Preparing Preservice Teachers for Inclusive Classrooms: Does Completing Coursework on Managing Challenging Behaviours Increase Their Classroom Management Sense of Efficacy?

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Preservice teacher education courses provide an opportunity for the development of knowledge, skills, and confidence in classroom and behaviour management. This study reports the change in classroom management sense of efficacy (CMSE) of a small cohort of Australian preservice primary teachers at 4 time points (precoursework, preprofessional experience, postprofessional experience, and postcoursework), during a semester-long course focused on managing challenging behaviours in the inclusive classroom. CMSE increased between the time points, significantly so, pre–post course. The sources of efficacy information available and the learning activities completed during each intervening time point are explored as possible explanations for the changes in CMSE reported. Issues in measuring preservice teachers' efficacy related to coursework are discussed.

Keywords: sense of efficacy, classroom and behaviour management, preservice teacher education

Experienced teachers, school principals, and the wider community view educating preservice teachers about classroom and behaviour management as a core responsibility of teacher education programs (Evertson & Weinstein, 2006). It is an area of initial teacher education that tends to receive more criticism than appreciation by beginning teachers in the literature (Atici, 2007; Giallo & Little, 2003; Siebert, 2005; Tsouloupas, Carson, & MacGregor, 2014). Of particular concern, among beginning teachers in Australia and internationally, is the management of disruptive and noncompliant behaviours in the inclusive classroom (Boz, 2008; Giallo & Little, 2003; Hagger & Malmberg, 2011; Poulou, 2007a). Further training is often sought on entry to the workplace (Pindiprolu, Peterson, & Bergloff, 2007).

When beginning teachers lack knowledge, skills, or understanding in effective classroom and behaviour management practices or approaches, this can adversely impact students' wellbeing (Murray & Pianta, 2007) and academic achievement (Ratcliff et al., 2010). Adverse impacts have also been reported on teacher wellbeing (Hong, 2012;

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Skaalvik & Skaalvik, 2007; Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010), stress (Klassen & Chui, 2011), job satisfaction (Collie, Shapka, & Perry, 2012), and their sense of efficacy (O'Neill & Stephenson, 2012a; Smart & Igo, 2010). Lacking belief in one's capabilities (sense of efficacy) can cripple action (Bandura, 1997).

A growing body of research has shown that preservice teachers in Australia (see, for example, O'Neill & Stephenson, 2012a), the United States (USA; see, for example, Fives, Hamman, & Olivarez, 2007), Turkey (see, for example, Boz & Boz, 2010), and Greece (see, for example, Poulou, 2007b) tend to report their efficacy in classroom management as moderately high. Perceptions such as sense of efficacy are important to investigate, as they have been associated with the actions teachers take in classrooms (Perry & Rahim, 2011). Little research, however, has examined preservice teachers' beliefs about the contribution that classroom and behaviour management coursework undertaken during their entire teacher education programs has made to their sense of efficacy as classroom managers (see, for example, O'Neill & Stephenson, 2012a; Poulou, 2007b). Additionally, scant research has been published that examines the contribution of a single course to their sense of efficacy, with or without an associated professional experience component (e.g., Larson & Goebel, 2008).

From a pedagogical standpoint, understanding the relative contributions that classroom and behaviour management coursework, with an embedded professional experience component, can make to beginning teachers' perceptions of their classroom management sense of efficacy is important to initial teacher educators. Looking for when change occurs, if any, and reflecting upon what instructional inputs had occurred, and the sources of efficacy information available, may provide some useful insights and avenues for curriculum and instructional redesign of such coursework. Critical examination of what contribution coursework makes to preservice teachers is pertinent. This is evidenced by the ongoing debate as to where and by whom classroom management training should best be delivered (UK Parliament, Education Select Committee, 2011), and questions surrounding what classroom management content should be delivered in generalist teacher education programs (Gore & Parkes, 2007; O'Neill & Stephenson, 2012b).

In Australia, like many other western countries, regular education teachers must now educate a diverse student body, with students from different cultural and socioeconomic backgrounds, and with diverse learning and social-emotional needs (Foreman & Arthur-Kelly, 2014). Our preservice teachers need to acquire knowledge, skills, and understanding about how to effectively manage *all* students in the modern-day inclusive classroom, including those displaying challenging behaviours (O'Neill & Stephenson, 2014; Stronge, Ward, & Grant, 2011). In Australia, the ability to do so is a graduate teacher requirement (Australian Institute for Teaching and School Leadership, 2011). Initial teacher education must therefore play a central role in developing beginning teachers' knowledge, skills, disposition, and understanding in the management of students displaying challenging behaviours.

The task of preparing beginning teachers for the challenge of inclusive classrooms is multifaceted and complicated by teachers' beliefs. Historically, general education teachers have been reported to have little tolerance for, or belief in, their capabilities (sense of efficacy) to manage students displaying challenging behaviours (Cook & Cameron, 2010; Soodak & Podell, 1994). In combination, this often results in regular education teachers referring these difficult-to-teach students to support classes or special schools at high rates (Graham & Jahnukainen, 2011; Soodak & Podell, 1994).

The move from the general education classroom to segregated settings for students displaying challenging behaviours is, for some, the start of an escalating series of poor life

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outcomes, including low rates of high school completion, high rates of drug and alcohol abuse, teenage pregnancy, and incarceration (Bullis & Cheney, 1999; Wynne, Ausikaitis, & Satchwell, 2013). Fortunately, early intervention by generalist classroom teachers, utilising positive behaviour interventions and supports (PBIS) that involve academic, social, and behavioural interventions, can ameliorate or eliminate challenging behaviours (Hester et al., 2004). Educating general education teachers in evidence-based practices or approaches, such as PBIS, appears essential for bolstering their sense of efficacy and their skill base in the management of students displaying challenging behaviours. Of concern, however, is the lack of classroom management coursework that includes instruction in managing challenging student behaviours, grounded in evidence-based practices in preservice teacher education programs in Australia and elsewhere (Atici, 2007; Fallon, Zhang, & Kim, 2011; Freeman, Simonsen, Briere, & MacSuga-Gage, 2014; O'Neill & Stephenson 2011a, 2013).

