Teachers in the Driver's Seat: Using Teacher Input to Design School-wide Professional Development through a School-University Partnership

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ABSTRACT: An exploratory case study was conducted to understand if leveraging school-university partnerships to improve school-wide professional development by using teacher input resulted in teachers implementing evidence-based practices in their inclusive classrooms. We sought to understand the extent to which a school-wide PD grounded in research and tailored to meet the needs of teachers could be designed and implemented with fidelity to teacher education researcher recommendations given the realities of school-university partnerships. Twenty-one teachers participated in the school-wide professional development series. A two-phase data collection and analysis approach included first qualitative and then quantitative data collection periods during the ten-month study. Results suggest that despite challenges associated with the realities of school contexts, a coherent link between participant needs and professional development content presented in a way that included hands-on application to demonstrate the feasibility of implementation resulted in teachers who were confident to use the evidence-based practices in their inclusive classrooms.

NAPDS Nine Essentials addressed in the article: 3. Ongoing and reciprocal professional development for all participants guided by need; 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

Education researchers continue to evaluate which teacher development practices lead to greater use of effective teaching strategies supported by scientifically-based research for students with disabilities accessing the general education curriculum (Blanton et al., 2006; Browder et al., 2012; Pugach et al., 2011; Spooner et al., 2017; Whitaker et al., 2007). For this reason, professional development (PD) can no longer just be about exposing teachers to effective research-based teaching strategies. Instead, PD should enable teachers to be innovators, critical thinkers, and implementers of effective teaching strategies that increase student learning (Darling-Hammond et al., 2017; Gulamhussein, 2013; Nagro et al., 2017). Unfortunately, teachers often report being unprepared to implement strategies that are not part of the general education curriculum such as individualized or modified instruction (Harrison, 2019; Kosko & Wilkins, 2009), differentiating instruction to include students with ranging abilities (Waitoller & Artiles, 2013), self-regulated strategy development (Kennedy et al., 2018), or intensive interventions to allow students with the greatest needs to access the general education curriculum (Browder et al., 2012) creating barriers to effectively teaching students with a range of individual needs.

During PD sessions, teachers are typically told how to change their teaching to better help students (i.e., top-down approach), but excluding teachers from intellectual discussions and problem solving processes diminishes teacher buy-in (Abbott et al., 1999; Cook & Cook, 2016; Maheady et al., 2016). Teacher beliefs and past experiences need to be accounted for when developing teachers who not only know about effective teaching strategies but also view such strategies as useful and worthwhile given their student population (Burns & Ysseldyke, 2009; Gable et al., 2012; Kennedy, 2016).

In addition, teacher knowledge of effective instructional strategies is only meaningful if such practices are implemented in the classroom (Cook & Schirmer, 2006; Maheady, Rafferty et al., 2016). Teachers may be aware of instructional and behavioral strategies grounded in research, but the reality is many teachers feel overwhelmed, look elsewhere for ideas (e.g., to veteran teachers), and do not consistently or correctly use these strategies (Burns & Ysseldyke, 2009; Cook & Cook, 2016; Nagro et al., 2019). Teachers need strategies that are practical and feasible given existing classroom routines combined with the unpredictable nature of classroom environments. Therefore, it is critical to provide PD that not only increases teacher knowledge but also is designed in a way that supports the transition from teacher knowledge to teacher implementation. This exploratory case study was intended to investigate one approach to designing and facilitating a school-wide PD series with the goal of promoting confidence in- and probability of- teacher implementation.

Professional development is meant to help teachers learn specific skills, grow a deeper understanding of how to meet student needs, and change practices in order to improve student outcomes (Darling-Hammond et al., 2017; Nagro et al., 2017). Consistently, researchers have urged teacher educators to move away from workshop style or one day in-service PD with limited follow-up because this model is considered *intellectually superficial* and rarely leads to meaningful changes in teacher practice (Kohnen & Whitacre, 2017; Kretlow & Bartholomew, 2010). Instead, those who have reviewed best practices in PD and/or studied the effects of various PD models recommend that PD be sustained over time, include hands-on application, active learning, collective participation, and a coherent link between teacher goals and learning objectives (e.g., Browder et al., 2012; Dunst et al., 2015; Garet et al., 2001; Kennedy, 2016). One way to achieve a coherent link between teacher needs and PD objectives is to put teachers in the driver's seat by seeking their input. Seeking teacher input when designing PD is important because teachers know their students' needs, but are not always using the most appropriate strategies to meet those needs (McElhone & Tilley, 2013).

