


The Effects of Targeted Professional Development on Teachers' Use of Empirically Supported Classroom Management Practices

Journal of Positive Behavior Interventions
2020, Vol. 22(1) 3–14
© Hammill Institute on Disabilities 2019
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1098300719859615
jpbj.sagepub.com


Brandi Simonsen, PhD¹ , Jennifer Freeman, PhD¹, Diane Myers, PhD², Kathryn Dooley, PhD³, Eleanor Maddock, MA¹, Laura Kern, JD, PhD⁴, and Sang Byun, MA¹

Abstract

Teachers receive limited training and support in classroom management, making it incumbent on school leaders to provide efficient and effective professional development supports. We explored the effects of a brief targeted professional development (TPD) approach (brief training, email prompts, and self-management of trained skills) on teachers' use of three empirically supported classroom management skills (prompts, opportunities to respond [OTR], and specific praise). Using an experimental crossover design, we documented that teachers increased their prompt and specific praise rates while they actively engaged in TPD. However, training effects did not maintain when TPD shifted to a new skill and teachers' increased use of OTRs during TPD was neither statistically significant nor maintained. Teachers found TPD to be acceptable, usable, and feasible.

Keywords

staff training, self-management, classroom intervention, elementary school age, positive behavior support, classroom-based studies

Decades of research support key classroom management practices (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008) and packaged classroom management programs (Korpershoek, Harms, de Boer, van Kuijk, & Doolaard, 2016; Oliver, Wehby, & Reschly, 2011). For example, explicitly teaching classroom routines and expectations (Alter & Haydon, 2017), providing prompts and pre-corrections to cue appropriate behaviors (Faul, Stepensky, & Simonsen, 2012), delivering high quality and rates of opportunities to respond (OTR; MacSuga-Gage & Simonsen, 2015), giving specific praise contingent on appropriate behavior (Floress, Beschta, Meyer, & Reinke, 2017), and maintaining a favorable ratio of positive to corrective feedback (Cook et al., 2017) are all specific practices that increase the likelihood of desired student outcomes (e.g., increased on-task, academically engaged time, correct academic responding; decreased off-task, disruptive, or general problem behavior) when implemented with fidelity.

Although empirically supported classroom management practices have been well established, an “implementation gap” exists between knowledge and implementation of classroom management practices in the field. First, not all states require pre-service training in empirically supported

classroom management practices (Freeman Simonsen, Briere, & MacSuga-Gage, 2014), and existing pre-service classroom management courses do not sufficiently cover empirically supported practices (Freeman et al., 2014; Oliver & Reschly, 2007). Therefore, teachers often enter the field without necessary preparation in classroom management (Begeny & Martens, 2006; Chesley & Jordan, 2012). Second, once in the field, teachers express ongoing concerns about student behavior and frustration with insufficient support (Reinke, Stormont, Herman, Puri, & Goel, 2011). Third, researchers have consistently demonstrated that teachers' implementation of empirically supported classroom management practices occurs at lower levels

¹University of Connecticut, Storrs, CT, USA

²Texas Woman's University, Denton, TX, USA

³University of Saint Joseph, West Hartford, CT, USA

⁴University of South Florida, Tampa, FL, USA

Corresponding Author:

Brandi Simonsen, University of Connecticut, 249 Glenbrook Rd., Unit 2064, Storrs, CT 06269-2064, USA.
Email: brandi.simonsen@uconn.edu

Action Editor: Maureen Conroy

than recommended (Reinke, Herman, & Stormont, 2013; Scott, Alter, & Hirn, 2011).

To begin to close this implementation gap, leaders in the field have turned to research on implementation, which is defined as a “specified set of activities designed to put into practice an activity or program of known dimensions” (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005, p. 5). Fixsen, Blasé, and colleagues (e.g., Fixsen, Blase, Metz, & Van Dyke, 2013; Fixsen et al., 2005) have articulated the typical mechanisms that facilitate installing, implementing, and sustaining practices in schools. In particular, they emphasize implementation drivers related to competency (“staff selection, training, coaching, and performance assessment”), organization (“facilitative administration, decision support data system, and systems interventions”), and leadership (“technical and adaptive leadership”; Fixsen et al., 2013, p. 222).

Other scholars have documented the importance of “competency drivers” as critical features of effective professional development (PD) for teachers (e.g., Darling-Hammond, Hyster, & Gardner, 2017). In the area of classroom management, studies suggest that comprehensive, multicomponent PD supports (e.g., explicit training, coaching, performance feedback, and similar strategies used in concert) are critical to improve outcomes for teachers and students (e.g., Allen & Forman, 1984). However, given the number of teachers who experience classroom management challenges, limited resources present a significant barrier to implementing competency drivers, or comprehensive PD supports, for all teachers. For example, Knight (2012) found that “coaching is between 6 to 12 times more expensive than traditional approaches” to PD (p. 52). Therefore, school leaders must identify efficient and cost-effective approaches to support teachers’ classroom management practices.

A targeted professional development (TPD) approach that “targets” key classroom management skills and emphasizes self-management may present one realistic, efficient, and potentially effective approach to implement competency drivers and support teachers’ implementation of empirically supported practices in the classroom (Simonsen et al., 2017; Simonsen et al., 2014). Self-management refers to “managing” one’s own behavior as you would manage the behavior of others—by implementing similar antecedent (e.g., self-delivered prompts, environmental rearrangements), behavior (e.g., self-monitoring), and consequence (e.g., self-reinforcement) strategies (e.g., Skinner, 1953). Self-management has been incorporated into approaches to support teachers’ implementation of classroom practices (Allinder, Bolling, Oats, & Gagnon, 2000; Browder, Liberty, Heller, & D’Huyvetters, 1986; Keller, Brady, & Taylor, 2005; Sutherland & Wehby, 2001; Workman, Watson, & Helton, 1982). Based on this early work, Simonsen and colleagues developed (Simonsen et al., 2014;

Simonsen, MacSuga-Gage, Fallon, & Sugai, 2013; Simonsen, Myers, & DeLuca, 2010) and piloted (Simonsen et al., 2017) a TPD approach that includes (a) an initial brief (~20 min) didactic training on specific praise and self-management, including opportunities to script specific praise statements, develop a self-management plan, and set an initial goal for the desired rate of specific praise; (b) weekly scripted email prompts reminding teachers to focus on their use of specific praise; (c) daily self-monitoring (using a golf counter to count specific praise statements during a selected 15-min segment of instruction), self-recording (entering data into a prepopulated Excel spreadsheet), and self-evaluation (reviewing graphed data to determine whether goal was met); and (d) contingent self-reinforcement (celebrating on days when goal was met).