This study documents the content imparted and instructional strategies utilised in a preservice primary education course, focused on managing challenging behaviours, with an embedded professional experience placement. Also presented is when and how primary preservice teachers' perceptions of their efficacy as classroom managers changed during the semester while completing the aforementioned course. The following section will now provide a brief description of the psychological construct of efficacy.

Teachers' Sense of Efficacy

A teacher's sense of efficacy is the belief a teacher holds in their future capabilities to plan and perform teaching tasks in a given context, rather than an estimation of their actual level of current performance (Tschannen-Moran & Hoy, 2001). The construct of a teacher's sense of efficacy was derived from Bandura's social cognitive theory (1977). Having efficacious beliefs about one's teaching is a requirement for personal accomplishment, spurring action (Bandura, 1997; Perry & Rahim, 2011). The study of teacher efficacy has maintained momentum since the 1970s, and has been associated with a number of important teacher behaviours, such as instructional and classroom management practices, that can boost student achievement (Guo, Piasta, Justice, & Kaderavek, 2010; Woolfolk, Rosoff, & Hoy, 1990). In cross-national studies, this construct has been shown to transcend cultural differences (see Duffin, French, & Patrick, 2012; Klassen et al., 2009). In the context of this study, possessing a good sense of efficacy in the classroom is thought to provide beginning teachers with the motivation to enact classroom management actions.

Classroom management sense of efficacy (CMSE). With the belief that classroom management and discipline were critical aspects of teaching that were behaviourally and conceptually distinct from teachers' capabilities to influence student learning, Emmer and Hickman (1991) were the first to investigate whether teachers (preservice and student teachers) would perceive classroom management and discipline as a distinct domain of the overarching construct of teaching efficacy, and indeed they did. Subsequent use of Emmer and Hickman's classroom management efficacy subscale with experienced teachers would confirm that, in the minds of teachers, efficacy in classroom management was conceptually distinct from efficacy in other interpersonal teaching tasks (see Brouwers & Tomic, 2001).

Brouwers and Tomic (2000) asserted that, '. . . if teachers do not react adequately to students when their behavior is disruptive, instructional time is lost for all students. In order to reach instructional goals it is necessary for teachers to deal adequately with disruptive behavior in classroom (p. 242)'. The view of self-efficacy in classroom management

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offered by Brouwers and Tomic reflects the commonly held view that classroom management is concerned with maintaining order and control in the classroom. This view does not take into account the broader conceptualisation of classroom management preferred by this author and others such as Brophy (1988). CMSE is defined here as teachers' beliefs in their future capabilities to organise classroom resources, routines, time, and to manage students' attention, socialisation, and behaviour.

When teachers self-assess their CMSE, Bandura (1997) posited that teachers, like all people, will draw upon four main information sources. Bandura's four sources of information included enactive mastery experiences (past performance); verbal persuasion (verbal feedback from others); vicarious experiences (what they observe comparable others achieve); and physiological and affective states (how they respond emotionally and physiologically to anticipated tasks). The most credible and influential source of efficacy information is thought to be enactive mastery experiences. However, when past experiences are limited, as is the case for novices, vicarious experiences, verbal persuasion, and, perhaps to a lesser degree, physiological and affective states are thought to play a more influential role (Bandura, 1997; Mulholland & Wallace, 2001).

The measurement of CMSE. Many teacher efficacy scales contain multiple items that pertain to classroom management (see, for example, Brouwers & Tomic, 2001; Dellinger, Bobbett, Olivier, & Ellett, 2008; Emmer & Hickman, 1991; Skaalvik & Skaalvik, 2007; Tschannen-Moran & Hoy, 2001). Some scale creators, however, have designed scales that focus solely on classroom management (see, for example, Betoret, 2009; Main & Hammond, 2008). Scale creators have included classroom management items that reflect a number of subtasks or categories, with most pertaining to maintaining order and control, student socialisation, and devising and implementing rules, expectations, routines, and procedures (O'Neill & Stephenson, 2011b).

The measurement of CMSE with preservice teachers. When teacher efficacy scales have been administered to experienced teachers, the scores they assigned to classroom management items, when subjected to factor analytic processes, have led to a distinct classroom management factor emerging (see, for example, Tschannen-Moran & Hoy, 2001). Teaching experience, however, appears to mediate how teachers perceive the distinctiveness of classroom management tasks. When multifaceted scales such as the Teachers' Sense of Efficacy Scale (TSES; Tscahannen-Moran & Woolfolk Hoy, 2001) have been administered to preservice teachers, their scores, when subjected to factor analyses, do not always indicate that preservice teachers differentiate classroom management as distinct from other teaching tasks such as instruction or engagement (Fives & Beuhl, 2009; Tschannen-Moran & Hoy, 2001). This is particularly evident when preservice teachers are enrolled in the first year of their programs (Duffin et al., 2012). Poulou (2007b), however, found that preservice teachers in the final year of their program (after completing student teaching) did appear to differentiate classroom management as a distinct factor (a latent construct) when responding to the TSES. It is, therefore, reasonable to assume when administering the TSES to a small population of preservice teachers towards the end of their programs, such as the participants in this study, that mean CMSE subscale scores can be used in analyses.

The measurement of CMSE change, pre–post coursework. Few studies were located where changes in preservice teachers' CMSE were measured pre–post coursework using the TSES; none were located that used an alternative teaching efficacy scale. In two studies that included classroom and behaviour management content, an increase in mean CMSE

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subscale scores was reported by Larson and Goebel (2008), and a significant increase in mean CMSE subscale scores by Mergler and Tangen (2010). In another study where classroom management content was not a component of teaching methods coursework, a minimal, nonsignificant increase in mean CMSE subscale scores was reported (Wagler & Moseley, 2005). This study will report the measurement of mean CMSE subscale scores using the TSES to determine if change occurred, pre–post and at two intervening time points, while completing coursework focused on evidence-based approaches to managing challenging student behaviours. The following section will briefly outline the aetiology of challenging behaviours and an evidence-based approach to managing challenging behaviours.

