Success and near misses: Pre-service teachers' use, confidence and success in various classroom management strategies

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ABSTRACT

While the importance of effective classroom management is repeatedly made, there is little comprehensive research identifying the management strategies pre-service teachers employ, nor how successful or confident they find various strategies. Accordingly, 336 Canadian pre-service teachers were surveyed. It was found that pre-service teachers report most frequently employing initial corrective strategies (for example, physical proximity), even though preventative strategies (such as establishing regular routines) were reported to be as successful as these initial corrective strategies. The strategies pre-service teachers report most frequently employing were also those they felt the most confident in. Recommendations for teaching programs conclude the paper.

1. Introduction

Effective classroom management contributes significantly to student learning and development, (Stough, Palmer, & Leyva, 1998 as cited in Ormrod, 2003) and is considered by principals, teachers and pre-service[2] teachers to be an important skill to acquire (Stoughton, 2007). At the same time, classroom management is the most significant cause of concern for pre-service teachers (Bromfield, 2006), particularly during the practicum (Mastrilli & Sardo-Brown, 2002) and is a deterrent to joining the profession (Priyadharshini & Robinson-Point, 2003). While most teacher preparation courses include classroom management subjects (Baker, 2005), there is little comprehensive research highlighting the management strategies pre-service teachers would employ, how confident they feel in using different strategies and finally, how successful they find these various strategies. Thus, data on the classroom management strategies that pre-service teachers would employ and how confident and successful they find these different strategies provides important information for teacher education programs, as well as ongoing teacher professional development activities.

2. Literature review

While there are various ways classroom management has been defined, they usually involve actions by the teacher to establish 'order, engage students, or elicit their cooperation' (Emmer & Stough, 2001, p. 103). Burden (2003, p. 3) adds a positive dimension to this definition, particularly in regards to student teacher relationships, by arguing that classroom management needs to encourage 'positive social interaction, active engagement in learning, and self-motivation'. Charles and Senter (2008) further expand on this discussion when they highlight the association between good teaching practice, through an active and relevant curriculum, and classroom management. While the literature often employs the terms classroom management, behaviour management and discipline interchangeably, here we use the umbrella term "classroom management" to include teacher strategies that oversee student behaviour, student interactions and learning (Martin & Sass, 2010). The following literature review highlights a range of classroom management practices, as ascertained across the literature, and then more specifically outlines classroom management issues in association with pre-service teachers.

2.1. Classroom management practices

This study sought to identify the classroom management strategies that pre-service teachers employ, their confidence level in the use of various strategies and finally, what they find most successful in managing classrooms. In order to do this, the authors developed

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[2] In this paper, pre-service teachers include trainee teachers and student–teachers, all terms which relate to those training to be teachers.

a survey, based on a range of classroom management practices identified from a literature review. This review was based on an extensive review of the EBSCOHOST databases, for literature between 1990 to July 2008. A range of management practices was identified (see Table 1) located in either elementary/primary schools, or high/secondary schools, or both. Search terms included 'behaviour/behavior management' 'school' 'teacher' 'classroom' in primary/elementary as well as secondary/high school settings. Behaviour management textbooks commonly read by pre-service teachers were also included that incorporated various theoretical approaches, such as Canter and Canter's (1992) "Assertive Discipline" and Glasser's "Choice Theory" (Dotson & Glasser, 1998). Generalist texts such as Charles and Senter (2008) were also included. Instructional and differentiation strategies were identified when they were specifically related to behaviour management principles (e.g. Sugai, Horner, & Gresham, 2002). Given the focus in this study of pre-service teachers in a generalist teaching program, strategies identified from specialised institutions such as juvenile delinquent settings and special schools were excluded. For example, Individualised Education Plans (I.E.P.s), most commonly employed in special schools (Hartwig & Ruesch, 2000) and the recommendation of a low ratio of students to teachers, as advocated in juvenile justice schools (Tobin & Sprague, 2000), were excluded as strategies in the survey developed here.

In terms of efficacy, Walker and Shea (1998) suggest it is important to have a wide range of techniques when dealing with student behaviour as no single intervention is effective with all children, or in all situations. Thus, the strategies identified here were the most commonly cited in the literature, across a variety of theoretical approaches.