This TPD approach aligns with Fixsen, Blasé, and colleagues’ competency drivers and incorporates the features of empirically supported comprehensive PD interventions (training, coaching, and performance feedback) but shifts the responsibility of some implementation supports from an external support provider (e.g., coach, administrator, expert) to the teacher. Specifically, the external support provider maintains a role in providing brief, scripted didactic training and regular (weekly) email prompts, and each teacher assumes responsibility for setting a goal for practice use, tracking implementation of key practices, evaluating performance against their goal, and celebrating personal success. In short, the teacher assumes the coaching and performance feedback functions typically performed by a coach. Thus, this approach may supplement or function as an alternative to resource-intensive coaching models.

In initial pilot and replication single-case studies, Simonsen et al. (2017) demonstrated that individual teachers increased their specific praise rates during TPD (i.e., following 1:1 training and during self-management), indicating that TPD may be a promising strategy for supporting teachers’ implementation of empirically supported classroom management practices. Further research is needed, however, as these studies did not report effects for student behavior or explore whether TPD could support teachers’ implementation of other classroom management skills. Given the empirical evidence supporting multiple critical classroom management skills to improve student outcomes (Korpershoek et al., 2016; Oliver et al., 2011; Simonsen et al., 2008), effective PD supports need to be flexible enough to target implementation of a variety of classroom management skills and ultimately improve students’ outcomes. In particular, PD should emphasize empirically supported classroom practices associated with improved student outcomes, including prompts (e.g., Faul et al., 2012), OTRs (e.g., MacSuga-Gage & Simonsen, 2015), and specific praise (e.g., Floress et al., 2017). Furthermore, testing a more efficient group training model is critical when considering the potential feasibility of the TPD model.

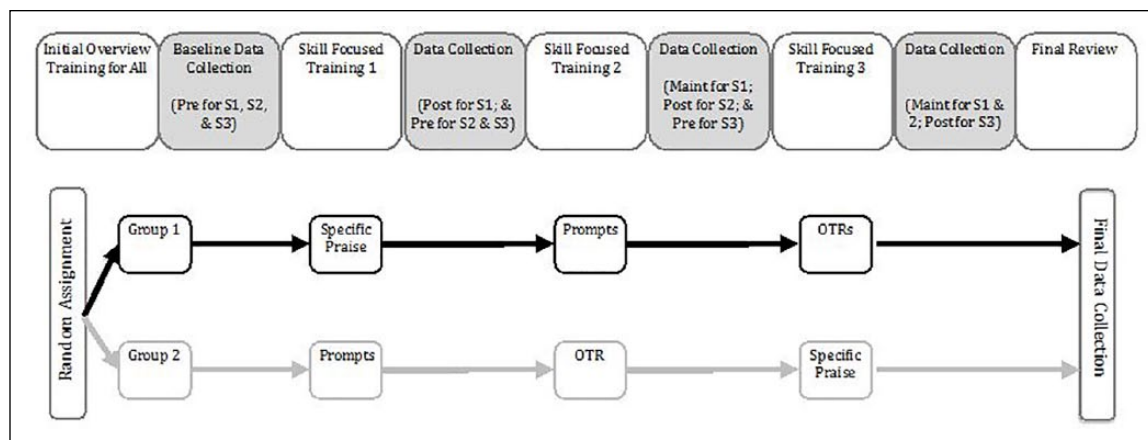


Figure 1. Teacher progression through skill training sequence.
Note. OTR = opportunities to respond.

The purpose of this study was to test the effects of TPD (i.e., brief training, email prompts, and teacher self-management), delivered in a small-group setting, on teachers' use of three empirically supported classroom management practices (i.e., prompts, OTRs, and specific praise) and explore the corresponding effects on students' classroom behavior. Specifically, we addressed the following primary research question:

Research Question 1: Does TPD increase teachers' use of specific trained classroom management practices?

We also addressed the following secondary research questions:

Research Question 1a: Is there a relationship between changes in teachers' use of one or more specific classroom management practices and students' observed behavior (on-task, active participation, or disruptive)?

Research Question 1b: Do participating teachers view TPD as socially valid (i.e., acceptable, feasible, and usable)?

Method

Setting and Participants

We conducted this study within two K–5 elementary schools (Schools A and B) both within the same large suburban district in the northeastern United States. Both schools had similar demographic profiles, and both were Title 1 eligible schools (enrollment: School A = 379, B = 330; student–teacher ratio: A = 13.98, B = 12.96; free or reduced lunch: A = 83.6%, B = 77.3%; racial or ethnic minority: A = 76.52%, B = 84.55%). We initially enrolled 17 teachers who delivered instruction in whole or small groups. Educators who exclusively worked in a 1:1 or 1:2 teacher to

student ratio were excluded from this study. During the course of the school year, six teachers stopped participating due to professional (e.g., student teacher took over classroom) and personal (e.g., medical) issues. This level of attrition is anticipated in year-long PD studies (e.g., Kubitskey et al., 2012). Therefore, the final sample included 11 teachers: nine from School A and two from School B. Participating teachers were certified, had between 1 and 17 years of teaching experience ($M = 5.64$ years), and taught in k–5th grade (one kindergarten, three first-grade, one second-grade, three third-grade, four fourth-grade, and two fifth-grade) inclusive classrooms.