Managing Challenging Student Behaviours

Across a range of students with and without disabilities, challenging behaviours can be displayed due to many reasons, for example, poor social skills, low cognitive functioning, biological causes, or academic performance deficits (Fallon et al., 2011, Matson et al., 2011). Challenging behaviours are viewed as those that interfere with students' social, emotional, and educational/cognitive wellbeing and can have adverse impacts on those around them (Bambara, 2005a). Considered most serious are those behaviours that are physically harmful or destructive (to self or others). Next are disruptive behaviours that interfere with participation or access to learning or community activities. Last are those considered distracting (e.g., out of seat) that may escalate into disruptive behaviours, or may affect social inclusion (Bambara, 2005b).

In the inclusive classroom, beginning teachers need to know how to effectively and positively manage challenging student behaviours (Fallon et al., 2011). One approach to managing challenging student behaviour that is showing evidence of effectiveness in the research literature is functional behavioural assessment (FBA)-based, behaviour support planning (BSP; Kern, Gallagher, Starosta, Hickman, & George, 2006). FBA-based BSP is the third tier of PBIS (Bradshaw, Mitchell, & Leaf, 2010).

FBA-based BSP. The goal of FBA is to determine what purpose(s) or function(s) the problematic or challenging behaviour serves. Knowing the function(s) of the behaviour assists in reducing or eliminating it, and in selecting, teaching and/or reinforcing a socially acceptable replacement behaviour that serves the same function (Gresham, 2004). FBA has been successfully employed in the design of BSPs for students across a range of disability types, including students with autism spectrum disorder (ASD; Neitzel, 2010), emotional and behavioural disorders (Kern, Hilt, & Gresham, 2004), and intellectual disabilities (Hetzroni & Roth, 2003; Vaughn & Horner, 1997). FBA is not limited to a particular disability type, as the problematic behaviour is the unit of analysis. FBA presents educators with a very utilitarian assessment approach when designing BSPs.

The process of FBA involves the collection of indirect (e.g., interviews, rating scales) and direct data (observations) on the antecedents (triggers), the problematic behaviour, and its maintaining consequences (O'Neill, Albin, Storey, Horner, & Sprague, 2015). Via examination of the data, hypotheses are formed about the behaviour's function. The next step involves selecting intervention strategies to create the BSP, which are matched to the underlying function(s), that aim to eliminate, ameliorate, or modify the triggers, teach replacement behaviours, and reinforce more appropriate behaviours while withholding reinforcement of the old problematic behaviour (Kern & Clarke, 2005). Responding to problematic behaviours by matching intervention to function has been shown to be a superior approach to interventions based on the typography of behaviour (Ingram, Lewis-Palmer, & Sugai, 2005). FBA-based BSP can be a time-consuming, team-oriented process

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that requires training, knowledge of operant behaviour principles, and ongoing support to be successfully implemented in regular classroom settings (Gresham, 2004). FBA is intended only for the most severe or interfering behaviours. Recently, however, *Basic FBA to BSP* training materials have been developed for use by regular school staff, for students displaying mild to moderate, low intensity problem behaviours (Loman & Horner, 2014). Regular school staff trained in *Basic FBA to BSP* were shown to have developed fluency in the BSP process, and were able to produce effective BSPs for real students in their schools (Strickland-Cohen & Horner, 2015).

Educating preservice teachers about FBA-based BSP. Little has been published on the practice of educating preservice teachers about FBA-based BSP, or in measuring change pre–post coursework completion. Stichter, Shellady, Sealander, and Eigenberger (2000) described the training issues in FBA for preservice teachers but did not describe an actual course. They did, however, identify three main training issues: '. . . what we teach, how we teach, and how we nurture the development of preservice practitioners' "clinical judgment"'(p. 144). Some authors have provided a brief outline of their course on FBA-based BSP (e.g., Fallon et al., 2011), whereas others have reported on their case-based method of instruction (e.g., Pindiprolu, Peck Peterson, Rule, & Lignugaris/Kraft, 2003). Fallon et al. (2011) measured pre–post coursework changes in FBA knowledge via assessing the adequacy of the FBA-based BSPs their students produced. Pindiprolu et al. (2003) measured pre–post coursework knowledge via a test on FBA and the application of FBA knowledge to a case study. Van Laarhoven, Munk, Lynch, Bosma, and Rouse (2007) assessed preservice teacher knowledge of the FBA process via written responses to vignettes. In Australia, there is some evidence from a nationwide survey of primary course coordinators that FBA is included in classroom and behaviour management coursework in regular/generalist teacher education programs (O'Neill & Stephenson, 2012b). However, no Australian studies have been published that detail the FBA coursework content imparted, or the pre–post coursework completion effects on knowledge, or other psychological constructs such as sense of efficacy.

Although FBA is a team-based data-driven approach, educating generalist teachers about how to collect and analyse data to make instructional and classroom management decisions in line with behavioural function has merit and is advocated (Crone & Horner, 2003; Loman & Horner, 2014; Scott, Anderson, & Alter, 2012). Under the Nationally Consistent Collection of Data on School Students with Disability scheme, by 2015 Australian schools will need to demonstrate that they have collected data (over a period of 10 weeks) via observations, or indirect data from parents/carers (i.e., interviews, checklists), and via diagnostic tools (Australian Government Department of Education, 2014). This will show how schools are supporting students with disabilities to meet the Disability Standards for Education (Australian Government Department of Education, 2005) and the Disability Discrimination Act (Australian Government, 1992), with the data supplied by schools used to calculate funding support. Classroom teachers will be expected to be involved in the data collection, analysis, and planning processes.

Study Aims

The first aim of this study was to measure what change, if any, had occurred in the CMSE of a small cohort of Australian preservice teachers, enrolled in a semester-long course focused on managing challenging behaviours. A secondary aim was to report the content and instructional methods used in a course designed to educate regular preservice teachers about managing challenging behaviours they might experience in an inclusive classroom

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environment. The course content and some aspects of the instructional methods used will be described in the contextual information section reported in the study method below.

