

ORIGINAL ARTICLE

Screencast-Delivered Professional Development Targeting Teachers' Self-Efficacy and Beginning-of-the-Year Classroom Management Practices[†]

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Abstract

Classroom management remains one of the greatest challenges for teachers. In this study, with 52 general and special education teachers, we examined the effectiveness of a screencast-delivered professional development program focused on classroom management practices in the first 3 days of school. Results suggest that after participating in the program, teachers report a positive change to the start of their school year across 12 different areas. Further, teachers' classroom management self-efficacy increased significantly after completing the program, and there was a significant correlation ($r = .41$) between increases in classroom management self-efficacy and rate of implementation of new practices. Implications for practitioners and future directions for research are included.

Keywords: behaviour management; classroom management; self-efficacy; professional development; fidelity of implementation

Preparing teachers to effectively manage student behaviour in the classroom is one of the greatest concerns in teacher education and teaching around the world (O'Neill & Stephenson, 2013; Wubbels, 2011). The learning that takes place in the classroom directly relates to the degree to which the teacher can manage students' behaviours (Garwood, Vernon-Feagans, & the Family Life Project Key Investigators, 2017; Sindelar, Brownell, & Billingsley, 2010; Wolff, van den Bogert, Jarodzka, & Boshuizen, 2015). Students in classrooms with teachers who excel at behaviour management tend to be more engaged (Gage, Scott, Hirn, & MacSuga-Gage, 2018), less disruptive (Cook et al., 2017), and achieve better academic outcomes (Stronge, Ward, & Grant, 2011). Furthermore, effective behaviour management practices are seen as a key to achieving the goal of inclusive education for students of all abilities (Garwood & Van Loan, 2019; O'Neill, 2016).

Evidence-based behaviour management practices, such as providing students with high rates of opportunities to respond (OTR; MacSuga-Gage & Simonsen, 2015), delivering positive performance feedback (Hattie & Timperley, 2007), and utilising behaviour-specific praise (Reinke, Herman, & Stormont, 2013) and active teaching techniques (e.g., moving around the classroom and interacting with students during small group instruction; Haydon & Kroeger, 2016), diminish the chances that students will misbehave. Rather than being off task, students are engaged and thus better able to benefit from teachers' instruction, which leads to improved academic outcomes (Emmer & Sabornie, 2015; Garwood, Harris, & Tomick, 2017). For example, in a study of more versus less effective fifth-grade teachers – measured by assessing reading and mathematics achievement of their students – the most effective teachers scored significantly higher in quality of classroom management (e.g., efficient

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routines, monitoring of behaviour, organisation of the classroom), and they subsequently had fewer instances of disruptive behaviours by students (Stronge et al., 2011).

Beginning the School Year

Beginning the school year with a predetermined plan for managing classroom behaviour is a critical attribute of effective teachers (Cothran, Kulinna, & Garrahy, 2003; Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008). Sanford's (1984) study of middle-grades science teachers found that the more effective classroom managers were those who explicitly taught rules and procedures in the beginning of the school year and then reviewed these guidelines for classroom behaviour throughout the year on an as-needed basis. A separate study of primary-grades teachers in five different schools found that those who had students who were more engaged and achieving higher scores in literacy activities in the middle of the school year had spent the first three days of school emphasising classroom management (Bohn, Roehrig, & Pressley, 2004). These teachers established positive classroom management practices by (a) getting to know students' names right away, (b) being enthusiastic and telling students of their high expectations for them, (c) avoiding punishments when handling misbehaviour, (d) including students in rule creation, and (e) having students practise classroom procedures.