2.2. Pre-service teachers and classroom management

There is a body of research that has examined pre-service teachers' views on the adequacy of preparation in the area of classroom management. In a survey of 54 elementary teachers with less than three years experience and 25 pre-service teachers in their final year in an elementary teaching program, Giallo and Little (2003) found that both groups reported feeling only moderately prepared and indicated that they required additional education in classroom management, a finding confirmed by other studies (Atici, 2007; Houston & Williamson, 1993; Maskan, 2007). Similarly, when asked if their teacher education courses adequately prepared them for dealing with classroom management, 81% of 117 pre-service teachers surveyed believed that teacher education was too theoretical and disconnected from the "real world of the classroom" (Maskan, 2007). In a discussion paper on teacher education in North America, Darling-Hammond (2010) argues more broadly that when pre-service teachers complain about programs being too theoretical they usually mean it is too abstract, and does not provide specific teaching tools that they can use, an argument these other studies tend to support.

Education can, however, make a difference to pre-service teachers' management of children's behaviour. Rathel, Drasgow, and Christle (2008) found that supervisor feedback impacted on the pre-service teachers' communication patterns when working with students with emotional and behavioural disorders. Stoughton (2007) analysed pre-service teachers' reflective writings and found a willingness to think analytically and an awareness of the complexity of behaviour interventions. Some teacher education programs are more effective than others; those that feature a didactic

Table 1
Classroom management strategies, per school setting, as highlighted in selected literature.

Strategy	School setting	Selected researchers/authors
Establish and maintain regular classroom routines	Elementary	Bohn, Roehrig, & Pressley, 2004
Communicate clear expectations and directions	Elementary and secondary	Sugai, Horner, & Gresham, 2002; Ming-Tak & Wai-Shing, 2008
Establish and maintain class rules	Elementary and secondary	Ming-Tak & Wai-Shing, 2008
Teach appropriate behaviour/s (for example, anger management skills)	Elementary and secondary	Leff, Power, Manz, Costigan, & Nabors, 2001; Mitchem, 2005
Visually scan the classroom	Elementary and secondary	Rogers, 2002
Provide prompt feedback on behaviour and/or work	Elementary and secondary	Lee & Laspe, 2003
Raise or lower voice		
Praise and encouragement	Elementary and secondary	Chalk & Bizo, 2004; Charles & Senter, 2008; Mitchem, 2005
Rewards, as might exist in a token (for example, rewarding with stickers or merits) or educational (such as time on the computer) reward system	Elementary and secondary	Simonsen, Fairbanks, Briesch, & Sugai, 2008
Provide 'wait time' after an instruction is provided	Elementary and secondary	Rogers, 2002
Change classroom seating arrangements	Elementary and secondary	Kern & Clemens, 2007
Non-verbal body language (such as frowning, signalling)	Secondary	Tartwijk, van Brekelman, Wubbels, Fisher, & Fraser, 1998
Physical proximity (e.g. move closer to a student)	Elementary and secondary	De Jong, 2005
Ignore inappropriate behaviour	Elementary and secondary	Clark, 2002; Mitchem, 2005
Remove privileges	Elementary and secondary	Levin & Nolan, 2004
Use student's name as a warning	Secondary	Wood, 2008
Threats, warnings	Secondary	Lewis, Romi, Qui, & Katz (2005)
Yelling	Secondary	Lewis, Romi, Qui, & Katz (2005)
Time out (inside or outside of the classroom)	Elementary, secondary and special schools	Ryan, Sanders, Katsiyannis, & Yell, 2007
Detention	Elementary and secondary	Maag, 2001
Punishment e.g. picking up litter, writing lines	Elementary and secondary	Maag, 2001
Develop and implement behaviour contract	Elementary and secondary	Nelson, 1996
Refer student to principal/assistant principal	Elementary	Egyed & Short, 2006
Refer student to other professionals	Elementary	Egyed & Short, 2006
Contact student's parents	Elementary and secondary	Mitchem, 2005
Modify the curriculum to students' learning needs	Elementary and secondary	Kern & Clemens, 2007; Wilks, 1996
Match curriculum to students' learning interests	Elementary and secondary	Baker, 2005; Kern & Clemens, 2007; Wilks, 1996

and contextualised curriculum that is integrated with school placements, are found to be the most effective, according to pre-service teachers as well as supervisors, employers and researchers (Darling-Hammond et al., 2006, 2010).