The two research questions to be answered by this study were: (a) Does preservice teachers' CMSE change pre–post coursework completion? (b) What change, if any, occurs in preservice teachers' CMSE between each time point, including pre–post a short, embedded professional experience?

Method

Participants

The potential pool of participants were enrolled at an Australian university that provides a 4-year undergraduate generalist teacher education program in primary education. In the 3rd and 4th year of the program, students must take two *elective* courses per year to supplement their core education methods and subject area studies. Among the 30–40 elective courses on offer each year, six special education courses are typically offered, including, for example, remediating literacy problems for students with learning disabilities, and managing challenging behaviours. The managing challenging behaviours course enrolment is capped at two classes of 30 (+/−2) students and is offered in the first semester. The potential participants were drawn from these two classes. Approximately 25% of the preservice teachers enrolled in the program are able to take this elective course. Demand typically has outstripped the supply for this course.

Contextual Information

Prior classroom management knowledge and experiences. All potential participants had completed a 30-hour foundation subject in classroom management and student engagement in the first year of their program. In that course, a basic overview of operant behaviour principles and five other theoretical classroom management models were presented (e.g., choice theory by Glasser, 2001; goal-centred theory by Dreikurs, 1968). All the potential participants in this study had completed between 33 and 52 days of supervised teaching (professional experience) in kindergarten to Year 6 classrooms (K–6; students aged 5–12 years) at a variety of school locations.

Course content and instructional methods. The managing challenging behaviour course described in this study is one of six 10-week long (20 hour), special education elective courses on offer to preservice teachers. The content delivered between the four phases of data collection was as follows. From time (T)1 to T2 (first 7 weeks), the preservice teachers learnt about FBA methods and BSP. In Week 1, each team of three to four students was allocated a unique case study that included a dataset. For the final 30 minutes of each 2-hour class, the team applied their newly acquired knowledge of a FBA method to their case study. The course content and the associated activities in the first 7 weeks included defining the most severe behaviour in observable and measurable terms, extracting relevant information from indirect and direct data sources, determining a likely hypothesis of function(s) based on the dataset, how to test hypotheses, followed by the selection of appropriate antecedent, behavioural, and consequence interventions congruent with the identified function(s).

From T2 to T3, students experienced a 2-week mid-semester break before embarking on a 3-week professional experience placement. The placement was in a regular K–6 classroom, which may or may not have included students who displayed challenging behaviours. Anecdotally, during class discussions in Week 8 (the first week back after

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professional experience), a number of students shared accounts of moderately challenging events that they had experienced or observed.

From T3 to T4, the final 3 weeks of course content was delivered. In Week 8, the students had to apply their knowledge of behavioural function to situations they experienced during professional experience placements, and learnt about strategies for managing deficit and excess behaviours. In Week 9, they learnt about Colvin's escalation cycle (2004), and key features of and intervention strategies for students with ASD and oppositional defiant disorder. The rationale for including this content in Week 9 was based upon research conducted with beginning teachers locally and elsewhere. Beginning teachers in Malta and Australia have indicated that they viewed antisocial, aggressive, destructive, and defiant behaviours as most serious (Kokkinos, Panayiotou, & Davazoglou, 2004), and reported wanting to know more about how to manage students with disabilities (Australian Education Union, 2009; Giallo & Little, 2003). Additionally, the more serious behaviours were those that Australian preservice teachers reported feeling least prepared to manage based on their past teacher education coursework (O'Neill & Stephenson, 2012c). The culminating activity in Week 10 involved the students generating a hypothetical dataset based on a student they encountered during professional experience. This dataset would then be used as a case study for the following year's cohort.

Procedure

After ethics approval had been granted from the teacher education institution, consent was sought from the Head of School to invite a non-teaching faculty member to assist in participant recruitment, and to invite all the preservice teachers enrolled in the managing challenging behaviour course to participate. The non-teaching faculty member was used for all direct contact (email or in person) to reduce pressure to participate from the teacher–researcher. The non-teaching faculty member was well known to the students.

Two weeks prior to the beginning of the semester (T1), the students received their first email with attachments including the letter of invitation; information sheet, with the link to the online survey; and consent forms. Students interested in participating in the study were instructed to return their signed consent letters to the third party via a discrete, locked drop box. The information letters reassured the potential participants that the non-teaching faculty member was the only person who had access to the online survey results, until final grades for the course had been submitted.

The study included four rounds of participant recruitment and data collection. At T4, one week after the final exam, all the students enrolled in the course were contacted via an email invitation sent by the non-teaching faculty member. The email included a link to the final online survey. One week before the start of classes, and one week after the final exam, all students were sent a reminder email to boost participation.

For T2 and T3, the non-teaching faculty member attended the start of the regularly scheduled class the week before and the week after the students were scheduled to complete a 3-week professional experience placement. The non-teaching faculty member invited all students in attendance to participate in the study, and then distributed the information letter, consent form, and a hard copy of the survey. The teacher–researcher waited outside the room until all surveys, complete or incomplete, had been returned to the non-teaching faculty member. The non-teaching faculty member retained all the T2 and T3 surveys and consent forms until after the submission of final grades.

Response. Of the 62 preservice teachers enrolled, 58 (93.5%) participated in at least one data collection phase. To avoid confounding comparisons, the data supplied from those

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TABLE 1

Demographic Data for Participants and Participant Numbers at Each Time Point

		Age		Gender		Year of program	
Time	*n*	≤ 21	22+	Female	Male	3rd	4th
1	22	14	8	20	2	13	9
2	39	24	15	36	3	24	15
3	44	32	12	40	4	28	16
4	26	16	10	24	2	15	11

who did not complete professional experience ($n = 3$), or where missing data was an issue ($n = 7$), were removed from further analyses. Of the 48 remaining preservice teachers who had attended the embedded professional experience, 20 (41.7%) responded to all four data collection times. At T1, 22 preservice teachers participated, 39 at T2, 44 at T3, and 26 at T4. The average response rate across data collection times was 68.2%.