Frequently, teachers want strategies to improve classroom management and student engagement (Coalition for Psychology in Schools and Education, 2019; Patton et al., 2015), which is not surprising given that student misbehavior and inadequate classroom management are primary reasons for negative perceptions about providing students with disabilities access to the general education curriculum (Belknap & Taymans, 2015) and eventually teacher burnout (Brouwers & Tomic, 1999; Haberman, 2005; Harrison, 2019). In their original reporting of the Teacher Need Survey, the Coalition for Psychology in Schools and Education (2006), part of the American Psychology Association, surveyed 2,334 teachers across the United States to better understand teacher concerns for educating all students in general education settings. Teachers reported greatest interest in receiving PD in classroom management strategies to (a) prevent negative student behaviors from becoming ongoing distractions, (b) promote social and emotional student safety, and (c) increase the participation and interaction of all students with a range of needs (Coalition for Psychology in Schools and Education, 2006).

Most recently, the Coalition for Psychology in Schools and Education (2019) updated the Teacher Needs Survey and 391 respondents from across the country responded. The survey results indicated professional development areas of greatest need included (a) working with students with emotional, behavioral, and/or learning disabilities; (b) helping students to persist in learning; and (c) helping students to regulate their emotions (Coalition for Psychology in Schools and Education, 2019). More than a decade has passed and the ways in which teachers talk about their professional needs have evolved, but their concerns remain similar. This was most evident with less experienced teachers (i.e., those with less than 10 years of experience) who expressed greater levels of concern and lower levels of confidence in classroom management and educating students with a range of individual needs when compared to more experienced teachers (Coalition for Psychology in Schools and Education, 2019). This national teacher perspective is an important starting point, but discussing issues directly related to teachers' own experiences lead to more effective PD (Wood et al., 2016).

One approach to gain input from teachers directly related to their own experiences is through a school-university partnership. School-university partnerships provide a mechanism for two-way communication between university and school-based partners, which can strengthen a collaborative relationship over time. Once teachers recognize their input is highly valued, teachers are more willing to implement strategies supported in research and presented through university facilitated PD (Burns & Ysseldyke, 2009; Cook & Cook, 2016). Such partnerships also help steer researchers towards inquiries that are more meaningful to teachers in the field (Maheady, Magiera et al., 2016). While school-university partnerships are thought to improve P-12 teacher learning, empirical evidence of such positive impacts is still emergent (Cook & Cook, 2016; Maheady, Magiera et al., 2016). In fact, Cheng and So (2012) argued that school-university partnerships have been extensively described in the literature, but there is a lack of evidence and discussion about how universities leverage these partnerships to promote PD through professional dialogue with school partners.

Investigating existing school-university partnerships and ways of using teacher input to drive PD development and facilitation can potentially inform the field regarding best practices for transitioning teachers from knowing about research-based strategies to using them. The purpose of this exploratory study was to understand if leveraging school-university partnerships to improve school-wide PD by using teacher input resulted in teachers implementing research-based strategies in their inclusive classrooms. Specifically, the current investigation was conducted to answer three questions:

1. How can teacher input, obtained through an existing school-university partnership, be used to develop and facilitate a professional development series?
2. Did teachers find the teacher input-based professional development series useful?
3. Is there an association between PD designed using teacher input, obtained through an existing school-university partnership, and teachers' perceived benefits for their current classrooms and teaching careers?

Method

Setting

The PD took place at an urban, elementary/middle school in the Mid-Atlantic region. Although contracted through the public school system, an independent non-profit corporation with parent, community, foundation, and institutional representation owned this elementary school. At the time of the PD, the student learning was taking place in a temporary building. The

new permanent facilities, which have since been completed, were under construction as part of a redevelopment movement in the city.

A school-university partnership was formed in 2011 when the university assumed operator responsibilities. The university-based partners focused on whole-school reform and unifying goals within the school-university partnership. The school vision was to pursue the most effective approaches to meeting the needs of students, their families, and the community using a holistic approach focused on the behavioral, cognitive, and physical needs of the child with an emphasis on individualized learning. One component of the whole-school reform initiative was monthly staff development meetings. The staff development meetings took place in one teacher's classroom since it was centrally located and large enough to accommodate the entire faculty.

Participants

School-based partners. There were 21 teachers employed at the partnership school including 85.7% (n = 18) general educators and 14.3% (n = 3) special educators according to the school website. School staffing data included in the school performance plan, accessible through the school website, indicated that 82% of the teachers had less than five years teaching experience, many of which had less than three years of experience (i.e., novice teachers).