Other studies have examined pre-service teachers' perceptions about behaviour management issues and practice. Kandakai and King (2002) investigated more than 800 pre-service elementary and secondary teachers' views on teaching violence prevention (for example, teaching conflict resolution skills) and found that just a little more than half felt confident in their ability to teach students how to resolve conflict using non violent means. Kokkinos, Panayiotou, and Davazoglou (2004) examined pre-service elementary teachers' perceptions of the seriousness of children's undesirable behaviours and found that pre-service teachers rated explicitly anti-social behaviour (such as stealing and bullying) as more serious, than internalising behaviours (for example, daydreaming, restlessness). Irwin and Nucci (2004) reported that pre-service elementary teachers perceived students' behaviour as unreasoned, and reliant on teachers' active and authoritarian presence. However, while identifying the perception of pre-service teachers is important, these studies did not seek to identify how pre-service teachers might act to prevent or manage student misbehaviour.

How pre-service teachers might manage challenging behaviour though has been explored. Using hypothetical case studies, Kher, Lacina-Gifford, and Yandell (2000) found that when faced with potentially defiant behaviour, pre-service teachers advocate sending the student to the office, giving verbal directives to stop the behaviour, reprimand the student, or would talk to the student privately and involve the principal and parents. Additionally, pre-service teachers believed that yelling and screaming at highly disruptive students or threatening them with punishment was ineffective.

Other studies have examined pre-service teachers' more general use of discipline. In a small-scale study, Atici (2007) interviewed nine pre-service Turkish teachers and found that most report using less intrusive methods, such as non-verbal messages and warnings to manage student behaviour. From surveys with 88 UK pre-service teachers and a further interview with 12, Bromfield (2006) highlighted pre-service secondary teachers' need for 'being in control' with many regarding this as the main indicator of effective management. She concludes by suggesting that teaching institutions need to move pre-service teachers from traditional behaviourist approaches to those which highlight the relationship between learning and behaviour.

Tulley and Chiu (1995) analysed the written narratives of 135 pre-service elementary and secondary teachers describing one effectively managed and one ineffectively managed incident involving a discipline problem. Content analysis revealed seven different strategies with the most effective being the more humanistic strategies, such as praise and approval, and the least effective being the most authoritarian, including the use of threats and warnings. Similarly, McNally, I'anson, Whewell, and Wilson (2005) asked secondary pre-service teachers to describe a critical incident they had experienced. However, in both studies, the behaviour management incidents and subsequent strategies were situation specific and drawn from pre-service teachers' school placement experiences; there could be other strategies pre-service teachers employ in other circumstances that were not tapped in this methodology.

Accordingly, the first of the three aims of the present study was to identify what behaviour management strategies pre-service elementary teachers would employ. In addition to what they would employ, pre-service teachers' confidence regarding the same strategy was identified. Pre-service teachers' confidence, or lack thereof, has been associated with how they interpret student behaviour; for example if not confident, they blame themselves for a student's

misbehaviour and if confident, pre-service teachers will instead interpret the same misbehaviour as precipitated by a student's home life (Kyriacou & Stephens, 1999). Furthermore, it has been found that high teacher self-efficacy is associated with teacher perseverance of challenging tasks, such as management issues, and positive classroom management (Jordan, Kirkcaley-Ifter, & Diamond, 1993, cited in Romi & Leyser, 2006). Thus, it is important to identify not only what pre-service teachers report using, but also how confident they are in various classroom management strategies. Finally, the third aim was to identify how successful pre-service teachers found these various strategies.

3. Method

3.1. Context of the study

The one year program undertaken by the pre-service teachers in this study prepares candidates to teach in primary-junior (JK-6) classrooms in Ontario. The program focuses on developing practical and professional skills based on theoretical and conceptual understandings of teaching. The aim is to prepare transformative and reflective teacher practitioners ready to assume their first teaching position. Pre-service teachers spend two days a week in schools, and two days a week at the university, throughout the program. In addition, there are extended teaching blocks in each semester (3–4 weeks) and each term is spent with a different age group. This intensive practice teaching experience allows candidates, who are grouped in schools in teams of 4–6, to make a significant contribution to, as well as learning from, the school community.