Study Design

We used an experimental group crossover design (Shadish, Cook, & Campbell, 2002) to explore the effects of TPD on teachers' use of empirically supported classroom management skill(s) across two cohorts of teachers (see Figure 1). In a crossover design, participants are randomly assigned to groups, and groups experience each intervention condition in a different order. Thus, all participants experience each intervention condition, avoiding the need to withhold or delay intervention. Using this approach, we randomly assigned teachers to one of two cohort groups, and each cohort progressed through TPD for each classroom management skill in a different, randomly assigned order. After baseline, Cohort 1 received TPD for specific praise, then prompts, and finally OTRs; whereas Cohort 2 received TPD for prompts, then OTRs, and finally specific praise. Thus, each cohort served as a “counterfactual” for the other cohort during each study phase. For example, when Cohort 1 was trained in prompts, Cohort 2 was trained in praise. Thus, Cohort 1's training was the counterfactual for Cohort 2's training at each time point, and vice versa. In addition, both cohort groups participated in an initial overview and final

review at the beginning and end of the study, respectively. These events provided an opportunity to provide more details to introduce (e.g., review study schedule and procedures) and close (e.g., final social validity data collection) the study.

Dependent Measures

We collected data on teachers' use of specific classroom management skills (i.e., specific praise, OTR, prompts), student behaviors (i.e., on task, disruptive, active participation), fidelity of implementation, and the social validity of the intervention, before and after the training of each classroom management skill, to address our research questions.

Measures of teacher and student behavior: Structured direct observation (SDO). Teachers' use of empirically supported classroom management skills was the primary dependent variable for this study. We also collected data to explore the effects of changes in teacher behavior on student behavior. We assessed teacher and student behavior using SDOs. Each observation was planned for a consistent 15-min segment of teacher-directed literacy or math instruction identified by each teacher. We sampled teacher behavior by collecting five SDOs before and after each skill-focused training module (i.e., between each training event) for all participating teachers. We made every attempt to spread the five SDOs throughout the month(s) between training events (i.e., approximately one observation every 1–1.5 weeks per teacher; see Figure 1).

Trained observers recorded the frequency with which participating teachers delivered prompts, OTRs, and specific and general praise for appropriate behavior. In addition, to be able to put these skill rates in context of other teacher behaviors, we also recorded the frequency with which the teachers delivered specific and general negative or corrective statements. (The appendix presents definitions for all teacher behaviors.) Total counts were divided by the number of minutes observed to compute a rate for each behavior during each observation.

In addition to the teacher behaviors described above, observers also recorded the behavior of three students (identified by seat location closest to one of the three corners away from the door) using momentary time sampling. That is, at the end of each minute, the observer quickly scanned the three students and recorded whether the student was engaged in on-task behavior. In addition, we used partial interval recording to note whether the student was disruptive or actively participating in instruction (discrete behaviors) at any point during the 1-min interval (see the appendix for definitions of student behaviors).

Observer training. The four observers were doctoral students in special education who had completed basic course-

work in classroom management. The lead data collector (fourth author) trained all behavioral observers to collect data using a series of training activities: (a) one meeting to introduce the tool and discuss operational definitions of the behaviors included on the form and (b) one or more sessions of in-vivo training (i.e., observing teachers and students in the classroom) with the form. In-vivo training continued until the behavioral observers reached the predetermined criterion (i.e., 85% of inter-observer agreement (IOA)).

IOA. Throughout the project, we checked IOA during 40% of behavior observations. To ensure the integrity of IOA checks, these checks were spread throughout the duration of the study to prevent observer drift and scheduled evenly across teachers, cohorts, and skills. For teacher behaviors (skill rates), we calculated IOA using the mean count-per-interval method (Cooper, Heron, & Heward, 2007); we computed IOA within each minute interval (dividing the smaller count by the larger count and multiplying by 100%) and then averaged IOA across intervals for each observation. For student behaviors, we calculated the percentage of intervals in which observers agreed. Average IOA remained high across all teacher skills and student behaviors (see Table 1).

Measures of fidelity of implementation. Consistent with a multi-dimensional approach to fidelity of implementation (Dane & Schneider, 1998), we measured fidelity in a variety of ways, including trainers' adherence to training script, teachers' use of the self-monitoring strategy (i.e., golf counter), and accuracy of teachers' self-monitoring (i.e., agreement between the teacher and observer). In addition, we monitored the extent to which teachers accurately entered data into the excel spreadsheet by reviewing each teacher's spreadsheet on a weekly basis. Specific indicators of fidelity are reported in study procedures.

Measures of social validity. At the end of each training event, we asked participants to complete two measures of social acceptability. First, we used the TPD Acceptability Questionnaire (TPD-AQ), a measure of acceptability and usability to assess social validity. The TPD-AQ was adapted from the Intervention Rating Profile-15 (IRP-15; Martens, Witt, Elliott, & Darveaux, 1985). The IRP-15, based on the longer IRP (Witt, Martens, & Elliot, 1984), was designed as a measure of teachers' acceptability of student-focused behavior interventions. The original 15-item IRP-15 has a one-factor structure, which has been called "general acceptability," with high internal consistency (Cronbach's $\alpha = .98$; Martens et al., 1985). Like the IRP-15, the TPD-AQ prompts teachers to rate 14 items related to the acceptability of TPD on a scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The psychometric properties of the TPD-AQ have not been established.

Table 1. Interobserver Agreement.

Behavior	M %	SD %	Range %
Teacher skill			
Specific praise	98.9	2.7	85.5–100
OTR	97.6	3.5	80.8–100
Prompt	99.7	1.3	93.3–100
Student behavior			
Disruptive	99.9	0.7	93.3–100.0
Active participation	97.2	4.8	73.3–100.0
On-task	99.5	2.9	60.0–100.0

Note. OTR = opportunities to respond.

Second, we used the Usage Rating Profile–Intervention Revised (URP-IR; Chafouleas, Briesch, Neugebauer, & Riley-Tillman, 2011). The 29-item URP-IR, which was created to supplement information collected by the IRP, is designed to examine multiple influences on usage. The URP-IR prompts participants to indicate their level of agreement or disagreement with each item using a 6-point Likert-type scale (1 = *strongly disagree* to 6 = *strongly agree*). Exploratory and confirmatory factor analysis and reliability estimates support six factors: (a) acceptability, (b) understanding, (c) home school collaboration, (d) feasibility, (e) system climate, and (f) systems support (Briesch, Chafouleas, Neugebauer, & Riley-Tillman, 2013).

