system for reinforcing behavior is implemented			
Behavior-specific/descriptive praise is used to encourage behavior			
Appropriate behaviors are acknowledgement more than inappropriate behavior			
Non-contingent attention is delivered to every student in the classroom.			
Instructional Management	88.49 (14.28)	83.95 (13.06)	$t(11) = -1.011 p = .334$
An attention-getting signal is used and reinforced			
Transitions between activities occur smoothly			
Multiple opportunities to respond are embedded into instruction			
Teacher solicits both individual and group responses			
Teacher actively engages students in observable ways (e.g., response cards)			
Teacher actively supervises students (moving frequently around the room, scanning) during instruction			
Class time is allocated to academic instruction			
Students answer questions correctly (when asked)			
Effective error corrections are implemented (telling, showing, demonstrating correct answers).			
Total	84.67 (11.82)	72.03 (12.19)	$t(11) = -2.916, p = .014$

Note. *Two teachers did not rate the instructional setting because they teach in multiple classrooms throughout the school. Items modified from the *Classroom Ecology Checklist* (*CEC*; Reinke et al., 2011).

To examine the teachers' classroom management practices prior to the PD, the team (university and school) administered the modified version of the CEC (Reinke et al., 2011) survey to all teachers. The self-report survey required participants to report how they (a) implemented classroom structure (4 items), (b) responded to inappropriate behavior (4 items), (c) responded to appropriate behavior (6 items), and (d) implemented instructional management (9 items). Table 1 provides a list of the domains with subtopics. Participants were asked to rate, "To what extent do you implement the strategies?" on a 3-point Likert-type scale: "I implement the strategy between 0-50% of instruction," (score = 0), "I implement the strategy between 51-79% of instruction" (score = 1), and "I implement the strategy between 80-100% of instruction" (score = 2). If a practice was not relevant to their setting or classroom, they selected "not applicable." Faculty members needed approximately 10 min to complete the checklist. Cronbach's alpha for the CEC measure is .86 (Reinke & Lewis-Palmer, 2005).

To obtain the independent observation measure, the university team conducted direct observations of teacher and student behavior also using a modified version of the CEC.

Members of the university team completed an announced observation during instruction within two weeks of a faculty meeting. University members provided a rating on the checklist following a 20-25 minute observation during instruction (training and reliability description to follow). University members observed each faculty member's classroom management practices. Immediately after each observation, the university member completed a checklist that contained the same items as the teachers' self-assessment survey (see Figure 1). Before beginning the direct observations, observers participated in a series of training sessions to develop observation skills and become reliable. During the first meeting (90 minutes), the university members reviewed an observation manual, discussed operational definitions of the classroom management practices, and practice coding videos until all observers exceeded the interobserver criteria (i.e., 80%, Tapp, 2004). After the in vivo training, university members participated in a minimum of three live sessions with a reliability observer. Training continued until each university member reached an inter-observer agreement with a standard observer of at least 80% (Tapp, 2004).
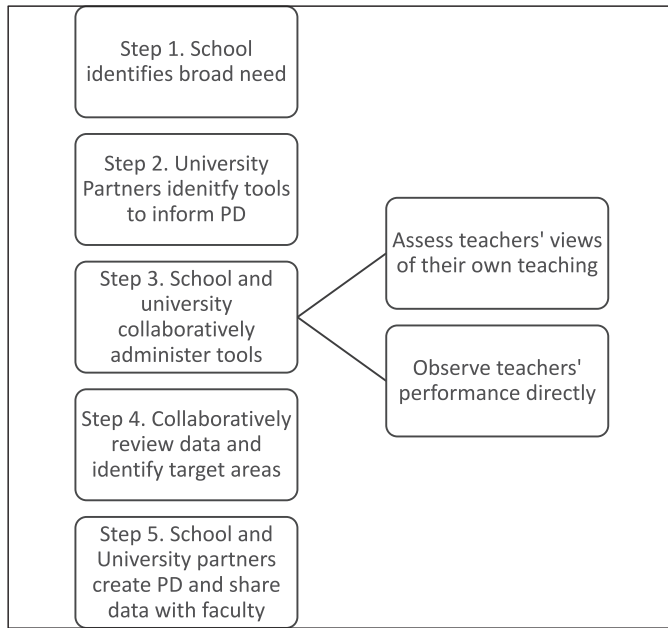
Figure 1. Targeting PD Learning Areas by Systematically Collecting Data on Professionals' Needs and Behavior. Note. PD = Professional development

