"THEY'RE ONLY PRESCHOOLERS, I THINK I CAN MANAGE THEM!" AN EXAMINATION OF TEACHER EFFICACY IN EARLY CHILDHOOD EDUCATORS

by

Amanda Bullock

A thesis submitted to the Faculty of Graduate and Postdoctoral Affairs in partial fulfillment of the requirements for the degree of

Master of Arts

in

Psychology

Carleton University
Ottawa, Ontario

Your file Votre référence
ISBN: 978-0-494-83144-1
Our file Notre référence
ISBN: 978-0-494-83144-1

Abstract

The goal of the present study was to explore possible antecedents and outcomes of early childhood educators' (ECE) teacher efficacy for classroom management. Participants were 370 ECEs (357 females, 9 males), aged 20-65 years, with 0-45 years of teaching experience. ECEs indicated their likelihood to intervene in response to hypothetical vignettes describing preschoolers engaging in physical aggression, relational aggression, and rough and tumble play. ECEs' years of experience, education, and specific training in classroom management were gathered from a demographic questionnaire. ECEs completed a measure of their personality traits. ECEs also completed a measure of their efficacy for classroom management. Results indicated that ECEs' experience, specific training in classroom management, extraversion, and neuroticism predicted ECEs' teacher efficacy. ECEs' tendency to intervene differed as a function of child sex, misbehaviour type, ECEs' demographics, and ECEs' teacher efficacy. Results are discussed in relation to previous research on teacher efficacy and teacher intervention.

Acknowledgements

First and foremost, I would like to express my gratitude to my thesis supervisor, Dr. Robert Coplan for all his patience, feedback, and words of encouragement in bringing this thesis to fruition. Also, thank you for funding this costly project. I would also like to thank my committee members for their helpful suggestions. Thank you to all the preschools and child-care centers that disseminated my survey to their staff members to complete. Further, I am grateful to all the early childhood educators who took their time to participate in this study.

In addition, I owe a lot of thanks to Justin for being at my side throughout my entire university career. Your unwavering support is very much appreciated and has helped me through this entire writing process. And, special thanks to Loki for staying up, huddled on the couch beside me on those late nights while I worked. Finally, I would like to thank my mom; Asha, dad; James, and my dearest uncle Percy for teaching me about the importance of education and working hard to achieve my goals. Although each one of you is no longer here, I hope that my perseverance in getting this far has made you proud.

Table of Contents

List of Tables

List of Figures

List of Appendices

"They're only preschoolers; I think I can manage them!" An examination of teacher efficacy in early childhood educators

Teacher efficacy is defined as a teacher's beliefs in his or capabilities to effectively organize and execute the necessary courses of action to complete a specific task in a particular setting (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). It represents a "future-oriented" belief about the level of competence a teacher believes he or she will demonstrate when confronted with a specific teaching task, rather than a teacher's "actual" levels of competence in performing an activity (Fives, 2003). Teacher efficacy is also a task and context specific construct (Chan, 2008; Dellinger, Bobbett, Olivier, Ellett, 2008; Tschannen-Moran & Woolfolk Hoy, 2001; Tschannen-Moran et al., 1998). In the current study, the focus of teacher efficacy was in the domain of classroom management.

Teacher efficacy for classroom management is a particularly important area of study in early childhood educators (ECEs). To begin with, preschool-age (ages 3-5 years) is a time where children tend to direct greater attention towards their peers and spend more time interacting with them, especially if they are attending preschool together (Hartup, 1983; Schindler, Moely, & Frank, 1987). As might be expected from the increase in peer interactions, conflict between peers tends to increase in both frequency and intensity (Vaughn, Vollenwieder, Bost, Azria-Evans, & Snider, 2003). Common problematic behaviours that occur during preschoolers' peer interactions include rough-and-tumble play (Boulton, 1996; Pelligrini & Smith, 1998), physical aggression, and relational aggression (Crick, Casas, & Ku, 1999; Crick, Casas, & Mosher, 1997; McEvoy, Estre, Rodriguez, & olsen, 2003; Ostrov & Keating, 2004; Ostrov, Woods,

Jansen, Casas, & Crick, 2004; Tomada & Schneider, 1997). As such, in the child-care settings early childhood educators are responsible for establishing and maintaining order and discipline in the classroom (Doyle, 1986).

In addition, elementary school teachers often report that one of the most stressful aspects of teaching is dealing with student misbehaviours (Blase, 1982; Byrne, 1991). Managing classroom misbehaviours is also related to elementary school teachers' experience of burnout (Brouwers & Tomic, 1999). Moreover, some elementary school teachers even leave their teaching profession because handling disruptive student behaviours becomes too overwhelming (Wilhelm, Dewhurst-Savellis, & Parker, 2000). As such, it is speculated that dealing with preschoolers' classroom misbehaviours would also be a source of stress and burnout for early childhood educators. Therefore, past research has focused on understanding the factors, mechanisms, and processes that influence early childhood educators' classroom management.

Teachers' attitude and beliefs influence their perceptions and judgements, which in turn, influence their behaviours in the classroom (Pajares, 1992). Past studies have found that teacher efficacy directly influences how teachers choose to respond, the amount of effort and persistence they display, and their thoughts and feelings in response to difficult students (Ashton & Webb, 1986; Gibson & Dembo, 1984; Meijer & Foster, 1988; Podell & Soodak, 1993; Riggs & Enoch, 1990; Woolfolk & Hoy, 1990). Further, there is some evidence to suggest that teacher efficacy mediates the relation between teachers' characteristics (e.g., knowledge, skill, personality) and their subsequent behaviour (e.g., Bouffard-Bouchard, 1990; Pajares & Johnson, 1996).

To date, the research on teacher efficacy for classroom management has focused

mainly on elementary school teachers. Among this research, there have been a few studies where researchers have focused on elementary school teacher characteristics that might predict teacher efficacy. These include elementary teachers' demographics (e.g., years of teaching experience, education level, and specific training in classroom management) and personality traits (e.g., extraversion, neuroticism, agreeableness, openness to experience, conscientiousness) (e.g., Henson & Chambers, 2002; Tschannen-Moran & Woolfolk Hoy, 2007).

Currently, there are only *four* studies that examine early childhood educators' teacher efficacy. There is limited to no research on the influence of early childhood educators' demographic characteristics and personality traits on teacher efficacy for classroom management. In addition, there is no research on the influence of early childhood teacher efficacy for classroom management on teacher intervention in response to child misbehaviours. Thus, the goals of the current study were to examine the antecedents and outcome of ECEs' teacher efficacy for classroom management. The literature review begins with a general explanation about the nature of individuals' behaviours.

Social Cognitive Theory and the Underpinnings of Human Agency

Agency refers to acts that are performed deliberately in order to produce a desired outcome (Bandura, 1997). For example, a student will attend classes regularly, complete required readings, and study very diligently if he or she desires to do well on an exam. There are many interacting factors that have been postulated to influence the production of behaviour. From the perspective of social-cognitive theory, human agency can be explained in terms of a model of *triadic reciprocal determinism* (Bandura, 1986, 1989,

1997). According to the principles of triadic reciprocal determinism, personal factors (e.g., biological, cognitive and affective states), behaviour, and environmental factors all function as interacting determinants that influence one another bi-directionally. The three sets of interacting factors include the person and behaviour, person and environment, and environment and behaviour.

In terms of the mutual influence between the person and behaviour, people's thoughts, beliefs, and feelings influence how people behave and in turn, the consequences of those behaviours affect people's thoughts and affective responses (Bandura, 1986, 1989). In the bi-directional interaction between the person and environment, people's cognitions and feelings are created and altered by environmental conditions and they too, influence the environment (Bandura, 1986, 1989). Finally, the reciprocal relation between behaviour and the environment suggests that people's everyday behaviours modify environmental conditions and are in turn, influenced by these very same environmental conditions (Bandura, 1986, 1989). It is important to note that the pattern and strength of the influences exerted by each of these interacting factors are not all equal or fixed, but vary depending on the individual, activity, and the situation. In addition, the mutual influences of these factors and their resulting reciprocal effects do not occur simultaneously (Bandura, 1986, 1989, 1997).

Social-cognitive theory not only provides a foundation for understanding how the determinants involved in the causal structure of human agency function, it also elucidates the primary capabilities of people that enable them to engage in behaviours (Bandura, 1986, 1989). For example, one such capability involves a person's capacity to use *symbols*. Symbols are useful in providing form, meaning, and maintenance of people's

life events. Through the use of symbols, people are able to process and convert their experiences into internal models that shape and direct their future actions.

Another type of capability that influences behaviour involves a person's capacity to exercise *forethought* (Bandura, 1986, 1989). The exercise of forethought can take the form of setting goals, planning the courses of action for future events, and anticipating the likely outcomes of engaging in specific behaviours. By engaging in forethought, people can motivate themselves by visualizing desirable events and directing their behaviours accordingly.

As well, people are capable of learning *vicariously* by observing how others act and noting the consequences that resulted from those behaviours (Bandura, 1986, 1989). This capability allows people to learn the rules that govern developing a new repertoire of actions while avoiding the time consuming task of trial and error that is involved in actually performing the behaviours.

In addition, people have *self-regulatory* capabilities which allow them to motivate and direct their behaviours according to their personal standards (Bandura, 1986, 1989). If there are discrepancies between one's current performances and the personal standards that have been set, then people will be motivated to change their future actions to comply with their personal standards.

Moreover, people have the capacity to engage in *self-reflective* thought which allows them to evaluate their experiences and thought patterns (Bandura, 1986, 1989). Through self-reflection, people not only acquire more knowledge and understanding about themselves, but they are also able to modify their thinking and behaviours accordingly. Self-referential thought also functions as a mediator between knowledge and

actions because it activates the cognitive, motivational, affective, and selective processes that convert one's knowledge and abilities into actions (Bandura, 1986, 1993, 1997). One of the most important types of self-referent thought that affects action is a person's *self-efficacy*. This construct was the central focus of the current study.

Perceived Self-Efficacy

According to Bandura (1977, 1986, 1997), people's motivation to engage in behaviours is governed by both their efficacy expectation and outcome expectation. *Efficacy expectation* (also known as *perceived self-efficacy*) is defined as a person's judgement of his or her capabilities to organize and carry out the necessary courses of action to complete a particular task (Bandura, 1997). Accordingly, perceived self-efficacy represents a "future–oriented" belief about the level of competence a person believes he or she will demonstrate when confronted with a specific task (Bandura, 1997). In this regard, self-efficacy is conceptualized as pertaining to self-perceptions of competence and not "actual" levels competence in performing an activity (Tschannen-Moran et al., 1998).

Outcome expectation on the other hand, refers to an individual's belief about the consequences of engaging in a particular behaviour in a certain situation (Bandura, 1977, 1986, 1997). Bandura (1986) pointed out that it is important to differentiate between efficacy and outcome expectations because although people may believe that performing certain actions will result in desirable outcomes, they will not act upon their outcome beliefs if they lack conviction about their capabilities to execute the necessary courses of action.

Perceived self-efficacy also appears to be task and situation specific (Bandura, 1997; Labone, 2004; Maddux, 1999; Pajares, 1996; Tschannen-Moran et al., 1998). This makes sense intuitively because people are not generally experts at performing every type of activity, but instead their competencies vary depending upon the tasks and situations. Thus, it is not surprising that people's beliefs in their capabilities are not the same across all realms of functioning. Indeed, efficacy judgements differ in terms of *generality*, which refers to the extent to which a person's sense of efficacy in performing one activity generalizes to other activities in the same or other domains of functioning (Bandura, 1977, 1986, 1997). Self-efficacy beliefs also differ in terms of the *level* of the task demands. For example, people may feel more efficacious when faced with a simple task and less efficacious when confronted with a more challenging situation (Bandura, 1977, 1986, 1997). Finally, people's sense of efficacy also varies in *strength*. This refers to the amount of effort and persistence exerted towards completing a given task (Bandura, 1977, 1986, 1997). For example, the strength of perceived self-efficacy in giving presentations will differ depending on the subject matter, the format of the presentation, and the types of audiences that will be addressed.

According to Bandura, (1986, 1997), self-efficacy judgements are formulated based on four primary sources of information: (1) enactive mastery experiences; (2) vicarious experiences; (3) verbal persuasion; and (4) physiological and affective states. Through cognitive processing and self-referent thinking, people selectively attend to, interpret, and integrate information from the different sources to formulate their efficacy beliefs (Bandura, 1997).

Enactive mastery experience is the most influential source of efficacy information because it is based on one's history of mastery experiences (Bandura et al., 1977; Bandura, 1997). People who have succeeded at a particular task generally experience an increase in their efficacy beliefs (Bandura, 1986, 1997). With repeated performance successes, they eventually develop a strong sense of efficacy and as a result, any performance difficulties or setbacks they encounter are unlikely to affect their personal efficacy. This is because people who are confident in their capabilities are more likely to ascribe their failures to insufficient effort, faulty work strategies, and unfavourable extenuating circumstances (Bandura, 1986). On the other hand, people who tend to have consistent performance failures experience a decrease in their efficacy beliefs, especially if the setbacks are encountered early during the course of an event, and do not reflect lack of effort or adverse environmental conditions (Bandura, 1986, 1997). Moreover, perceived self-efficacy that is generated and enhanced or diminished through enactive mastery experiences often generalizes to more than one domain of functioning (Bandura, 1986, 1997; Bandura et al., 1977).

A second source of efficacy information is the *vicarious experience* of the consequences of other people's actions (Bandura, 1986, 1997). In general, vicarious experiences are less influential on efficacy judgements as compared to direct mastery experiences. However, people become more sensitive to the efficacy information provided from vicarious experiences particularly when they are uncertain about their own capabilities or lack firsthand knowledge of their competencies. The mechanism by which vicarious experiences influence efficacy beliefs is thought to be through social modelling (Bandura, 1986, 1997; Brown & Inouye, 1978; Schunk, 1987; Schunk & Gunn, 1985).

People's beliefs about their efficacy are increased when they observe models they perceive are in similar situations or have similar capabilities to them perform competently because the observers become persuaded that they too have the requisite knowledge and skills to succeed (Bandura, 1982, 1986). In a similar fashion, when people observe the models fail even after exerting substantial effort, the observers' judgements about their own capabilities to perform are undermined and in turn, they exert reduced amounts of effort (Brown & Inouye, 1978).

Verbally persuading someone that she or he possesses the capabilities to perform a particular activity is another way of constructing and enhancing one's sense of efficacy (Bandura, 1986, 1997). When people are verbally persuaded that they "have what it takes" to succeed at a given task, they are more likely to exert and sustain greater effort towards the completion of the task. In turn, this greater effort serves to further develop their skills and increases their self-efficacy. In contrast, those who have self-doubts about their capabilities are more likely to give up when problems occur, and thus not experience any enhancement of skills or efficacy.

Notwithstanding the influence of verbal persuasion on self-efficacy, it is more difficult to inculcate and maintain enhanced beliefs of personal efficacy than it is to weaken it (Bandura, 1986). This is because erroneous increases in self-efficacy are challenged after people have exerted a great deal of effort and failed at the given task. On the other hand, people who have been persuaded that they are inefficacious are more likely to avoid any challenging activities, readily give up when difficulties arise, and are less likely to work hard to succeed.

The final source of efficacy information is provided by people's perceptions of their *physiological* and *affective states* (Bandura, 1986, 1997). When people are faced with challenging situations, they sometimes perceive their physiological and emotional arousal (e.g., fear, anxiety) as indicators that they lack the capabilities to succeed. In such cases, the expectation of failure is exacerbated by the conjuring of consistent negative thoughts about lack of ability. In turn, this increases their levels of stress and can further debilitate performance. Moreover, the influence of affective states on perceptions of self-efficacy generalizes to a wide range of functioning (Bandura, 1997).

Because perceived self-efficacy is self-referential, self-regulatory, and involves aspects of forethought, it plays an important predicting role of influencing people's behaviours, thoughts, and feelings in several ways (Bandura, 1986, 1997). It affects their *choice* of behaviours, in that people choose to engage in activities they believe they are capable of doing while they tend to avoid tasks they perceive surpass their capabilities (Bandura, 1977). In addition, perceived self-efficacy influences the amount of *effort* and extent of *persistence* people demonstrate when difficulties arise in completing a task (Bandura, 1986). When challenges occur, people with a strong sense of efficacy exert greater effort in order to succeed whereas those with perceived deficits in their capabilities exhibit less effort or give up entirely (Bandura & Cervone, 1986; Brown & Inouye, 1978; Schunk, 1981). For example, Bouffard-Bouchard, Parent, and Larivee (1991) found that among children with the same skill level in mathematics, children with higher self-efficacy in mathematics were more likely to consistently apply their knowledge to solving the mathematical problems, exhibited greater persistence, and were

less likely to dismiss correct solutions impulsively as compared to children with lower self-efficacy.

Beliefs about capabilities also influence *thoughts* and *affective reactions* to imagined and actual encounters with the environment (Bandura, 1986). People who perceive themselves as inefficacious at coping with task demands tend to focus on and exaggerate the extent of their incompetence (Lazarus & Launier, 1978). This may increase stress reactions and undermine the effective use of capabilities to overcome the challenges (Bandura, 1986). Moreover, in a study across nine countries Perrewe and colleagues (2002) reported that people with low self-efficacy consistently experienced greater *burnout*. Burnout is conceptualized as a tripartite syndrome characterized by intense emotional exhaustion (i.e., feelings of being emotionally drained accompanied by a decrease in one's emotional resources), depersonalization (i.e., a detached attitude towards other people), and reduced personal accomplishments (i.e., a person's negative self-evaluation of his or her performances) (Maslach & Jackson, 1981; Maslach, Jackson, & Leiter, 1996; Schaufeli, Maslach, & Marek, 1993).

Perceived self-efficacy also appears to influence causal thinking. For example, highly efficacious people tend to attribute performance successes to their own abilities and efforts and failures to their lack of effort (Bandura, 1986; Collins, 1982; Schunk, 1984; Schunk & Cox, 1986; Schunk & Gunn, 1986; Silver, Mitchell, & Gist, 1989). Conversely, those who are inefficacious with similar competencies are more likely to attribute their successes to external factors (e.g., luck) and misgivings to deficits in their capabilities (Bandura, 1986; Collins, 1982; Schunk, 1984; Silver et al., 1989).

Notwithstanding the predictive role of self-efficacy judgements on people's choice of activities, the amount of effort and persistence they exert, and their thoughts and feelings, perceived self-efficacy also *mediates* the effects of other determinants of behaviour on subsequent performances. Indeed, there is strong empirical support indicating that the underlying mechanism linking performance with predictor variables such as prior training, experience, and abilities passes through self-efficacy (Bandura, 1986; 1994; 1997; Bandura & Schunk, 1981; Bouffard-Bouchard, 1990; Collins, 1982; Hackett, 1985; Lent, Brown, & Larkin, 1984; Pajares, 1996; Pajares & Kranzler, 1995; Pajares & Johnson, 1996; Pajares & Miller, 1994; Schunk, 1991; Schunk & Henson, 1985; Randhawa, Beamer, & Lundberg, 1993; Relich, Debus, & Walker, 1985).