Study Procedures

After obtaining consent from all participating teachers, we randomly assigned teachers to one of two cohorts using a random number generator to assign random numbers to teachers within each school. To ensure equal group sizes within and across schools, we (a) sorted the teachers by their random numbers (put in ascending order by random numbers) and (b) assigned the first half of teachers within each school to Cohort 1 and the second to Cohort 2.

All trainings (initial overview, three skill-focused trainings, and final review) were provided by one of three trainers (first, second, or third authors), who all have experience and expertise in classroom management and PD for in-service educators. At the end of each training event, we asked participating teachers to complete previously described social validity measures (acceptability and usability). At each training event (initial overview, three skill-focused trainings, and final review), a second member of the research team attended the training and completed a checklist based on the training script, indicating whether each training element was delivered fully, partially, or not at all. Fidelity to scripted training elements was 100% across all training sessions.

Initial overview and baseline data. Participating teachers from both schools and cohorts attended an initial overview event at their own school. That is, we provided two separate, parallel training events scheduled during the same week. This training provided a general description of empirically supported classroom management practices (including skills to be trained throughout the year), provided an overview of the study, and focused on the importance of establishing routines at the beginning of the school year. After this initial overview, we collected baseline social validity data, based on an overview of TPD, from all participating teachers, and trained observers collected data on teachers' use of empirically supported classroom management practices and student behavior (using a sample of five SDOs).

Intervention. After we collected baseline data and approximately 1.5 to 2 months after the initial overview event, we initiated the skill-focused training events. These events were delivered approximately 2 months apart. As depicted in Figure 1, the first skill-focused training event focused on specific praise for Cohort 1 and prompts for Cohort 2; the second event focused on prompts for Cohort 1 and OTRs for Cohort 2; and the third event focused on OTRs for Cohort 1 and specific praise for Cohort 2. Thus, we delivered four separate trainings (one for each cohort in each school) during each training window.

During each training, we used a training script and accompanying PowerPoint presentation (see Note 1) to (a) introduce and provide a rationale for the targeted skill, (b) definite critical features for the targeted skill (consistent with the operational definitions in the appendix), (c) give participants an opportunity to practice with the targeted skill (i.e., discriminate between a range of examples and non-examples, script contextually appropriate examples) during training, (d) provide an overview of self-management, (e) ask participants to develop a self-management plan for the targeted skill (set goal, describe strategies to self-manage), and (f) review how participants would self-manage following the training (use the golf counter, enter data into Excel, evaluate their performance against their goal, and self-reinforce when they met their goal).

Following each skill-focused training, the first or second author sent teachers weekly email reminders about their trained skill, and teachers (a) self-monitored their use of the targeted skill (using a provided golf counter) during the same 15 min of teacher-directed instruction selected for direct observation, (b) entered self-monitoring data on the targeted skill into an Excel Spreadsheet, (c) self-evaluated whether they met their goal rate (using the automatically updated graph in the spreadsheet), and (d) self-reinforced on days their goal was met. Throughout this time, trained observers collected data on all teacher and student behaviors during five SDOs.

To monitor whether participating teachers were self-monitoring, trained observers also collected fidelity data on self-monitoring during the five SDOs. Observers recorded whether the teacher implemented the self-monitoring strategy fully (i.e., kept the golf counter with her or him and was seen clicking it), partially (used the golf counter during some, but not all, of the 15-min segment), or not at all (was not observed to use the golf counter). After the first skill-focused training, teachers used the self-monitoring strategy fully during 72% of observations, partially during 9% of observations, and not at all during 19% of observations. After the second skill-focused training, teachers used the self-monitoring strategy fully during 81% of observations, partially during 13% of observations, and not at all during 6% of observations. After the third (and final) skill-focused training, teachers used the self-monitoring strategy fully during 81% of observations, partially during 6% of observations, and not at all during 13% of observations.

Maintenance and follow-up. As teachers progressed through the training sequence (see Figure 1), they shifted their focus to each newly trained skill, and the previously trained skill(s) moved into a “maintenance” phase (i.e., they were no longer the focus of TPD). The concluding training event occurred approximately 2 months after the final skill-focused training and provided a final review of all skills and critical features of classroom management and highlighted the importance of specific corrective feedback. As described for the initial training, parallel training events were held across participating schools. Following the study, we provided interested teachers with a 1-page summary of all SDO data; this summary was the only time we shared observer-collected data with teachers.

Analysis

We used hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002; Weiss, 2005) to answer Research Question 1 and descriptive summaries to answer Research Questions 2 and 3. To answer Research Question 1 (effects of intervention on teachers’ skill rates), we used HLM to account for the nesting of observations within teacher. We constructed three separate models that predicted changes in the level of each teacher’s skill rate (i.e., specific praise, OTRs, and prompts) using dichotomous intervention variables for (a) TPD and (b) maintenance phases. We controlled for teacher years of experience and grade level taught at the teacher level. To address the second research question (student outcomes), we calculated the correlation between student behaviors (i.e., on task, disruptive, active participation) and teacher rates of behavior (i.e., specific praise, OTR, prompts, specific correctives). To address the third research question (social validity), we descriptively summarized results from rating scales (TPD-AQ and URP-IR).

Results

Teacher Behaviors

While participating in TPD, teachers demonstrated statistically significant increases in their rates of both specific praise ($p < .001$) and prompts ($p = .002$). These changes did not sustain during the maintenance phase for praise ($p = .075$) or prompts ($p = .274$), when teachers shifted their focus to another skill. Grade level and years of experience were not statistically significant predictors of a teachers’ use of praise or prompts. TPD did not result in statistically significant changes in teachers’ use of OTRs ($p \leq .165$). The only statistically significant predictor of OTRs was the grade level taught. Teachers’ use of OTRs decreased as the grade level increased ($p \leq .016$). See Table 2 for descriptive statistics and Table 3 for all HLM results.