Student population. Although student data were not the focus of this paper, we chose to include basic, publicly available student information as it relates to the context of the school. While student outcome measures were not directly employed, the ultimate goal of the PD was to improve student engagement and learning in inclusive classrooms. The school's website reported class sizes of no more than 20 students. According to the state department website, 12.5% (n = 21) of students in the elementary grades and 22.6% (n = 12) of students in the middle school grades received special education services. These data were not broken down by disability type. Race and ethnicity data indicated 98.7% (n = 220) of the student population was African American. Out of the 90 students who participated in the state accountability measure the previous school year, 58.9% (n = 56) performed proficient or advanced on the state accountability assessment compared to 85.1% for all students in the state who performed proficient or advanced.

Measures and Data Collection

Assessing teacher perspectives. Teacher participated in focus groups, faculty meetings, and direct classroom observations which inform the PD content and design. Additionally, we conducted an initial whole group activity where participants were asked to (a) identify classroom challenges, (b) identify strategies they previously implemented, (c) rate the success of existing strategies, and then to (d) assess the degree to which the list of strategies planned for the PD series potentially aligned to needs within their own classrooms. This led to one exhaustive list of strategies from which perceptions regarding the success of implementing strategies from the list were shared. The intention was to assure the PD content was relevant, new, accounted for teacher input, and teachers perceived the PD as potentially useful given their classrooms needs.

Assessing the professional development content. At the end of the PD series, teachers answered 19 close-ended Likert-scale questions and four open-ended questions to summarize the (a) perceived usefulness of the PD content, (b) impact the PD series had on their professional growth, (c) probability of implementing the research-based strategies in their classrooms, and (d) level of confidence in implementing the research-based strategies (see Figure 1 for a list of close-ended survey items). Responses to the open-ended survey items were not analyzed for this exploratory study. Overall, the survey captured teacher perspectives regarding the success of the PD series that was designed based on their input. There were no forced responses, and 18 of the 21 teacher participants completed the survey.

Assessing teacher implementation. Five months after the second PD session (the following school year), teachers were asked to complete an eight-item follow-up questionnaire. There were four close-ended questions where teachers were asked to respond yes or no to determine if (a) they were implementing the research-based strategies, (b) they felt teachers and/or their students benefited from the PD series, (c) the resources provided during the PD were useful, and (d) they felt they still needed more information on this topic. Each yes/no question was paired with an open-ended question where teachers were asked if yes, (a) which research based strategies are you using, (b) how did the PD benefit you and/or your students, (c) which resources were most useful, and (d) which topics would you like more information about. There were no forced responses, and six of the 21 teacher participants completed the follow-up questionnaire. Additionally, user login patterns (i.e., frequency counts) to a private online professional learning community (PLC) as well as clicks on each resource were tracked to measure usage as a minimal proxy for usefulness. The tracking began at the conclusion of the first face-to-face session and ended when questionnaire was completed at the end of the 10-month data collection window.

Procedures

Professional development facilitation. While five, 1-hour PD sessions were originally anticipated, two, 2-hour PD sessions occurred during face-to-face whole group sessions. The PD included PowerPoint presentations, video exemplars, live polling, active problem solving, group discussions, and planning for future implementation of the strategies. Each teacher received a binder that included the presentation slides, examples of each strategy, templates for implementation, and articles from peer-reviewed journals explaining the research-based strategies. The binders were used throughout the PD sessions for reference and discussion. Teachers also received access to a private online PLC. The online PLC contained parallel and supplementary

Questions	Unlikely/Little	Somewhat	Very
1. How likely are you to access the online resources?	0	1	2
2. How likely are you to use the whole group strategies while teaching?	0	1	2
3. How confident are you in implementing the whole group strategies based on the training?	0	1	2
4. How likely are you to use the visual strategies while teaching?	0	1	2
5. How confident are you in implementing the visual strategies based on the training?	0	1	2
6. How likely are you to use the motor strategies while teaching?	0	1	2
7. How confident are you in implementing the motor strategies based on the training?	0	1	2
8. How likely are you to use the choice strategies while teaching?	0	1	2
9. How confident are you in implementing the choice strategies based on the training?	0	1	2
Statements	Disagree	Neutral	Agree
10. This PD enhanced my knowledge of proactive teaching strategies	0	1	2
11. This PD supplemented techniques I already knew	0	1	2
12. The PD was designed for all teachers in my school	0	1	2
13. The information in this PD was delivered at a satisfactory pace	0	1	2
14. The video examples in the PD helped deepen my understanding of proactive strategies	0	1	2
15. The online learning community is useful for accessing videos, articles, and other relevant resources	0	1	2
16. I would like more information regarding proactive strategies	0	1	2
17. I will make changes to the instructional methods I use as a result of this PD	0	1	2
18. This PD will help me long term in my career as a teacher	0	1	2
19. This PD positively impacted my current classroom	0	1	2