For example, Pajares and Kranzler (1995) examined the predictive effects of high school students' general mental ability, mathematical skill level, and mathematics self-efficacy on their performance in mathematics problem-solving. Results indicated that general mental ability, skill level, and mathematics self-efficacy each had a direct effect on students' mathematics problem solving performances. However, mathematics self-efficacy partially mediated the links between general mental ability and skill level and students' performances.

Perceived self-efficacy is therefore an important construct for understanding people's motivations, cognitions, and affective responses. Notwithstanding the predictive and mediating influence that perceived self-efficacy have on people's behaviours, if people do not possess the requisite knowledge and skills to carry out a task, then strong beliefs of personal efficacy will be ineffective in producing desired behaviours (Bandura, 1986). Moreover, although some may possess the right capabilities as well as have a

strong sense of perceived self-efficacy, they may not engage in behaviours to complete a task because they simply have no incentives to do so (Bandura, 1986). In the current study, the primary focus was on teachers' perceived self-efficacy in the specific context of dealing with child misbehaviours in the classroom.

Teacher efficacy

Teacher efficacy is defined as a teacher's judgement of his or her capabilities to effectively organize and execute the necessary courses of action to successfully complete a given task in a particular context (Tschannen-Moran et al., 1998). Similar to the previous, more general discussion of efficacy, teacher efficacy is thought to be a future-oriented construct of a teacher's beliefs in his or her competence to perform particular teaching tasks (Fives, 2003). Also consistent with Bandura's (1986, 1997) assertions regarding perceived self-efficacy, researchers have argued that teacher efficacy is also task and context specific (Chan, 2008; Dellinger et al., 2008; Tschannen-Moran & Woolfolk Hoy, 2001; Tschannen-Moran et al., 1998).

Past research has demonstrated that teacher efficacy is comprised of two factors: 1) personal teaching efficacy; and 2) general teaching efficacy or teacher efficacy (Anderson, Greene, & Lowen, 1988; Ashton & Webb, 1982; 1986; Burley, Hall, Villeme, & Brockmeier, 1991; Gibson & Dembo, 1984; Hoy & Woolfolk, 1993; Moore & Esselman, 1992; Rich, Lev, & Fischer, 1996; Saklofske, Michaluk, Randhawa, 1988; Soodak & Podell, 1993; Webb, 1982; Woolfolk & Hoy, 1990). General teaching efficacy refers to teachers' beliefs that as a group, their ability to influence students' positive outcomes are limited by factors external to teachers such as the students' home environment, family history, and parental influences (e.g., Anderson et al., 1988; Gibson

& Dembo, 1984; Ross, 1994). In contrast, personal teaching efficacy refers to teachers' beliefs that they personally possess the capabilities to enhance students' learning and achievements (e.g., Anderson et al., 1988; Gibson & Dembo, 1984; McLaughlin & Marsh, 1978; Meijer & Foster, 1988; Ross, 1992, 1994; Soodak & Podell, 1993, 1996).

Moreover, some researchers have proposed that personal teaching efficacy and general teaching efficacy reflect Bandura's (1977, 1986, 1997) conception of efficacy expectation and outcome expectation respectively (Ashton & Webb, 1982, 1986; Gibson & Dembo, 1984; Riggs & Enoch, 1990; Soodak & Podell, 1996). Although it is generally accepted that personal teaching efficacy reflects a person's belief in his or her capabilities to perform a particular task (i.e., perceived self-efficacy), other researchers have argued that the definition of general teaching efficacy most likely reflects an external locus of control rather than an outcome expectation (Coladarci & Fink, 1995; Guskey & Passaro, 1994; Tschannen-Moran et al., 1998; Tschannen-Moran & Woolfolk-Hoy, 2001). External locus of control refers to the notion in which people attribute the responsibility to what happens to them to factors outside of their control (Rotter, 1966). This definition in turn, seems to reflect the concept of general teaching efficacy, that is, teachers' beliefs that as a group, their ability to influence students' outcomes are limited by factors external to teachers. Moreover, it has been suggested that personal teaching efficacy is a more accurate reflection of a teacher's beliefs in his or her capabilities to perform particular teaching tasks in certain situations rather than general teaching efficacy or a combination of general teaching efficacy and personal teaching efficacy (Guskey & Passaro, 1994; Tschannen-Moran et al., 1998).

Teachers' sense of efficacy is influenced by the cognitive processing of information derived from mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective reactions (Chan, 2008; Tschannen-Moran et al., 1998). In addition, teachers' sense of efficacy directly influence teachers' choice of behaviours, the amount of effort exerted and extent of persistence, as well as their thoughts and emotional reactions when dealing with difficult or unmotivated students (e.g., Ashton & Webb, 1986; Gibson & Dembo, 1984; Meijer & Foster, 1988; Podell & Soodak, 1993; Riggs & Enoch, 1990; Woolfolk & Hoy, 1990). For example, in one of the first studies to examine teachers' sense of efficacy, Gibson and Dembo (1984) through observations of teachers' behaviours noted that low efficacy teachers (based on a composite of general teaching efficacy and personal teaching efficacy scores) criticized students who responded incorrectly to problem questions whereas high efficacy teachers provided less criticisms and praised the students for trying to solve the problems. High efficacy teachers also persisted with the students who were struggling until they derived the correct problem solutions as compared to their low efficacy peers.

Teacher efficacy is a task and situation specific construct that influences how teachers behave. Tschannen-Moran and Woolfolk Hoy (2001) proposed that teachers' sense of efficacy can be subdivided into three specific domains of functioning including student engagement (i.e., engaging students in the learning process), instructional strategies (i.e., implementing instructional strategies), and classroom management (i.e., managing student behaviours). The focus of the current study was on teacher efficacy in the specific area of classroom management. A major aim of this study was to explore some of the potential *antecedents* of teacher efficacy for classroom management.

Demographics and Teacher Efficacy

Research has indicated that elementary school teachers' demographic characteristics are related to teacher efficacy (e.g., Egyed and Short 2006; Klassen & Chiu, 2010; Hoy & Woolfolk, 1993; Tschannen-Moran & Woolfolk Hoy, 2007). In the current study, the influences of elementary teachers' years of experience, education level, and specific training in classroom management on teacher efficacy for classroom management were explored.

Teaching experience. Past studies have examined the changes in teachers' efficacy beliefs as they transition through pivotal stages in their teaching careers (e.g., de la Torre Cruz & Casanova Arias, 2007; Woolfolk Hoy & Spero, 2005; Tschannen-Moran & Hoy, 2007). There is considerable evidence to indicate that personal teaching efficacy grows during the pre-service years (Cannon, 1992; Fives, Hamman, & Olivarez, 2007; Gorrell & Huang, 1995; Housego, 1990; Woolfolk Hoy & Spero, 2005; Hoy & Woolfolk, 1990; Liaw, 2009; Wenner, 2001). This suggests that as student teachers acquire more experience they are also becoming increasingly skilled and capable of handling the teaching tasks (Martin, Linfoot, & Stephenson, 1999; Richardson & Placier, 2001; Ross, 1994; Stein & Wang, 1988).

There is also evidence to suggest that teacher efficacy for classroom management increases when teachers transition from pre-service to in-service teachers (Chan, 2008; de la Torre Cruz & Casanova Arias, 2007; Giallo and Little, 2003). For example, Chan (2008) sampled four groups of secondary school Hong Kong Chinese teachers reflecting different stages of teachers' careers: prospective teachers with no teaching experience; prospective teachers with one month of supervised teaching; experienced teachers with 1-

2 years of teaching experience; and experienced teachers with more than 3 years of teaching experience. Each group of teachers reported their efficacy beliefs for seven domains of functioning (including classroom management). Results indicated that experienced teachers with more than 3 years of teaching experience had the greatest teacher efficacy for classroom management as compared to the other three groups. In addition, there appeared to be a general trend of increasing teacher efficacy for classroom management from prospective teachers with no teaching experience to experienced teachers with the most teaching experience.

More experienced teachers also tend to have higher teacher efficacy for classroom management as compared to novice teachers (Akbari & Moradkhani, 2010; Klassen & Chiu, 2010; Wolters & Daughterty, 2007). For example, Wolters and Daughterty (2007) compared teacher efficacy for classroom management among teachers in their first year of teaching, 1-5 years of experience, 6-10 years of experience, and 11 or more years of experience. Results indicated that teachers who were in their first year of teaching, followed by teachers with 1-5 years of experience reported lower teacher efficacy for classroom management compared to the most experienced teachers.

According to Evans and Tribble (1996), pre-service teachers report lower levels of teacher efficacy because they have had less classroom teaching experience as compared to practicing teachers. Also, because pre-service and novice teachers acquire their efficacy beliefs primarily through vicarious experiences and verbal persuasion, their teacher efficacy beliefs will be different than more experienced teachers, who actively use their skills to manage student behaviours on a daily basis and enhance their teacher efficacy through mastery experiences (Chan, 2008; Tschannen-Moran & Woolfolk Hoy,

2007). Moreover, during the early years of teaching, teacher efficacy is thought to be unstable and easily influenced. However, as time in the teaching profession increases and teachers acquire greater experience, teacher efficacy increases and eventually stabilize becoming resistant to change (Tschannen-Moran & Woolfolk Hoy, 2007; Wolters & Daugherty, 2007).

Interestingly, some researchers have reported that teachers' efficacy beliefs are somewhat higher in their pre-service years and decrease within the first two years of being an in-service teacher (Buell, Hallam, Gamel-McCormick, & Scheer, 1999; Woolfolk Hoy & Spero, 2005; Soodak & Podell, 1997; Welch, 1995). For example, Woolfolk Hoy and Spero (2005) examined how teachers' sense of efficacy changes from student teaching to first year of teaching. They assessed prospective teachers at the start of their Master's of Education teaching certification program, at the end of student teaching, and after their first year of employment as a teacher. Results indicated that teacher efficacy increased during teacher preparation and student teaching but dropped with the actual experience of teaching. The researchers suggested that this finding could be due to prospective and novice teachers underestimating the demands of the teaching tasks, as well as their abilities to handle the teaching tasks. However, it is still possible that after this initial drop in efficacy, teachers may come to feel more confident in their abilities with increasing experience.

Teacher education. Past research has demonstrated that teacher efficacy is positively related to elementary school teachers' educational level (Hoover-Dempsey, Bassler, & Brissie, 1987; Hoy & Woolfolk, 1993; Rubeck & Enochs, 1991). This makes sense intuitively because teachers with more education would become more familiar with

the types of classroom misbehaviours of children and would acquire greater knowledge and skills about managing the behaviours, which could result in greater teacher efficacy for classroom management. For example, Hoy and Woolfolk (1993) found that elementary school teachers with a graduate degree reported greater personal teaching efficacy. Contrary to these findings, Moore and Esselman (1992) examined the personal teaching efficacy of elementary, middle, and high school teachers who had less than a Bachelors degree, Bachelors degree, Masters degree, and higher than a Masters degree. They found that as compared to their more educated counterparts, teachers with the least amount of education reported the *highest* personal teaching efficacy. However, Ross (1994) contended that these findings were confounded with Moore and Esselman's (1992) decision to group together teachers from elementary to high schools, since teachers in elementary schools were less likely to hold an undergraduate degree. Although Moore and Esselman (1992) did not speculate about their unique findings, it may be the case that the elementary school teachers overestimated their personal teaching efficacy.

Training in classroom management. According to Housego (1990), elementary school teachers' perceptions of being well-prepared to carry out specific teaching tasks also have bearings on their beliefs about their capabilities to execute the necessary actions. This suggests that if elementary school teachers believe that they are prepared with the knowledge and skills to handle a particular teaching task, then they may feel more confident in their abilities to perform the necessary actions to complete the task at hand. Thus, one way in which teachers could enhance their feelings of being well-prepared and in turn, their personal teaching efficacy, is through training to carry out

specific teaching duties. There are many different ways in which teachers can receive specific training including specialized workshops, on-the-job mentoring and consultation, and academic coursework through a college or university (Alvarez, 2007).

Past research has found that training specific to classroom management is related to elementary school teachers' sense of efficacy (Buell et al., 1999; Villa, Thousand, & Chapple, 1996). For example, Buell and colleagues (1999) compared general educators' and special educators' efficacy for managing disruptive behaviours of children with disabilities. They found that as compared to general education teachers, special education teachers reported greater efficacy for managing the behaviours of disabled children. This difference was attributed to special educators having received training in managing difficult behaviours of children with disabilities whereas general educators did not. In addition, Egyed and Short (2006) found that teachers with the most amount of training (i.e., two or more courses in classroom management) reported higher personal teaching efficacy as compared to their peers who received no training.

Overall, it appears that teaching experience, education level, and specific training in classroom management are related to greater personal teaching efficacy and efficacy for classroom management. A second domain of antecedents of early childhood educators' capabilities to manage student behaviour that was explored in the current study was teacher personality.

Personality Traits and Teacher Efficacy

According to McCrae and Costa (2003), personality traits are defined as aspects of individual differences in proclivities to exhibit enduring patterns of thoughts, feelings, and behaviours over time and across situations. Based on differing theoretical

perspectives of personality, numerous models have been created to explain these individual differences (Digman, 1990). However, a detailed description of these theoretical approaches is beyond the scope of the present study. The model of personality that will be used in the current study is the Five Factor Model. However, the Myers Briggs Type Inventory was also discussed as it is the model which has also been previously used in the literature on teacher personality traits and teacher efficacy.

Overview of Five Factor Model. The Five Factor Model (FFM) of personality, commonly referred to as the "Big Five" has received widespread consensus in the personality psychology literature as the best taxonomy of personality traits (Barrick & Mount, 1991; Costa & McCrae, 1995; Digman, 1990; Digman & Inouye, 1986; Furnham, 1996; John & Srivastava, 1999; McCrae & Costa, 1989; McCrae & John, 1992). The Five Factor Model of personality describes personality traits as comprised of five dimensions called Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (Costa & McCrae, 1986; McCrae & John, 1997). Each of the five dimensions is independent of one another and represents a wide domain that encompasses more specific traits or facets (McCrae & Costa, 1989; 1997; 2003). These five dimensions of personality are typically assessed using the Revised NEO-Personality Inventory (NEO PI-R; Costa & McCrae, 1992).

Extraversion is the first dimension of the FFM and is comprised of six facets that include three interpersonal traits (warmth, gregariousness, assertiveness) as well as three temperamental traits (activity, excitement seeking, positive emotions) (McCrae & Costa, 2003). Extraverted people are typically described as friendly, cheerful, and socially outgoing whereas individuals low on extraversion (or high on introversion) are generally

perceived as shy, quiet, and withdrawn (John, 1990; McCrae & Costa, 2003). Also, individuals high on extraversion report feeling happy about their lives more often than introverts (Lucas & Fujita, 2000) are more optimistic about current and future situations (Costa & McCrae, 1980), and are less burnout from job demands (Cano-García, Padilla-Muñoz, & Carrasco-Ortiz, 2005; Fontana & Abouserie, 1993; Iverson, Oleklans, & Erwin, 1998; Kokkinos, 2007; Mills & Heubner, 1998; Zellers, Perrewe, & Hochwarter, 2000). Moreover, extraverts engage in more approach-oriented behaviours (Reeve, 2009) and experience more personal accomplishments (Eastburg, Williamson, Gorsuch, & Ridley, 1994).

The next dimension of personality in the FFM is *agreeableness* (McCrae & Costa, 2003) which has been thought of as involving the most humane aspects of humanity because at one end of the dimension there are characteristics such as altruism and nurturance and hostility and selfishness on the other (Digman, 1990). Individuals high on agreeableness are more trustworthy and trusting of others (McCrae & Costa, 2003) and their actions are influenced more by their feelings rather than by reason (McCrae & Costa, 1989). Also, people who are high on agreeableness are more caring and nurturing and as such, tend to be more tolerant of others who need help (Barrick & Mount, 1991). As well, they are better able to cope with stressors and experience less burnout (Kokkinos, 2007; Zellers et al., 2000). Although highly agreeable people are more likely to intervene using negotiating skills when conflicts arise (Jensen-Campbell & Graziano, 2001) they tend to prefer avoiding conflict altogether (Larsen & Buss, 2008).

Conscientiousness is comprised of six facets including competence, order, dutifulness, achievement striving, self-discipline and deliberation (McCrae & Costa,

2003). Conscientious people are better able to handle stressful situations because they actively engage in problem focused coping strategies (Bartley & Roesch, 2011; Watson & Hubbard, 1996) and also experience less burnout (Kokkinos, 2007; Kokkinos & Davazoglou, 2005; Mills & Huebner, 1998; Zellers et al., 2000). As well, people high on conscientiousness are more likely to think through a course of action and resist impulsive behaviour (McCrae & Costa, 2003). Because of their industriousness and hard-working nature, conscientious people tend to experience a greater level of satisfaction in their careers (Langford, 2003).

Neuroticism is the fourth dimension of personality which represents the likelihood of a person to experience negative and troublesome mood and thoughts, and to engage in correspondingly disturbing behaviours (Vestre, 1984). In the FFM, neuroticism is comprised of six facets including anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability (McCrae & Costa, 2003). In general, individuals who are high on neuroticism tend to be high on each of these facets. Because people who are high on neuroticism are more depressed, frustrated, and vulnerable to stress, they are more likely to have difficulty coping with stressful events and experience burnout (Burke & Greenglass, 1995, 1996; Costa & McCrae, 1987; Iverson et al., 1998; Kokkinos, 2007; Maslach, Schaufeli, & Leiter, 2001; McCrae & Costa, 2003; Wright & Cropanzano, 1998; Zellers et al., 2000). In addition, neurotic individuals are more likely to engage in avoidant-oriented behaviours and display greater withdrawal (Leiter & Maslach, 1988; Reeve, 2009). Conversely, people who are low on neuroticism (or emotionally stable) are typically described as calm, relaxed, level-headed, and easy going (McCrae & John, 1992).

Finally, *openness to experience* is characterized by people who are curious, imaginative, creative, unconventional, and empathetic (Zellers et al., 2000). People who are high on openness to experience appear to have a more entrenched awareness of their surroundings (McCrae & Costa, 1991) and are more likely to detect stressors in their environment (Zellers at al., 2000). They also tend to use more problem focused coping strategies when dealing with problems (Strutton, Pelton, & Lumpkin, 1995) and experience less burnout (Kokkinos, 2007). In addition, those high on openness to experience are more open to new ideas and tend to have positive attitudes toward new experiences (Barrick & Mount, 1991). As well, they are more empathetic toward others and try to find solutions to help those in need (McCrae & Costa, 2003).

Overview of Myers Briggs Type Inventory. Although most of the research in personality psychology has adopted the FFM as the framework for studying personality and the NEO PI-R as its measure, it is actually not reflected in research conducted on teachers (Decker & Rimm-Kaufman, 2008). Instead, most of the studies that have examined the influence of personality traits on teachers' sense of efficacy have utilized the Myers Briggs Type Inventory (MBTI; Myers & McCaulley, 1985) which is based on Jung's (1921/1971) theory of psychological types (Myers & McCaulley, 1985). The MBTI measures four personality traits: Extraversion-Introversion (EI), Sensing-Intuition (SN), Thinking-Feeling (TF), and Judgement-Perception (JP) and combinations of the four personality traits determine 16 distinct psychological types (e.g., ENFP) (Myers & McCaulley, 1985). Each combination set reflects the psychological type theory of personality that people can be categorized according to their attitudinal, judgemental, and perceptual tendencies (Boyle, 1995; Pettinger, 1993).