Student Behaviors

Throughout the study, students were engaged in high levels of on-task behavior ($M = 94.94\%$ of intervals, $SD = 8.85\%$) and low levels of disruptive behavior ($M = 1.28\%$ of intervals, $SD = 3.74\%$), and varied in their levels of active participation ($M = 26.59\%$ of intervals, $SD = 24.65\%$). Student participation was correlated positively with teachers’ use of specific praise statements, $r(228) = .148$, $p = .025$, and OTRs, $r(228) = .417$, $p < .001$. As teachers increased their specific praise and OTR rates, students were more likely to participate. The teachers’ use of OTRs was also positively correlated with on-task student behaviors, $r(228) = .156$, $p = .018$, indicating that as teachers increased their OTR rates, students were more likely to be engaged in learning. Correlations between teachers’ rates of (a) specific praise statements and students’ on-task, $r(228) = -.018$, $p = .783$, and disruptive, $r(228) = .032$, $p = .632$, behavior; (b) OTRs and students’ disruptive behavior, $r(228) = -.060$, $p = .367$; and (c) prompts and students’ on-task, $r(228) = .031$, $p = .645$, disruptive, $r(228) = -.060$, $p = .367$, and participation, $r(228) = -.049$, $p = .458$, were not statistically significant.

Social Validity

Results from the TPD-AQ indicate that, in general, teachers found the training plus self-management intervention to be an acceptable and effective intervention for addressing classroom management (overall $M = 5.4$; see Table 4). Of note, teachers reported that TPD would be appropriate for a variety of teachers ($M = 5.5$), an acceptable intervention ($M = 5.4$), and an appropriate way to increase classroom management ($M = 5.4$). Teachers also reported that they would be willing to continue using this intervention ($M = 5.4$). The lowest rating on this scale indicated that

Table 2. Descriptive Statistics for Observed Teacher Behaviors (Rate per Minute) by Cohort and Training Sequence.

Cohort 1	Baseline			Training in specific praise			Training in prompts			Training in OTRs		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
Teacher skill												
Specific praise	0.30	0.23	0.00–1.07	0.87	0.42	0.20–1.73	0.51	0.28	0.13–1.20	0.46	0.34	0.00–1.20
OTR	2.16	1.12	0.40–5.00	2.04	0.89	0.13–4.00	2.20	1.12	0.67–5.60	2.02	0.97	0.00–3.67
Prompt	0.02	0.05	0.00–0.27	0.06	0.09	0.00–0.27	0.21	0.20	0.00–0.80	0.08	0.11	0.00–0.40

Cohort 2	Baseline			Training in prompts			Training in OTRs			Training in specific praise		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
Teacher skill												
Specific praise	0.30	0.36	0.00–1.47	0.28	0.26	0.00–1.13	0.37	0.34	0.00–1.33	0.57	0.43	0.00–1.40
OTR	1.90	1.26	0.08–5.60	2.18	1.54	0.13–7.67	2.01	1.19	0.00–3.60	1.61	1.06	0.00–3.27
Prompt	0.04	0.07	0.00–0.20	0.18	0.24	0.00–0.87	0.11	0.28	0.00–1.00	0.03	0.05	0.00–0.20

Note. OTR = opportunities to respond.

classroom management concerns may not have been significant enough to warrant this intervention ($M = 4.2$). Overall ratings across the three skill areas were highly consistent (M range across trainings = 5.4–5.5).

Results from the URP-IR indicated that teachers found the TPD intervention acceptable (M range across trainings = 4.8–5.4), improved their understanding of classroom management (M range across trainings = 5.0–5.6), feasible (M range across trainings = 4.7–5.3), and that system climate was favorable for this intervention (M range across trainings = 5.1–5.7). Teachers reported that this intervention did not require a high level of home-school collaboration (M range across trainings = 2.7–3.3) and that they would not need additional system support to carry out this intervention (M range across trainings = 2.4–2.9). Table 5 presents all results.

Discussion

Discussion of Study Results

Teacher behaviors. While participating in TPD, teachers increased their implementation rates of two empirically supported classroom management skills: specific praise and prompts. These results provide (a) further evidence of TPD supporting teachers in increasing specific praise rates (Simonsen et al., 2017) and (b) preliminary evidence of similar effects for prompts. Although TPD was developed as an efficient PD method (<5 hr of training during the year, <5 min daily outside of instruction), it aligns with competency drivers (Fixsen et al., 2013; Fixsen et al., 2005) and incorporates key features of effective PD identified by Darling-Hammond et al. (2017), as the training modeled classroom management skills, included opportunities for active learning, and was delivered in a small-group format

Table 3. HLM Results for Teacher Outcomes.

Predictor	Coefficient	SE	p value
Specific praise			
TPD	.302	.057	<.001***
Maintenance	.147	.082	.075
Grade level taught	-.065	.040	.134
Teacher years of experience	.005	.010	.626
Opportunities to respond			
TPD	.338	.243	.165
Maintenance	-.506	.318	.113
Grade level taught	-.294	.099	.016*
Teacher years of experience	.037	.025	.178
Prompts			
TPD	.107	.035	.002**
Maintenance	.060	.060	.274
Grade level taught	.018	.017	.319
Teacher years of experience	-.002	.004	.852

Note. HLM = hierarchical linear modeling; TPD = targeted professional development.

* $p < .05$. ** $p < .01$. *** $p < .001$.

to enable collaboration; in addition, email prompts and ongoing self-management (self-monitoring, self-recording, self-evaluation, and self-reinforcement) addressed key elements of coaching, feedback, and reflection.

Although teachers increased their specific praise or prompt rates while participating in TPD, teachers did not maintain their increased skill use when they shifted their focus to a different skill. That is, consistent with previous studies (e.g., Hawkins & Heflin, 2011; Simonsen et al., 2017), although specific praise and prompt rates remained higher than baseline, rates decreased during maintenance from the levels achieved during TPD. There are several potential explanations for the lack of maintenance. First,

Table 4. Social Validity Ratings on the Targeted Professional Development Acceptability Questionnaire.