Figure 1. Teacher survey to measure the perceived success of the PD series.

resources to those presented throughout the PD series and had capabilities for the teachers to have open discussions within the group as well as private conversations with the university-based partners for on-going support and collaboration. Such PLCs, also referred to as professional learning networks, have documented benefits such as allowing for collaboration, connectivism, networked learning, idea sharing, idea linking, and learning amplification outside the restrictions of place and time (Cook et al., 2017; Oddone et al., 2019). Therefore, an online PLC seemed like a logical addition to the face-to-face PD particularly when considering the change from five to two face-to-face PD sessions. Each teacher received an access code with explicit directions for joining the online PLC, which was developed using the Edmodo platform. We monitored the online PLC usage.

Research Design

This investigation was conducted using an exploratory case study design where focus group data were collected first and then analyzed using a qualitative approach in order to build the PD series, which resulted in research questions and dependent variables aligned to measuring perceived usefulness of the PD. Specifically, open coding was used to review the notes of the principal where each of the three authors reviewed a copy of the notes and coded for emergent themes. We compared codes in a team meeting to come to consensus on the areas of greatest need or the themes that emerged most prominently throughout the focus group notes. The themes were ranked by level of importance for teachers based on two criteria. First, issues or concerns that were noted most often by teachers were considered of higher importance, which is consistent with traditional open coding (Corbin & Strauss, 1990).

Second, issues or concerns that pertained to student safety (e.g., extinguishing aggressive behaviors) were given priority. While code names differed slightly between authors (e.g., addressing problem behaviors vs. diminishing unwanted behaviors), three themes were present for all three authors. We emailed a list of the three target areas for the PD to the principal for confirmation of alignment between teacher needs and plans for the PD. Strengths of this design include a straightforward linear data collection, analysis, and reporting scheme (Creswell, 2012; Tashakkori & Teddlie, 1998). Specifically, first data were collected through focus groups. Next, these data informed the planning for and assessment of the PD. Finally, data collected during the PD informed the development of a researcher-created follow-up survey. Because this was exploratory, we did not enter into the study with predetermined ideas of what we would cover in the PD series or which previously validated measures we might use to assess the strength of the PD. Challenges of an exploratory design include a lengthy timetable, which in this case was 10 months from the initial data collection to the final follow-up questionnaire and a dependency on researcher-created measures that were not previously validated.

Results

Research question one investigated how teacher input, obtained through an existing school-university partnership, was used to develop and facilitate a professional development series. Three themes were identified as areas of greatest teacher need and served as the framework of the PD content. First, teachers wanted strategies for diminishing or extinguishing unwanted student behaviors. Second, teachers wanted strategies for increasing the participation of disengaged students across grade levels. Third, teachers wanted to learn how to better meet the needs of students diagnosed with or who displayed characteristics associated with Autism Spectrum Disorder (ASD) or Attention Deficit Hyperactivity Disorder (ADHD) and who were accessing the general education curriculum. While teacher dispositions were not a theme directly addressed within the PD series, it is worth noting many teachers reported high stress levels due to frequent behavioral disruptions in the classroom. Teachers also consistently noted they were not interested in PD that was overly theoretical and instead were hoping for easy to use strategies to embed in their day-to-day activities based on the school culture. Less common teacher responses during the focus group included strategies for collaboration between special and general educators and strategies for teaching math and reading to students with and without disabilities in the same classroom.

Using teachers' input as the driver for the PD content, we focused on research-based strategies related to student engagement, classroom management, behavior management, and teaching students with ASD and ADHD to generate the content for the PD series. Simonsen, Fairbanks, Briesch, Myers, and Sugai (2008) identified 20 evidence-based, general classroom management strategies through a systematic review and categorized the strategies into five essential features of effective classroom management: (a) physical and instructional predictability; (b) clear expectations that are posted, explicitly taught, reviewed, and enforced; (c) active observable engagement; (d) a continuum of strategies for responding to appropriate behaviors; and (e) a continuum of strategies for responding to inappropriate behaviors. Many of the strategies teachers reported using during the brainstorming session aligned with Simonsen and colleagues' (2008) list of evidence-based practices and we sought out strategies that could be used to supplement those already being employed.