The *extraversion-introversion* dimension refers to whether a person's attitude towards the world is oriented outwards to other people and objects, or is oriented inwards (Myers & McCaulley, 1985). The *sensing-introversion* dimension focuses on whether one relies on information gathered from one or more senses or from insight. Moreover, the *thinking- feeling* dimension contrasts the use of logic and reasoning in the decision making process with a more subjective and interpersonal sense. Finally, the *judgement-perception* dimension differentiates between a penchant for planning and coordinating activities versus a preference for flexibility and impulsiveness.

Although the MBTI is widely used in the areas of academic advising (Blume, 1992), career counselling, and by human resource departments (Boyle, 1995; Tieger & Barron-Tieger, 1993; Thompson & Ackerman, 1994), it has been criticized for distorting Jung's theory of psychological types (Hicks, 1984; Sticker & Ross, 1964) as well as for having low construct validity (Pettinger, 1993; Saggiono, Coopwe, & Kline, 2001). As such, researchers have reinterpreted the MBTI in terms of the FFM of personality and found that the four MBTI dimensions measured aspects of four of the Big Five personality traits. Specifically, extraversion-introversion correlated with extraversion, sensing-intuition with openness, thinking-feeling with agreeableness, and judgement-perception with conscientiousness (Furnham, 1996; Furnham, Moutafi, & Crump, 2003; Macdonald, Anderson, & Tsagarakis, 1994; McCrae & Costa, 1989). In addition, there is some evidence that extraversion-introversion and neuroticism are correlated (Furnham 1996; Furnham et al., 2003).

Conceptualizing links between personality traits and teacher efficacy. Research on the influence of elementary school teachers' personality traits and teachers' sense of

efficacy is extremely sparse. To date, there is no literature on the relation between teacher personality traits and teacher efficacy among *early childhood educators*. Henson and Chambers (2002) examined the influence of teachers' personality types on personal teaching efficacy and found that teachers who were extraverted reported higher personal teaching efficacy as compared to introverted teachers. In addition, Roberts, Harlin, and Briers (2007) examined the relation between teachers' personality types and teacher efficacy for classroom management. Results indicated that both extraversion and judging were positively associated with teacher efficacy for classroom management.

If reinterpreted using the FFM, this suggests that teachers who are high on extraversion and conscientiousness might be more likely to experience greater teacher efficacy for classroom management. Extraverted teachers tend to approach and engage in more activities as compared to their introverted peers (Reeve, 2009) and so they have the opportunity to gain more experiences and enhance their competencies. Also, because extraverted teachers are more sociable and assertive (McCrae & Costa, 2003), they may be more likely to discuss with other teachers about how to manage classroom misbehaviours and through vicarious experiences as well as verbal persuasion, their efficacy for classroom management could be constructed and enhanced. Conscientious teachers are also more likely to experience greater teacher efficacy for classroom management because they exude competence when they carry out activities. As well, teachers high on conscientiousness are more self-disciplined and industrious (McCrae & Costa, 2003) and so they will tackle more challenging teaching tasks and will persist in the face of obstacles both of which provide opportunities for mastery experiences.

Further, it can be speculated that neuroticism, agreeableness, and openness to experience could be related to teacher efficacy for classroom management. Teachers high on neuroticism may experience greater anxiety and stress when faced with student disruptive behaviours (Kokkinos, 2007) and these physiological and affective reactions could undermine their efficacy for classroom management. Moreover, teachers high on agreeableness and openness to experience are more willing to help others in need (McCrae & Costa, 2003) possibly because they believe that they have what it takes to help others. As such, high agreeableness and high openness to experience in teachers may be related to greater teacher efficacy for classroom management.

Despite the paucity of research on the influence of teacher personality traits on teacher efficacy for classroom management, there is still evidence to suggest that personality traits such as extraversion and conscientiousness are positively related to teacher efficacy for classroom management. It is also possible that neuroticism, agreeableness, and openness to experience could be related to teacher efficacy for classroom management and as such, more research is needed.

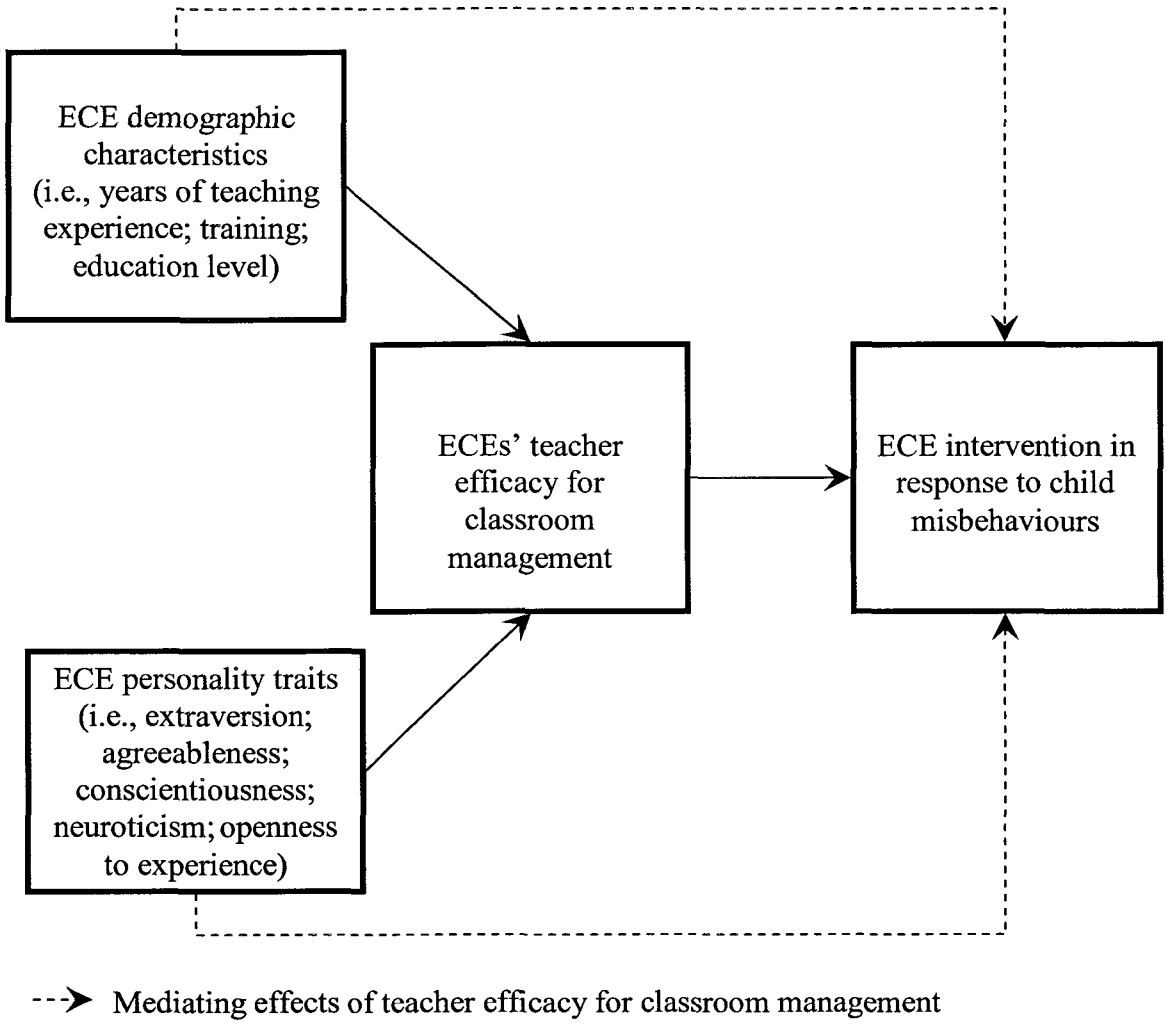
Teacher Characteristics, Efficacy, and Behaviours

A second aim of the current study was to explore the role of teacher efficacy as a mediator of the links between early childhood educators' characteristics (e.g., demographics, personality) and the tendency to act (i.e., intervene) in response to child misbehaviours in the classroom. Denham and Michael (1981) proposed a model of teacher efficacy with the aim of encouraging and facilitating research that examines teacher efficacy, its antecedents, and consequences. The antecedents of interest included teacher training, teacher experience, system variables (e.g., work environment), personal

variables (e.g., personality) and causal attributions, and the consequences involved teacher behaviours (e.g., classroom behaviours) and student outcomes (e.g., achievement scores). Teacher efficacy is postulated to function as an intervening variable that mediates the relation between the antecedents and the consequences. In addition, it is suggested that the antecedents could directly influence the consequences when teacher efficacy is controlled. Moreover, Denham and Michael (1981) pointed out that the antecedents could be interrelated, for instance, the effect of teaching experience on teacher efficacy may depend upon personal variables, and as such, the predictive factors of teacher efficacy should not be studied in isolation.

Drawing upon this model as a theoretical framework, a conceptual model was put forth in which early childhood educators' teacher efficacy for classroom management *mediates* the effects of ECEs' demographic characteristics and personality traits on ECEs' intervention in response to child misbehaviours (see Figure 1). In the following sections, the links between early childhood educators' behavioural interventions and teacher efficacy for classroom management, ECEs' demographic characteristics, and ECEs' personality are explored.

Figure 1. Conceptual model of early childhood educators' teacher efficacy for classroom management and behavioural intervention in response to child misbehaviours



Teacher intervention responses to child misbehaviours. According to Glickman and Tamashiro (1980) and Wolfgang (1995), elementary teachers' classroom management approaches can be conceptualised as interventionist, non-interventionist, and interactionalist in nature. Interventionists tend to believe that students learn about appropriate behaviours when their behaviours are reinforced through teachers' rewards and punishments. As such, an interventionist approach is one in which a high degree of control is exercised over classroom activities and students' behaviours. On the other hand, non-interventionists tend to believe that students need to express themselves and that teachers need to relinquish control over students' behaviours. Between the two extremes, there is the interactionalist who believes that both the teachers and students need to work together to foster classroom management. Indeed, there is a multitude of ways in which teachers respond when managing student behaviours. Given the focus on teacher efficacy, the primary focus of the current study was whether early childhood teachers will in fact *act at all* (i.e., intervene in any way) when confronted with child misbehaviours.

Teacher efficacy and teacher intervention responses. Research has indicated that elementary school teacher efficacy for classroom management are related to their decisions to intervene in response to student problem behaviours (Hughes, Barker, Kemenoff, & Hart, 1993; Soodak & Podell, 1993; 1994; Yoon, 2004). For example, Yoon (2004) presented teachers with hypothetical vignettes depicting child misbehaviours (e.g., physical aggression, relational aggression) and asked teachers to report their efficacy for classroom management and their likelihood of intervening. Results indicated that teachers with higher teacher efficacy for classroom management

were more likely to report that they would intervene as compared to low efficacy teachers.

In addition, Hughes and colleagues (1993) presented teachers with hypothetical vignettes depicting children with behaviour problems (e.g., physical aggression). Teachers were asked to rate the certainty in their abilities to reduce or fix the problem depicted in each of the vignettes and indicate whether they would choose to intervene by handling the situation on their own, refer the student for special education, or refer the student for consultation. Hughes et al., (1993) found that teachers who were certain of their abilities to solve the problem (i.e., higher personal teaching efficacy) were less likely to report referring the student for special education or for consultation. In other words, teachers who chose to handle the situation on their own had greater personal teaching efficacy.

Moreover, Soodak and Podell (1994) found that teachers with higher personal teaching efficacy were more likely to chose to use teacher-based interventions (e.g., behaviour modification) in response to a vignette depicting a child displaying problems of self-control rather than seeking school support services (e.g., referral for special education). Although this study examined different *types* of behavioural intervention choices of teachers, the findings support the notion that teachers with greater personal teaching efficacy are more likely to act directly (i.e., intervene) in response to misbehaviours because they feel greater confidence in their capabilities.

In sum, it appears that teacher efficacy for classroom management does have an impact on elementary school teachers' responses toward children's misbehaviours. However, the extant literature has not examined preschool teachers and their sense of

efficacy for classroom management and its impact on ECEs' behaviours to discipline problems. Moreover, while perceived self-efficacy has been postulated to mediate the links between people's knowledge and abilities and their actions, there currently exist no studies that have empirically tested the meditating role of teacher efficacy for classroom management between ECEs' characteristics (demographic; personality) and teacher responses to children's misbehaviours. Having discussed the influence of teacher efficacy for classroom management on teacher responses, the following sections focused on other determinants of teacher behaviour, including teacher demographic characteristics and teacher personality traits.

Teacher demographic characteristics and teacher intervention responses. Research has shown that *years of teaching experience* could influence elementary school teachers' intervention in response to child misbehaviours. For example, Martin and Shoho (2000) found that experience teachers were more interventionist (i.e., controlling) of children's behaviour as compared to prospective teachers with less teaching experience. Based on this finding, it can be speculated that ECEs with more *experience* might be more likely to choose to intervene in response to behaviour problems.

There is also some evidence to suggest that teachers respond differently to student misbehaviours as a function of differences in their *level of education*. Moore and Cooper (1984) compared kindergarten to high school teachers' disciplinary techniques with varying education levels and found that the most educated teachers (i.e., received post Master's level credit) were less likely to report using reprimand (e.g., corporal punishment) and restrictions (detention) as compared to teachers with the least education (i.e., Bachelor's degree). When applied to early childhood educators, this may suggest

that ECEs with higher education are more aware of effective discipline strategies and are confident in their abilities as to use less punitive techniques as compared to their peers with less education.

Finally, *training in classroom management* also appears to influence elementary school teachers' responses toward child misbehaviours (Alvarez, 2007; Arnett, Kaplan & Conn, 1984; Schwartz et al., 1997; Soodak & Podell, 1997; Tillery, Varjas, Meyers, & Collins, 2010). Alvarez (2007) presented teachers with hypothetical vignettes depicting student aggression and asked them to report their intervention strategies. Teachers with training in classroom management reported that they would use more positive approaches (e.g., explain the classroom rules), whereas teachers without training reported that they would be more likely to refer children for outside support and seek additional information about the student behaviour problems. Thus, it could be speculated that ECEs with specific training in behaviour management would have greater knowledge and skills about managing classroom behaviours and as such, would be more likely to intervene.

Teacher personality and teacher intervention responses. Most of the research on the relation between teacher personality and teacher behaviour has focused on the common personality traits of *elementary school teachers* in the classroom. For example, teachers are typically characterized with a personality type of introversion, sensing, feeling, and judgement (ISFJ) (Macdaid, McCaulley, & Kainz, 1986; Reid, 1999) and have been described as nurturing, patient, and conscientious in their interactions with students (Fairhurst & Fairhurst, 1995; Hirsh & Kummerow, 1997).

Following from this is the possibility that, in general, early childhood educators may share a specific set of personality characteristics. From a conceptual standpoint, it

could be speculated that early childhood educators are generally high on extraversion because they are often sociable and energetic when interacting with children on a daily basis. They may also be high on conscientiousness as it takes a well organized and deliberate person to handle preschool children's behaviours and maintain order in the classroom. As well, early childhood educators may be high on agreeableness as they tend to be nurturing and empathetic towards children. In addition, low neuroticism might be a trait common to early childhood educators because they would need to be able to cope with the stress involved with child care. Lastly, early childhood educators may be high on openness to experience because they need to be creative and imaginative in their play and instruction in order to maintain children's attention (McCrae & Costa, 2003)

Research has also examined the personality characteristics of highly effective elementary school teachers and found that they tend to have a personality type of extraversion, intuition, feeling, and perception (ENFP) (Rushton & Juola-Rushton, 2006; Rushton, Morgan, & Richard, 2007) and were often described as energetic, optimistic, creative, and flexible (Fairhurst & Fairhurst, 1995; Keirsey & Bates, 1984).

However, there has been virtually no previous research on the influence of teacher personality on teachers' responses to child misbehaviours. From a conceptual perspective, it can be speculated that extraverted individuals, who would tend to be sociable and assertive (McCrae & Costa, 2003) may be more likely to "take charge" in the classroom and respond to student misbehaviours. In contrast, introverted teachers who tend to be quieter and more reserved, might be less likely to intervene in such situations. In addition, extraverted teachers tend to experience less emotional exhaustion and depersonalization and greater personal accomplishment (Kokkinos, 2007; Schaufeli

& Enzmann, 1998) which suggests that they would be better able to cope with student misbehaviours and as a result, they may be more likely to intervene to deal with the problem behaviour. In contrast, introverted teachers who tend to experience greater burnout (Cano- García et al., 2005) might be less able to cope with the stress of managing student misbehaviours and hence more likely to avoid confronting student misbehaviours. Therefore, it is speculated that extraverted ECEs would be more likely to intervene in response to child misbehaviours.

Conscientious individuals tend to be well-organized, self-disciplined, and achievement-oriented (McCrae & Costa, 2003). As such, it could be speculated that conscientious ECES may want to control student behaviours and limit the frequency of classroom misbehaviours in order to foster a productive classroom environment. Conscientious people also actively engage in problem focused coping strategies when confronted with problems (Bartley & Roesch, 2011; Watson & Hubbard, 1996) and as such, may be better able to cope with the stress of managing student misbehaviours, and therefore be more likely to intervene in response to child misbehaviours.

Individuals high on neuroticism tend to be more anxious, frustrated, and unable to cope with stressful situations (McCrae & Costa, 2003). Neurotic teachers are more vulnerable to stress from work related demands and tend to experience greater burnout (Kokkinos, 2007; Schaufeli & Enzmann, 1998). Watson and Hubbard (1996) found that teachers high on neuroticism are more likely to avoid student disruptive behaviours in the hopes that doing so would reduce the stress associated with dealing with student misbehaviours. Based on these findings, it could be speculated that ECEs high on

neuroticism would be more likely to avoid dealing with student misbehaviours and respond by intervening less as compared to their emotionally stable peers.

People high on openness to experience tend to be more empathetic towards others (McCrae & Costa, 2003; Zellers et al., 2000). They engage in problem focused coping strategies (Strutton, Pelton, & Lumpkin, 1995) and report less burnout symptoms (Kokkinos, 2007; Schaufeli & Enzmann, 1998). Thus, ECEs high on openness to experience may be more inclined to intervene to stop the behaviour because they want to help the misbehaving student or they can cope with the stress that comes with managing disruptive behaviours.

Finally, people who are high on agreeableness tend to be altruistic, nurturing, and empathetic (McCrae & Costa, 2003), tolerant of others who need help (Barrick & Mount, 1991) and tend to use negotiating skills to resolve the problem (Jensen-Campbell & Graziano, 2001). In this sense, agreeable teachers might be speculated to be more likely to intervene to reduce conflict among students. However, agreeable individuals are also more prone to avoiding situations of conflict altogether (Larsen & Buss, 2008). As such, it could also be speculated that even though highly agreeable teachers may be more caring of their students, they may choose to avoid dealing with student discipline problems and instead let students resolve conflicts with one another on their own. Thus, highly agreeable ECEs may be less likely to intervene in response to child misbehaviours.