Item	Mean teacher ratings ^a					M
	Initial overview	Praise training	Prompt training	OTR training	Final review	
1. Targeted professional development was an acceptable intervention for increasing use of specific classroom management skills (i.e., specific praise).	4.9	5.6	5.5	5.5	5.4	5.4
2. Most teachers would find targeted professional development appropriate for increasing use of specific classroom management skills (i.e., specific praise).	5.0	5.4	5.5	5.4	5.6	5.4
3. Targeted professional development proved effective in increasing use of specific classroom management skills (i.e., specific praise).	4.5	5.3	5.3	5.2	5.8	5.2
4. I would recommend the use of targeted professional development to other teachers.	4.7	5.4	5.4	5.2	5.6	5.3
5. The classroom management challenges were severe enough to warrant use of targeted professional development.	3.9	3.9	4.5	4.0	4.8	4.2
6. I would be willing to continue using the targeted professional development in the classroom setting.	5.0	5.4	5.5	5.4	5.6	5.4
7. Targeted professional development would not result in negative side effects for teachers.	4.9	4.6	5.1	5.0	5.4	5.0
8. The targeted professional development would be appropriate for a variety of teachers.	5.3	5.6	5.7	5.5	5.6	5.5
9. The targeted professional development is consistent with trainings I have had before in the school setting.	4.9	5.2	4.9	5.0	5.6	5.1
10. Targeted professional development is a fair way to increase use of specific classroom management skills (i.e., specific praise).	4.9	5.5	5.5	5.2	5.4	5.3
11. Targeted professional development is reasonable for increasing use of specific classroom management skills (i.e., specific praise).	4.9	5.4	5.5	5.3	5.6	5.3
12. I liked the procedures used in the targeted professional development.	4.8	5.4	5.4	5.2	5.6	5.3
13. Targeted professional development is a good way to increase use of specific classroom management skills (i.e., specific praise).	4.9	5.4	5.3	5.4	5.4	5.3
14. Overall, targeted professional development was beneficial for increasing use of specific classroom management skills (i.e., specific praise).	5.0	5.4	5.5	5.4	5.6	5.4

Source. Adapted from the Intervention Rating Profile–15; Martens, Witt, Elliott, and Darveaux (1985).

Note. OTR = opportunities to respond.

^aRatings on a scale from 1 = *strongly disagree* to 6 = *strongly agree*.

Table 5. Social Validity Ratings on URP-IR.

Item	Mean teacher ratings ^a				
	Initial overview	Praise training	Prompt training	OTR training	Final review
1. Acceptability	5.4	5.4	5.3	4.8	5.2
2. Understanding	5.6	5.1	5.3	5.0	5.3
3. Home school collaboration	3.1	2.7	3.0	3.1	3.3
4. Feasibility	5.3	5.3	5.2	4.7	5.0
5. System climate	5.6	5.7	5.4	5.1	5.4
6. System support	2.9	2.4	2.8	2.5	2.8

Note. URP-IR = Usage Rating Profile–Intervention Revised; OTR = opportunities to respond.

^aRatings on a scale from 1 = *strongly disagree* to 6 = *strongly agree*.

students engaged in high levels of on-task and low levels of disruptive behavior throughout the study; therefore, changes in student behavior may not have been sufficient to warrant or reinforce teachers' improved skill implementation. Second, training skills in isolation may not have promoted the

coordinated and maintained implementation of all classroom management skills. Due to the nature of the crossover design, we trained skills in different orders for each cohort, and we did not specifically train how each skill could be used in concert with previously trained skills. More explicit instruction

on how skills are linked (i.e., prompts increase the likelihood of students behaving appropriately, high rates of OTRs increase opportunities for appropriate social and academic student behavior, and specific praise for appropriate social and academic behavior increases the likelihood of future appropriate behavior) may result in different outcomes.

Finally, although removing TPD supports after documenting intervention effects for each skill was an important part of the crossover design, it likely contributed to poor skill maintenance. Darling-Hammond et al. (2017) described the importance of PD of a “sustained duration”; however, less attention has been paid in the professional literature to maintenance of teachers’ skills after the conclusion of PD supports. Fixsen, Blase, Duda, Naoom, and Van Dyke (2010) argued for the “continued availability of the implementation drivers” (competency, organization, and leadership; p. 34), suggesting ongoing support is necessary to sustain implementation. Among studies that have examined maintenance of effects, preliminary evidence suggests that skill maintenance may suffer when PD supports are entirely withdrawn (e.g., Hawkins & Heflin, 2011; Simonsen et al., 2017); however, simple strategies, like providing prompts and reminders, may promote skill maintenance (Hemmeter, Hardy, Schnitz, Adams, & Kinder, 2015). Therefore, efficient and effective maintenance supports should be studied.

In contrast to specific praise and prompts, teachers’ use of OTRs increased only slightly during TPD, and increases were neither statistically significant nor maintained. This may be because teachers’ baseline levels of OTRs were higher than the other skills and had less room for improvement. Researchers have documented that “typical” rates of OTRs range from 0.57 (Scott et al., 2011) to 1.43 (Reinke et al., 2012), and teachers in this study delivered an average of 2.12 OTRs per minute ($SD = 1.22$). OTR rates may also be more dependent on curricular materials, which is supported by the finding that grade level influenced teachers’ OTR rates more than their participation in TPD in the present study. Therefore, additional research is needed to understand whether adjustments are needed to support teachers in increasing OTRs or whether teachers who started with lower OTRs rates would respond differently to TPD.

Student behaviors and social validity. Despite the generally appropriate student behavior, some changes were noted as teachers increased their skill use—students’ participation increased as teachers increased OTRs and specific praise, and students were more on-task when teachers increased OTRs. Furthermore, teachers generally reported that TPD was acceptable (see Table 4), usable, and feasible (see Table 5). Perhaps the greatest testimony to the social validity of TPD was teachers asking to repeat the PD the following year so their peers, who were not a part of the study, could benefit

from the support. Following this recommendation, the internal behavior coaches provided TPD, with our support, to teachers who were not a part of the present study in the subsequent year.