Taking a proactive approach to classroom management was one way to supplement existing practices and introduce something new to teachers while keeping the focus on behavioral supports for students with disabilities accessing the general curriculum. Therefore, research-based proactive strategies, intended to encourage students to demonstrate appropriate behaviors rather than focusing on behavior redirections or consequences (Nagro et al., 2019; Reglin, Akpo-Sanni, & Losike-Sedimo, 2010; Scott, 2017), became the focus of the professional development and were organized in four categories: (a) whole group systematic implementation of student response and

behavior monitoring strategies (Haydon, MacSuga-Gage, Simonsen, & Hawkins, 2012; Horner, Sugai, & Anderson, 2010; Schnorr, Freeman-Green, & Test, 2016; Sutherland & Wheby, 2011); (b) incorporating visual supports to increase structure and improve comprehension of environmental expectations (Hume & Odom, 2007; Lequia, Machalicek, & Rispoli, 2012; Macdonald, Trembath, Ashburner, Costley, & Keen, 2018); (c) embedding gross motor skills into learning to increase student movement (Have et al., 2016; Mavilidi, Okely, Chandler, & Paas, 2016; Tan, Hannon, Webster, Podlog, & Newton, 2016); and (d) including opportunities for student choice while meeting learning objectives (Billingsley, Thomas, & Webber, 2018; Flowerday & Schraw, 2003) (outlined in Figure 2). We selected proactive strategies to target each of the four categories because of the documented benefits (see Scott, 2017) of positive interactions between teacher and students that increase student engagement and prevent problematic behaviors, which was the expressed need of the teachers participating in this PD. We felt this was a logical approach the school-wide PD where the strategies needed to be adaptable across grade level and subject areas.

During the initial whole group brainstorming activity conducted to assess teachers' perspectives about previous attempts to address the needs of their classrooms, teachers reported already using 21 reactive strategies or strategies used to respond to student behaviors such as *yelling at students who misbehave, using sarcasm with students, using behavior charts to track student behavior,* and *giving candy to students who listen to directions*. Further, teachers identified another 25 proactive strategies they were already using the promote engagement including using *self-regulation checklists, introducing incentives, using proximity, setting clear expectations for students, modeling clear directions,* and *narrating positive student behaviors*. Teachers identified strategies from their lists that they felt were unsuccessful such as *using intimidation* and *threatening students* and those that have worked in the past such as *implementing tight transitions between activities* and *creating lunch incentives for small groups*. The research team provided an outline of 28 new strategies that would be covered during the PD (see Figure 2 for examples) to show how the new strategies would address areas where teachers reported having been unsuccessful in the past when trying to meet the needs of all their students.

Research question two investigated if teachers found the teacher input-based PD series useful and research question three investigated if there was an association between PD designed using teacher input, obtained through an existing school-university partnership, and teachers' perceived benefits for their current classroom and teaching career. SPSS Frequencies program was used to examine the distribution of perceived usefulness of the engagement strategies including and confidence in- and probability of- implementing strategies. Table 1 shows the distribution of teacher responses. Overall, most teachers felt "very confident" and "very likely" to implement the strategies after participating the PD series (Table 1). Visual inspection of Table 1 shows no notable differences between levels of confidence or probability of implementing the strategies based on category of strategy (whole group, visual, motor, or choice). Markedly, while 56% of teachers ($n = 10$) agreed that "the online learning community is useful for accessing videos, articles, and other relevant resources," not one teacher logged into the online PLC at any point from the end of the first PD session through the subsequent school year when the follow-up questionnaires were completed.

To understand if there was an association between PD designed through an existing school-university partnership using teacher input and perceived benefits for teachers' current classrooms and teaching career, teacher questionnaires were analyzed using the SPSS Crosstabs program and Chi-Square statistic assuming equal probabilities. The Likert-scale responses from the teacher questionnaire were recoded where agreement equaled one and anything less than agreement, including neutral ratings, were recoded to zero (see Table 2). The transformed dichotomous variables were then entered into the Crosstabs program where columns were ratings of PD design and rows were ratings of teacher outcomes to allow for inspection of the cell counts and percentages (see Table 2).

Results of the Chi-Square indicated a significant association between three PD design components and two teacher outcomes. Results indicated a significant association between teachers who felt the PD was designed for all teachers in their school and teachers who felt the PD positively impacted their current classroom [x^2 (1, $N = 18$) = 4.22, $p = .040$] as well as teachers who felt the PD will help them long term in their career as a teacher [x^2 (1, $N = 18$) = 4.11, $p = .043$]. Results indicated a significant association between teachers who felt the PD supplemented techniques they already knew and teachers who felt the PD positively impacted their current classroom [x^2 (1, $N = 18$) = 4.22, $p = .040$]. Results indicated a significant association between teachers who felt the video exemplars in the PD helped deepen their understanding of proactive strategies and teachers who felt the PD will help them long term in their career as a teacher [x^2 (1, $N = 18$) = 5.14, $p = .023$].