Of the ten subjects offered, all students complete a foundation subject titled "Child development/classroom management" which introduces students to the main concepts of human development, behaviour and learning, within the context of individual differences and socio-cultural influences. Assessments reflect the importance of, and interrelationship between practice and theory, within a reflective practitioner model; for example, in the classroom management subject students are asked to consider the nature of rewards in motivation theory and learning research, record the ways they see rewards being used in schools and ascertain the views of teachers, students and administrators about this particular behaviour management strategy, before providing their own judgment on the issue.

3.2. Participants

Participants included 336 pre-service elementary teachers enrolled in a one year teacher education program at a university in a large central province of Canada, 15% of whom were male and 85% female, a similar ratio of male and female elementary teachers in Canada (2006 Census). Two cohorts of pre-service teachers participated in the study. One cohort consisted of 157 participants at the beginning of their course while the second cohort consisted of 179 pre-service teachers who were finishing their course. In this institution, pre-service teachers begin their teaching program after the completion of a general undergraduate course.

3.3. Instrument

The Survey Of Behaviour Management Practices (SOBMP) was specifically developed by the authors to assess pre-service teachers' frequency, confidence and success regarding various behaviour management strategies. The SOBMP included items based on the classroom management strategies drawn from a literature view, as shown in Table 1. The SOBMP included 31 five point Likert-scale items on management strategies and participants were asked to

rate their frequency use, confidence, and success of each strategy. The Likert-scale included five points ranging from 5 (extremely) through to 1 (not at all). Thus, the higher the participants' score the more frequent/confident/successful pre-service teachers scored on a certain behaviour management strategy. The survey also sought demographic data.

The items were categorised into four subscale variables through factor analysis using principal components extraction and Varimax rotation and consisted of: preventive strategies, rewards, initial corrective and later corrective strategies. Preventative strategies consisted of strategies commonly considered to prevent behavioural issues from arising, such as establishing routines, seating arrangements, and class rules. The reward subscale included strategies that related to the use of rewards (e.g. "provide rewards such as stickers"). The initial corrective subscale included items involving mild or low intrusive corrective strategies such as proximity control, signalling, and re-directive statements. In comparison, later corrective strategies focused on more intrusive strategies such as time out and behavioural contracts. Internal reliability analyses (Cronbach's alpha) resulted in acceptable (>.6) alpha coefficient scores of reliability for frequency, confidence, and success. Of the initial 31 strategies six items did not load substantially onto either of the dimensions and were deleted from subsequent analysis.

3.4. Procedure

A pilot study of the SOBMP was conducted to obtain feedback on the questionnaire items with another 42 pre-service teachers (not included in this data set). Based on their feedback, minor changes to the instrument were made. For this study, one cohort of participants in the first semester of their course was surveyed at the end of the first semester. Furthermore, the second cohort of participants in the final semester of their course was surveyed at the end of the semester.

4. Results

Means, standard deviations, multivariate analysis of variance (MANOVA), and paired samples t-tests were carried out to examine pre-service teachers' frequency use, confidence, and success in various management practices (see Fig. 1 for a summary). The results from the study are first presented by overall findings of the pre-service teachers' frequency use, confidence, and success comparing the various classroom management strategies. Comparisons between the pre-service teachers at the beginning and at the end of the course will then be shown.
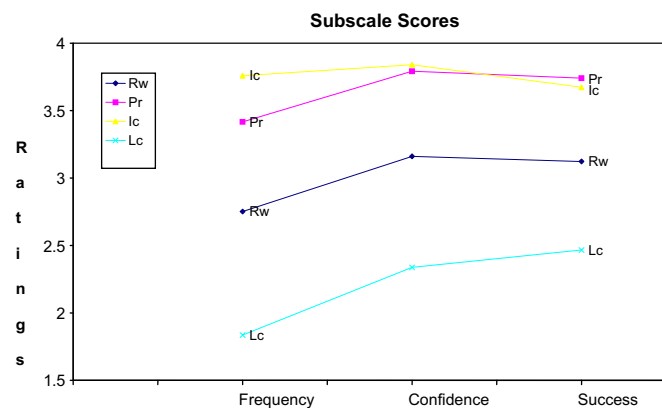

Fig. 1. Pre-service teachers' behaviour management subscale scores in terms of frequency, confidence and success. Rw = rewards: Pr = prevention: Ic = initial correction: Lc = later correction.