Preservice participant demographics and participation data are presented in Table 1. Across each phase of the study, participants were mainly ≤ 21 years of age, enrolled in the third year of their program, and female. The gender balance and age of the preservice teachers in this study is similar those reported in other Australian studies of preservice teachers (e.g., Forlin & Chambers, 2011; Palmer, 2006), and in the USA (Dunn & Rakes, 2011; Fives et al., 2007; Putman, 2012).

To ensure that there was not any systematic bias in the sample based on participants' year of program, gender, or age, independent sample *t* tests were conducted on the CMSE subscale scores for each time point. To increase statistical validity for the age *t* test, the initial five age categories were reduced to two, ≤ 21 years and 22+ years, due to the small sample size. For year of program, gender, or age, there was no significant difference in CMSE subscales scores (see Appendix). As there was no significant difference in CMSE subscales scores associated with year of program, gender, or age, the data were pooled in further analyses.

Measures

The online survey questionnaire used at T1 and T4 contained demographic items, age, gender, year of program, and their student number for pre–post survey matching, and the 24-item Teachers' Sense of Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001). For T2 and T3, a briefer survey questionnaire was used that contained general demographic questions, and the 24-item TSES.

Teachers' Sense of Efficacy Scale. The TSES has been widely used by researchers interested in preservice and inservice teachers' sense of efficacy, and has excellent total and subscale reliability (see, for example, Charalambous, Philipou, & Kyrakides, 2008; Klassen & Chiu, 2010). The 24-item version contains three 8-item subscales: instruction, engagement, and classroom management. For each item, participants are asked to rate how much they feel they can do to influence student behaviour along a 9-point scale, from *nothing* (1) to *a great deal* (9). In this study, the classroom management sense of efficacy (CMSE) subscale was the focus of analysis, as it was best suited to measure change from completing a course on managing challenging student behaviours. The subscale reliability for the classroom management subscale in this study was high for all four time points, ranging from

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α = .86 to .89. The CMSE subscale α reported here is similar to that reported by Smith, Corkery, Buckley, and Calvert (2013) for preservice in New Zealand, ranging from .84 to .87.

Data Analysis

Descriptive statistics were calculated for each CMSE item, and for the subscale at each time point. For the participants who had responded to all four data collection points (longitudinal sample), a repeated measures ANOVA using SPSS (Version 22) was used to measure the change pre–post course completion, with post hoc tests conducted to determine if significant increases in CMSE subscale scores had occurred from one time point to another. For repeated measures ANOVA, the estimated effect size is reported as omega squared (ω^2). Omega squared is an unbiased measure that estimates the population effect size for small samples (Olejnik & Algina, 2003). An ω^2 value of .01 is seen as a small effect, .06 as medium, and .14 as large (Kirk, 1996). For post hoc tests, Pearson's correlation coefficient (r) was calculated to report the effect size.

As differing numbers of students responded at each time point, paired-sample t tests were used to determine if significant changes in CMSE occurred from one time point to the next. Effect sizes for paired-sample t tests were reported as Pearson's correlation coefficient (r), where .10 represents a small effect, .30 a medium effect, and .50 a large effect (Field, 2013).

Results

Change in CMSE Pre–Post Course Completion

In Table 2, mean CMSE item and subscale scores for the 20 participants that provided data for all time points (i.e., the longitudinal sample) are displayed. As Mauchly's test for the assumption of sphericity had been violated, $\chi^2(5) = 12.51$, $p = .03$, the degrees of freedom were adjusted using Greenhouse–Geisser correction ($\varepsilon = .73$). There was a highly significant change (1.1/9.0 points), of large effect size ($\omega^2 = .20$), in the longitudinal sample's CMSE subscale mean scores from T1 to T4, $F(2.2, 41.4) = 10.50$, $p < .001$.

At an item level, it was of interest to see which CMSE items had increased significantly from T1 to T4. As eight t tests were required, p was adjusted to .006. Items that increased significantly from T1 to T4 were Item 8 (establish routines), 15 (calm a disruptive student), 16 (establish a classroom management system), and 21 (respond to defiant students). Two of these items (15 and 21) align with more challenging student behaviours.

Change in CMSE Between Each Time Point

The results from the post hoc tests of the repeated measures ANOVA for the longitudinal sample indicated that there was a significant increase ($p = .03$) in CMSE subscale score means from T3 to T4 only (see Table 3). The effect size was small ($r = .20$). The change in CMSE subscale scores per week between time points was 0.07 pts/wk for T1–T2 and T2–T3, increasing to 0.13 pts/wk for T3–T4. To examine if changes between time points had also occurred in CMSE subscale score means for the total sample, three paired-sample t tests were conducted, necessitating that p be adjusted (0.05/3 = .017). The p values for all three paired-sample t tests were > .017 (see Table 4). The change in CMSE subscale scores per week differed from the longitudinal sample, with the average change from T2 to T3 being slightly higher at 0.1 pts/wk, and slightly lower at 0.1 pts/wk for T3–T4.

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TABLE 2

Change in Mean CMSE Items and Subscale Scores at the Four Time Points and *p* values for the Longitudinal Sample ($n = 20$)

		Time point										
		T1		T2		T3		T4		T1–T4		
No.	Item wording	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	Δ*M*	*t* score	*p*
Items aligned to managing challenging behaviours												
3	Control disruptive behaviour in the classroom	6.6	1.2	6.9	1.1	7.4	1.2	7.7	1.1	1.1	−2.98	.008
15	Calm a student who is disruptive or noisy	6.5	1.1	6.9	1.3	7.3	1.1	7.8	1.0	1.3	−5.23	.000
19	Keep a few problem students from ruining an entire lesson	6.5	1.4	7.0	1.1	7.1	1.1	7.5	0.8	1.0	−2.70	.014
21	Respond to defiant students	5.9	1.4	6.7	1.0	7.0	1.1	7.5	1.0	1.6	−4.71	.000
General classroom management items												
5	Make your expectations clear about student behaviour	7.8	1.1	8.2	0.9	8.2	0.8	8.1	0.8	0.3	−1.16	.260
8	Establish routines to keep activities running smoothly	6.8	1.2	7.5	1.0	7.7	1.0	8.1	0.7	1.3	−4.00	.001
13	Get children to follow classroom rules	7.5	1.1	7.4	1.1	7.4	0.9	8.2	0.8	0.7	−2.21	.040
16	Establish a classroom management system with each group of students	6.2	1.1	7.1	1.3	7.3	1.2	7.8	1.2	1.6	−5.14	.000
Cronbach's α		.87		.86		.89		.87				
Mean CMSE subscale score ($n = 20$)		6.7	0.9	7.2	0.9	7.4	0.8	7.8	0.8	1.1	−4.49	.000