It is critical that teachers establish effective classroom management practices from the first day of school (Capizzi, 2009). However, due to the timing and context of the student-teaching experience, pre-service teachers rarely get the opportunity to establish beginning-of-the-year classroom management systems, which ultimately leads to anxiety and lower self-efficacy about one's ability to manage student behaviour (Colson, Sparks, Berridge, Frimming, & Willis, 2017; Cushman & Kemp, 2012). Teaching is a stressful job, and no struggle causes greater stress to general education teachers (Klassen & Chiu, 2010) and special education teachers (Wehby & Kern, 2014) than student misbehaviour. When special educators experience stress over a long period of time, they are at risk for burning out (Garwood, Van Loan, & Werts, 2018; Garwood, Werts, Varghese, & Gosey, 2018). Perhaps this is why some have suggested training teachers in the efficient use of effective behaviour management practices constitutes a public health intervention (Marlow et al., 2015). Stress-induced burnout puts teachers at risk for a myriad of mental and physical health problems, such as depression and chronic fatigue (Roeser et al., 2013). These teachers are also at risk for diminished feelings of classroom management self-efficacy (Schwarzer & Hallum, 2008).

Classroom Management Self-Efficacy and Positive Behaviour Interventions and Supports

Classroom management self-efficacy encompasses teachers' beliefs in their ability to organise and maintain order in the classroom. Interest in classroom management self-efficacy from the research community is high, as dozens of scales have been developed to measure this construct in the last 30 years (see O'Neill & Stephenson, 2011, for a review). A teacher's belief in themselves is the critical factor that drives their ability to complete the task of teaching (Dicke et al., 2014). Bandura (1977) posited that it was not a person's skill level, but rather their self-efficacy for a given task that dictated effort and persistence. When struggles occur, as they inevitably will within the classroom, teachers with greater self-efficacy are more likely to get back on track (Schwarzer & Hallum, 2008). Positive feedback loops exist between teachers' classroom management practices and students' behaviour, wherein teachers who have greater classroom management self-efficacy utilise more effective practices, which leads to more positive student behaviours and a greater sense of efficacy for teachers (Jennings & Greenberg, 2009). In a study of 64 special educators serving a variety of students with disabilities, classroom management self-efficacy had a strong and inverse relationship to burnout (Garwood, Werts, et al., 2018).

The use of positive behaviour interventions and supports (PBIS) has been a rallying cry for educators and administrators in a number of countries for nearly three decades (McIntosh & Goodman, 2016; Sugai, Simonsen, Freeman, & La Salle, 2016), but the success or failure of the PBIS movement will ultimately come down to how well the adults (i.e., teachers) in schools implement effective behaviour management practices at the classroom level (Herman, Hickmon-Rosa, & Reinke, 2018). For example,

in a study with 33 primary classrooms located in schools implementing school-wide PBIS, teachers with greater classroom management self-efficacy were more likely to use evidence-based behaviour management practices and have fewer instances of disruptive student behaviour (Reinke et al., 2013). The good news is that classroom management self-efficacy is a malleable factor that can be addressed during pre- and in-service training (Simonsen et al., 2008). The bad news is twofold: pre-service teachers are rarely required to take an entire course on evidence-based classroom management strategies (Freeman, Simonsen, Briere, & MacSuga-Gage, 2014), and coursework that is offered tends to prioritise theory over practical application (Rozelle & Wilson, 2012). In-service, research-based professional development in classroom management is needed to overcome the gaps in pre-service training.

Professional Development in Classroom Management

Traditionally, in-service training has relied on ‘train and hope’ or one-stop shopping approaches that involve day-long sessions where teachers are inundated with theoretical information and provided few opportunities to practise the skills being taught (Darling-Hammond & Richardson, 2009). In a general review of the literature on teacher professional development (PD), Joyce and Showers (2002) found that the average classroom implementation of new skills learned from this type of PD was only 5%. These disappointing results are even worse when one considers that most PD is delivered in person by outside agencies at a high cost to schools (Blonigen et al., 2008). The return on investment for school districts is not economically viable. As a result, innovative approaches to PD in classroom and behaviour management are beginning to take place. One of the more common approaches is the use of PD coaches to support teachers’ intervention implementation. In a recent review of 29 studies examining the efficacy of coaching to increase teachers’ use of social-behavioural interventions, 86% of studies found coaching to be an effective model (Stormont, Reinke, Newcomer, Marchese, & Lewis, 2015). However, most coaches were outside experts brought in to support teachers, which again evokes concerns regarding the cost and viability of such a model. Coaching holds promise, but more research is needed on its effectiveness and on other forms of PD in classroom management. Furthermore, researchers have recently called for more research on PD that can improve teachers’ classroom management self-efficacy (Kelm & McIntosh, 2012) and on PD delivered in an online format that can increase access and decrease costs for schools (Marquez et al., 2016). Despite these calls, little empirical attention has been given to the in-service training of teachers in classroom management practices to begin the school year.