Procedures

After analyzing the data, university members proposed a series of PD sessions to the Averell Elementary School administrators. The series (three 90-minute sessions) targeted specific evidence-based classroom management practices. Based on the survey feedback, topics such as instructional delivery were not reviewed because they were rated as strengths for the majority of teachers (see Table 1). Rather, the PD series topics included a continuum of strategies to (a) acknowledge appropriate behaviors and (b) respond to inappropriate behaviors. The following paragraph includes an overview of the PD process.

Once we identified topics, two PBIS team members and university members worked together to create the PD sessions. The PBIS team members were second-grade teachers. They met two times after school for approximately one hour. During the planning meetings, the team designed a three-part PD series to meet faculty needs based on the survey and observations. The first two sessions focused on a continuum of strategies to encourage and recognize appropriate behavior (e.g., specific and contingent praise, active student responding, class-wide group contingencies). At the beginning of the first PD session, the university member shared the survey and observation results with the teachers, aggregated across teachers so no one was identified (see Figure 2). Specifically, the university members explained the areas of strength, areas needing improvement, and emphasized that the faculty members' input was used to develop the PD agenda. The third PD session focused on using a continuum of strategies to respond to inappropriate behavior (e.g., error corrections, performance feedback, planned ignoring;

Lane et al., 2011). A teacher and university member facilitated each PD session jointly.

Analytic Plan

The university members conducted a descriptive analysis of teacher and observer data to develop specific PD content areas. Means for each area of classroom management were obtained by averaging the scores belonging to each sub-area (see Table 1). We also calculated correlations to determine the relationship between teachers' self-report survey scores and real-time direct observation ratings. The intent of using and scoring teacher self-report and direct observations was to document how both groups report classroom management.

Results

This case study explored the relationship between teachers' self-report of classroom management practices and direct observation of teachers' practice. Both teachers and university members rated the teachers' "classroom structure" as an area of strength. They also identified two classroom management domains that could be improved across all participating teachers: (a) responding to appropriate behavior and (b) responding to inappropriate behavior. It is important to note that although the observers and teachers identified the same domains, on average the teachers rated themselves ($M = 84.67$, $SD = 3.41$) significantly higher than the observers ($M = 72.04$, $SD = 3.52$), $t (11) = -2.916$, $p = < .05$, r = -.57). By the same token the 12 teachers who completed the survey, average scores across all items were not significantly correlated with observations $p (11) = .31$, p = 0.49, 95% CI = [-0.48, 0.93]. This indicated that the teachers stated that they engaged in more practices than the university members recorded during their classroom observation.

Discussion

Findings from this case study are consistent with the literature on teacher self-reporting. Specifically, self-reported scores tend to be higher than data obtained by direct observation (Lane et al., 2008). As such, this supports the importance of using a multiple measures in assessing processes, teacher development, and outcomes (Bruhn, Hirsch, & Lloyd, 2015; Darling-Hammond, 2006). We examined correlations between teacher's ratings and the external observations. This enabled us to estimate the consistency between the teacher ratings from the self-report survey and the observer's observations. Results were generally correlated, but also differed slightly between reporting methods. A significant relationship was identified between classroom structure, responding to appropriate behavior, and responding to inappropriate behavior. Conversely, there was not a relationship between the average teacher self-report and direct observation scores.
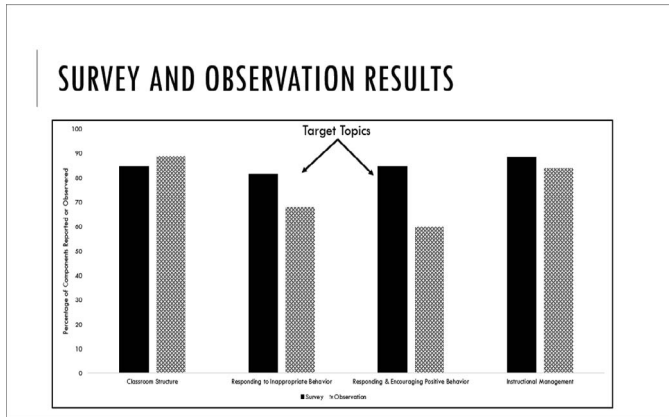
Figure 2.   Data Slide for Faculty Presentation