Notwithstanding the importance of personality traits, it is possible that ECEs' experience, education level, and specific training in classroom management may be more influential and over-ride any possible links between ECEs' personality traits and their intervening behaviour. For example, LePine and Dyne (2001) found that participants'

cognitive ability was more strongly related with task performance than were any of the personality traits of the Five Factor Model. Since greater experience, training, and higher education may inculcate the skills needed to complete the job at hand, it is possible that these demographic characteristics may be more influential to ECEs' behaviour than ECEs' personality traits.

Mediating effects. As described previously, perceived self-efficacy is a type of self-referent capability that individuals possess. Bandura (1986, 1993, 1997) postulated that self-referent thoughts might function as a mediator between a person's knowledge and their behaviours. In this regard, he suggested that self-referent thoughts would trigger the cognitive, motivational, affective, and other selective processes that transform one's knowledge, skills, and abilities into actions. Accordingly, perceived self-efficacy might also be expected to mediate the links between other determinants of behaviour and people's choice of activities, the amount of effort and extent of persistence they demonstrate, and the affective and thought reactions they experience. Indeed, there is consistent empirical support for the notion that perceived self-efficacy represents the underlying causal mechanism that connects other predictors of behaviours such as experience, training, and one's abilities to perform (e.g., Bouffard-Bouchard, 1990; Pajares & Johnson, 1996; Pajares & Miller, 1994; Schunk & Henson, 1985).

However, there has been a lack of research specifically examining whether teacher efficacy for classroom management might mediate the effects of other predictors of teacher behaviour on their response toward student misbehaviours. It was speculated that ECEs' teacher efficacy for classroom management would mediate the relation between early childhood educators' demographic characteristics and ECEs' response to

classroom misbehaviours, as well as the relation between ECEs' personality traits and ECEs' response to classroom misbehaviours (see Figure 1).

The Current Study

The first purpose of this current study was to examine the predictive roles of early childhood educators' demographic characteristics (years of teaching experience, education level, and training in classroom management) and personality traits on ECEs' teacher efficacy for classroom management. The second aim of this study was to explore the role of early childhood educators' teacher efficacy for classroom management as a possible mediator of the links between teacher characteristics (e.g., demographics, personality) and the tendency to act (i.e., intervene) in response to child misbehaviours in the classroom.

Research has shown that teacher efficacy is one of the driving forces of teacher behaviours in the classroom (e.g., Bandura, 1997; Tschannen-Moran et al., 1998). Most of the research on teacher efficacy for classroom management has focused almost exclusively on elementary school teachers. To date, there appear to be only four studies that have examined teacher efficacy in early childhood educators. For example, Brown (2005) investigated the relation between preschool teachers' sense of efficacy, their beliefs about the importance of mathematics, and their mathematics instructional techniques. Results indicated that higher ECEs' teacher efficacy was related to stronger beliefs in the importance of mathematics. However, ECEs' teacher efficacy was not related to observations of ECEs' mathematics instructional techniques. It was speculated that this discrepancy was due to early childhood educators' erroneous beliefs of their capabilities to create and implement a curriculum in mathematics.

In another study on early childhood educators, Guo, Piasta, Justice, and Kaderavek (2010) examined the relations among teacher efficacy, classroom quality (instructional support, emotional support) and preschoolers' print awareness and vocabulary achievements. Results indicated that ECEs' teacher efficacy and classroom quality positively predicted preschoolers' print awareness gains. In addition, early childhood educators with higher efficacy and higher levels of emotionally supportive classroom quality were associated with preschool children's vocabulary gains.

Moreover, Kim and Kim (2010) examined the relations among South Korean early childhood educators' teacher efficacy, ECEs' and classroom characteristics, preschool centre climate, and ECEs' depression severity. It was found that preschool teachers with more years of teaching experience reported higher levels of teacher efficacy. In addition, classrooms with larger child-teacher ratio were associated with lower levels of teacher efficacy. As well, positive preschool center climate was associated with higher levels of teacher efficacy. Moreover, higher levels of ECEs' depression severity were associated with less efficacy.

Finally, Kotaman (2010) examined prospective and in-service early childhood educators' teacher efficacy for classroom management. Results indicated that teaching experience was positively related to teacher efficacy for classroom management in early childhood educators.

Overall, these studies demonstrated some possible antecedents and outcomes of teacher efficacy in early childhood educators. However, none of the studies paid particular attention to teacher efficacy in the domain of classroom management. Research

has shown that preschool-aged children engage misbehaviours such as aggression and rough-and-tumble play (Campbell, 2002).

Aggression is defined as any behaviour that is deliberately intended to hurt or cause harm to others (Coie & Dodge, 1998). Research has focused on many different types of aggressive behaviours including physical aggression and relational aggression (see Underwood, 2003, for a review). Physical or overt aggression includes behaviours such as hitting and pushing that result in physical damage as well as using physical intimidation and verbal threats (Crick & Grotpeter, 1995). Relational aggression on the other hand, while covert in nature, harms others by damaging and manipulating social relationships, through gossiping, spreading rumours, and excluding peers from a group (Crick & Grotpeter, 1995). Research has demonstrated that both physically and relationally aggressive behaviours are stable during the preschool years and continue into middle childhood (Cote, Vaillancourt, Barker, Nagin, & Tremblay, 2007; Tomada & Schneider, 1997; Zimmer-Gembeck, Gerger, & Crick, 2005).

There has been some evidence to suggest that the display of physical and relational aggression differs for preschool-aged boys and girls (e.g., Crick et al., 1997; Ostrov et al., 2004). For example, Ostrov and colleagues (2004) conducted an observational study of preschoolers' aggressive behaviours and found that boys typically engaged in more physical aggression, whereas girls were observed to engage in greater relational aggression.

Moreover, the display of physical aggression and relational aggression in preschool has been linked to socio-emotional difficulties (Crick et al., 1997; Ostrov et al., 2004). For example, Crick and colleagues (1997) found that both physical and relational

aggression in preschoolers were associated greater peer rejection and depressed affect, and lower peer acceptance and prosocial behaviour.

Rough-and-tumble play is a variant of physical aggression, however, the playful signals that are evident during a rough-play incident typically discredits any aggressive intent of the behaviour (Pellegrini, 2003). Rough-and-tumble behaviour usually involves children's play fighting, wrestling, and chasing (Pellegrini, 1987). Not surprisingly, there is research to suggest that boys typically engage in more rough-and-tumble play as compared to girls (e.g., Boulton, 1996; Humphreys & Smith, 1987; Pellegrini, 1989; Pellegrini & Smith, 1998).

Rough-and-tumble play has been found to serve a number of functions. For example, rough-and-tumble play helps develop and maintain friendships (Smith & Boulton, 1990). Typically, rough-and-tumble play partners are friends (Blurton Jones, 1972). In addition, rough-and-tumble play provides children with opportunities to build and enhance their social skills. For example, Parke and colleagues (1987) found that children whose fathers engaged in rough-play with them were more likely to be popular with their peers. Notwithstanding the positive aspects of rough-and-tumble play, research has also shown that rough-and-tumble play is related to later aggression (Humphreys & Smith, 1987; Pellegrini, 1993; Pellegrini, 1995).

Taken together, because aggression and rough-play tend to be associated with negative outcomes, it is important that teachers intervene to stop these behaviours. In addition, when disruptive behaviours occur, teachers would need to spend a lot more time dealing with classroom misbehaviours instead of engaging the children and providing instructional support. Moreover, when children engage in misbehaviours such as

aggression, other children may model the behaviour resulting in a contagion effect (Goldstein, Arnold, Rosenberg, Stowe, & Ortiz, 2001). Accordingly, it was of interest to examine whether ECEs' teacher efficacy for classroom management predicted early childhood educators' decision to act (i.e., intervene) in response to child misbehaviours. Further, boys tend to engage in greater rough-and-tumble play (e.g., Pellegrini & Smith, 1998) and physical aggression (e.g., Crick et al., 1997) while girls tend to engage in greater relational aggression (Ostrov et al., 2004). As such, the current study also examined whether ECEs' responses to intervene would differ for preschool boys and girls who engaged in gender typical and atypical behaviours.

In addition, the relations between other ECEs' demographic characteristics (e.g., years experience, education level specific training in classroom management) and personality traits on teacher efficacy and their intervening behaviour have not been explored in this group. Moreover, studies on preschool teachers have not examined teacher efficacy for classroom management as a possible mediator of the relations between ECEs' characteristics (demographics, personality) and ECEs' responses to student misbehaviours.

The present study used child behaviour vignettes to assess early childhood educators' responses to child misbehaviours. Hypothetical vignettes are typically favoured over other methodologies such as questionnaires when assessing individuals' attitudes, beliefs, values, perceptions, and norms (Gould, 1996; Finch, 1987; Marsh, 1982). They are also advantageous because responses can be collected from a large sample of participants simultaneously in a time efficient manner (Alexander & Becker, 1978; Gould, 1996). Accordingly, using scenarios that depicted child misbehaviours were

valuable as it would be time consuming if trying to observe all acts of problem behaviours.

In addition, unlike the observational method where it becomes almost impossible for every participant to observe the same problem behaviours, vignettes allow researchers to obtain information from a heterogeneous group with regards to the same scenario (Barter & Renold, 1999; Lanza & Carifio, 1992). This in turn results in more uniform data (Gould, 1996). Moreover, when participants have been assessed using vignettes. they were less likely to consciously bias their responses as might be common during interviews or when questionnaires were used, and any observer effect which was typical of observational studies was eliminated (Alexander & Becker, 1978).

Although there may be a discrepancy between how teachers believe they would respond and how they actually do respond in the moment (Alexander & Becker, 1978), hypothetical vignettes still has been the more appropriate method to assess teacher attitudes, beliefs, and strategies to deal with student problem behaviours (e.g., Arbeau & Coplan, 2007; Bauman & Del Rio, 2006; Brophy & McCaslin, 1992; Brophy & Rohrkemper, 1981; Gutkin & Ajchenbaum, 1984; Yoon & Kerber, 2003). Moreover, past studies have used hypothetical vignettes in the study of teacher efficacy and teacher responses to child behaviours (Hughes et al., 1993; Soodak & Podell, 1993, 1994).

In studies of elementary school children, the types of misbehaviours that are typically depicted include physical aggression and relational aggression (Brophy & McCaslin, 1992; Hughes et al., 1993; Ozben, 2010; Swanson, O'Conner, & Cooney, 1990). For the present study, behavioural descriptions of physical aggression, relational

aggression, and rough-and-tumble play are presented in the vignettes as these behaviours are more common among preschool-aged children (Campbell, 2002).

Early childhood educators' demographic characteristics (years of teaching experience, education level, and specific training in behaviour management) were gathered through a typical background questionnaire. The types of training in classroom management are based on past studies of preschool and elementary school teachers and included whether teachers attended one/more college or university courses, participated in a workshop/in-service training, received a specialized certification or degree, and on-the-job training (e.g., Alvarez, 2007; Arnett et al., 1989). Specific ECEs' personality traits were assessed with a general measure of personality traits. Early childhood educators' teacher efficacy for classroom management was measured using a specific subscale for teacher efficacy in this domain.

Hypotheses. The first aim of this study was to examine the antecedents of early childhood educators' teacher efficacy for classroom management. In terms of ECEs' demographic characteristics, it was predicted that greater years of teaching experience, higher education level, and specific training in classroom management would be positively related to higher levels of ECEs' teacher efficacy for classroom management. In terms of ECEs' personality traits, it was predicted that ECES who are higher on extraversion, conscientiousness, agreeableness, and openness to experience would be related to higher levels of ECEs' teacher efficacy for classroom management. Further, it was predicted that high levels of neuroticism would be negatively related to ECEs' teacher efficacy for classroom management.

The second aim of this study was to examine the mediating effects of early childhood teacher efficacy for classroom management on the links between ECEs' demographic characteristics and ECEs' responses to child misbehaviour as well as ECEs' personality traits and their responses to child misbehaviour. It was predicted that early childhood educators' with higher levels of ECE teacher efficacy for classroom management would be more likely to report that they would intervene. It was also predicted that ECEs with greater years of teaching experience, higher education level, and greater training in classroom management would be more likely to report that they would intervene. As well, it was predicted that ECEs who are high on extraversion, conscientiousness, and openness to experience would be more likely to report that they would intervene whereas ECEs who are high on neuroticism and agreeableness would be less likely to report that they would intervene. Speculatively, it was predicted that ECEs would be more likely to report that they would intervene toward children who were not engaging in gender stereotypical behaviours.

In terms of ECEs' teacher efficacy for classroom management being a mediator in the relations between ECEs' characteristics and ECEs' responses, it was predicted that a mediating effect would be found if the relation between ECEs' demographic characteristics and their responses is attenuated (partial mediation) or no longer evident (full mediation). It was also predicted that a mediating effect would be found if the relation between ECEs' personality traits and ECEs' responses is attenuated or no longer evident.

Method

Participants

Participants were n=370 early childhood educators (ECEs, 357 females, 9 males, 4 undeclared) aged 20-65 years (M = 41.63, SD = 10.53). The sample self-identified as primarily Caucasian (83%), with a variety of other ethnicities represented (4.3% Asian, 2.5% Black, 2% Aboriginal, 1% Hispanic, 0.04% as other and 0.03% did not answer the question). The sample consisted primarily of ECEs from Ontario preschools and child-care centres (88%), but responses from other geographic regions were also received, including 7% from Western Canada (e.g., British Columbia, Alberta) and 4% from Eastern Canada (e.g., New Brunswick, Nova Scotia). Due to the nature of the recruitment process, it was not possible to estimate the consent rate for this study.

The majority of participants held an ECE diploma (78%) as their highest degree obtained. About 1% (n = 4) of the participants reported holding only a high school diploma, whereas 20% reported holding a university degree (i.e., B.A., B.Ed., B.Sc.). One participant indicated that they had a graduate degree. Participants reported a wide range of teaching experience, with years of teaching ranging from 0-45 years (M = 17.04, SD = 9.87).

Of the total sample, there were 323 participants who reported receiving specific additional training on managing children's behaviours, 45 with no training, and 2 undeclared. Of the 323 participants who reported receiving additional training, 32% reported training from one/more college or university courses, 34% reported college or university courses as well as participation in a workshop or in-service training, 23% reported college or university courses, workshop or in-service training, as well as

receiving a specialized certification or degree, and 9% reported receiving training from all of the above plus on-the-job training.

Measures

Demographic information. After consenting to participate in the study, early childhood educators were first presented with a demographic questionnaire (see Appendix D). Participants indicated their age, sex, ethnicity, last degree obtained (e.g., high school, ECE diploma), year in which the last degree was obtained, and years of teaching. They also indicated whether they had received training on managing children's behaviours. If they responded yes, they were then asked to check all that applied from the types of training listed which included: one/more college or university courses, participated in a workshop or in-service training, received a specialized certification or degree, and on-the-job training. In addition, participants indicated the location of the preschool/child-care centre where they worked as well as the age of the children they were currently teaching.

Child behaviour vignettes. Participants were instructed to read a total of eight vignettes that depicted preschool-aged children engaging in different types of classroom behaviours which reflected: shyness, unsociability, agentic (e.g., invite someone to play), affliative (e.g., offer comfort), exuberance/talkativeness, relational aggression, physical aggression, and rough-and-tumble play. The behavioural descriptions that were presented to the participants were adapted from previous research that have used vignettes to assess parents' and teachers' attitudes and responses toward children's behaviours (e.g., Arbeau & Coplan, 2007; Hastings, McShane, Parker & Ladha, 2007; Yoon & Kerber, 2003).

When each participant accessed the survey website, he or she was randomly assigned to receive the eight vignettes that depicted either a boy or girl engaging in the behaviour. The types of child behaviour vignettes were also presented in a random order. Of particular importance in the present study were the vignettes that depicted preschool-aged children engaging in misbehaviours, specifically, physical aggression, relational aggression and rough-and-tumble play. Sex of the child in the vignettes was also assessed to determine whether early childhood educators' likelihood to intervene would differ as a function of their sex. The texts of the vignettes that depicted physical aggression, relational aggression, and rough-and-tumble play in boys are presented in Table 1.

Table 1.

Texts of child behaviour vignettes for physical aggression, relational aggression and rough-and-tumble play (boy version)

Types of misbehaviour	Description of vignettes
Physical aggression	One of the other children has a toy that Andrew wants. Andrew approaches the child, grabs the toy, and pushes the other child down.
Relational aggression	While working on an art project, you overhear Daniel say to another boy: 'If you don't let me have the purple marker I won't invite you to my birthday party.'
Rough-and-tumble	During a game of tag you see Stephen chase and jump on another boy's back. Both children fall on the ground laughing.

Note. The girl version of these vignettes is identical except for the change in names

ECE responses and beliefs. In response to each behavioural scenario, participants were asked to use a five point Likert-type scale (from 1 "not at all likely" to 5 "very likely") to rate how likely they would be to *intervene* to stop the behaviour. In addition, participants were asked to use a five point Likert-type scale where 1 indicated "not very likely" and 5 indicated "very likely" to rate how adequately prepared they felt to deal with the child's behaviour (see Appendix E).

ECE personality. Teacher personality traits were measured using the *Ten-Item Personality Inventory* (TIPI; Gosling, Rentfrow, & Swann, 2003 - see Appendix F). The TIPI is a 10-item measure in which pairs of items reflect each of the five dimensions of the Five Factor Model. The pairs of personality traits that were presented to the participants included: "extraverted, enthusiastic" and "reserved, quiet" (reversed) for *Extraversion* (low score equals high *introversion*); "sympathetic, warm" and "critical, quarrelsome" (reversed) for *Agreeableness*; "dependable, self-disciplined" and "disorganized, careless" (reversed) for *Conscientiousness*; "calm, emotionally stable" and "anxious, easily upset" (reversed) for *Emotional Stability* (low score equals high *neuroticism*); and "open to new experiences, complex" and "conventional, uncreative" (reversed) for *Openness to Experience*. Using a 7-point Likert-type scale (from 1 "disagree strongly" to 7 "agree strongly") participants rated the extent to which each of the pairs of personality traits best reflected their personality.

Despite its truncated length, the TIPI has demonstrated adequate test-retest reliability (Gosling et al., 2003) and convergent validity with other personality measures based on the Five Factor Model (Donnellan, Oswald, Baird, & Lucas, 2006; Ehrhart et al., 2009; Furnham, 2008; Gosling et al., 2003). In the present study, correlations between

the two items that comprised each of the TIPI scales were as follows: Extraversion (r = .48), Agreeableness (r = .10), Conscientiousness (r = .23), Emotional Stability (r = .38), and Openness to Experience (r = .22). These results were comparable to the findings by Ehrhart and colleagues (2009). The TIPI has been used previously in research on pre-service teachers (Silova, Moyer, Webster, & McAllister, 2010).

ECE teacher efficacy for classroom management. Early childhood educators' teacher efficacy for classroom management was assessed using the *efficacy for classroom management* subscale of the *Teachers' Sense of Efficacy Scale* (TSES; Tschannen-Moran & Woolfolk Hoy, 2001 – see Appendix G). The subscale consisted of 8-items that assessed teachers' perceptions about their competence to handle difficult student behaviours. A 9-point Likert-type scale is used (from 1 "not at all likely" to 9 "a great deal"). There were some minor changes made to the wording of this scale. The words "student" and "students" were changed to "child" and "children" to better reflect the behaviours of preschool-aged children. Sample items included "How much can you do to control disruptive behaviour in the classroom?" and "How well can you respond to defiant children?"