TABLE 3

Comparisons of Mean CMSE Subscales Scores Between Time Points (*t* tests) and *p* values for the Longitudinal Sample ($n = 20$)

Pair	Time point	*n*	*M* CMSE	*SE*	Δ*M*	Δ/wk in points	*t* score	*p*
1	T1	20	6.7	0.2	0.5		−2.28	.035
	T2		7.2	0.2		0.07		
2	T2	20	7.2	0.2	0.2		−1.03	.318
	T3		7.4	0.2		0.07		
3	T3	20	7.4	0.2	0.4		−3.12	.006*
	T4		7.8	0.2		0.13		

Note. *indicates *p* was significant ($p < .017$ after Bonferroni correction).

Discussion

In this study, the method to determine if change had occurred in preservice primary teachers' CMSE was achieved by conducting a repeated measures ANOVA for pre–post coursework scores, and dependent *t* tests for measuring if change had occurred between coursework and the embedded professional experience phase. The pre–post changes in

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TABLE 4

Comparisons of Mean CMSE Subscale Scores for Whole Sample Using Paired-Sample *t* tests Between Time Points

Pair	Time point	*n*	*M* CMSE	*SE*	Δ*M*	Δ/wk in points	*t* score	*p*
1	T1	20	6.7	0.2	0.5		−2.28	.035
	T2		7.2	0.2		0.07		
2	T2	37	7.0	0.15	0.3		−2.03	.050
	T3		7.3	0.15		0.10		
3	T3	25	7.4	0.17	0.3		−1.95	.063
	T4		7.7	0.15		0.10		

Note. p adjusted to < .017 after Bonferroni correction.

CMSE reported in this study will now be compared to the limited extant research, followed by a discussion on the possible reasons for the change detected between phases. An explanation of the change in CMSE between time points will be offered in light of the instructional methods employed during the course, and by considering Bandura's (1997) four efficacy information sources.

Change in CMSE Pre–Post Course Completion

The primary preservice teachers who completed the elective course aimed at preparing them to support students exhibiting challenging behaviours, experienced a modest, yet significant increase in their mean CMSE subscale scores from the start (T1) to the end of the course (T4). The change in mean scores suggests, not confirms, that the completion of a focused classroom behaviour management course can increase preservice teachers' sense of efficacy as classroom managers. This study provides some support for Giallo and Little's (2003) suggestion that focused classroom and behaviour management coursework preparation could make a difference to beginning teachers' sense of efficacy.

As outlined previously, little comparative research exists where change in CMSE has been measured pre–post coursework completion. In the one study located where classroom and behaviour management was the focus of the course, Larson and Goebel (2008) administered the 24-item TSES to eight preservice *special* education teachers enrolled in an applied behaviour analysis (ABA) course in Maryland, USA. Some of the content knowledge delivered in the present study was likely similar to that reported by Larson and Goebel, as FBA is based on ABA principles (Alberto & Troutman, 2013). In the Larson and Goebel study, mean CMSE subscale scores increased from 6.7 to 7.5 (+0.8 points) pre–post course, compared to the increase of 1.1 points for the 20 generalist preservice primary teachers in this study. The course content imparted in the Larson and Goebel study included both ABA theory *and* a number of classroom management models. Focusing on one approach to mastery, an instructional approach favoured by classroom management experts such as Brophy (1988), may explain our marginally larger increase in mean CMSE scores pre–post course completion.

Mergler and Tangen (2010) measured the change in 208 Australian preservice teachers' CMSE subscale scores at two time points during a semester-long educational psychology course. In this course, classroom and behaviour management content was delivered in one *topic*. A significant time effect for mean CMSE scores was reported. Mean CMSE subscale scores, as measured by the 12-item TSES, increased from 6.3 to 6.5 points for those attending in face-to-face mode and from 6.6 to 6.9 points for those attending online. Time 1 (Week 3) occurred before microteaching, and Time 2, at Week 9, after microteaching.

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The TSES items included in the classroom management component, however, included two student engagement items in addition to the four standard classroom management items. Direct comparison with this study is problematic due to the CMSE subscales having different constituent items. At a conceptual level, it is plausible that undertaking an entire course focused on classroom and behaviour management provides preservice teachers with a greater sense of efficacy as classroom managers than completing a course where one topic on classroom management is embedded in another course.

Change in CMSE Between Data Collection Points

Change in CMSE T1–T2. In this study, a nonsignificant increase occurred from T1 to T2 (the first 7 weeks) when the students learnt about FBA-based BSP. Aside from imparting content knowledge via lectures and multimedia clips, to connect theory to practice, students were required to apply the weekly curriculum content concurrently to a case study based on a student displaying challenging behaviours in an inclusive, regular classroom. Case studies are purported to provide preservice teachers with 'a slice of reality', where complex situations can provide an intellectual exercise involving analysis of information and problem-solving, assisting in deeper understanding and connection to theory (Killen, 2003, p. 240). This instructional approach, however, seemed insufficient to significantly increase mean CMSE subscale scores when measured at T2 in this study. Considering the instructional approach in light of teachers' beliefs may help explain the result. Although the preservice teachers were actively engaging with and solving the problems described in the case studies, they were not living the experience. Research conducted by Levin and He (2008) into teacher beliefs (personal practical theories) may provide some explanation for why coursework instruction alone led to little change in CMSE by T2.