Question	Yes	No	Describe Action Step
Did I identify the broad need by reviewing professional standards and conferring with administrators, faculty planning groups (e.g., positive behavior support teams), or faculty members?			
Did I select a tool as well as a method to identify the specific PD topic?			
Did I confirm the specific need by using a teacher self-assessment survey or observation?			
Did I conduct surveys or observations, the results must be tabulated either by hand or electronically (e.g., Excel), allowing the presenter to analyze and graph the data?			
Did I review the data to allow me (PD Provider) to refine the PD topic(s) and format?			
Did I create the PD based on the data?			
Did I share the data with the teachers (or other targeted participants)?			

Figure 3.   PD Providers Self-Check. *Note*. If the answer to a question is "no", then the PD provider should consider brainstorming and implementing action steps

Averell Elementary School implemented a multi-method data-driven approach to provide targeted PD on classroom management. The survey and observation results suggest that teachers and observers can identify the same sub-topics, however, there were some differences in their reported needs. Therefore, providers of PD can learn about teacher needs through teacher self-reports and direct observations. Adding an administrator's rating of sub-topics may provide additional information about needs of the overall faculty. We recommend that PD providers complete an informal self-check (similar to Figure 3) that can be used when conducting PD. The questions prompt PD providers to consider critical areas when developing data-driven PD. If the answer to a question is "no," we recommend brainstorming ideas and implementing action steps.

Limitations and Future Research

As this project was a preliminary case study, there is ample room and need for related future research. First, the study participants represented a portion of teachers at one school, on one day. As we look to strengthen the PD research base, we should consider employing this framework with larger groups of teachers with multiple observations. Researchers can replicate this framework with other content areas and gather data on outcomes to determine whether or not teachers implement what was learned from targeted need-based PD.

A second limitation of this study relates to the lack of information on whether or not teacher changes influence positive student outcomes. In subsequent studies, it would be of interest to explore the effects of targeted PD on student engagement and academic outcomes. Future inquiries could sample student engagement through the use of direct observation measures such as time sampling (Cooper, Heron, & Heward, 2007). Momentary time sampling recording involves observing if a behavior occurs or does not occur at a specified time. The observer selects a length of an observation (e.g., 20 minutes) and then divides the time into smaller equal intervals (e.g., 1 minute). Next, the observer sets a timer (silent) to vibrate at the end of each interval (every 1 minute). Upon feeling the vibration the observer (1) looks at the student, (2) determines whether they are engaging in the behavior, and (3) marks on a datasheet whether a behavior occurs at the signal by placing an "X" for occurrence or "O" for no occurrence.

A third limitation is that we did not measure social validity of the PD. While anecdotal reports were positive across of the training, there are no data to determine whether the teachers' viewed the targeted PD process as valuable. We strongly recommend future inquiry assess teachers' perceived usefulness of the targeted PD process.

Implications for Practice

To help teachers improve their instruction effectively, providers must provide PD that is targeted and purposeful. This allows for focus and efficiency in planning PD. We encourage PD providers to conduct direct observations as part of a multiple-method, multiple-informant approach.

Many PD providers are positioned well to use multiple sources of data to develop PD. Therefore, it is important for them to consider the logistics of data-driven PD. For example, once the tool(s) are identified, providers must determine *how* they will assess the faculty's current PD needs. Regardless of the chosen method(s), it is advantageous to set aside time for collecting and analyzing data. A teacher survey can be administered during a faculty meeting or sent to teachers electronically. Electronic surveys have the advantage of anonymity, which results in more candid feedback, free from fear of reprimand or administrator evaluations; however, one drawback

of asking faculty members to complete an anonymous survey is that providers cannot compare the direct observations to teacher surveys, which could identify individual teachers who need additional support.