The *efficacy for classroom management* subscale has frequently been used in samples of elementary school teachers and has previously demonstrated strong internal consistency, with α's ranging from .86 to .96. (Akbari & Moradkhani, 2010; Fives et al., 2006; Klassen & Chiu, 2010; Moe, Pazzaglia, & Ronconi, 2010; Roberts, Mowen, Edgar, Harlin, & Briers, 2007; Tschannen-Moran & Woolfolk Hoy, 2001, 2007). The efficacy for classroom management scale has also demonstrated evidence of content validity (i.e., associations with other measures of teacher efficacy – see Tschannen-Moran & Woolfolk

Hoy, 2007). In its single previous usage with early childhood educators, the *efficacy for classroom management* scale also demonstrated high internal consistency ($\alpha = .87$, Brown, 2005).

In the current sample, results from factor analysis (with principal components extraction) indicated that the items loaded on a single factor, with an Eigenvalue of 5.03 (accounting for 62.91% of the total variance). Factor loadings ranged from .53 to .64. The scale also demonstrated strong internal consistency in the present sample ($\alpha = .92$).

Procedure

Upon receiving ethics approval from the *Carleton University Ethics Committee for Psychological Research*, directors of preschool and child-care centers as well as ECE associations across Canada were emailed in May 2011 and asked to invite their staff members to participate in the web-based study. Also, coordinators of institutions across Canada that provided the ECE program were contacted by email and asked to disseminate an invitation to participate to past students who completed the ECE program. The invitation to participate in the study contained the URL for the survey (http://www.carletonecesurvey.ca/) which was to be completed online.

Participants interested in participating in the survey clicked on the URL to access the survey. First, early childhood educators read the Informed Consent Form (see Appendix B) which described the purpose of the study, informed them of the anonymity of the study, and that they had the right to withdraw from the study at any time and omit any questions they felt uncomfortable answering. In addition, the consent form informed the early childhood educators that ethics approval was obtained from the university. Moreover, the consent form provided the contact information for the researchers involved

in the study as well as the Chair of Carleton University's Ethics Committee and Chair of Carleton University's Psychology Department. Finally, early childhood educators then clicked on the link "I consent to participate in the Survey of ECE Teachers". Subsequently, participants completed the demographic questionnaire. Next, participants read a series of eight vignettes that depicted either a preschool-aged boy or a girl engaging in different types of behaviours. After each scenario, they indicated their likelihood to intervene as well as level of preparedness to deal with the child's behaviour. Finally, the survey concluded with the teacher personality questionnaire as well as the efficacy for classroom management subscale.

After participants completed the survey, they were presented online with the Debriefing Form (see Appendix C). A summary of the findings will be sent to the participating child-care federations and preschools during the Fall of 2011, who will be asked to forward the results to staff members.

Results

Preliminary Analyses

Missing data. Cases that were missing less than 25% of data on the efficacy for classroom management subscale of the *Teachers' Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) were prorated. Because the *Ten-Item Personality Inventory* was comprised of 10 pairs of personality traits, when one item of a pair was missing the remaining item for that pair was subsequently deleted. This resulted in missing scores for each of the 5 subscales. Missing data on the measures of ECEs' tendency to intervene for physical aggression, relational aggression, and rough-and-tumble play were dealt with by reverse scoring on a Likert-type scale from 1 to 5, ECEs' responses to how likely they would be to do nothing in response to the child misbehaviour.

Descriptive statistics. The descriptive statistics for all study variables are displayed in Table 2. Of particular note was the very high mean and low standard deviation for the efficacy for classroom management variable. In fact, the majority of participants reported the maximum possible score on this 8-item scale. This contributed towards a significant negative skew and significant leptokurtic distribution of scores for this variable. In an attempt to make the distribution of ECEs' teacher efficacy scores more normal, square root, log, and inverse transformations were each applied. However, none of these transformations substantively improved the distribution of ECEs' teacher efficacy scores. Since the majority of participants scored high on the efficacy for classroom management measure, it was decided that ECEs' teacher efficacy scores should be dichotomized to compare the majority of ECEs who scored "high" (which

represented a "normative score") versus the smaller group of ECEs who reported "lower" efficacy scores. As such, two efficacy groups were created. Participants in the *lower efficacy* group (n = 64) had scores greater than 1 standard deviation below the mean. The rest of the sample was placed in the *high/normative efficacy* group (n = 306). For comparison purposes, all analyses were also computed using the ECEs' teacher efficacy scores as a continuous variable. Although the overall pattern of results was comparable employing efficacy as a continuous variable, findings were stronger when treating efficacy as a dichotomous variable.

The measures of emotional stability, openness, and conscientiousness each contained 1 outlier score and agreeableness contained 2 outlier scores (i.e., greater than 3SDs from the mean). These outliers were not dropped but instead were re-scored to 3SDs away from the mean (Tabachnick & Fidell, 2007).

Testing of assumptions. The assumptions of independence, normality, and homogeneity of variances and covariances that are required for a multivariate analysis of variance (MANOVA) were tested. The assumption of independence was met as participants' scores on all of the dependent measures were not influenced by or related to the scores of other participants. Using Levene's tests and Box's M, results indicated that homogeneity of variances and covariances for all dependent variables were met. Histograms of all dependent variables were examined and revealed normal distributions except for the measures of participants' tendencies to intervene for relational aggression and physical aggression, and education level.

Participants' scores on the tendency to intervene for relational aggression measure had a significant negative skew of -.94, which was more than 2 times the standard error

Table 2.

Descriptive Statistics for all Study Variables

Variable	N	Range	Mean	SD	Skewness	Kurtosis
Efficacy	370	3-9	7.87	.88	-1.02	2.30
Rough-and-tumble play intervention	370	1-5	3.03	1.34	-.04	-1.11
Physical aggression intervention	370	1-5	4.61	.71	-2.22	5.86
Relational aggression intervention	369	1-5	3.91	1.15	-.94	.17
Relational aggression intervention[a]	369	-1.90-1.11	.00	1.00	-.20	-1.24
Years teaching	366	0-45	17.04	9.89	.22	-.76
Teacher training	368	0-5	2.70	1.37	-.42	-.26
Education level	361	1-4	2.20	.43	1.21	1.02
Extraversion	368	1-7	5.16	1.40	-.60	-.32
Emotional Stability	368	2.56-7	5.82	1.08	-.85	-.10
Openness	368	3.20-7	5.99	.91	-.81	-.11
Agreeableness	364	3.44-7	6.09	.88	-.81	-.22
Conscientiousness	362	3.88-7	6.34	.80	-1.34	1.01

[a] Tendency to intervene for relational aggression measure after log transformation

of skew (Tabachnick & Fidell, 2007). Accordingly, a log transformation was performed on the measure of tendency to intervene for relational aggression. After this transformation was completed, the skewness of the distribution of scores for the tendency to intervene for relational aggression measure appeared to be more normal.

In terms of the measure of tendency to intervene for physical aggression, a closer examination of ECEs' scores revealed that of the total sample, only .8% (n = 3) rated a scale score of "1" (i.e., "least likely to intervene"), only .8% (n = 3) rated a score of "2", 5.95% (n = 22) rated a score of "3", 21.08% (n = 78) rated a score of "4", and over 71% (n = 264) rated a score of "5" (i.e., "most likely to intervene"). Thus, over 92% of the sample reported that they would be "more likely" or "most likely" (i.e., scale score of 4 or 5) to intervene. As such, all further analyses compared the ECEs who were "more likely" to intervene versus their "less likely" to intervene counterparts.

ECE education. Approximately 78% of the sample reported that their highest degree was an ECE diploma whereas 20% reported holding a university degree. A chi-square test of independence was performed to examine the relation between ECEs' education level (ECE diploma, University degree) and level of efficacy for classroom management. Results indicated that there was no significant relation between ECEs' level of education and level of efficacy, $\chi^2 = (1, N = 355) = .85$, *ns*.

A second chi-square test was performed to examine the relation between ECEs' education level and ECEs' tendency to intervene for physical aggression. Results indicated that there was no significant relation between ECEs' level of education and their tendency to intervene for physical aggression, $\chi^2 = (1, N = 361) = 3.47$, *ns*.

Finally, a MANOVA examined differences in ECEs' education level (ECE diplomas vs. University degrees) and tendencies to intervene for rough-and-tumble play and relational aggression. Results indicated that there was no significant multivariate main effect of education level, $F(2, 352) = .82$, *ns*, partial $\eta^2 = .01$.

Validation of efficacy groups. The goal of these analyses was to provide evidence of the construct validity of the measure of efficacy for classroom management in an ECE sample. A MANOVA examined differences between ECEs' teacher efficacy groups in terms of context-specific feelings of preparedness to deal with rough-and-tumble play and relational aggression. Results indicated a significant multivariate main effect of Efficacy Group, $F(2, 362) = 21.46$, $p = .000$, partial $\eta^2 = .11$. Results from follow up ANOVAs indicated a significant effect of Efficacy Group for both *preparedness to deal with rough-and-tumble play*, $F(1, 363) = 27.13$, $p = .000$, partial $\eta^2 = .07$ and *preparedness to deal with relational aggression* $F(1, 363) = 41.38$, $p = .000$, partial $\eta^2 = .10$. Efficacy group means for teachers' feelings of preparedness to deal with rough-and-tumble play and relational aggression are displayed in Table 3. High/normative efficacy ECEs reported greater feelings of preparedness to deal with rough-and-tumble play and relational aggression as compared to lower efficacy ECEs.

Associations between teacher characteristics. Correlations between early childhood educators' demographic characteristics and personality traits are displayed in Table 4. Results from correlational analyses revealed that ECE experience was significantly and positively related to ECE training in classroom management.

Table 3.

Means (Standard Deviations) for ECE Feelings of Preparedness of Efficacy Groups

Child Behaviour Problems	Efficacy Group	
	High/Normative (n = 305)	Lower (n = 60)
Rough-and-tumble play	4.75_a (.52)	4.32_b (.33)
Relational Aggression	4.76_a (.52)	4.23_b (.81)

- means in the same row with different subscripts differ significantly at the .001 level

Table 4.

Correlations between ECE Demographics and Personality Traits

ECE Characteristics	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1)Years Teaching		.30**	.02	.11*	.06	.18**	-.03
(2) Training			.06	.05	.17**	-.04	-.06
(3) Extraversion				.11*	.38**	-.03	.09
(4) Emotional Stability					.29**	.25**	.17**
(5) Openness to Experience						.05	.25
(6) Agreeableness							.13*
(7) Conscientiousness							

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

In addition, there were a number of significant associations between ECEs' personality traits (see Table 4). Among the results, ECEs' extraversion was significantly and positively associated with emotional stability and openness to experience. Emotional stability was significantly and positively related to openness to experience, agreeableness, and conscientiousness. Also, agreeableness was significantly and positively related to conscientiousness.

Moreover, as indicated in Table 4, there were significant associations between ECEs' demographic characteristics and personality traits. Namely, ECEs' experience was significantly and positively associated with emotional stability and agreeableness. In addition, ECEs' training in classroom management was significantly and positively associated with openness to experience.

Main Analyses

Overview. The first main objective of the current study was to examine the predictive roles of early childhood educators' demographic characteristics and personality traits in ECEs' teacher efficacy for classroom management. Accordingly, a MANOVA was conducted comparing high/normative efficacy ECEs with lower efficacy ECEs in terms of their demographic characteristics (i.e., years of teaching, specific training in classroom management). A second MANOVA was performed to determine whether high/normative efficacy and lower efficacy ECEs differed in terms of personality traits (i.e., extraversion, neuroticism, openness to experience, agreeableness, conscientiousness).

The second main objective was to investigate the role of early childhood educators' teacher efficacy as a possible *mediator* of the links between ECEs'

characteristics (demographics, personality) and the tendency to intervene in response to child misbehaviours in the classroom. First, correlations were computed between ECEs' characteristics and ECEs' tendencies to intervene for rough-and-tumble play and relational aggression. Next, a series of MANOVAs were conducted to determine whether ECEs' characteristics differed among ECE groups pertaining to tendencies to intervene for physical aggression. Independent samples *t*-tests compared whether ECEs' tendencies to intervene for rough-and-tumble play and relational aggression differed when boys versus girls were depicted in the scenarios. Similarly, a chi-square test of independence examined the relation between ECEs' tendency to intervene for physical aggression and sex of the child depicted in the scenario. Another MANOVA was then conducted to test whether ECEs' tendencies to intervene for rough-and-tumble play and relational aggression differed for high/normative efficacy ECEs and lower efficacy ECEs. Further, a chi-square test of independence examined the relation between ECEs' teacher efficacy and tendency to intervene for physical aggression. Finally, to test the mediating role of ECEs' teacher efficacy on the links between ECEs' characteristics and ECEs' tendencies to intervene (for rough-and-tumble play, relational aggression and physical aggression), a series of hierarchical regression was performed.

ECE Characteristics as Predictors of ECEs' Teacher Efficacy for Classroom Management

Demographics. The first MANOVA examined differences in ECEs' teacher efficacy and years of experience and specific training in classroom management. Results indicated a significant multivariate main effect of Efficacy Group $F(2, 362) = 5.85$, $p = .003$, partial $\eta^2 = .03$. Results from follow up ANOVAs indicated a significant effect of

Efficacy Group for both *years of experience* $F(1, 363) = 6.86$, p = .009, partial $\eta^2 = .02$ and *specific training in classroom management* $F(1. 363) = 8.16$, p = .005, partial $\eta^2 = .02$. Efficacy group means for ECEs' years of experience and training in classroom management are displayed in Table 5. High/normative efficacy ECEs reported greater years of experience and more specific training in classroom management as compared to lower efficacy ECEs.

Personality traits. A MANOVA examined differences in ECEs' teacher efficacy and personality traits, while controlling for ECEs' experience and ECEs' training in classroom management. Results indicated a marginally-significant multivariate main effect of Efficacy Group $F(5, 338) = 2.04$, $p < .10$, partial $\eta^2 = .03$. Results from follow up ANOVAs indicated a significant effect of Efficacy Group for both *extraversion* $F(1, 342) = 3.95$, $p = .048$, partial $\eta^2 = .01$ and *emotional stability* $F(1, 342) = 6.70$, $p = .010$, partial $\eta^2 = .02$. Efficacy group means for ECE personality traits are displayed in Table 6. High/normative efficacy ECEs reported higher levels of extraversion (i.e., lower introversion) and emotional stability (i.e., lower neuroticism) as compared to lower efficacy ECEs.

Predictors of ECEs' Tendencies to Intervene for Child Misbehaviours

Sex of child. An independent samples *t*-test was conducted to compare whether ECEs' tendency to intervene for rough-and-tumble play differed for boys and girls. Results indicated that ECEs were more likely to intervene for boys ($M = 3.26$, $SD = 1.29$) as compared to girls in the rough-and-tumble play scenarios ($M = 2.81$, $SD = 1.35$), $t(368) = 3.32$, $p = .001$.

Table 5.

Means (Standard Deviations) for ECE Demographics of Efficacy Groups

Demographic Characteristics	Efficacy Group	
	High/Normative (n = 304)	Lower (n = 61)
Years of Experience	17.68_a (9.99)	14.08_b (8.74)
Training in Classroom Management	2.80_a (1.33)	2.26_b (1.46)

- means in the same row with different subscripts differ significantly at the .01 level

Table 6.

Means (Standard Deviations) for Big Five Personality Traits of Efficacy Groups

	Efficacy Group	
	High/Normative (n = 285)	Lower (n = 61)
Extraversion	5.22_a (1.42)	4.79_b (1.34)
Emotional Stability	5.90_a (1.05)	5.48_b (1.06)
Openness to Experiences	6.04 (.89)	5.75 (.92)
Agreeableness	6.13 (.89)	5.98 (.81)
Conscientiousness	6.36 (.80)	6.30 (.81)

- means in the same row with different subscripts differ significantly at the .05 level

A second independent *t*-test was performed to investigate whether ECEs' tendency to intervene for relational aggression differed for boys and girls. No significant difference was found between ECEs' tendency to intervene for boys (M = -.04, SD = 1.01) and girls (M = .04, SD = .99) in the relationally aggressive scenarios $t(367) = -.78$, *ns*.

Further, a chi-square test of independence examined the relation between ECEs' tendency to intervene for physical aggression and sex of the child. Results indicated that there was no significant relation between ECEs' tendency to intervene for physical aggression and sex of the child depicted in the physically aggressive scenario, $\chi^2 = (4, N = 370) = 4.89$, *ns*.

Demographic characteristics. Correlations between early childhood educators' demographic characteristics and ECEs' tendencies to intervene for rough-and-tumble play and relational aggression are displayed in Table 7. Results revealed that ECEs' tendency to intervene for relational aggression was significantly and positively related to both ECEs' experience and specific training in classroom management. The associations between ECEs' demographic characteristics and ECEs' tendency to intervene for rough-and-tumble play were not statistically significant.

A MANOVA was then conducted to examine differences in early childhood educators' demographic characteristics among groups of ECEs who differed in their tendency to intervene for physical aggression. Results indicated a significant multivariate main effect of Intervene Group, $F(2, 362) = 3.82$, p = .023, partial $\eta^2 = .02$. Results from follow up ANOVAs indicated a significant effect of *specific training in classroom management*, $F(1, 363) = 6.92$, p = .009, partial $\eta^2 = .02$.

Table 7.

Correlations between ECE Characteristics and Tendency to Intervene

ECE Characteristics	Child Behaviour Problems	
	Rough-and-Tumble Play	Relational Aggression
Years of Teaching	.02	.12*
Training in classroom management	-.02	.11*
Extraversion	.02	-.01
Emotional Stability	-.02	-.03
Openness to Experiences	.04	.03
Agreeableness	.00	.01
Conscientiousness	-.03	.01

*$p<.05$

Intervene group means for years of experience and specific training in classroom management are displayed in Table 8. Early childhood educators who were more likely to intervene for physical aggression reported greater specific training in classroom management.

Personality traits. Further correlational analyses between ECEs' personality traits and ECEs' tendencies to intervene for rough-and-tumble play and relational aggression are also displayed in Table 7. Results indicated that neither ECE extraversion, emotional stability, openness to experience, agreeableness, and conscientiousness were associated with ECEs' tendencies to intervene for rough-and-tumble play and relational aggression.

A MANOVA examined ECEs' tendency to intervene for physical aggression and ECEs' personality traits, while controlling for specific training in classroom management. Results indicated no significant multivariate main effect of Intervene Group, $F(5, 342) = .96$, *ns*, partial $\eta^2 = .01$.

Efficacy for classroom management. A MANOVA examined differences in ECEs' teacher efficacy for classroom management and ECEs' tendencies to intervene for rough-and-tumble play and relational aggression while controlling for teacher experience and teacher training in classroom management. Results indicated a marginally-significant multivariate main effect of Efficacy Group $F(2, 359) = 2.90, p < .10$, partial $\eta^2 = .02$. Results from follow up ANOVAs indicated a significant effect of Efficacy Group for ECEs' *tendency to intervene for relational aggression* $F(1, 360) = 4.73, p = .030$, partial $\eta^2 = .01$. Efficacy group means for ECEs' tendencies to intervene for rough-and-tumble play and relational aggression are presented in Table 9. High/normative efficacy

Table 8.