Limitations

Study results should be interpreted in light of the following study limitations. First, a small sample of teachers ($n = 11$) participated in this study. A larger sample may have provided greater power to detect meaningful differences in teacher behavior, explore order effects, and examine the effects of other variables (e.g., teacher and student demographic characteristics). Therefore, caution should be used in interpreting these findings and generalizing to other teachers without further replication. Second, we sampled the classroom behavior of three students, rather than the entire class, and these students mostly engaged in appropriate (on-task and not disruptive) behavior; a different measurement approach (e.g., sampling behavior of all students in class) may have been more sensitive to changes in overall student behavior. Third, observers were not blind to study purpose or condition, as they also collected data on fidelity of training. Future research should aim to reduce the potential for observer bias. Finally, although we observed during the same 15 min selected by each teacher throughout the study, typical variations in classroom instruction and routines may have contributed to variability in the data.

Conclusion and Implications

This study suggests TPD may support teachers’ implementation of key classroom management skills (prompts and specific praise); however, more research is needed to (a) directly compare a range of PD strategies to determine which strategies are the most efficient and effective, for whom, and under what conditions and (b) explore strategies to enhance maintenance of skill use across time and generalization of effects to other skills (e.g., OTRs), settings, and individuals (e.g., middle and high school teachers, paraprofessionals). These findings add to the literature on effective PD, supporting the importance of direct training, coaching, and performance feedback, and providing preliminary support for these functions to be met through a combination of coach (training and prompting) and self-management support.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Appendix

Operational Definitions of Teacher and Student Behaviors.

Behavior	Definition
Teacher Behaviors	
Prompts	A specific verbal prompt for appropriate social behavior (e.g., “Remember to show respect by raising your hand”).
OTRs	A teacher behavior that prompts or solicits student response (e.g., asking a question, presenting a demand, choral responding, using response cards).
Specific praise	A positive statement, typically provided by the teacher, when a desired behavior occurs (contingent) to inform students specifically what they did well (e.g., Nice hand raise!). Specific praise includes academic behavior and social behavior.
General praise	A positive statement, provided by the teacher, when a desired behavior occurs (contingent), does not inform students specifically what they did well (e.g., Nice!).
Specific corrective	A statement provided by the teacher, when an undesired behavior occurs (contingent) to inform students specifically what their errors/mistakes were (e.g., “Instead of talking out, please raise your hand.”)
General corrective	A statement provided by teacher, when an undesired behavior occurs (contingent) that does not inform students specifically what their error/mistakes were (“e.g., Stop!”).
Student behaviors	
On-task	Performing the appropriate task for the context. In other words, (s)he is engaging in behaviors that are specified and desired by the teacher at that time (e.g., looking at the teacher while teacher is giving directions).
Disruptive	Student action that interrupts regular school or classroom activity (e.g., talking out off-topic).
Active participation	Actively participating in the classroom activity (e.g., raising hand to answer a question).

Note. OTR = opportunities to respond.


Funding

The development of this article was supported in part by Grant H326130004 from the Office of Special Education Programs, U.S. Department of Education for OSEP Center on Positive Behavioral Interventions and Supports (www.pbis.org). Opinions expressed herein are the author’s and do not necessarily reflect the position of the U.S. Department of Education, and such endorsements should not be inferred.

Note

1. Please contact the corresponding author to obtain training scripts, power points, and the Excel spreadsheet.

ORCID iD

Brandi Simonsen  <https://orcid.org/0000-0002-1561-1686>

References

- Allen, C. T., & Forman, S. G. (1984). Efficacy of methods of training teachers in behavior modification. *School Psychology Review, 13*, 26–32.
- Allinder, R., Bolling, R., Oats, R., & Gagnon, W. (2000). Effects of teacher self-monitoring implementation of curriculum-based measurement and mathematics computation achievement of students with disabilities. *Remedial and Special Education, 21*, 219–226. doi:10.1177/074193250002100403
- Alter, P., & Haydon, T. (2017). Characteristics of effective classroom rules: A review of the literature. *Teacher Education and Special Education, 40*, 114–127. doi:10.1177/0888406417700962
- Begeny, J. C., & Martens, B. K. (2006). Assessing pre-service teachers’ training in empirically validated behavioral instruction practices. *School Psychology Quarterly, 21*, 262–285. doi: 10.1521/scpq.2006.21.3.262
- Briesch, A. M., Chafouleas, S. M., Neugebauer, S. R., & Riley-Tillman, T. C. (2013). Assessing influences on intervention implementation: Revision of the Usage Rating Profile-Intervention. *Journal of School Psychology, 51*, 81–96. doi:10.1016/j.jsp.2012.08.006
- Browder, D., Liberty, K., Heller, M., & D’Huyvetters, K. K. (1986). Self-management by teachers: Improving instructional decision making. *Professional School Psychology, 1*, 165–175.
- Chafouleas, S. M., Briesch, A. M., Neugebauer, S. R., & Riley-Tillman, T. C. (2011). *Usage Rating Profile-Intervention (revised)*. Storrs: University of Connecticut.
- Chesley, G. M., & Jordan, J. (2012). What’s missing from educator prep. *Educational Leadership, 69*, 41–45.
- Cook, C. R., Grady, E. A., Long, A. C., Renshaw, T., Coddling, R. S., Fiat, A., & Larson, M. (2017). Evaluating the impact of increasing general education teachers’ ratio of positive-to-negative interactions on students’ classroom behavior. *Journal of Positive Behavior Interventions, 19*, 67–77. doi:10.1177/1098300716679137
- Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.
- Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clinical Psychology Review, 18*, 23–45. doi:10.1016/S0272-7358(97)00043-3

- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Palo Alto, CA: Learning Policy Institute.
- Faul, A., Stepensky, K., & Simonsen, B. (2012). The effects of prompting appropriate behavior on the off-task behavior of two middle-school students. *Journal of Positive Behavior Interventions, 14*, 47–55. doi:10.1177/1098300711410702
- Fixsen, D. L., Blase, K., Duda, M., Naoom, S. F., & Van Dyke, M. (2010). Sustainability of evidence-based programs in education. *Journal of Evidence-Based Practices for Schools, 11*, 30–46.
- Fixsen, D. L., Blase, K., Metz, A., & Van Dyke, M. (2013). Statewide implementation of evidence-based programs. *Exceptional Children, 79*, 213–230. doi:10.1177/001440291307900206
- Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature* (FMHI Publication #231). Tampa: The National Implementation Research Network, Louis de la Parte Florida Mental Health Institute, University of South Florida.
- Floress, M. T., Beschta, S. L., Meyer, K. L., & Reinke, W. M. (2017). Praise research trends and future directions: Characteristics and teacher training. *Behavioral Disorders, 43*, 227–243. doi:10.1177/0198742917704648
- Freeman, J., Simonsen, B., Briere, D. E., & MacSuga-Gage, A. S., (2014). Pre-service teacher training in classroom management: A review of state accreditation policy and teacher preparation programs. *Teacher Educational and Special Education, 37*, 106–120. doi: 10.1177/0888406413507002
- Hawkins, S. M., & Heflin, L. J. (2011). Increasing secondary teachers' behavior-specific praise using a video self-modeling and visual performance feedback intervention. *Journal of Positive Behavior Interventions, 13*, 97–108. doi:10.1177/1098300709358110
- Hemmeter, M. L., Hardy, J. K., Schnitz, A. G., Adams, J. M., & Kinder, K. A. (2015). Effects of training and coaching with performance feedback on teachers' use of pyramid model practices. *Topics in Early Childhood Special Education, 35*, 144–156. doi:10.1177/0271121415594924
- Keller, C. L., Brady, M. P., & Taylor, R. L. (2005). Using self-evaluation to improve student teacher interns' use of specific praise. *Education and Training in Developmental Disabilities, 40*, 368–376.
- Knight, D. S. (2012). Assessing the cost of instructional coaching. *Journal of Education Finance, 38*, 52–80.
- Korpershoek, H., Harms, T., de Boer, H., van Kuijk, M., & Doolaard, S. (2016). A meta-analysis of the effects of classroom management strategies and classroom management programs on students' academic, behavioral, emotional, and motivational outcomes. *Review of Educational Research, 86*, 643–680. doi:10.3102/0034654315626799
- Kubitskey, B. W., Vath, R. J., Johnson, H. J., Fishman, B. J., Konstantopoulos, S., & Park, G. J. (2012). Examining study attrition: Implications for experimental research on professional development. *Teaching and Teacher Education, 28*, 418–427. doi:10.1016/j.tate.2011.11.008
- MacSuga-Gage, A. S., & Simonsen, B. (2015). Examining the effects of teacher-directed opportunities to respond and student outcomes: A systematic review of the literature. *Education and Treatment of Children, 38*, 211–240. doi:10.1353/etc.2015.0009
- Martens, B. K., Witt, J. C., Elliott, S. N., & Darveaux, D. X. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice, 16*, 191–198. doi:10.1037/0735-7028.16.2.191
- 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: <https://files.eric.ed.gov/fulltext/ED543769.pdf>
- Oliver, R. M., Wehby, J. H., & Reschly, D. J. (2011). Teacher classroom management practices: Effects on disruptive or aggressive student behavior. *Campbell Systematic Reviews, 4*, 1–55. doi:10.4073/csr.2011.4
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: SAGE.
- Reinke, W. M., Herman, K. C., & Stormont, M. (2013). Classroom-level positive behavior supports in schools implementing SW-PBIS: Identifying areas for enhancement. *Journal of Positive Behavior Interventions, 15*, 39–50. doi:10.1177/1098300712459079
- Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., Goel, N. (2011). Supporting children's mental health in schools: Teacher perceptions of needs, roles, and barriers. *School Psychology Quarterly, 26*, 1–13. doi: 10.1037/a0022714
- Scott, T. M., Alter, P. J., & Hirn, R. G. (2011). An examination of typical classroom context and instruction for students with and without behavior disorders. *Education & Treatment of Children, 34*, 619–641. doi:10.1353/etc.2011.0039
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi experimental designs*. Belmont, CA: Wadsworth, Cengage Learning.
- 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. doi: 10.1353/etc.0.0007
- Simonsen, B., Freeman, J., Dooley, K., Maddock, E., Kern, L., & Myers, D. (2017). Effects of targeted professional development on teachers' specific praise rates. *Journal of Positive Behavior Interventions, 19*, 37–47. doi:10.1177/1098300716637192
- Simonsen, B., MacSuga-Gage, A. S., Briere, D. E., Freeman, J., Myers, D., Scott, T., & Sugai, G. (2014). Multi-tiered support framework for teachers' classroom management practices: Overview and case study of building the triangle for teachers. *Journal of Positive Behavior Interventions, 16*, 179–190. doi:10.1177/1098300713484062
- Simonsen, B., MacSuga-Gage, A. S., Fallon, L. M., & Sugai, G. (2013). Teacher self-monitoring to increase specific praise rates. *Journal of Positive Behavior Interventions, 15*, 3–13. doi:10.1177/1098300712440453
- Simonsen, B., Myers, D., & DeLuca, C. (2010). Teaching teachers to use prompts, opportunities to respond, and reinforcement. *Teacher Education in Special Education, 33*, 300–318. doi:10.1177/0888406409359905
- Skinner, B. F. (1953). *Science and human behavior*. New York: Macmillan.
- Sutherland, K. S., & Wehby, J. H. (2001). The effect of self-evaluation on teaching behavior in classrooms for students with

- emotional and behavioral disorders. *The Journal of Special Education*, 35, 2–8. doi:10.1177/002246690103500306
- Weiss, R. (2005). *Modeling longitudinal data*. New York, NY: Springer-Verlag.
- Witt, J. C., Martens, B. K., & Elliot, S. N. (1984). Factors affecting teachers' judgments of the acceptability of behavioral interventions: Time involvement, behavior problem severity, and type of intervention. *Behavior Therapy*, 15, 204–209.
- Workman, E. A., Watson, P. J., & Helton, G. B. (1982). Teachers' self-monitoring of praise vs. praise instructions: Effects on teachers' and students' behavior. *Psychological Reports*, 50, 559–565.