Additionally, Fisher's Exact One-Sided Test was run through SPSS because some cell sizes within the Pearson Chi-Square were less than five. Results from Fisher's Exact One-Sided Test similarly revealed significant associations between teachers who felt the PD was designed for all teachers in their school and teachers who felt the PD positively impacted their current classroom ($p = .057$), between teachers who felt the PD supplemented techniques they already knew and teachers who felt the PD positively impacted their current classroom ($p = .057$), and between teachers who felt the video exemplars in the PD helped deepen their understanding of proactive strategies and teachers who felt the PD will help them long term in their career as a teacher ($p = .041$).

All of the teachers ($n = 6$) who completed the follow-up questionnaire five months after the PD series, reported using the proactive strategies in the subsequent school year. When asked to identify which specific proactive strategies teachers were using if any, most teachers 67% ($n = 4$) reported using visual strategies with their students. Overall, 100% of the teachers ($n = 6$) who

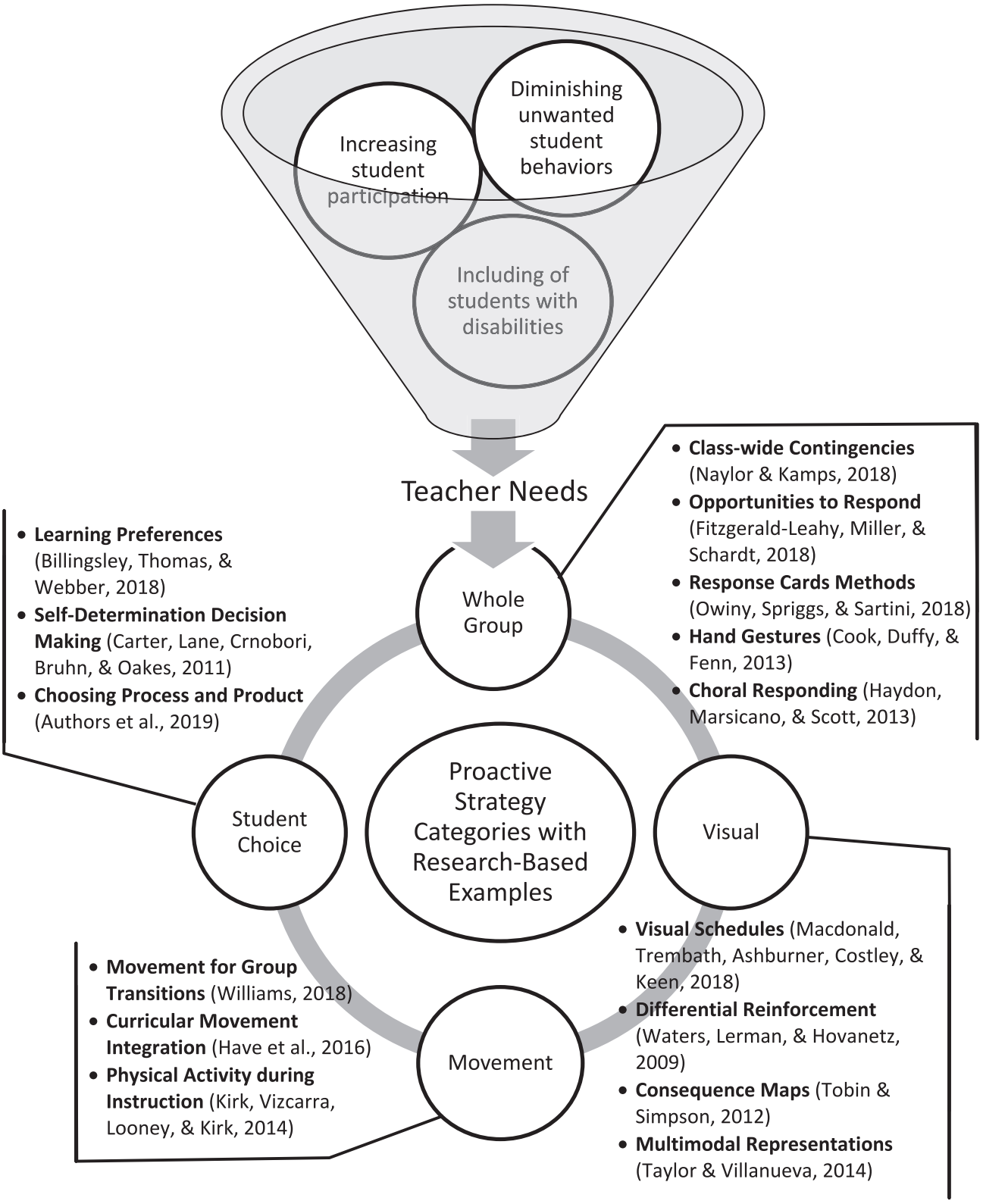

Figure 2. Addressing teacher needs through school-wide PD on proactive strategies.