Means (standard deviations) for ECE Demographics of Intervene Groups

ECE Demographics	Intervene Group (Physical Aggression)	
	High (n = 338)	Low (n = 27)
Years Experience	16.85 (9.91)	19.96 (9.13)
Training in Classroom Management	2.66_a (1.36)	3.37_b (1.15)

- means in the same row with different subscripts differ significantly at the .01 level

Table 9.

Means (Standard Deviations) for ECE Tendency to Intervene of Efficacy Groups

Child Behaviour Problems	Efficacy Group	
	High/Normative (n = 304)	Lower (n = 60)
Rough-and-tumble Play	3.07 (1.37)	2.80 (1.16)
Relational Aggression	$.03_{a}$ (.10)	$-.19_{b}$ (1.00)

- means in the same row with different subscripts differ significantly at the .05 level

ECEs were more likely to intervene for relational aggression as compared to lower efficacy ECEs.

A chi-square test of independence examined the relation between ECEs' teacher efficacy for classroom management and ECEs' tendency to intervene for physical aggression. Results indicated that there was no significant relation between ECEs' teacher efficacy for classroom management and ECEs' tendency to intervene for physical aggression, $\chi^2 = (4, N = 369) = 7.51$, *ns*.

Mediating Role of ECEs' Teacher Efficacy for Classroom Management

According to Baron and Kenny (1986), in order to test for a mediation effect, significant associations between the predictors, outcomes, and mediating variable must first be demonstrated. Then, if these conditions are met the relation between the predictor and outcome variables is computed while controlling for the mediating variable. As indicated in Table 5, ECE experience and teacher training in classroom management both significantly predicted ECEs' teacher efficacy. Also, as indicated in Table 7, ECE experience and ECE training in classroom management were significantly and positively related to ECEs' tendency to intervene for relational aggression. However, there were no significant associations between ECEs' demographic characteristics and ECEs' tendency to intervene for rough-and-tumble play. Results from univariate analyses displayed in Table 8 indicated that ECE training in classroom management was related to ECEs' tendency to intervene for physical aggression. Moreover, as indicated in Table 7, ECEs' personality traits were not significantly related to ECEs' tendencies to intervene for rough-and-tumble play and relational aggression. Also, results from a MANOVA indicated that ECEs' personality traits were not related to ECEs' tendency to intervene

for physical aggression. Further, results from univariate analyses displayed in Table 9 indicated that ECEs' teacher efficacy for classroom management was related to ECEs' tendency to intervene for relational aggression. Results from a chi-square test of independence indicated no significant relation between ECEs' teacher efficacy and ECEs' tendency to intervene for physical aggression.

Thus, only one set of variables met the criteria to assess possible mediation effects. Accordingly, the mediating role of ECEs' teacher efficacy in the link between ECEs' demographic characteristics and ECEs' tendency to intervene for relational aggression was explored using hierarchical regression analyses. Early childhood educators' teacher efficacy for classroom management was entered in Step 1, followed by ECE experience and ECE training in classroom management in Step 2. The results of this regression are displayed in Table 10. At Step 1, ECEs' teacher efficacy for classroom management was not a significant predictor of ECEs' tendency to intervene for relational aggression. At Step 2 (i.e., while controlling for ECEs' teacher efficacy for classroom management) ECE demographic characteristics (as a block) remained a significant predictor of ECEs' tendency to intervene for relational aggression (with teacher training retaining its significant association with tendency to intervene). Thus, there was no statistical evidence to suggest that ECEs' teacher efficacy mediated the link between ECEs' demographic characteristics and ECEs' tendency to intervene.

Interestingly, as indicated in Table 10, the standardized coefficient for ECEs' teacher efficacy for classroom management became a significant predictor of ECEs' tendency to intervene for relational aggression once ECEs' demographic variables were added to the regression equation at Step 2. This finding indicated the presence of

suppression effects. A suppressor variable refers to a "variable that increases the predictive validity of another variable by its inclusion in a regression equation" (Conger, 1974, pp. 36-37). In other words, there was some error variance in the efficacy variable that was not correlated with ECEs' tendency to intervene, but was correlated with ECEs' demographic characteristics. By including ECEs' demographic characteristics, the error variance in the efficacy variable was suppressed, thereby leaving ECEs' teacher efficacy as an improved predictor of ECEs' tendency to intervene for physical aggression.

Table 10.

Hierarchical Regression Analyses Predicting ECE Tendency to Intervene for Relational Aggression

Variables Entered	R^2	F	ΔR^2	ΔF	SE	β
Step 1	.01	2.51				
Efficacy					.14	.08
Step 2	.04	4.32**	.03	5.20**		
Efficacy					.14	.12*
Years Teaching					.01	.11
Training in Classroom Management					.04	.11*

* p<.05 ** p<.01

Discussion

The goal of the current study was to explore the antecedents and outcomes of teacher efficacy for classroom management among a sample of early childhood educators. There has been a plethora of previous research related to efficacy for classroom management among elementary school teachers. Among this research, there have been a few studies where researchers have focused on elementary school teacher characteristics that might predict teacher efficacy, including demographics and personality traits (e.g., Henson & Chambers, 2002; Tschannen-Moran & Woolfolk Hoy, 2007). However, there has been virtually no previous research related to the teacher efficacy of early childhood educators. Thus, the present study examined the predictive roles of early childhood teachers' demographic characteristics and personality traits on teacher efficacy for classroom management. Further, the possible mediating role of early childhood educators' teacher efficacy for classroom management in the links between ECEs' characteristics and ECEs' likelihood to intervene in response to child misbehaviours was explored. The types of child misbehaviours studied included physical aggression, relational aggression, and rough-and-tumble play. Also, early childhood teachers' tendency to intervene as a function of the sex of the child depicted in each of the scenarios was explored.

Overall, it was predicted that both ECEs' demographic characteristics (e.g., teaching experience, education level, specific training in classroom management) and personality characteristics (e.g., extraversion, neuroticism, agreeableness, conscientiousness, openness to experience) would be related to ECEs' teacher efficacy for classroom management. It was also hypothesized that ECEs' demographic and

personality characteristics would both predict ECEs' likelihood to intervene in response to child misbehaviours (e.g., rough-play, aggression). Finally, it was speculated that ECEs' teacher efficacy for classroom management would mediate the *relations* between ECEs' characteristics (i.e., demographics, personality traits) and ECEs' likelihood to intervene in response to child misbehaviours.

Overall, the findings from the current study provided mixed support for these hypotheses. For example, results indicated that whereas ECE education level did not predict teacher efficacy for classroom management, ECEs in the high/normative efficacy group had greater teaching experience and more direct training in classroom management than their lower efficacy group counterparts. Moreover, early childhood educators with high levels of extraversion and low levels of neuroticism (high emotional stability) were in the high/normative efficacy group. Early childhood educators' agreeableness, openness to experience, and conscientiousness did not predict ECEs' teacher efficacy for classroom management.

In addition, whereas ECE education level did not predict ECEs' tendencies to intervene, training in classroom management predicted ECEs' likelihood to intervene in the physical and relational aggression vignettes. As well, ECEs with more teaching experience reported that they would be more likely to intervene in response to relational aggression. However, ECEs' experience and specific training in classroom management did not predict ECEs' tendency to intervene for rough-and-tumble play.

Personality traits were not directly related to ECEs' tendencies to intervene. Early childhood educator in the high/normative efficacy group reported that they would be more likely to intervene in response to relational aggression as compared to ECEs in the

lower efficacy group. However, ECEs' teacher efficacy was not related to ECEs' tendencies to intervene for rough-and-tumble play and physical aggression. Moreover, ECEs' teacher efficacy did not mediate the relation between ECEs' demographics (years experience, specific training in classroom management) and ECEs' tendency to intervene for relational aggression. Instead, ECE demographic characteristics were found to suppress the effect of ECEs' teacher efficacy for classroom management on their tendency to intervene.

Finally, some interesting sex differences also emerged. For example, ECEs reported that they would be more likely to intervene in response to rough-and-tumble play when it was displayed by boys as compared to girls. However, early childhood teachers' tendencies to intervene for relational aggression and physical aggression did not differ for boys and girls.

In the following sections, each of these results is discussed in turn. To begin with, the validity of assessing teacher efficacy for classroom management using the *efficacy for classroom management* subscale of the *Teachers' Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) in a sample of early childhood educators is discussed. Next, results pertaining to the predictors of ECEs' teacher efficacy are discussed, followed by the predictors of ECEs' tendencies to intervene in response to child misbehaviours. Finally, the lack of empirical support is considered for the proposed mediation effects in the conceptual model linking ECEs' teacher efficacy, ECEs' characteristics, and ECEs' tendency to intervene (see Figure 1).

Assessing Teacher Efficacy among Early Childhood Educators

Over the past three decades, research pertaining to teacher efficacy has been plagued with conceptual and methodological difficulties (see Klassen, Tze, Betts, & Gordon, 2011, for a review). Not surprisingly, the conceptual confusion around the concept of teacher efficacy has made measuring it quite problematic (Tschannen-Moran & Woolfolk Hoy, 2001). For example, as previously discussed, there is a lack of clarity about whether general teacher efficacy accurately reflects Bandura's (1986) notion of outcome expectation (Coladarci & Fink, 1995; Guskey & Passaro, 1994; Tschannen-Moran et al., 1998; Tschannen-Moran & Woolfolk Hoy, 2001). In addition, although researchers have agreed that teacher efficacy is task and situation specific, it is still unclear what the optimal level of specificity is for measuring teacher efficacy (Henson, 2002; Tschannen-Moran et al., 1998; Tschannen-Moran & Woolfolk Hoy, 2001). For example, is efficacy specific to teaching physical education or more specific to teaching basketball?

In the current study, teacher efficacy was defined as a teacher's judgement of his or her capabilities to effectively orchestrate and carry out the necessary courses of action to successfully complete a given task in a particular context (Tschannen-Moran et al., 1998). Early childhood educators' teacher efficacy for classroom management was assessed using the *teacher efficacy for classroom management* subscale of the *Teachers' Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001). Because this scale was designed with the intention of assessing teacher efficacy at the elementary school level (Tschannen-Moran & Woolfolk Hoy, 2001), the current study adapted the *efficacy for classroom management* subscale in order to assess teacher efficacy among early

childhood educators. Notwithstanding, the current study demonstrated a unified factor structure and high internal consistency that were comparable to the findings by Tschannen-Moran and Woolfolk Hoy (2001) in their original development of the subscale.

Results from the current study revealed that the majority of early childhood educators reported quite high levels of efficacy about their capabilities to manage child misbehaviours. In fact, many ECEs reported the maximum score on this 8-item subscale. Interestingly, the comparatively high mean score on this scale found in the current study was quite similar to the mean score reported in the single previous study on early childhood educators' teacher efficacy utilizing the Teachers' Sense of Efficacy Scale (Brown, 2005). However, the mean score found in the current study was substantially higher than those reported in previous research based on elementary school teachers (e.g., Tschannen-Moran & Woolfolk Hoy, 2001).

There are several possible explanations for this finding. To begin with, it is possible that ECEs simply have higher efficacy for classroom management than elementary school teachers. This could be attributed to the specific type of education that early childhood educators receive. In most provinces of Canada, individuals must possess a background in early childhood education to be qualified to work in a child-care setting (Human Resources Department Canada, 2001). The certificate in early childhood education may prepare prospective teachers with specific knowledge about young children's misbehaviours and the skills to manage them. In addition, ECEs may have higher efficacy for classroom management because they received specialized training focused on classroom management for young children. Moreover, it is possible that in

general, most ECEs feel a high sense of teacher efficacy because they are not faced with opportunities that challenge their capabilities when working with preschool-aged children. As such, their level of efficacy may not be shaken if they are always able to succeed at every opportunity when managing children's behaviours.

In addition, the work setting of preschools and child-care centers are quite different from elementary schools. Early childhood educators tend to work with smaller groups of children alongside other ECEs within the same classroom (Holloway & Reichhart-Erickson, 1988; McCartney et al., 1997). When difficulties arise when dealing with a child's misbehaviour, ECEs are able to seek advice from other ECEs who are working in the same classroom in a readily fashion. Elementary school teachers on the other hand, are not provided with quick support and encouragement to deal with classroom management issues as they tend to work alone. Therefore, it is possible that these differences in context may explain why early childhood educators reported higher teacher efficacy for classroom management.

Alternatively, the higher mean efficacy score among ECEs may be explained by these participants being more likely to respond in socially desirable ways as compared to elementary school teachers. Also, it is possible that ECEs simply overestimated their efficacy for classroom management. If early childhood teachers overestimated their efficacy, future research could assess ECEs' actual intervening behaviour to determine if there are any discrepancies between their efficacy beliefs and actions. Notwithstanding the skewed distribution of ECEs' teacher efficacy scores, the subscale evidenced some construct validity as it was positively related to context specific feelings of preparedness by teachers to deal with rough-and-tumble play and relational aggression.

Overall, the *teacher efficacy for classroom management* subscale demonstrated strong psychometric properties to assess early childhood teacher efficacy for classroom management. The findings indicate that the majority of participants reported high/normative efficacy for classroom management which supports previous research on early childhood educators (Brown, 2005). However, in light of teacher efficacy being a task and situation specific construct, it may be that a new measure that focuses specifically on the tasks of early childhood educators should be developed. In addition, future research should examine the characteristics that make teacher efficacy different in ECEs versus elementary school teachers. It is possible that the sources of efficacy function differently at the ECE level compared to higher academic levels. For example, early childhood teacher efficacy gained through vicarious experiences may be different because their education and training are honed in on preschool-aged children's learning, development, and behaviours.

Predictors of ECEs' Teacher Efficacy

One of the central aims of the current study was to explore the predictors of ECEs' teacher efficacy for managing difficult child behaviours in the classroom. Early childhood educators' demographic and personality characteristics were both examined.

Demographic characteristics. To begin with, in terms of demographic characteristics, results indicated that ECE education level was not a significant predictor of teacher efficacy for classroom management. This is in contrast to previous research with elementary school teachers indicating that teachers with higher education levels tend to report greater teacher efficacy (e.g., Hoover-Dempsey et al., 1987; Hoy & Woolfolk, 1993; Rubeck & Enochs, 1991).

A likely explanation for the lack of significant education effects in the current sample was the lack of variability. Not surprisingly, a very large majority of ECEs reported that an Early Childhood Education diploma was their highest degree. In contrast, previous research that has examined the relation between teacher education and teacher efficacy has focused on elementary school teachers, whose education levels may be more likely to vary (Hoover-Dempsey et al., 1987; Hoy & Woolfolk, 1993; Rubeck & Enochs, 1991). For example, some elementary school teachers hold a Bachelor of Education degree while others have graduate degrees.

Early childhood educators with greater teacher experience were reported by teachers in the high/normative efficacy group. This finding supports previous research with early childhood educators (Kotaman, 2010; Kim & Kim, 2010) as well as elementary school teachers (Akbari & Moradkhani, 2010; Klassen & Chiu, 2010; Wolters & Daughterty, 2007). Teachers with less experience tend to generate and enhance their efficacy beliefs mainly through vicarious experiences and verbal persuasion (Chan, 2008; Tschannen-Moran & Woolfolk Hoy, 2007), both of which tend to be weaker sources of efficacy (Bandura, 1997). A different process appears to take place among teachers who have been in the profession longer, who instead can actively use their skills to manage student behaviours on a daily basis and subsequently enhance their teacher efficacy through mastery experiences (Chan, 2008; Tschannen-Moran & Woolfolk Hoy, 2007). Also, the actual "hands on" experience in dealing with managing child misbehaviours that come with more years of teaching makes teacher efficacy more stable and resistant to change (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2001; Wolters & Daughtery, 2007).

The finding that ECEs who received more specific training in classroom management tended to report higher levels of efficacy than their less-trained counterparts was also consistent with previous research linking teacher training and teacher efficacy (Buell et al., 1999; Egyed & Short, 2006; Villa et al., 1996). This supports the notion that ECEs who received the most amount of additional specific training were indeed learning about child misbehaviours and how to deal with them. The knowledge and skills gained through this training appears to make ECEs feel more prepared, which in turn may help boost their confidence in their abilities (Housego, 1990). In addition, it is possible that ECEs with more training may experience less negative physiological and affective responses such as anxiety, stress, and burnout when confronted with the challenging classroom behaviours. This may occur because early childhood educators believe they possess the knowledge and skills to deal with the behaviour. In turn, ECEs' teacher efficacy for classroom management remains high and does not diminish.

Also, by participating in more training activities, ECEs may learn how to handle disruptive behaviours in the child-care centres by modelling the behaviours of their mentors. In turn, this vicarious learning experience may increase their efficacy in classroom management (Bandura, 1997; Tschannen-Moran et al., 1998). Moreover, it may be possible that teachers receive more feedback, support, and encouragement in the training exercises which may also increase their efficacy for classroom management (Bandura, 1997; Tschannen-Moran et al., 1998).

Although the current study suggested that greater training in classroom management relates to greater ECEs' teacher efficacy, it was not possible to examine effects related to the specific types of training received (e.g., course/university courses vs.

workshop etc). This was because teachers who received training from one source (e.g., on-the-job) also typically received training from another source (e.g., workshop). Accordingly, analyses were centred around the total amount of training received. Future research could examine whether ECEs' teacher efficacy differs based on the way in which training was received. For example, is ECEs' teacher efficacy enhanced when training is received on-the-job as it is more practical in nature versus training received through a college/university course that may be more theoretical in nature?

Taken together, these findings suggest that greater years of teaching experience and specific training in classroom management are associated with higher levels of teacher efficacy for classroom management among early childhood educators. This has important implications because it suggests that ECEs displaying lower efficacy can be encouraged by the notion that they will feel more confident in time (i.e., when they have more experience). Also, as ECEs receive more training in classroom management, their knowledge and skills to deal with difficult child behaviours may increase, which in turn may also increase their confidence in their abilities for classroom management.

Personality characteristics. Another set of predictors of early childhood teacher efficacy for classroom management that were examined in this study were teacher personality traits. This study was the first to explore relations between personality traits and efficacy among early childhood educators.

Results indicated that ECE extraversion was positively related to ECEs' teacher efficacy for classroom management, even after controlling for the effects of teaching experience and previous training. Similar findings were previously reported with elementary school teachers (Henson & Chambers, 2002; Roberts et al., 2007). For

example, Henson and Chambers (2002) examined the relation between teacher personality traits and personal teaching efficacy. Results indicated that teachers who were extraverted reported higher personal teaching efficacy as compared to introverted teachers.

Extraverted teachers tend to approach and engage in more activities as compared to their introverted peers (Reeve, 2009) which in turn, may provide additional opportunities to gain more experiences and enhance competencies. Therefore, this mechanism may account for the link between extraversion and efficacy. Moreover, because extraverted teachers are more sociable and assertive (McCrae & Costa, 2003), they may be more likely to discuss with other teachers about how to manage child misbehaviours. In turn, through vicarious experiences as well as verbal persuasion, their efficacy for classroom management may be developed and increase.