Purpose and Research Questions

The purpose of the study was to provide classroom teachers with information to establish effective classroom management processes in the beginning of the school year and to descriptively examine its impact. To accomplish this goal, teachers were given access to a screencast-delivered PD program focused on classroom management practices in the first three days of school. A theory of adult learning undergirded the PD program; specifically, the PD was grounded in learner-centred aspects of How People Learn (HPL; Bransford, Brown, & Cocking, 2000). Based on the theory of HPL, we designed the PD to be meaningful to teachers’ lived experiences and included many real-world examples/activities throughout the training in an effort to support uptake of knowledge. Desimone (2011) has highlighted the importance of PD programs building on teachers’ experiences to facilitate learning. The following research questions guided the study:

1. To what extent do teachers report a change to their start of the school year after participation in the PD program?
2. Do teachers self-report a change in their classroom management self-efficacy after participating in the PD program?

Table 1. Teacher Demographics and Descriptive Data ($N = 52$)

	<i>M</i>	<i>SD</i>	Range
Age	45.69	11.72	25–70
Years teaching total	18.02	10.63	1–40
	<i>n</i>	%	
Sex			
Female	45	86.54	
Male	7	13.46	
Race			
African American	2	3.85	
Caucasian	48	92.31	
Hispanic/Latino	1	1.92	
Multiracial	1	1.92	
Highest degree in education			
Bachelor's	16	30.77	
Master's	31	59.62	
Doctoral	5	9.61	
Licensure area			
General education	42	80.77	
Special education	10	19.23	
Licensure path			
Traditional	35	67.31	
Alternative	17	32.69	
Grade level served			
Primary school	21	40.38	
Middle school	18	34.62	
High school	13	25.00	

3. What percentage of ideas learned during the PD do teachers report implementing in the classroom?
4. What is the relationship between teachers' change in classroom management self-efficacy and their reported rate of implementation?

Method

Participants and Setting

The study took place in two schools (convenience sample) located in a suburban region of the southeastern United States. Table 1 contains descriptive information for the 52 teachers who took part in the study. The average age of the participants was 45.69 ($SD = 11.72$) years and teaching experience ranged from 1 to 40 years ($M = 18.02$, $SD = 10.63$). The majority of the participants were female (86.54%) and Caucasian (92.31%). Both general education (80.77%) and special education (19.23%) teachers took part in the study. Teachers worked with students in both the primary (40.38%) and secondary (middle

and high school; 59.62%) grades. Of the 52 teachers in the study, 27 (51.92%) reported they had taken a course in classroom management during their pre-service preparation and three (5.77%) had achieved national board certification.

Materials

The PD program in this study, which contains an online screencast (i.e., recorded lectures with interactive videos) with an accompanying workbook, was designed to help teachers begin their school year with a focus on classroom management to set the stage for a successful academic year for themselves and their students. The program has undergone iterative development to be sure the practices being disseminated are aligned with the most current research on classroom management (Harris, 2015). The PD program, which is accessed online and self-guided by teachers, focuses on four areas important to the physical layout of a classroom: visibility (*Can I make eye contact with each student and can each student see the academic displays?*), accessibility (*Can the students and I reach all of our necessary materials?*), distractibility (*What parts of the room might draw students' attention away from my lesson?*), and flexibility (e.g., teachers are provided with concrete strategies for ease and efficiency in rearranging the room to accommodate different instructional modalities). Active teaching techniques (e.g., physical movement, visual scans of the room) are discussed in this section as well. Classroom expectations (i.e., rules) are described as the *have to* behaviours students must learn, and classroom procedures are described as the *how to* behaviours for students to succeed in the class. Teachers learn methods of developing classroom expectations with their students to cultivate a sense of classroom community and methods for having students practise classroom procedures to demonstrate their understanding. Teachers are also instructed on ways to develop classroom goals (i.e., *the hope to* behaviours) with their students.