Table 1. Perceived Success of the PD Series by Strategy Category; N = 18

	Implementation Confidence			*Implementation Probability*		
	Very Confident *f*	*Somewhat Confident* *f*	*Little Confidence* *f*	*Very Likely* *f*	*Somewhat Likely* *f*	*Unlikely* *f*
Whole Group	12	6	0	14	4	0
Visual	10	8	0	12	4	1
Motor	11	7	0	11	7	0
Student Choice	9	9	0	11	7	0

f = frequency of response.

completed the follow-up questionnaire said the school-wide PD was beneficial to them professionally and their participation in the PD also benefited their students.

Discussion

The purpose of this exploratory study was to understand if leveraging school-university partnerships to improve school-wide PD by using teacher input resulted in teachers implementing research-based strategies in their inclusive classrooms. First, we sought to understand the extent to which a school-wide PD grounded in research and tailored to meet the needs of teachers could be designed and implemented with fidelity given the realities of school-university partnerships. Researchers including Garet and colleagues (2001) and Kennedy (2016) suggested PD will more likely impact teacher practice positively when PD has a coherent link to teacher goals, is content specific, sustained over time, and includes hands-on application, active learning, and collective participation. The coherent link to teachers' goals was a strength of this PD series (see Figure 2). The teachers felt the proactive strategies were useful and they had the confidence to implement the strategies given the training they received (see Table 1).

The PD was intended to be sustained over time. The faculty was required to attend grade level or content specific training sessions many of the months when we had initially planned to facilitate school-wide PD sessions. As a result, the anticipated five, 1-hour PD sessions were limited to two, 2-hour face-to-face sessions. We cannot rule out possible influences separate training sessions may have had for some of the teachers. The goal was to supplement the face-to-face sessions with an ongoing online PLC to make sure all teachers had ongoing support specific to their daily classroom needs as a way to address the lack of face time.

Unfortunately, creating the online PLC with electronic resources and opportunities for professional discussions was not enough to get teachers to engage in the ongoing component of the PD, even though it was perceived as a helpful tool based on questionnaire responses. No teachers accessed the PLC at any time throughout the 10 months of data collection. Showing screenshots of the login page with systematic directions of how to make a free account was likely an insufficient introduction to

Table 2. Frequencies and Percentages for Crosstabs, Design Components by Outcomes

	Outcomes					
	"This PD positively impacted my current classroom"			*"This PD will help me long term in my career as a teacher"*		
Design Components	*Agree* *f* (%)	*Disagree or Neutral* *f* (%)	*Total* *f* (%)	*Agree* *f* (%)	*Disagree or Neutral* *f* (%)	*Total* *f* (%)
"The PD was designed for all teachers in my school"						
Agree	7 (87.5)	1 (12.5)	8 (44.4)	8 (100.0)	0 (0.0)	8 (44.4)
Disagree or Neutral	4 (40.0)	6 (60.0)	10 (55.6)	6 (60.0)	4 (40.0)	10 (55.6)
Total	11 (61.1)	7 (38.9)	18 (100)	14 (77.8)	4 (22.2)	18 (100)
"The PD supplemented techniques I already knew"						
Agree	7 (87.5)	1 (12.5)	8 (44.4)			
Disagree or Neutral	4 (40.0)	6 (60.0)	10 (55.6)			
Total	11 (61.1)	7 (38.9)	18 (100)			
"The video examples in the PD helped deepen my understanding of proactive strategies"						
Agree				9 (100)	0 (0.0)	9 (50.0)
Disagree or Neutral				5 (55.6)	4 (44.4)	9 (50.0)
Total				14 (77.8)	4 (22.2)	18 (100)

the online PLC. Had there been more time and computer-based resources available, each teacher should have created their accounts during the first face-to-face session to remove any obstacles associated with initial login to the website. Teachers related to face-to-face PD and felt confident implementing strategies that were presented by hard copy rather than those presented online. The implications of teacher preferences in delivery model warrant additional investigation. It was also possible that the teachers did not recognize the benefits of joining the online PLC so late in the school year, and forgot about it when the following school year started.

Active learning, hands-on application, and collective participation were particularly important to the teachers who explained they did not want to sit through face-to-face sessions that were overly theoretical and instead wanted to learn useful strategies and how to implement them the following school day. The proactive strategies covered were new to the faculty and were intended to be adaptable across grade levels since the PD included teachers from kindergarten through eighth grade. For example, when discussing activity schedules as a visual strategy, examples ranged from basic picture matching (e.g., animal pictures on schedule correspond to matching animal pictures on activity bins) to colored folders (e.g., first complete work in red folder, then blue folder, etc.) to steps in the writing process (e.g., plan, write, reread and edit).