Neuroticism (i.e., lower emotional stability) was also found to be associated with lower ECEs' teacher efficacy. This was a unique finding in the literature on teacher personality and teacher efficacy. Since emotionally stable individuals tend to be more calm and level-headed than their more neurotic counterparts, (e.g., McCrae & Costa, 1992), highly neurotic teachers may be more frustrated, stressed, and likely to experience symptoms of burnout (Kokkinos, 2007; Maslach et al., 2001; Zellers et al., 2000) when confronted with the challenge of dealing with classroom misbehaviours. In turn, this would serve to lower feelings of efficacy.

In the current study, early childhood educators' conscientiousness was predicted to influence ECEs' teacher efficacy for classroom management because individuals high on conscientiousness tend to exude competence when they complete a task (McCrae &

Costa, 2003). In addition, research has shown that conscientious people tend to handle stressful situations better because they engage in more problem focused coping strategies (Bartley & Roesch, 2011; Watson & Hubbard, 1996). Moreover, conscientious people tend to experience less burnout (Kokkinos, 2007; Kokkinos & Davazoglou, 2005; Mills & Huebner, 1998; Zellers et al., 2000). As such, it was expected that conscientious teachers would feel more confident in their abilities to handle disruptive classroom behaviours because they are able to handle the stress involved. However, results from the current study did not reveal a significant relation between ECEs' conscientiousness and ECEs' teacher efficacy. This was in contrast to previous research that judging (a conceptually related trait from the *Myers-Briggs Type Inventory*, Myers & McCaulley, 1985) was related to higher levels of teaching efficacy (Roberts et al., 2007). It could be speculated that conscientiousness may not play a particularly important role in influencing teacher efficacy because the job requirements of an ECE are relatively simple. In other words, an early childhood educator who is low on conscientiousness may still feel confident in their abilities to handle disruptive behaviours in a similar fashion to an ECE who is high on conscientiousness because they perceive dealing with misbehaviours in preschoolers as easy. Future research is needed to further explore the relation between early childhood educators' conscientiousness and ECEs' teacher efficacy for classroom management.

Moreover, from a conceptual standpoint, it was predicted that early childhood educators' openness to experience would be positively related to ECEs' teacher efficacy for classroom management because individuals high on this trait tend to explore new things (McCrae & Costa, 2003). As such, it was believed that ECEs high on openness to

experience would engage in more opportunities to learn about children's behaviours and ways to manage them which in turn, would increase their efficacy. In addition, similar to individuals high on conscientiousness, those high on openness to experience tend to use more problem focused coping strategies when dealing with problems (Strutton et al., 1995) and experience less burnout (Kokkinos, 2007). Contrary to the hypothesis, openness to experience was not related to ECEs' teacher efficacy possibly because preschool and child-care centres may not allow ECEs to be very creative and imaginative when interacting with children. Instead, early childhood educators may need to follow the guidelines and policies about managing children's disruptive behaviours that are outlined by the centers. As such, there may be no opportunities for ECEs characterized by openness to experience to construct and enhance their efficacy for classroom management.

Further, it was predicted that early childhood educators' agreeableness would be positively related to ECEs' teacher efficacy for classroom management. Individuals high on agreeableness are more caring and nurturing (Barrick & Mount, 1991). As well, they are better able to cope with stressors and experience less burnout (Kokkinos, 2007; Zellers et al., 2000). However, results from the current study revealed that ECEs' agreeableness did not predict ECEs' teacher efficacy for classroom management. It may be that agreeableness is not a particularly influential trait on ECEs' perceptions of their capabilities to deal with misbehaviours. As such, an early childhood educator who is caring and nurturing towards children may feel just as confident in their classroom management skills as compared to another ECE who is lower on compassion. Future

research is needed to further explore any possible relation between ECE agreeableness and ECEs' teacher efficacy.

In sum, the findings from the current study indicated that ECE extraversion was positively associated with ECEs' teacher efficacy for classroom management. Novel to the teacher personality and efficacy literature was the finding that early childhood educators in the lower efficacy group reported high neuroticism. Unlike previous research on elementary school teachers, no relation was found between ECE conscientiousness and ECEs' teacher efficacy. This could be due to the different personality measure that was used. Early childhood educators' personality was assessed in the current study using the *Ten Item Personality Inventory* (Gosling et al., 2003) which is based on the Five Factor Model. However, Roberts and colleagues (2007) used the *Myers Briggs Type Inventory* (Myers & McCaulley, 1985) which is based on Jung's (1921/1971) theory of psychological types. Moreover, early childhood educators' agreeableness and openness to experience were not related to ECEs' teacher efficacy for classroom management. Future research is needed to further explore the personality traits of ECEs and how it relates to ECEs' teacher efficacy for classroom management.

Predictors of ECEs' Tendencies to Intervene

Overall, ECEs reported that they would be more likely to intervene in the rough-and-tumble play scenario when this behaviour was displayed by hypothetical boys as compared to girls. However, no differences in tendency to intervene were found as a function of child sex in the physically aggressive or relationally aggressive scenario. There is some research to suggest that boys engage in more rough-and-tumble play as compared to girls (Boulton, 1996; DiPietro, 1981; Humphreys & Smith, 1987; Maccoby

& Jacklin, 1987; Pellegrini, 1989; Pellegrini & Smith 1998). In this regard, ECEs might have been expected to intervene more in the case of rough-play when displayed by girls because this would have also represented a gender-norm non-congruent behaviour.

Notwithstanding, ECEs may have been particularly concerned that if they did not intervene to stop rough-and-tumble play in boys that it would escalate to physical aggression. There is evidence to suggest that children who engage in rough-and-tumble play are characterized by others as aggressive (Humphreys & Smith, 1987; Pellegrini, 1993, 1995), and preschool-aged boys tend to display more physical aggression as compared to girls (Crick et al., 2006).

On the other hand, ECEs' tendencies to intervene for physical aggression and relational aggression did not differ for boys and girls. This may suggest that the training ECEs receive underscore the importance of dealing with more maladaptive behaviours such as aggression. As such, the training may be less focused on how to manage rough-play. It could also be speculated that teachers are following the mandates set by child-care centers about intervening to stop any physical interactions where children may be hurt.

Early childhood educators with greater teaching experience and specific training in classroom management reported that they would be more likely to intervene in response to instances of relational aggression. Moreover, ECEs in the high/normative efficacy group were more likely to report that they would intervene to stop relational aggression. Relational aggression in the preschool may be hard to detect (Magdol et al., 1997; Rivers & Smith, 1994). ECEs with more professional experience and more specific training may be more skilled at identifying relational aggression and be more aware of

the potential negative outcomes associated with this form of aggression. Because relational aggression involves harming others in a covert manner (e.g., teasing, rumour spreading, e.g., Crick et al., 2006), greater experience and training in classroom management would aid teachers on picking up instances of relational aggression. In turn, increase experience and specific training in classroom management would increase ECEs' teacher efficacy for dealing with relational aggression.

As well, although most early childhood educators were very likely to intervene with regard to instances of physical aggression, the small group of ECEs who were less likely to do so reported less training in classroom management. Most ECEs appeared to be following the policies dictated by the preschools and child-care centers that forbid injurious physical interactions between children. In terms of the ECEs who were less likely to intervene, it could be speculated that these ECEs may be more stressed and burned out than ECEs who were more likely to intervene. Indeed, past research has indicated that teachers who feel more stressed and burned out perform at a lower quality and are less involved with their students (Rudow, 1999). Therefore, it makes sense intuitively that ECEs who are more burnout would be less likely to seek training to improve their classroom management skills.

Moreover, early childhood educators' experience was not related to ECEs' tendency to intervene for physical aggression. This may be the case because all ECEs are required by the preschools and child-care centers to intervene in response to inappropriate physical contact between children.

Contrary to predictions, early childhood educators' demographic characteristics did not predict ECEs' tendency to intervene for rough-and-tumble play. Early childhood

educators may be following the policies of the preschools and child-care centers that any physical behaviour between children that may lead to harm should be stopped. Moreover, the training in classroom management may be focused on more negative and problematic child behaviours such as physical aggression (Goldstein, 1995) and relational aggression. As such, ECEs may not be getting sufficient information about how to deal with a behaviour type that is playful, but also involves physical contact. Indeed, Tannock (2008) found that early childhood educators were unsure about how to deal specifically with rough-and-tumble play. Moreover, some early childhood educators were unable to differentiate between rough-and-tumble play and physical aggression (Tannock, 2008).

Finally, teacher education level did not predict ECEs' tendencies to intervene in any of the vignettes. As discussed previously, the majority of ECEs reported holding the Early Childhood Education diploma as their highest degree. As such, there was not sufficient variability in ECEs' education level to predict ECEs' behaviours.

Also contrary to predictions, no links were found between ECEs' personality traits and their tendencies to intervene for child misbehaviours. It is worth reiterating that early childhood educators' personality traits were related to their efficacy beliefs. As such, it may be possible that ECEs' experience and training in classroom management are playing a more influential role on their responses to intervene as compared to their personality traits. In essence, ECEs may be relying on the knowledge they gained through years of teaching experience and training in classroom management about children's misbehaviours, how to detect it, and whether they should intervene or not.

In addition, the lack of relation between early childhood educators' personality and ECE intervention may suggest that ECEs are compelled to follow through with the guidelines of the preschools and child-care center about intervening to stop child misbehaviours.

Further, early childhood educators' teacher efficacy did not predict ECEs' tendencies to intervene for physical aggression and rough-and-tumble play possibly because ECEs are following the policies outlined by the preschools and child-care centers to stop physical behaviours that could lead to injury. Also, because physical aggression and rough-and-tumble play are easily observable ECEs' teacher efficacy beliefs may not play as important of a role in influencing ECEs' decision to intervene.

Taken together, these findings indicate that there are many factors that influence early childhood educators' decisions to intervene in response to disruptive classroom behaviours. Interestingly, ECEs' tendency to intervene was influenced by child sex only for rough-and-tumble play. Future research is needed to further explore the types of child misbehaviours that ECEs learn about during their training in classroom management. Also, ECEs with more training in classroom management were more likely to intervene for physical and relational aggression. This suggests that the training is in fact providing teachers with the knowledge and skills to deal with these types of misbehaviours. As well, greater teaching experience was associated with a greater likelihood to intervene for relational aggression. This suggests that with time, teachers develop the "eye" for detecting the presence of this covert form of aggression. Moreover, early childhood educators' personality traits did not influence ECEs' tendencies to intervene. It may be that a more comprehensive measure of ECEs' personality traits is needed rather than a scale based on 10 items. Further, ECEs' teacher efficacy was positively related to ECEs'

tendency to intervene for relational aggression possibly because of greater experience and specific training in classroom management. Future research is needed to further explore the role of ECEs' teacher efficacy for classroom management and ECEs intervention responses.

Mediating Role of ECEs' Teacher Efficacy

There has been consistent empirical support for the notion that perceived self-efficacy represents one of the underlying causal mechanisms that connects other predictors of behaviours (such as experience, training, and abilities) to performance (e.g., Bouffard-Bouchard, 1990; Pajares & Johnson, 1996; Pajares & Miller, 1994; Schunk & Henson, 1985). As such, it was hypothesized that ECEs' teacher efficacy for classroom management would mediate the relation between ECEs' characteristics (demographics, personality) and ECEs' tendencies to intervene to child misbehaviours. Because early childhood educators' personality traits did not predict ECEs' tendencies to intervene for child misbehaviours, it was not possible to assess the mediating role of ECEs' teacher efficacy in this case.

Moreover, results from follow up analyses indicated that ECEs' teacher efficacy for classroom management did *not* mediate the relation between demographic characteristics and tendencies to intervene for relational aggression. Thus, both ECEs' teacher efficacy for classroom management and ECEs' demographic characteristics independently and uniquely predicted ECEs' tendency to intervene for relational aggression. Moreover, even while controlling for ECEs' teacher efficacy, specific training in classroom management still continued to predict ECEs' behavioural intervention in response to relational aggression. This suggests that the training ECEs

receive may be very rigorous and able to over-ride the effect of teacher efficacy when it comes to intervening for relational aggression. In addition, the training ECEs receive may place a lot of attention on identifying and managing relationally aggressive behaviours. Future research is needed to further explore the mediating role of teacher efficacy for classroom management in early childhood educators.

Limitations and Future Directions

The current study provided much needed insights into the personality and demographic characteristics that may influence teacher efficacy for classroom management among early childhood educators. In addition, the current study contributed to the study of ECEs' teacher efficacy and ECEs' likelihood of intervening in response to classroom misbehaviours. Notwithstanding, there are some limitations that should be considered in the interpretation of the results.

First, the mean score of early childhood teacher efficacy for classroom management was very high, with the majority of participants rating the maximum possible score on this subscale. To our knowledge, this is only the second study to assess ECE efficacy for classroom management using the efficacy for classroom management subscale of the Teachers' Sense of Efficacy Scale (Brown, 2005). Although this scale showed good psychometric properties and some evidence of validity, it remains to be seen if it can be used effectively as a measure of efficacy in ECEs. Further investigation is needed to determine if a new measure specific to early childhood educators needs to be developed that takes into account the tasks of working as an ECE at preschools and child-care centers.

Secondly, although the current study identified predictors of ECEs' teacher efficacy as well ECEs' intervening behaviour towards child misbehaviours, the effect sizes were small. This may indicate that there are other factors involved that influence teachers' confidence in their abilities to manage the classroom as well as their behaviours. For example, it may be that ECEs causal attributions of children's misbehaviours influence their efficacy for classroom management, which in turn affects whether they choose to intervene. Future research is needed to further explore other possible factors that play a role in ECEs' efficacy beliefs as well as their responses toward child misbehaviours.

In addition, it was not feasible to use qualitative assessments and interviews to better understand the antecedents and consequences of ECEs' teacher efficacy for classroom management. An internet-based study was used to target many preschools and child-care centers across Canada at once in a time efficient manner. The questionnaires that participants completed were already long and it would have been time-consuming for participants to answer any open-ended questions. Also, qualitative data would require the researchers to code all the data which would also be time-consuming. Future research would benefit from these other methodologies because it provides a richer, more in-depth understanding of the antecedents and consequences of teacher efficacy. For example, participants could explain what aspects of training in classroom management are helpful for increasing ECEs' teacher efficacy beliefs.

Another drawback of this study was that it was based on cross-sectional data with regard to teacher experience. A longitudinal study of early childhood educators' teacher efficacy would shed more light on the development and stability of ECEs' teacher

efficacy at different career stages (e.g., prospective, novice, early, mid, and late-career). For example, it may be that ECEs' teacher efficacy increases during the pre-service to novice and early career stages because of greater opportunities for mastery experiences, vicarious learning from the mentors and peers, and verbal persuasion. Also, because teachers who are in the profession longer tend to experience burnout (Kokkinos, 2007), and burnout is related to efficacy (Skaalvik & Skaalvik, 2007), it may be possible that the most senior early childhood educators may experience a decrease in their efficacy.

The current study also lacked observational data. Although the focus of the current study was on early childhood educators' teacher efficacy beliefs, observations of their classroom behaviours would also be helpful because participants' actual behaviours may not accurately reflect their answers on the questionnaire. Moreover, Bandura (1986) had noted that it is not uncommon for individuals to underestimate and overestimate their efficacy beliefs. Currently, there are some studies that compare observers' performance ratings of teachers to their self-reported data (Riggs, 1995; Saklofske et al., 1988; Trentham, Silvern, & Brogdon, 1985). A study using observations of ECEs' behaviours would be ideal to detect any discrepancies between ECEs' teachers' efficacy for classroom management and their tendencies to intervene to stop child misbehaviours.

Moreover, the current study examined factors that predict early childhood educators' likelihood to intervene in response to child misbehaviours. The study found that ECEs' teacher efficacy for classroom management was positively related to ECEs' tendencies to intervene in response to relational aggression. Future research could examine the relation between ECEs' teacher efficacy and specific intervention techniques that early childhood educators would use to deal with child misbehaviours. For example,

Melby (1995) examined the relation between elementary school teacher efficacy for classroom management and their intervention strategies toward children they identified as hyperactive, aggressive, and a composite of hyperactive and aggressive behaviours. Results indicated that in contrast to high efficacy teachers, low efficacy teachers were significantly more likely to report utilizing negative consequences and severe punishments when responding to student misbehaviours.

Further, no differences were found between early childhood educators' personality traits and their tendencies to intervene for child misbehaviours. Future research may need to question whether ECEs' personality traits influence specific intervention strategies. In addition, future research could explore the relation between ECEs' personality traits and other types of child misbehaviours such as talkativeness.

Moreover, future research could study the relation between ECEs' personality traits and ECE intervention using a more comprehensive measure of personality rather than a scale that was based on 10 items. In a similar vein, a different theoretical approach to personality may be more influential. Although most of the research in personality psychology has adopted the FFM as the framework for studying personality, the Myers Briggs Type Inventory (MBTI; Myers & McCaulley, 1985) which is based on Jung's (1921/1971) theory of psychological types (Myers & McCaulley, 1985) is typically used to study teacher personality traits and teacher efficacy (Decker & Rimm-Kaufman, 2008).

A further limitation in the current study was that differences in early childhood educators' sex could not be examined due to the small number of male ECEs who completed the online survey. However, the fact is that ECEs of preschools and child-care centers are typically females. Future research could examine whether ECEs' teacher

efficacy for classroom management differs for male and female early childhood educators. In addition, future research could examine if there are differences in male and female ECEs' tendencies to intervene in response to child misbehaviours. Connor (1989) reported that females tend to perceive rough-and-tumble play as aggression whereas males are more likely to view it as playful behaviour. As such, it may be that female ECEs would be more likely to intervene in response to rough-and-tumble play as compared to male ECEs.

Further, other factors exist that could influence ECEs' teacher efficacy for classroom management that were not examined in the current study. According to social-cognitive theory (Bandura, 1986, 1993, 1997), personal, behavioural, and environmental factors all interact to influence one another through the process of reciprocal determinism. As such, it is important to examine the reciprocal relationships between the preschool and child-care centers (environment) and early childhood educators' teacher efficacy beliefs (personal). The current study did not examine the relation between ECEs' teacher efficacy for classroom management and the child-teacher ratio of the preschools and child-care centers. In a study on South-Korean early childhood educators, Kim and Kim (2010) found that larger child-teacher ratio was associated with lower teacher efficacy. Future research could examine whether the child-teacher ratio of the preschools and child-care centers influences ECEs' teacher efficacy in the domain of classroom management. As well, it would be of interest to determine whether the child-teacher ratio influences ECEs' tendencies to intervene in response to child misbehaviours.

Moreover, early childhood educators' teacher efficacy may be influenced by the efficacy generally shared by other ECEs and the directors of the preschools and child-

care centers. Research has suggested that schools in which teachers work together to find ways to deal with student behaviour problems are likely to increase the efficacy of individual teaches (Tschannen-Moran & Woolfolk Hoy, 1998). As such, future research could examine the influence of the preschool and child-care centers' collective efficacy for classroom management.