The goal of gathering data before developing PD is to recognize current strengths and areas of growth. The data help providers refine the PD topic(s). When the data indicate more than one area to target, PD can be adjusted to meet the teachers' specific needs. For example, various topics are delivered in small-group sessions. One of the tenets of practice-based professional development indicates that PD should engage teachers with similar needs (Ball & Cohen, 1999). Customizing PD topics to meet the individual needs of teachers could be helpful especially if teachers have mastered prerequisite skills.

It is equally important for the providers to share the data with the teachers (or other targeted participants). McIntosh, Kim, Mercer, Strickland-Cohen, and Horner (2015) assessed factors associated with sustained implementation of School-Wide Positive Behavior Interventions and Supports, a widely adopted approach to proactively support positive student behavior and reduce problem behavior. Their findings suggest that frequent sharing of data with the entire school is a potential mechanism of sustainability of implementation. Specifically, sharing data at least quarterly (as well as weekly, bi-weekly, or monthly) are associated with a strong sustainability score. McIntosh and colleagues (2015) note that "the school team may enhance not just data-based decision making but also the priority of the practice for staff and administrators and strengthen perceptions that implementation leads to valued outcomes" (p. 188). Therefore, assessing faculty need before the creation of PD provides a measure of social validity may predict the degree to which a teacher adopts a practice or intervention (Harrison, Vannest, & Reynolds, 2013)

In this study, we surveyed teachers' view of specific classroom management procedures and compared them to direct observations. Recording the teachers' views of a practice and sharing the results allowed the teachers' to see how their feedback helped develop the PD's goals. Such explicit participation in the develop of PD goals should promote social validity (Wolf, 1978). Another key feature of sharing the data is that teachers acknowledge and recognize that colleagues in the building have similar needs that also align with creating socially valid PD. The multi-method, multi-informant approach described in this manuscript served as an example of how providers determine and target instructional areas that need improvement, thereby helping them allocate PD time in valuable ways. SUP

References

Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners: Toward a practice-based theory of professional education. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 3-32). San Francisco, CA: Jossey-Bass.

Bruhn, A. L., Hirsch, S. E., & Lloyd, J. W. (2015). Treatment integrity in school-wide programs: A review of the literature (1993-2012). *The Journal of Primary Prevention, 36*, 335-349. doi: 10.1007/s10935-015-0400-9

Carnine, D. (1997). Bridging the research-to-practice gap. *Exceptional Children, 63*, 513-521.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Upper Saddle River, NJ: Pearson.

Darling-Hammond, L. (2006). Assessing teacher education: The usefulness of multiple measures for assessing program outcomes. *Journal of Teacher Education, 57*, 120-138.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Palo Alto: CA: Learning Policy Institute. Retrieved from https://learningpolicyinstitute.org/product/teacher-prof-dev.

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualization and measures, *Educational Researcher, 38*, 181-199.

Every Student Succeeds Act of 2015, S. 1177, 114th Cong. (2015). Retrieved from http://edworkforce.house.gov/uploadedfiles/every_student_succeeds_act_-_conference_report.pdf

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa: University of South Florida, National Implementation Research Network.

Harris, K. R., Lane, K. L., Graham, S., Driscoll, S. A., Sandmel, K., Brindle, M., & Schatschneider, C. (2012). Practice-based professional development for self-regulated strategies development in writing: A randomized controlled study. *Journal of Teacher Education, 63*, 103-119.

Harrison, J. R., Vannest, K. J., & Reynolds, C. R. (2013). Social acceptability of five screening instruments for social, emotional, and behavioral challenges. *Behavioral Disorders, 38*, 171-189.

Hill, H. (2007). Learning in the teaching workforce. *Excellence in the Classroom, 17*, 111-127.

Lane, K. L., Kalberg, J. R., Bruhn, A. L., Mahoney, M. E., & Driscoll, S. A. (2008). Primary prevention programs at the elementary level: Issues of treatment integrity, systematic screening, and reinforcement. *Education and Treatment of Children, 31*, 465-494.