Teachers perceived the video exemplars as beneficial because the video clips helped start discussions and active problem solving about how to adapt the implementation of various strategies in different classrooms across grade levels. For example, as teachers discussed their own classrooms in relation to the video exemplars, it helped others brainstorm and work through how to use the different strategies with their particular students. The teachers noted the supplemental materials in the resource binders were also useful because during the face-to-face sessions, educators could make notes as to how they could use the templates, checklists, and other resources with their students. Additionally, the teachers who completed the follow-up questionnaires reported the binders were the most useful resource and having a hard copy was helpful for referencing the strategies the subsequent school year.

The same subgroup ($N = 6$), who completed the follow-up questionnaire in the subsequent school year, unanimously reported using the strategies, specifically the visual proactive strategies, that offered supports for the learning environment as well as during instruction. Teachers may have used the visual strategies more so than any others because they felt most confident to implement these strategies (see Table 1). The visual strategies were the only strategies covered during both face-to-face sessions because after the first PD session we felt this portion of the PD was rushed and needed to be revisited. Teachers' may have reported using visual strategies more so than others because of the multiple opportunities to review and discuss these particular strategies, but this hypothesis was not investigated. Future research on effective PD design and delivery may include an investigation of the effects of revisiting the same content across multiple sessions.

Limitations

While this was an exploratory study, the small sample size is still not optimal for this type of research. One major limitation of this study was the seemingly low response rate on the follow-up questionnaire. Only six of the 21 teachers (29%) completed the follow-up questionnaire. The principal distributed and collected hard copies of the questionnaire during a faculty meeting so we assumed all teachers would be in attendance and there was an alternate reason for the low response rate. The school was undergoing major reconstruction both physically with the new building and contextually with the shifts in the school mission and vision.

The principal shared faculty rosters for both academic years within the 10-month data collection period, which revealed less than half of the teachers who attended the PD series returned the following year limiting the number of possible respondents for the questionnaire. It is estimated that 500,000 public school teachers in the United States (15%) change schools or leave the profession each year (Sutcher et al., 2016). Teacher turnover is an important issue as teacher attrition disrupts teacher quality and negatively impacts student learning (Ronfeldt et al., 2013). Teachers who feel part of a collaborative school culture where they are valued and celebrated are more likely to remain, and professional development can be infused with positivity and opportunities to celebrate successes aimed at achieving such school culture goals (Johnson et al., 2019; Simon & Johnson, 2015). Future attempts to leverage teacher input when designing PD might include additional check-in points during the ongoing PD that include opportunities to share progress and celebrate successes to promote connectivity between teachers, school leadership, and university partners. Additionally, tiered supports that emphasize positivity may be considered for those teachers who indicated they were less than *very confident* in implementing the strategies covered within the PD.

Conclusion

School-university partnerships present unique benefits and challenges to development and implementation of school-wide PD. The school-university partnership supported development of the PD series by providing valuable information about teacher needs. However, school realities presented challenges to implementing the series with fidelity to researcher recommendations of ongoing, sustained PD (i.e., Browder et al., 2012; Dunst et al., 2015; Garet et al., 2001; Kennedy, 2016; Yoon et al., 2007). Despite findings from this investigation, leveraging technology to remove barriers associated with scheduling face-to-face PD sessions is still a promising approach warranting further investigation (see Nagro et al., 2017; Nagro et al., 2020). Accessibility and usability of tech-enhanced PD should be

considered when selecting approaches to sustaining PD over time.

This school-wide PD was tailored specifically for the needs of teachers given the unique context within this particular school, and the unfortunate reality is, teachers change positions or leave the profession frequently. In fact, an estimated 10% of teachers leave the profession annually (Podolsky, Kini, Bishop, & Darling-Hammond, 2016) and many report challenges educating students with disabilities as a key factor (Barrio & Combes, 2015). Within the context of this investigation, school-wide reform may have been unrealistic since many of the teachers who learned about proactive strategies for student engagement did not return to implement such strategies the following school year.

Despite challenges associated with school realities, there was a strong relationship between PD design components including supplementing teachers' current knowledge, targeting all teachers school-wide, and enhancing the sessions with video exemplars and perceived teacher benefits for their classrooms at the time of the PD as well as their future careers as teachers. Future investigations specific to using teacher input obtained through an existing school-university partnership to develop useful PD may benefit from expanding upon the design components of and lessons learned from this work. SUP

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