Table 2
Frequency means and standard deviations for the subscales of the Survey Of Behaviour Management Practices (SOBMP) instrument.

Subscale	Mean	SD
Reward strategies	2.75	1.05
Prevention strategies	3.42	.83
Initial correction strategies	3.76	.62
Later correction strategies	1.84	.80

4.1. Frequency

As Table 2 indicates, the most commonly reported behaviour management strategies were initial correction strategies ($M = 3.76$). Initial correction strategies were reportedly used significantly more than prevention strategies ($M^1 - M^2 = .327$, $t = 7.46$, $p < .005$), rewards ($M^1 - M^2 = .996$, $t = 17.59$, $p < .005$), and later correction strategies ($M^1 - M^2 = 1.916$, $t = 41.09$, $p < .005$). More specifically, it was "moved yourself closer to the student" ($M = 4.35$), "use of non-verbal body language" ($M = 4.33$) and "saying the student's name as a warning" ($M = 4.15$) that were most commonly reported strategies by pre-service teachers in this study. The most commonly reportedly employed prevention strategies included "established a regular routine" ($M = 4.04$) and "taught appropriate behaviour as part of a lesson" ($M = 3.63$). The use of reward strategies were in the lowest half of all strategies with "providing educational rewards such as extra computer time" ($M = 2.72$) and "used a school based merit system" ($M = 2.48$) of the least frequent items in the reward strategy sub-group. The least frequently reported strategies overall were those grouped in the later correction subscale, with the least commonly reported strategies including "referral of student to other professionals" ($M = 1.56$) "Implemented time out outside of the classroom" ($M = 1.59$) and, "contacted the student's parents" ($M = 1.72$).

There were no significant differences between gender regarding frequency of any of the subscales. However, there were significant differences between pre-service teachers at the beginning and end of their course in regard to preventative strategies ($F(1, 271) = 9.371$, $p < .01$, $\eta^2 = .034$). Pre-service teachers who had nearly completed their course ($M = 3.54$) reportedly used preventative strategies more frequently than those at the beginning of their course ($M = 3.24$).

4.2. Confidence

As can be seen in Table 3, pre-service teachers were most confident in using initial correction strategies ($M = 3.84$) and prevention strategies ($M = 3.79$). Pre-service teachers were significantly more confident in using both initial correction strategies and prevention strategies than they were using rewards ($M^1 - M^2 = .672$, $t = 11.937$, $p < .005$; $M^1 - M^2 = .654$, $t = 11.079$, $p < .005$ respectively), and later correction strategies ($M^1 - M^2 = 1.472$, $t = 26.960$, $p < .005$; $M^1 - M^2 = 1.440$, $t = 26.577$, $p < .005$ respectively). More specifically, it was the "moved yourself closer to the student" ($M = 4.38$), "use of non-verbal body language" ($M = 4.29$), "establishing a regular routine" ($M = 4.28$), and, "saying the student's name as a warning"

Table 3
Confidence means and standard deviations for the subscales of the Survey Of Behaviour Management Practices (SOBMP) instrument.

Subscale	Mean	SD
Reward strategies	3.16	1.04
Prevention strategies	3.79	.71
Initial correction strategies	3.84	.61
Later correction strategies	2.34	.95

($M = 4.14$) that pre-service teachers were most confident using. The use of rewards were in the lowest half of all of the strategies with "using a school based merit system" ($M = 2.84$) being the item in the reward subscale that pre-service teachers were least confident in. Overall, pre-service teachers were least confident in using later correction strategies, in particular, "Implemented time out outside of the classroom" ($M = 1.97$), "referral of student to other professionals" ($M = 2.16$), and, "referred student to principal, assistant principal" ($M = 2.29$).

There were no significant differences in confidence using any of the strategies between gender, or pre-service teachers' stage of the course.