Personal practical theories (PPTs) are beliefs that teachers hold, formed from their previous experiences, and reflection on those experiences, that can influence the ways teachers think and act in the classroom. When Levin and He (2008) asked 94 postgraduate, preservice teachers from southeast USA, enrolled in a course on classroom management and instruction, to identify the source of their PPTs, relatively few were related to the course content. Only 31% of the statements supplied were coded as being related to their teacher education courses; 12% of the 31% were related to the course curriculum (approximately 1 in 10 beliefs). Lived experiences and observations as school students (distal vicarious experiences), and later from their professional experience placements, contributed to their classroom management and instruction beliefs in a much greater way (28% and 35% of belief statements, respectively).

From T1 to T2, no recent enactive mastery (teaching) experiences had occurred that could have contributed to the increase in mean CMSE subscale scores. Verbal persuasion information via teacher feedback had not been received on their capabilities in FBA-based BSP, as their behaviour support plans had yet to be graded. Some verbal persuasion may have been delivered during group work on the case studies, with the instructor offering encouragement on the subcomponent skills involved in FBA-BSP. Additional verbal persuasion information may also have been received during group work on their case studies from their fellow peers, which has been purported to promote preservice teachers' perceptions of efficacy (Liaw, 2009). Physiological and affective state information was likely minimal, as the preservice teachers were not exposed to any stressful classroom management situations from T1 to T2.

During T1–T2, the teacher–researcher role-played many strategies and explicitly reflected *in action* (connecting the modelled behaviours with theory, during and after the

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role-plays). Tigchelaar and Korthagen (2004) asserted that role-plays could provide preservice teachers with new vicarious experiences, thereby enriching Gestalts. Vicarious experiences can have a positive impact on efficacy beliefs for those with less experience (Bandura, 1997), especially if competent models demonstrate effective, serviceable strategies, and methods; have skills that novices aspire to; express confidence despite acknowledging the difficulty of the task; and, via repeated performances, show how threatening situations can be viewed as predictable and controllable. As the demonstrations were not in real classrooms with real students displaying challenging behaviours, the positive effects on the observers' efficacy appraisals were likely tempered. A small amount of vicarious information could have also been obtained from course readings about successful FBA-based BSP interventions. Levin and He (2008), however, found that course readings accounted for 10% of preservice teachers' personal practical theory belief statements about classroom management and instruction.

Change in CMSE T2–T3. In an attempt to measure the possible contribution that the embedded professional experience provided to preservice teachers mean CMSE subscale scores, TSES data were collected pre (T2) and post (T3) a 3-week professional experience placement. The placements were all in regular primary school settings. A nonsignificant increase occurred from T2 to T3, ranging from 0.2 of a point (longitudinal sample) to 0.3 (whole sample). In the context of this study, the assertion by Fry and McKinney (1997) that professional experience is when CMSE develops the most does not seem to apply. On the surface, the finding better supports the assertion by Woodcock, Hemmings, and Kay (2012) that short professional experience placements do not provide sufficient time for efficacy beliefs to change.

A review of studies that used the TSES to measure change in mean CMSE subscale scores from completing lengthier student teaching placements toward the end of programs (see Charalambous et al., 2008; Fives et al., 2007) indicated that a small yet significant increase can occur in CMSE. Perhaps a long professional experience placement might have yielded a significant increase. It is also possible that the number of previous professional experience placements, or a lack of challenge encountered during the placement, might have dampened the effect of enactive mastery experiences on their CMSE self-appraisals.

Bandura (1997) suggested that the right amount of challenge, if successfully overcome, can bolster self-efficacy. It may be that the small increase in CMSE from T2 to T3 was related to the preservice teachers experiencing few new classroom management challenges in the regular education classroom placements that needed to be overcome. The embedded professional experience placement, after all, was their fifth or seventh placement in their program. Likewise, the supervising teachers they observed may have experienced few challenges that could contribute to their CMSE vicariously. There is also some conjecture that performances conducted under supervision, or with assistance, do little to change efficacy perceptions (Mulholland & Wallace, 2001).

Change in CMSE T3–T4. From T3 (start of class in Week 8) to T4 (after the final class in Week 10), a small yet significant increase in mean CMSE subscale scores occurred for the longitudinal sample, and a nonsignificant increase for the whole sample. In the final 3 weeks of the course, the preservice teachers consolidated their understanding of FBA-BSP, learnt about evidence-based practices used to support the behaviour of students diagnosed with autism spectrum disorder and oppositional defiance disorder, management techniques suited for each phase of the escalation cycle, and about excess and deficit behaviours. The instructional strategies employed during this phase provided increased opportunities for

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verbal persuasion and vicarious experiences, and may have contributed to their sense of efficacy for dealing with challenging behaviours.

Two *realistic approach* (Tigchelaar & Korthagen, 2004) application activities were completed in the last 3 weeks to consolidate their understanding of FBA-BSP. The first involved reflecting on a specific challenging behaviour situation that they or a peer had encountered during the recent professional experience placement. The preservice teachers had to propose the underlying function(s) and devise antecedent, behavioural, and consequence strategies that could reduce the challenging behaviour and promote more adaptive student responses. Providing opportunities to reflect upon unconscious Gestalts, using what Epstein (1998) referred to as their *rational mind*, may have assisted preservice teachers to form a conscious cognitive schema (Lunenberg & Korthagen, 2009) about FBA-based BSP.

Critical reflection that activates memories and promotes introspection has been reported to facilitate preservice teachers' integration of theory and practice (Orland-Barak, & Yinon, 2007). This is thought to guide future practice (Cheng, Tang, & Cheng, 2012), strengthening efficacy beliefs (Cheong, 2010; Harrison, Ryan, & Moore, 1996). The reflection activity also provided opportunities to receive verbal persuasion information from each other, which, as previously noted, can contribute to preservice teachers' confidence in their classroom management capabilities (Liaw, 2009).

A second application activity required the preservice teachers, in small groups, to generate a dataset based on the challenging behaviour displayed by a student while on their recent professional experience placement. This was done to provide an authentic case study for the following year's class (McNally, I'anson, Whewell, & Wilson, 2005) and to act as revision of earlier course content. During this activity, verbal persuasion information from their peers, and teacher–researcher, about their growing capabilities in FBA-BSP, could have further contributed to their CMSE. Verbal and written feedback was also received from the teacher–researcher on their case study assessment task. Positive teacher feedback can be an important source of information, adding to their confidence in the mastery of new skills and learning (Pajares & Johnson, 1996; Schunk, 1991). Previous research conducted with preservice teachers has shown that verbal persuasion is an important source of efficacy information (O'Neill and Stephenson, 2012c; Poulou, 2007b).