To assist teachers in introducing themselves to their students, the PD contains opportunities for brainstorming and offers a bank of sentence stems that teachers can complete and share with their students (e.g., *I am at my best when . . . , Most people think that I . . .*). Behaviour-specific praise and consistency in the enforcement of classroom expectations (i.e., being fair with students) are two of the several strategies discussed in the context of building a positive classroom community where students have both their emotional and physical needs addressed. Creating systems for grading and providing students feedback, including the use of OTRs, are discussed, and teachers are given examples of self-assessments they can complete to gauge the effectiveness of their grading and feedback system, as well as assessments their students can use to track their own progress. Finally, the PD discusses the importance of establishing positive home-school communication. Teachers are provided with templates for letters they can write to parents in the beginning of the year, as well as a checklist that discusses means of soliciting parental involvement in school activities. At the end of the PD program, teachers complete a step-by-step outline template of areas to address in the first three days of school, which they can tailor to any primary or secondary grade level classroom.

Throughout the online screencast, teachers are directed to different sections of the accompanying workbook to check their understanding. They also work through 20-plus activities that they tailor to their own grade level in an expanding online template (this allowed the researchers to confirm participants completed the PD). Teachers are encouraged to revisit a module if they score low on a self-assessment. Scores on self-assessments were not available to the research team; only data indicating completion (or not) of a module and assessment were available. The program also contains several narrative vignettes to show teachers what proposed strategies look like in action, thereby emphasising real-world experiences.

Procedures

Upon institutional review board approval from Appalachian State University, we contacted administrators for the schools in the spring of the academic year to gauge their interest in participating in the study of a screencast-delivered classroom management PD program in the upcoming summer and following academic year. By agreeing to participate in the program, school staff at each site were granted free access to an online screencast of the PD program, as well as an accompanying workbook

that aligned with learning modules in the program and online templates for completing activities. Prior to being granted access to the materials, teachers completed paper surveys (see Measures) and then mailed them to the authors. Materials for the PD were made available in the beginning of the summer after the previous academic year had ended. Teachers were informed they had the entire summer to complete the program at their own pace.

We reviewed all of the teachers' electronic records to ensure they had completed the program by the end of the summer. Teachers then began the school year as they chose to, and approximately two weeks into the year, they completed follow-up surveys. We chose teacher reports rather than direct observations because we felt (based on our own classroom teaching experience) researcher presence in the beginning of the school year would be (a) confusing to students and (b) distracting to teachers attempting to establish classroom management routines. Much of the early criticism (see Hook & Rosenshine, 1979) of self-report data being an inaccurate account of teachers' classroom practice lacks empirical support (Desimone, 2009). Indeed, many empirical studies reveal a high and significant correlation between teacher report and classroom observation data (e.g., Clunies-Ross, Little, & Kienhuis, 2008; Kaufman, Stein, & Junker, 2016).

Measures

Because of the unique approach to PD intervention, the majority of measures used to answer research questions in the current study were researcher-developed questionnaires asking teachers to reflect on their experiences during the PD. For research question one, teachers were asked to reflect on the amount of change to the beginning of their school year when compared to the previous year. A 5-point Likert-type scale (1 = *great decrease*, 2 = *some decrease*, 3 = *no change*, 4 = *some increase*, 5 = *great increase*) was used to assess teachers across 12 items. Ten items were related to positive aspects of beginning the school year (e.g., *confidence in starting the school year*) and two items related to students' negative behaviours (e.g., *off-task behaviour*, *office discipline referrals*).

For research question two, teachers completed the short version of the classroom management efficacy subscale of the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) pre- and post-completion of the PD. The subscale contains four Likert-type scale items (e.g., *How much can you do to control disruptive behaviour in the classroom?*) rated 1–9. Cronbach's alpha for the subscale from the norming sample was .90 and .91 for the current sample. Higher scores indicate greater classroom management self-efficacy.