4.3. Success

Overall, pre-service teachers reported that preventative strategies were the most successful of all strategies when managing student behaviour ($M = 3.74$) with initial correction strategies ($M = 3.67$) also being reported as successful, as seen in Table 4. Pre-service teachers were significantly more successful in using both preventative strategies and initial corrective strategies than they were using rewards ($M^1 - M^2 = .630$, $t = 10.763$, $p < .005$; $M^1 - M^2 = .541$, $t = 8.864$, $p < .005$ respectively), and later correction strategies ($M^1 - M^2 = 1.262$, $t = 22.967$, $p < .005$; $M^1 - M^2 = 1.195$, $t = 20.516$, $p < .005$ respectively). More specifically, it was the "established a regular routine" ($M = 4.24$), "moved yourself closer to the student" ($M = 4.21$) "use of non-verbal body language" ($M = 4.00$) "taught appropriate behaviour as part of a lesson" ($M = 3.92$) and "implemented a regular system to deal with transition" ($M = 3.80$) that were the most successful strategies. The least successful strategies were those grouped as later correction strategies, with the least successful strategy being "Implemented time out outside of the classroom" ($M = 1.98$) and "referral of student to other professionals" ($M = 2.40$).

There were no significant differences between gender regarding the success of any of the strategies. There were however significant differences between pre-service teachers at the beginning and end of their course in regard to the success of preventative strategies ($F(1, 233) = 7.70$, $p < .01$, $\eta^2 = .032$) with those who had nearly completed their course ($M = 3.83$) finding preventative strategies to be more successful than those at the beginning of their course ($M = 3.58$).

4.4. Prevention and reward strategies

In regards to preventative strategies and reward strategies pre-service teachers reported significantly higher success scores than they did frequency of use scores ($M^1 - M^2 = .261$, $t = 7.76$, $p < .01$; $M^1 - M^2 = .295$, $t = 7.974$, $p < .01$ respectively). Moreover, they reported significantly higher confidence scores than they did frequency of use scores ($M^1 - M^2 = .339$, $t = 11.39$, $p < .01$; $M^1 - M^2 = .349$, $t = 8.912$, $p < .01$ respectively). There was no significant difference between their confidence and success scores for preventative strategies or reward strategies. Thus, although pre-service teachers' confidence and success scores were higher, the frequency for prevention and reward strategies was lower.

Table 4
Success means and standard deviations for the subscales of the Survey Of Behaviour Management Practices (SOBMP) instrument.

Subscale	Mean	SD
Reward strategies	3.12	1.00
Prevention strategies	3.74	.67
Initial correction strategies	3.67	.61
Later correction strategies	2.47	.92

4.5. Initial correction strategies

Relating to the initial correction strategies, pre-service teachers reported significantly lower success scores than they did frequency scores ($M^1 - M^2 = .107$, $t = 3.983$, $p < .01$). Furthermore, they reported a higher confidence score than they did success score ($M^1 - M^2 = .166$, $t = 6.174$, $p < .01$). There was no significant difference between their confidence and frequency of use scores. Thus, although pre-service teachers' confidence and frequency scores were higher, their success scores were lower.

4.6. Later correction strategies

In regards to later correction strategies, pre-service teachers reported significantly higher confidence scores than they did frequency scores ($M^1 - M^2 = .448$, $t = 10.08$, $p < .01$). Moreover, they reported a higher success score than they did frequency score ($M^1 - M^2 = .571$, $t = 11.641$, $p < .01$). They also reported a higher success score than confidence score ($M^1 - M^2 = .132$, $t = 3.393$, $p < .01$). Thus, pre-service teachers reported a higher success score than confidence score, and an even lower frequency score.

5. Discussion

Pre-service teachers report that the most frequently employed strategies are initial or what might be described as low level corrective strategies, in particular, "the use of physical proximity", "moving closer to a student", and "saying a student's name as a warning". The least frequently employed strategies were those in the subscale titled later corrective strategies, with the overall strategies least commonly employed including "referring students on to professionals" and "the use of time out from the classroom". Thus, the results demonstrate that pre-service teachers are not focused on corrective strategies per se but more specifically on low level, initial corrective management strategies.

The second most commonly reported strategies were those grouped under prevention, in particular, "established a regular routine" and "taught behaviour as part of the lesson". Whilst the pre-service teachers report most commonly employing initial correction strategies in the classroom, they find the most successful strategies to be those dealing with routines, transitions, and teaching appropriate behaviour (preventative strategies) as well as those strategies considered low level or initial corrective strategies. Thus, although the most frequently reported strategies by pre-service teachers are those grouped under initial correction, the strategies they find the most successful include both preventative and initial corrective strategies.