Vicarious experiences were also available from T3 to T4. Key instructional strategies employed during this time included didactic instruction in key concepts, role-plays, and multimedia presentations of effective management techniques for noncompliance and aggression. Watching competent models demonstrate how to manage challenging behaviours was important, given the research on beginning teachers' concerns (Kokkinos et al., 2004). Despite the low prevalence in inclusive classrooms of more severe behaviours, such as physical and verbal aggression towards staff or students (Carter, Stephenson, & Clayton, 2008), observing how experts respond to such behaviours would be valuable from a salience and functional standpoint, for the novice observers (Bandura, 1997). The practice of the models overtly verbalising self-guiding thoughts during the demonstrations (Schunk & Gunn, 1985) may have added to the novices' CMSE by vicarious means.

Limitations

There are several limitations to this study. Although the average response rate was adequate, the sample size was modest, which ranged from 22 to 48 participants across the four data collection points. This had implications for analytical decisions, which were

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accommodated through repeated measures ANOVA that employs list-wise deletions, as well as individual *t* test that retains cases. A second limitation of the study was the use of self-report data; however, the construct of sense of efficacy is an intrapsychic construct and is best measured by self-report data. Future research could include ratings by others to validate the self-report data. A final limitation may be the suitability of the TSES CMSE subscale for measuring change in preservice teachers' perceptions of their classroom management capabilities. Issues of the scale's utility to detect change over a semester, coupled with preservice teachers often scoring themselves well above the scale midpoint (Duffin et al., 2012), should be noted. Despite this limitation, the TSES has emerged as one of the more salient and widespread instruments (Hoy & Burke Spero, 2005; Klassen et al., 2009), hence its use.

Recommendations, Future Directions, and Conclusions

Four recommendations are offered for teacher educators interested in measuring efficacy change associated with coursework or professional experience. Research into survey methods has shown a decline in participation rates of tertiary education students in web-based surveys (Laguilles, Williams, & Saunders, 2011). Providing an in-person invitation to participate in the study at the start of the class in Week 1 would likely have increased the participation rate at T1, as was evident at T2 and T3. Second, including items in the postprofessional experience survey that elicited information about the perceived manageability of the class would permit analyses that could further our understanding of how such experiences might impact on beginning teachers' sense of efficacy as classroom managers pre–post placements. Finally, although Bandura (1997) cautioned scale developers to avoid self-efficacy scales that were too context specific, if teacher–researchers are interested in how their course curriculum might contribute to self-efficacy, then the measurement scale used should reflect the curriculum content on offer more closely (see, for example, Marquez et al., 2013).

Research into the possible impact that coursework can make on preservice teachers' CMSE is still in its infancy. Future comparative research is needed that examines (a) the difference in preservice CMSE when different approaches to instruction in classroom management are employed (e.g., one model to mastery versus a multimodel approach), and (b) the difference in measuring preservice teachers' CMSE with the TSES versus a CMSE measure reflective of the curriculum offered. Such information could be of use to teacher educators when designing their classroom and behaviour management courses.

Richardson (2003) has suggested that the effect of academic programs, let alone a single course, in teacher education programs in changing beginning teacher beliefs is, at best, weak. The findings from this study add to the limited knowledge base on classroom and behaviour management course effects on preservice teachers' CMSE; a single, focused course could enhance preservice teacher beliefs about their future capabilities as classroom managers, albeit it in a modest way. In agreement with Woodcock et al. (2012), the findings presented here suggest that short, embedded professional experiences contribute to efficacy beliefs in a limited way, especially towards the end of programs.

Classroom and behaviour management is a core teaching task (Doyle, 1985). One way that teacher educators could address the complaints of students past regarding the inadequacy of preservice preparation in classroom and behaviour management is by conducting research into their course offerings, via measuring the perceived effects on preservice teachers. Publishing research that illustrates coursework content, instructional

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methods employed, and the pre–post outcomes of such approaches could serve the future generation of preservice teachers and their instructors well.

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Conflicts of Interest

None.

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Appendix

Independent *t* tests for Year of Program, Gender, and Age for Mean CMSE Subscale Scores

Demographics	Time 1		Time 2		Time 3		Time 4	
Year	*M* CMSE	*SE*	*M* CMSE	*SE*	*M* CMSE	*SE*	*M* CMSE	*SE*
3rd Year	6.43	0.24	6.95	0.18	7.42	0.15	7.83	0.18
4th Year	7.00	0.31	7.12	0.23	7.06	0.26	7.56	0.27
Change in *M*	−0.57		−0.17		0.36		−0.29	
t(*df*)	20		37		42		23	
t score	−1.47		−0.57		1.29		0.85	
p value	.16		.58		.20		.40	
Gender	*M* CMSE	*SE*	*M* CMSE	*SE*	*M* CMSE	*SE*	*M* CMSE	*SE*
Female	6.57	0.20	7.02	0.14	7.27	0.14	7.74	0.15
Male	7.63	0.25	6.92	0.69	7.46	0.31	7.50	1.00
Change in *M*	−1.04		0.20		−0.19		0.24	
t(*df*)	20		37		42		24	
t score	−1.62		0.20		−0.43		0.41	
p value	.12		.84		.67		.69	
Age	*M* CMSE	*SE*	*M* CMSE	*SE*	*M* CMSE	*SE*	*M* CMSE	*SE*
≤ 21 years	6.55	0.22	6.88	0.18	7.34	0.14	7.72	0.16
22+ years	6.85	0.37	7.23	0.22	7.15	0.32	7.73	0.32
Change in *M*	−0.30		−0.35		0.19		−0.01	
t(*df*)	20		37		42		24	
t score	−0.75		−1.24		0.65		−0.02	
p value	.46		.22		.52		.99	

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