For research question three, teachers completed two short surveys. First, at the end of the PD, but prior to starting the school year, teachers were asked to write down the number of ideas they gleaned by category (e.g., room arrangement, classroom expectations, home–school communication) that they were planning to implement in their classrooms. Approximately two weeks into the school year, teachers were given a copy of their list of ideas and asked to self-report how many of the ideas in each category they actually implemented in the beginning of the year. Finally, when teachers completed their post-assessments, they were invited to provide any feedback they felt was warranted, as a means of assessing social validity of the PD.

Design and Analytic Plan

A pre–post design study was implemented and data were analysed using SAS Version 9.4. For research question one, means and standard deviations were calculated for each of the 12 categories. Responses for the two negative behaviour items were transposed so an overall positive change in beginning the school year score could be calculated for the sample. For research question two, a dependent sample *t*-test for the group of 52 teachers was conducted using teachers' self-reported classroom management self-efficacy scores pre- and post-participation in the PD. Cohen's *d* ($(M_1 - M_2) / \sigma_{\text{pooled}}$; Cohen, 1992) was used to calculate an effect size. For research question three, all self-reported planned and implemented scores across eight categories (Room Arrangement, Self-Introduction, Expectations/Rules, Procedures, Grading, Community, Home–School Communication, and Other) were analysed for descriptive

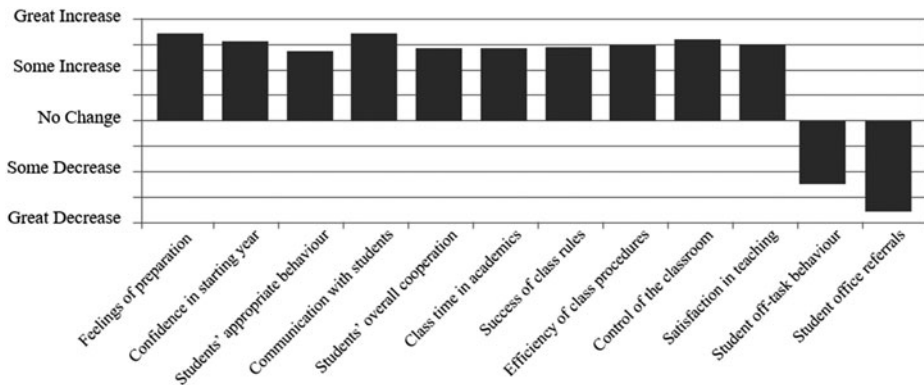


Figure 1. Teachers' evaluations of starting the school year compared to the previous year ($N = 52$).

purposes. For research question four, a Pearson product-moment correlation coefficient was calculated between two variables: *change in classroom management self-efficacy* and *rate of implementation*. *Change in classroom management self-efficacy* for each teacher was calculated by subtracting teachers' pre-PD self-efficacy score from their post-PD self-efficacy score. *Rate of implementation* was calculated as the percentage of ideas teachers' actually implemented in the beginning of the school year versus what they indicated they planned to implement after completing the PD. All 52 teachers returned data on classroom management self-efficacy, but three of these teachers did not return data on ideas planned and ideas implemented. Therefore, analysis for research question four included data for 49 teachers.

Results

Overall, teachers self-reported a positive change to their start of the school year. Average improvement scores across the 12 categories (see Figure 1) for the 52 teachers ranged from 3.8 to 5.0, with an overall score of 4.54 ($SD = 0.36$). At pre-test, teachers self-reported an average classroom management self-efficacy score of 7.37 ($SD = 0.95$). At post-test, teachers self-reported an average classroom management self-efficacy score of 8.14 ($SD = 0.82$). These results suggested a large and significant increase in the 52 teachers' classroom management self-efficacy scores, $t(102) = 4.42$, $p < .0001$, $d = 0.87$.

Combined, 49 teachers wrote down 826 ideas they planned to try in their classroom after completing the PD. Two weeks into the school year, these teachers reported they had implemented 640 of these ideas. The overall rate of implementation was 77.48% (see Table 2). Ideas that were classified as Other included items that were gleaned from the program but not specific to any particular topic (e.g., using equity [index] cards to track student participation).