The literature clearly highlights the importance of prevention over reactive/corrective approaches when addressing student behaviour (for reviews see Bambara & Kern, 2005; De Jong, 2005; Simonsen, Fairbanks, Briesch, & Sugai, 2008) and the success of these when addressing student behaviour is further supported by the experiences of the pre-service teachers surveyed here. However, in this study, pre-service teachers are most commonly employing initial correction and their success rates might be attributable to the frequency with which they are employing them. Indeed, it was found that pre-service teachers reported significantly lower success scores than frequency use scores, meaning that while they used these strategies relatively frequently, they did not find them as successful. At the same time, their frequency for rewards and prevention was lower than their success scores in these two groups of strategies. Again, while they report not employing rewards and preventative strategies as frequently as initial correction, they tend to find them successful when they do implement them. Overall, pre-service teachers' concerns are in the first instance reactive and corrective,

similar to Stough, Palmer and Leyva's (1998, as cited in Emmer & Stough, 2001) study of beginning teachers, and other studies on pre-service teachers (Atici, 2007; Bromfield, 2006). However, such a result is consonant with the general behaviour management literature, in finding that preventative, positive strategies are considered to be successful behaviour management approaches (De Jong, 2005; Kern & Clemens, 2007; Simonsen et al., 2008).

Even though the pre-service teachers surveyed here found preventative strategies to be as successful as initial corrective strategies, they do not employ preventative strategies as frequently as those strategies grouped under initial corrective strategies. Moreover, where they were within their course does make a difference. For instance, those who were near completion of their teaching course used preventative strategies more so than those at the beginning of their course. Similarly, those who had nearly completed the teacher program found preventative strategies to be more successful, than those who were at the start of their courses. While there are causation problems when analysing cross-sectional data, these findings tentatively indicate the cumulative influence of school placements and the university program. Hence, even though the teaching program was not explicitly evaluated, such data tentatively indicates the importance of a contextually grounded program in which students are encouraged to take their university learning into practice.

Overall, pre-service teachers were reasonably confident in using a wide range of behaviour management strategies. More specifically, pre-service teachers reported being most confident in using initial corrective strategies and preventative strategies, less confident in the use of rewards and least confident overall in the use of later corrective strategies, in particular referral procedures, and using time out from the classroom. Generally, their confidence levels reflect the strategies that they subsequently employed, so that when highly confident, they would use these strategies most frequently.

The reported use of rewards is not as relatively high as the use of other classroom strategies, perhaps due to the controversial nature of its efficacy (see for example, Cameron, 2001; Deci, Koestner & Ryan, 2001). While different strategies were not compared, in a survey-based study, Hoffman, Huff, Patterson, and Nietfeld (2009) found that 91% of in-service elementary teachers gave tangible rewards on a monthly basis. In comparison, the majority of pre-service teachers in this study did not report using rewards frequently. While it is difficult to ascertain why this might be the case perhaps the emphasis on the reflective practitioner model in the program might make pre-service teachers less likely to resort to a technique not clearly espoused by research. Follow-up interviews would be useful to explore this issue further.

Notwithstanding the importance of preventative strategies, aligned with supportive classroom environments is the need for teachers to defuse and manage potentially violent situations. The prevalence of repeated, aggressive behaviour in the classroom has increased over time (Alvarez, 2007) with aggressive behaviour viewed more negatively by teachers than any other child clinical problem (Safran, Safran, & Barcikowski, 1990). Increasingly, school violence is considered a problem not only in western countries but also in the developing world (Jones, Moore, Villar-Marquez & Broadbent, 2008). Specific behavioural issues such as verbal disrespect and violence are one of the main reasons for teacher stress (Lewis, Romi, Qui, & Katz, 2005). Finally, Kandakai and King (2002) found that just over half of the 800 North American pre-service teachers surveyed (both elementary and high) did not feel confident in their abilities to manage violent situations. The present study also highlights pre-service teachers' lack of confidence in using later forms of correction, which would be necessary when dealing with violent and/or aggressive students. It is not overly surprising that the pre-service teachers surveyed report infrequently employing

these later forms of corrective management, as such strategies and responsibilities (for example, implementing behavioural contracts and referring students on to professionals) would normally be implemented by their mentors or school supervisors. However, their relatively lower levels of confidence in the use of these strategies highlight an educational requirement that needs to be addressed in beginning teacher programs, if not earlier.