Lane, K. L., Menzies, H., Bruhn, A. L., & Crnobori, M. E. (2011). *Managing challenging behaviors in schools: Research-based strategies that work*. New York, NY. Guilford.

MacSuga, A. S., & Simonsen, B. (2011). Increasing teachers' use of evidence-based classroom management strategies through consultation: Overview and case studies. *Beyond Behavior, 20*(1), 4-12.

Mathur, S. R., Estes, M. B., & Johns, B. H. (2012). Professional development in behavior management: Translating knowledge gained into action. *Beyond Behavior, 21*(3), 15-23.

McIntosh, K., Kim, J., Mercer, S., Strickland-Cohen, M. K., & Horner, R. H. (2015). Variables associated with enhanced sustainability of school-wide positive behavioral interventions and supports. *Assessment for Effective Intervention, 40*, 184-191. DOI: 10.1177/1534508414556503

No Child Left Behind Act of 2001, Public Law 107-110. (2001). Retrieved from http://www2.ed.gov/policy/elsec/leg/esea02/index.html

Oakes, W. P., Lane, K. L., & Hirsch, S. E. (2017). Functional assessment-based interventions: Focusing on the environment and

considering function. *Preventing School Failure*. DOI:10.1080/1045988X.2017.1326799

Oliver, R. M., & Reschly, D. J. (2007). *Effective classroom management: Teacher preparation and professional development*. Washington, DC: National Comprehensive Center for Teacher Quality. Retrieved from: http://www.tqsource.org/topics/effectiveClassroomManagement.pdf

Pindiprolu, S. S., Peterson, S. M., & Bergloff, H. (2007). School personnel's professional development needs and skill level with functional behavior assessments in ten Midwestern states in the United States: Analysis and issues. *Journal of the International Association of Special Education, 8*(1).

Reinke, W. M., Herman, K. C., & Newcomer, L. (2016). The Brief Student-Teacher Classroom Interaction Observation: Using dynamic indicators of behaviors in the classroom to predict outcomes and inform practice. *Assessment for Effective Intervention, 42,* 32-42.

Reinke, W. M., Herman, K. C., & Sprick, R. (2011). *Motivational interviewing for effective classroom management: The classroom check-up.* Guilford Press: New York

Reinke, W. M., & Lewis-Palmer, T. (2005). *Classroom ecology checklist.* Eugene: University of Oregon.

Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based practices in classroom management: Considerations for research to practice. *Education and Treatment of Children, 31,* 351-380.

Tapp, J. (2004). Multi-option observation system for experimental studies (MOOSES). Accessed from: https://mooses.vueinnovations.com/

The New Teacher Project (2015). *The mirage: Confronting the hard truth about our quest for teacher development.* Washington, DC: Authors.

Tomlinson, C. (2008). Learning to love assessment. *Educational Leadership, 65*(4), 8-13.

Virginia's School Quality Profiles (2016). Retrieved from Virginia Department of Education website: http://www.doe.virginia.gov/statistics_reports/

Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad.* Dallas, TX. National Staff Development Council.

Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis, 11,* 203-214.

Yoon, K. S., Duncan, T., Lee, S. W.-Y., Scarloss, B., & Shapley, K. (2007). *Reviewing the evidence on how teacher professional development affects student achievement* (Issues & Answers Report, REL 2007–No. 033). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from http://ies.ed.gov/ncee/edlabs

Zenkov, K., Shiveley, J., & Clark, E. (2016). Why we must answer the question "What is a professional development school?" *School-University Partnership, 9*(3), 1-10.

❖ ❖ ❖

Shanna E. Hirsch is an Assistant Professor of Special Education at Clemson University. Her research is centered on identifying methods to support novice teachers in the area of classroom management.

Emily Ely is an Assistant Professor of Reading Education at Mary Baldwin University. Her scholarly agenda includes literacy instruction and technology in teacher education.

John Wills Lloyd is Professor Emeritus of Education at the University of Virginia. He studies the difficulties encountered by students with learning and behavior problems and methods for ameliorating those problems.

Deanna Isley is a Principal in Charlottesville, Virginia. She has a particular interest in supporting and mentoring teachers, as well as teacher learning, development, and retention.