Change in classroom management self-efficacy for 49 teachers ranged from 0.13 to 3.38, with an average change score of 1.47 ($SD = 0.69$). Rate of implementation ranged from 25.93% to 100%, with an average score (as stated previously) of 77.48% ($SD = 27.76$). A moderate, positive correlation was found between change in classroom management self-efficacy and rate of implementation ($r = .41$, $p = .003$).

Social Validity

In their post-surveys, no teachers reported any negative comments about the program, but several teachers included positive comments. Examples included the following: 'I thought all of the information was very insightful and purpose driven'; 'Other than typical kindergarten behaviour issues, it has been a wonderful year and I feel like I've been able to apply techniques from the program'; 'As a special educator, I found the program particularly helpful for collaborating with my colleagues around ways to

Table 2. Rate of Implementation of Ideas Learned During the Professional Development

Category (N = 49)	Ideas learned	Ideas tried	Implementation %
Room arrangement	101	71	70.30
Self-introduction	135	106	78.52
Classroom expectations	125	100	80.00
Classroom procedures	155	115	74.19
Grading and feedback	113	94	83.10
Classroom community	96	75	78.13
Home-school communication	93	73	78.49
Other	8	6	75.00

support students with challenging behaviours'; 'I appreciated doing some thinking around student anxiety about grades and coming up with ongoing procedures and activities to build in self-reflection for the students'.

Discussion

A core component of becoming an expert teacher is developing competent skills in managing a classroom (Freeman et al., 2014; O'Neill & Stephenson, 2013; Wolff et al., 2015). Too many teachers in today's schools feel unprepared to address the behaviour challenges presented by their students on a daily basis (Wills, Wehby, Caldarella, Kamps, & Swinburne Romine, 2018). Lack of preparation during pre-service education (McLeskey, Billingsley, & Ziegler, 2018) and an absence of effective in-service PD (Freeman et al., 2014) leaves teachers frustrated with their perceived inability to manage the classroom. For many, these frustrations can ultimately lead them to quitting the profession (Bettini et al., 2017; Garwood, Werts, et al., 2018).

School staff need access to research-based behaviour management practices and they also need the PD delivering this knowledge to be made available in a way that respects the time constraints under which they operate in schools (Bambara, Goh, Kern, & Caskie, 2012). The purpose of the current study was therefore to provide general and special education teachers with screencast-delivered PD in classroom management that they could complete at their own pace over the summer months in between academic years. Results of the study suggested that (a) teachers applied the knowledge they learned in the PD to their classroom practice, (b) teachers reported a positive change to the beginning of their school year compared to the previous year, (c) teachers reported a significant increase in their classroom management self-efficacy after participating in the PD, and (d) there was a positive relationship between teachers' improved classroom management self-efficacy and their rate of implementation of the practices they learned in the PD.

Implications for Practitioners

Evidence-based approaches to preventing and responding to behaviour problems in the classroom address the following areas: (a) physical layout of the classroom, (b) establishing and teaching behavioural expectations (i.e., rules) and routines (i.e., procedures), (c) delivering behaviour-specific praise, (d) active supervision (e.g., physical movement, visual scans of the room), (e) high rates of OTR, (f) providing students with reminders about behavioural expectations, and (g) consistent responding to behaviour by re-teaching when necessary (Simonsen et al., 2015). All of these areas were addressed in the PD that was the focus of this study. Three additional areas — introducing oneself as a teacher,

creating systems for grading and feedback, and establishing communication with parents — are also important to consider when developing classroom management plans. First, the importance of teachers humanising themselves to their students in the beginning of the school year has been established in previous classroom management research (Bohn et al., 2004), as forming relationships with students sets the stage for more systematic school-wide and classroom behaviour support strategies (Mihalas, Morse, Allsopp, & Alvarez McHatton, 2009). Second, regarding grading, the recent literature on multi-tiered systems of support has made it clear that academic and behavioural expectations must be integrated to promote optimal student and teacher success (McIntosh & Goodman, 2016). Finally, sharing one's behaviour management plan with parents can help promote at home the principles one is attempting to teach children in the classroom (Stevens & Lingo, 2013; Walker et al., 2009). In order for these collaborations to occur, a teacher must first establish positive lines of communication with parents. When developing classroom management plans, teachers may wish to review and ensure their plans address all of the aforementioned areas.