The present study is limited as the sample group was drawn from one university, in one Canadian province, with pre-service teachers working in similar cultural contexts. Additionally, as teaching programs differ widely in terms of content, procedures and duration (Alvarez, 2007) future studies would profit from surveying students from other institutions and other countries. It is important to emphasize that this study relied on self-report data and future studies need to incorporate observations of teaching in order to ascertain what pre-service teachers actually do in their classrooms whilst on placement and as beginning teachers. How these self-perceptions and corresponding behaviours might change over time and in different situations (i.e. classrooms, schools, age of students and so on) might also be ascertained.

In summary, the study demonstrated pre-service teachers' clear preference for using low level or initial corrective strategies when addressing behavioural issues, though at the same time found that pre-service teachers find both prevention and low-level corrective strategies to be equally successful when dealing with student behaviour. On the whole, the strategies pre-service teachers report most frequently using, were also those they felt most confident in using.

The results of this study have important implications for how teacher education programs may be developed. Several studies have shown that pre-service teachers believe they will be good teachers without any preparation and that instead, the majority of their knowledge about teaching will come from school placements or when they eventually enter the classroom (Joram & Gabriele, 1998). Such beliefs act as a 'filter' for interpreting their university experiences and, in particular, the place of theory (Pajares, 2002; Powell, 1992). Furthermore, it has been found that teachers resist information or methods that differ from their current beliefs, particularly if they already feel knowledgeable in this area (Westwood, 1996, as cited in Alvarez, 2007). While the cross-sectional data in this study, that compared pre-service teachers at the beginning and at the end of their course, indicate the influence of education and training, it might be argued that pre-service teachers' exposure to preventative classroom strategies needs to commence earlier and/or to a greater extent. This study found that pre-service teachers report employing mostly initial corrective strategies and feel most confidence in its use. Consequently, the efficacy of using corrective strategies for classroom management needs to be openly discussed and located within a continuum of other approaches and techniques. This means more than merely providing research that supports the use of alternative approaches as opposed to more corrective strategies, albeit lower level ones. As Johnson (1988) found that attempts to change teachers' behaviours are ineffective unless beliefs are directly questioned, preventative approaches need to be presented in such a way that is congruent with pre-service teachers' current notions about behaviour management (Maag, 2001).

In teaching classroom management, the problem for many teacher educators is that pre-service teachers prefer a recipe like model for addressing behavioural issues rather than learning about theory. For example, Bromfield (2006, p. 189) cites a training survey which found that pre-service teachers (albeit secondary pre-service teachers) requested 'step-by-step strategies to deal with bad behaviour and a discussion of options for different situations'. The problem with mechanistic approaches to classroom management is the tendency to over-simplify the nature of students' behavioural difficulties and disregard contextual influences. Additionally, an overemphasis on

'tips' risks the absence of central principles to guide behaviour. The processes involved in preventing classroom management problems require an understanding of the function of behaviour within an ecological framework (Charles & Senter, 2008). This understanding will vary, depending on the theory of behaviour and motivation that pre-service teachers align themselves to (Ming-Tak & Wai-Shing, 2008). Thus, classroom management education needs to recognise the assumptions that drive students' as well as teachers' behaviour, which is contingent on particular contexts and beliefs.

Moreover, techniques that teachers develop to prevent mis-behaviour in the classroom do not come naturally, and unless developed and emphasized in teacher education programs, will be undervalued and underused (Stoughton, 2007). Even though pre-service teachers do not believe that they will face student behavioural problems confronted by older teachers (Kearney, Plax, Sorensen, & Smith, 1988), positive classroom environments need to be conscientiously and actively planned for (Beaman & Wheldall, 2000). Pre-service teachers may not necessarily receive this message whilst on placement as many schools and teachers are predominately reactive and control orientated (Furlong, Morrison, & Pavelski, 2000). Thus, school placements need to be carefully selected, integrated alongside university programs and provide opportunities for pre-service teachers to observe effective strategies and practice them under supervision and guidance. Thus, overall, given the frequency in which pre-service teachers in this study report employing (low level) corrective strategies, teacher education institutions and school supervisors need to explicitly describe, promote and model preventative strategies in classroom management.

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