Despite the plethora of resources available on evidence-based approaches to classroom management, implementation of these approaches is often low (Hagermoser Sanetti, Williamson, Long, & Kratochwill, 2018). The PD delivered in the current study not only included evidence-based practices, but results also suggested that 77% of the ideas teachers took from the program in the summer were actually implemented in the classroom. Teachers' time is a precious commodity (Bambara et al., 2012); therefore, in-service trainings need to deliver high-impact practices that teachers can use in the classroom to see a meaningful change in their students' behaviour. Although PD models that utilise coaching have shown positive effects (Stormont et al., 2015), there also needs to be more low-cost options available to schools. Delivering self-paced, online PD provides one efficient means of addressing in-service teachers' gaps in knowledge related to classroom management (Marquez et al., 2016). Allowing teachers to complete their in-service training over the summer (when they are not trying to balance other work responsibilities) by self-pacing and revisiting material as often as they choose may also be a way forward to ensure teachers have time to learn and plan new ways of managing and instructing their students.

Although it would be desirable to require all pre-service teachers to take and pass a course in classroom management before being licensed (Freeman et al., 2014), there are two issues that suggest in-service training is just as, if not more, important. First, most faculty in teacher preparation programs do not possess expertise in classroom management pedagogy (Jones, 2006). Second, the difference between the training one receives for the job and the actual job of teaching (Smagorinsky, Cook, Moore, Jackson, & Fry, 2004) suggests that teachers may need to be in the classroom and identify their areas of need for PD so the training they do receive is more meaningful. Because classroom management is one of the most commonly mentioned areas of concern by interns who have just completed their student-teaching assignments (He & Cooper, 2011), and because it is much more logical to begin the school year with a focus on classroom management rather than trying to embed management practices when things are not going well (Capizzi, 2009; Garwood, Harris, & Tomick, 2017), PD that focuses on classroom management in the beginning of the school year is a good investment of practitioners' time.

Limitations and Future Directions

The promising findings from this study suggest several areas for future research, but must also be considered in light of empirical limitations. First, online PD in classroom management allows researchers to deliver training to teachers in distant and remote locations; however, it does limit the amount of face time PD facilitators can have with participants to field questions and offer direct support regarding classroom management concerns. Given the significant correlation between efficacy and implementation identified in this study, future studies could explore whether in-person or online PD is more effective in increasing teachers' classroom management self-efficacy. Second, a larger sample size would allow for more sophisticated analysis regarding the relationship between teachers' classroom

management self-efficacy and their rate of implementation. Third, social desirability could have resulted in teachers' reporting higher rates of implementation than was actually done in the classroom. However, despite historical concerns about teacher-report measures (Hook & Rosenshine, 1979), more recent research has demonstrated a high correlation between teacher self-report and independent observations (Clunies-Ross, Little, & Kienhuis, 2008; Desimone, 2009; Kaufman et al., 2016). One possible avenue for future research, which would eliminate the concerns regarding researcher presence in the classroom, would be to utilise video recordings of teachers' classroom management strategies in the beginning of the school year. Fourth, including a measure of student engagement across the first two weeks in the school year could lend further support to the utility of the classroom management PD program. Finally, we employed an AB (i.e., pre-post) design and, as such, this design does not allow for a true measure of program effectiveness. In future studies of the PD program, researchers could adopt an experimental approach (e.g., randomised controlled trial) to establish a treatment and control group, which would allow for causal inferences.

Conclusion

Innovative approaches to addressing teachers' lack of expertise in classroom management are needed. If classroom teachers are not provided with the help they need, then all of the progress that has been made in the PBIS movement is at risk of losing its value in schools (Herman et al., 2018). Similarly, if teachers do not focus on classroom management in the beginning of the school year, then the evidence-based practices identified in the literature may do them no good as they struggle to maintain order and student engagement in the classroom.

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