Conclusion and Implications

The results in the present study indicated that early childhood educators' teacher efficacy for classroom management was predicted by both ECEs' demographic characteristics and personality traits, and was also associated with ECEs' tendency to act to stop a specific child misbehaviour. Overall, ECEs with greater teaching experience and more specific training in classroom management tended to report higher efficacy for classroom management. These findings are important because they help identify the factors that support the development of a strong sense of efficacy. This is particularly useful for early childhood educators entering the workplace with little to no teaching experience and fewer training in classroom management. The findings suggest that over time, ECEs' sense of efficacy would increase the longer they stay in the profession. In addition, directors of preschools and child-care centers could encourage their staff members to receive more training in classroom management as greater training increases ECEs' teacher efficacy.

In addition, ECEs with personalities characterized by higher extraversion and lower neuroticism also tended to report higher levels of efficacy. Although it is unethical and impractical to screen the personality traits of prospective and in-service early childhood teachers, it may still be helpful for ECEs to be aware of these associations. For

example, high levels of neuroticism are related to stress and burnout (Kokkinos, 2007; Schaufeli & Enzmann, 1998), and burnout in turn is associated with decreased teacher efficacy (Skaalvik & Skaalvik, 2007). As such, early childhood educators who are high neuroticism could take steps to deal with frustration and stress in order to maintain a high sense of teacher efficacy.

It was also found that early childhood educators' characteristics, efficacy beliefs, and sex of the child depicted in the scenarios influenced ECEs' tendencies to intervene in response to child misbehaviours. Specifically, ECEs were more likely to intervene in response to boys who engaged in rough-and-tumble play as compared to girls. However, ECEs' tendencies to intervene in physical aggression and relational aggression were not influenced by the sex of the child in the respective scenarios. This has important implications because it suggests that when it comes to rough-and-tumble play, early childhood educators' behaviours appear to be being swayed by the sex of the misbehaving child. Thus, early childhood education programs and other avenues for teacher training in classroom management should emphasize teacher interventions irrespective of the child's sex. This finding may also indicate early childhood educators' concern that rough-and-tumble play in boys would eventually escalate to physical aggression, which is also more prevalent among boys as compared to girls (e.g., Ostrov et al., 2004). Why teachers' tendency to intervene for physical aggression is not different for boys and girls, even though physical aggression is more common in boys, might be due to policies in place by preschools and child-care centers to stop all physical contact that causes injury.

The current study also showed that ECEs with greater experience and training in classroom management were more likely to intervene to stop relational aggression while the latter was associated with a greater tendency to intervene for physical aggression. Together, these findings are important because they demonstrate the benefits of receiving added training. Interestingly, teacher experience and training in classroom management did not predict ECEs' tendency to intervene for rough-and-tumble play. This suggests that early childhood educators need more information about this type of behaviour and what to do when it occurs. Early childhood education programs should teach prospective teachers about common preschool behaviours and ways to deal with it, rather than focus mainly on the most severe types of behaviours such as aggression.

Finally, the current study showed that early childhood educators' teacher efficacy for classroom management was associated with teachers' tendency to act by directly intervening in response to relational aggression, but not physical aggression and rough-and-tumble play. Together, these results suggest that ECEs are more confident in their capabilities to deal with an aggressive behaviour that is generally more covert in nature. It may not appear that ECEs' teacher efficacy is a driving force behind teachers' intervening behaviours for physical aggression and rough-and-tumble play because most preschools and child-care centers prohibit physical interactions between children that could result in injury. Future research is needed to further explore ECEs' teacher efficacy for classroom management and different types of child behaviours.

In summary, the current study identified possible antecedents and outcomes of early childhood educators' teacher efficacy for classroom management in an understudied sample. The results indicated that ECEs' teacher efficacy is an important construct even

at the preschool level as it influences teacher behaviours. In addition, this study was instrumental in identifying specific characteristics that predict high efficacy ECEs. Future research is needed to further explore the area of teacher efficacy in classroom management in early childhood educators.

References

Akbari, R., & Moradkhani, S. (2010). Iranian english teachers' self-efficacy: Do academic degree and education make a difference? *Pazhuhesh-e Zabanha-ye Khareji, 56*, 25-47.

Alexander, C., & Becker, H. (1978). The use of vignettes in survey research. *Public Opinion Quarterly, 42*, 93-104.

Alvarez, H. K. (2007). The impact of teacher preparation on responses to student aggression in the classroom. *Teaching and Teacher Education, 23*, 1113-1126.

Anderson, R., Greene, M., & Loewen, P. (1988). Relationships among teachers' and students' thinking skills, sense of efficacy, and student achievement. *Alberta Journal of Educational Research, 34*, 148-165.

Arnett, J.L. (1989). Caregivers in day care centers: Does training matter? *Journal of Applied Developmental Psychology*, 10, 541-552.

Ashton, P. T., & Webb, R. B. (1982, March). *Teachers' sense of efficacy: Toward an ecological model.* Paper presented at the annual meeting of the American Educational Research Association, New York.

Ashton, P. T., & Webb, R. B. (1986). *Making a difference: Teachers' sense of efficacy and student achievement.* New York: Longman.

Bandura, A. (1977). Self efficacy: Toward the unifying theory of behavioral change. *Psychological Review, 84*, 191-215.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122-147.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.*

Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44*, 1175-1184.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*, 117-148.

Bandura, A. (1994). Social cognitive theory and exercise of control over HIV infection. In R. J. DiClemente and J. L. Peterson (Eds.), *Preventing AIDS: Theories and methods of behavioral interventions* (pp. 25-59). New York: Plumen.

Bandura, A. (1997). *Self efficacy: The exercise of control.* New York: Freeman.

Bandura, A., Adams, N. E., & Beyer, J. (1977). Cognitive processes mediating behavioral change. *Journal of Personality and Social Psychology, 35*, 125-139.

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41*, 586-598.

Bandura, A., & Cervone, D. (1986). Differential engagement of self-reactive influences in cognitive motivation. *Organizational Behavior and Human Decision Processes, 38*, 92-113.

Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1-26.

Barter, C., & Renold, S. (1999). The use of vignettes in qualitative research. *Social Research Update, 25*. Retrieved from http://www.soc.surrey.ac.uk/sru/SRU25.html

Bartley C.E., & Roesch S.C. (2011). Coping with daily stress: The role of

conscientiousness. Personality and Individual Differences, 50, 79–83.

Bauman, S., & Del Rio, A., (2006). Preservice teachers' responses to bullying scenarios: comparing physical, verbal, and relational bullying. *A Journal of Educational Psychology, 98,* 219-231.

Betz, N. E., & Hackett, G. (1986). Applications of self-efficacy theory to understanding career choice behavior. *Journal of Counselling Psychology, 34*, 299-308.

Birch, S. H., & Ladd, G. W. (1997). The teacher-child relationship and children's early school adjustment. *Journal of School Psychology, 35*, 61-79.

Birch, S. H., & Ladd, G. W. (1998). Children's interpersonal behaviours and the teacher-child relationship. *Developmental Psychology, 34*, 934-946.

Blase, J. J. (1982). 'A social-psychological grounded theory of teacher stress and burnout.' *Education Administration Quarterly, 18*, 93-113.

Bloom, J. W. *(*1992*).* Contexts of meaning and conceptual integration: How children understand and learn. In R. A.Duschl & R. J.Hamilton (Eds.), *Philosophy of science, cognitive psychology, and educational theory and practice* (pp. *177–194*). New York: State University of New York Press.

Blurton Jones, N. (Ed.). (1972). Ethological studies of child behavior (pp. 97-129). London: Cambridge University Press.

Boulton, M. J. (1996). A comparison of 8– and 11–year-old girls' and boys' participation in specific types of rough-and-tumble play and aggressive fighting: Implications for functional hypotheses. *Aggressive Behaviour, 22*, 271–287.

Bouffard-Bouchard, 1990, T. (1990). Influence of self-efficacy on performance in a cognitive task. *The Journal of Social Psychology, 130*, 353-363.

Bouffard-Bouchard, T., Parent, S., Larivee, S. (1991). Influence of self-efficacy on self-regulation and performance among junior and senior high school age students. *International Journal of Behavioral Development, 14*, 153-164.

Bouwers, A., & Tomic, W. (1999). Teacher burnout, perceived self-efficacy in classroom management, and student disruptive behaviour in secondary education. *Curriculum and Teaching, 14*, 7-26.

Boyle, G. J. (1995). Myers-Briggs Type Indicator (MBTI): Some psychometric limitations. *Humanities and Social Sciences Paper, 26*, 1-8.

Brophy, J., & McCaslin, M. (1992). Teachers' reports about how they perceive and cope with problem students. *The Elementary School Journal, 93*, 3-68.

Brophy, J., & Rohrkemper, M. (1981). The influence of problem ownership on teachers' perceptions of and strategies for coping with problem students', *Journal of Educational Psychology,* 73, 295–311.

Brown, I. Jr., & Inouye, D. K. (1978). Learned helplessness through modelling: The role of perceived similarity in competence. *Journal of Personality and Social Psychology, 36*, 900-908.

Buell, M. J., Hallam, R., Gamel-McCormick, M., & Scheer, S. (1999). A survey of general and special education teachers' perceptions and inservice needs concerning inclusion. *International Journal of Disability, Development, and Education, 46*, 143-156.

Burke R. J., Greenglass E. R. (1995). A longitudinal study of psychological burnout in teachers. *Human Relations, 48*, 187-98.

Burke R. J., Greenglass E. R. (1996). Predicting teacher burnout over time: Effects of

work stress, social support, and self-doubts on burnout and its consequences. *Human Relations, 48*, 187-98.

Burley, W. W., Hall, B. W., Villeme, M. G., & Brockmeier, L. L. (1991, April). A path analysis of the mediating role of efficacy in first-year teachers' experiences, reactions, and plans. *Paper presented at the annual meeting of the American Educational Research Association,* Chicago.

Byrne, B. M. (1991). 'Burnout: Investigating the impact of background variables for elementary, intermediate, secondary, and university educators.' *Teachers and Teaching EFducation, 7*, 197-209.

Campbell, S. B. *(2002).* Behavior problems in preschool children. New York*: Guilford Press.*

Cannon, J. (1992). *Influence of cooperative early field experience on preservice elementary teachers' science self-efficacy.* Unpublished doctoral dissertation, Kansas State University, Manhattan, Kansas. UM9235617.

Cano-García, F.J., Padilla-Muñoz, E.M., & Carrasco-Ortiz, M.A. (2005). Personality and contextual variables in teacher burnout. *Personality and Individual Differences, 38*, 929-940

Chan, D. W. (2008). General, collective, and domain-specific teacher self-efficacy among Chinese prospective and in-service teachers in Hong Kong. *Teaching and Teacher Education, 24*, 1057-1069.

Coladarci, T., & Fink, D. R. (1995, April). Correlations among measures of teacher efficacy: Are they measuring the same thing? *Paper presented at the annual meeting of the American Educational Research Association,* San Francisco.

Collins, J. L. (1982, March). *Self-efficacy and ability in achievement behavior. Paper presented at the annual meeting of the American Educational Research Association,* New York.

Conger, A. J. (1974). A revised definition for suppressor variables: A guide to their identification and interpretation. *Educational Psychological Measurement, 34,* 35–46.

Connor, K. (1989). Aggression: Is it in the eye of the beholder? *Play and Culture, 2*, 213-217.

Costa, P. T., Jr., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology, 38*, 668-678.

Costa, P. T., Jr., & McCrae, R. R. (1992). Trait psychology comes of age. In T. B. Sonderegger (Ed,), *Nebraska symposium on motivation: Psychology and aging* (pp. 169-204). Lincoln: University of Nebraska Press.

Costa, P. T., Jr., & McCrae, R. R. (1995). Solid ground in the wetlands of personality: A reply to Block. *Psychological Bulletin, 117*, 216-220.

Cote, S. M., Vaillancourt, T., Barker, E. D., Nagin, D., & Tremblay, R. E. (2007). The joint development of physical and indirect aggression: Predictors of continuity and change during childhood. *Development and Psychopathology, 19*, 37-55.

Crick, N. R., Casas, J. F., & Ku, H-C. (1998). Relational and physical forms of peer victimization in preschool. *Developmental Psychology, 35*, 376-385.

Crick, N. R., Casas, J. F., & Mosher, M. (1997). Relational and overt aggression in preschool. *Developmental Psychology, 33*(4), 579-588.

Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development, 66*(3), 710-722.

Crick, N. R., Ostrov, J. M., Burr, E. J., Cullerton-Sen, C., Jansen-Yeh, E., & Ralston, P. (2006). A longitudinal study of relational and physical aggression in preschool. *Applied Developmental Psychology, 27*, 254-268.

de la Torre Cruz, M. J., & Casanova Arias, P. F (2007). Comparative analysis of expectancies of efficacy in in-service and prospective teachers. *Teaching and Teacher Education, 23*, 641-652.

Decker L. E., Rimm-Kaufman, S.,E., (2008). Personality Characteristics and Teacher Beliefs among Pre-Service Teachers. *Teacher Education Quarterly, 35, 45-64.*

Dellinger, A. B., Bobbett, J. J., Olivier, D. F., & Chad, D. E. (2008). Measuring teachers' self-efficacy beliefs: Development and use of the TEBS-Self. *Teaching and Teacher Education, 24*, 751-766.

Denham, C. H., & Michael, J. J. (1981). Teacher sense of efficacy: A definition of the construct and a model for further research. *Educational Research, 5*, 39-63.

DiPietro, J. A. (1981). Rough-and-tumbleplay: A function of gender. *Development Psychology, 17*, 50–58.

Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology, 41*, 417-440.

Digman, J. M., & Inouye, J. (1986). Further speculation of the five robust factors of personality. *Journal of Personality and Social Psychology, 50*, 116-123.

Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini IPIP

scales: Tiny yet effective measures of the Big Five factors of personality. *Psychological Assessment, 18*, 192–203.

Doyle, W. (1986). Classroom organization and management. In M. Wittrock, *Handbook of research in teaching.* (3rd ed.) (pp. 392-431). New York: Macmillan/

Eastburg, M. C., Williamson, M., Gorsuch, R. and Ridley, C. (1994), Social Support, Personality, and Burnout in Nurses. *Journal of Applied Social Psychology, 24*, 1233– 1250

Egyed, C. J., & Short, R. J. (2006). Teacher self-efficacy, burnout, experience, and decision to refer a disruptive student. *School Psychology International, 27*, 462-474.

Ehrhart, M. G., Ehrhart, K. H., Roesch, S. C., Chung-Herrera, B. G., Nadler, K., & Bradshaw, K. (2009). Testing the latent factor structure and construct validity of the Ten-Item Personality Inventory. *Personality and Individual Differences, 47*, 900-905.

Evans, E., & Tribble, M. (1986). Perceived teaching problems, self efficacy and commitment to teaching among preservice teachers. *Journal of Educational Research, 80*, 81–85.

Fairhurst, A. M., & Fairhurst, L. L. (1995). *Effective teaching, effective learning : making the personality connection in your classroom* (1st ed.). Palo Alto, Davies-Black Publication.

Finch, J. (1987). The vignette technique in survey research. *Sociology, 21*, 105-114.

Fives, H. (2003, April). What is teacher efficacy and how does it relate to teachers'

knowledge? A theoretical review. *A paper presented at the American Educational ResearchAssociation Annual Conference,* Chicago.

Fives, H., Hamman, D., & Olivarez, A. (2007). Does burnout begin with student teaching? Analyzing efficacy, burnout, and support during the student-teaching semester. *Teaching and Teacher Education, 23*, 916-923.

Fontana, D., Abouserie, R. (1993) Stress levels, gender and personality factors in teachers British *Journal of Educational Psychology, 63*, 261–270.

Furnham, A. (1996). The big five versus the big four: The relationship between the Myers-Briggs Type Indicator (MBTI) and NEO-PI five factor model of personality. *Personality and Individual Differences, 21*, 303-307.

Furnham, A. (2008). Relationship among four Big Five measures of different length. *Psychological Reports, 102*, 312–316.

Furnham, A. Moutafi, J., & Crump, J. (2003). Demographic and personality predictors of intelligence: a study using the Neo Personality Inventory and the Myers–Briggs Type Indicator. *European Journal of Personality, 17*, 79–94.

Gavrilidou, M., Mesquita, P., & Mason, E. (1993). Greek teachers' judgements about the nature and severity of classroom problems. *School Psychology International,14*, 169–80.

Gorrell, J., & Huang, Y. S. (1995). A Study of Efficacy Beliefs among Preservice Teachers in Korea. *Journal of Research and Development in Education, 28*, 101-105.

Giallo, R., & Little, E. (2003). Classroom behaviour problems: The relationship between preparedness, classroom experiences, and self-efficacy in graduate and student

teachers. *Australian Journal of Educational & Developmental Psychology, 3*, 21-34.

Gibson, S., & Dembo, M. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*, 569-682.

Glickman, C., D & Tamashiro, R. T. (1980). Clarifying teachers' beliefs about discipline. *Educational Leadership, 37*, 459-464.

Guskey , T., & Passaro, P. (1994). Teacher efficacy: A study of construct dimensions. *American Educational Research Journal, 31*, 627-643.

Gutkin,T., & Ajchenbaum, M. (1984). Teachers' perceptions of control and preferences for consultative services, *Professional Psychology: Research and Practice,15*, 565–70.

Guo, Y., Piasta, S. B., Justice, L. M., & Kaderavek, J. N. (2010). Relations among preschool teachers' self-efficacy, classroom quality, and children's language and literacy gains. *Teaching and Teacher Education, 26*, 1094-1103.

Hackett, G. (1985). The role of mathematics self-efficacy in the choice of math-related majors of college women and men: A path analysis. *Journal of Counselling Psychology, 32*, 47-56.

Hartup, W. W. (1983). Peer relations. In P. H. Mussen (Ed.), *Handbook of child psychology: Vol. 4. Socialization, personality, and social development* (pp. 103–196). New York: Wiley.

Henson, R. K. (2002). From adolescent angst to adulthood: Substantive implications and measurement dilemmas in the development of teacher efficacy research. *Educational Psychologist, 37*, 137-150.

Henson, R. K., & Chambers, S. M. (2002, February). Personality type as a predictor of teaching efficacy and classroom control beliefs in emergency certification teachers. *Paper presented at the annual meeting of the Southwest Educational Research Association,* Austin.

Henson, R. K., Kogan, L. R., & Vacha-Haase, T. (2001). A reliability generalization study of the teacher efficacy scale and related instruments. *Educational and Psychological Measurement, 61*, 404–420.

Hicks, L. E. (1984). Conceptual and empirical analysis of some assumptions of an explicit typological theory. *Journal of Personality and Social Psychology, 46*. 1118-1131.

Hirsh S., & Kummerow J. (1997). Life types: Understanding yourself and make the most of who you are…, Warner Books, New York.

Holloway, S. D., & Reichhart-Erickson, M. (1988). The relationship of day care quality to children's free-play behavior and social problem-solving skills. Early Childhood Research Quarterly, 3, 39-53.

Hoover-Dempsey, K., Bassler, O., & Brissie, J. (1987). Parent involvement: Contributions of teacher efficacy, school socioeconomic status, and other school characteristics. *American Educational Research Journal, 24*, 417-435.

Houlihan, M., Fraser, I., Fenwick, K., Fish, T., & Moeller, C. (2009). Personality effects on teaching anxiety and teaching strategies in university professors. *Canadian Journal of Higher Education, 39*, 61-72.

Housego, B. E. J. (1990). Student teachers' feelings of preparedness to teach. *Canadian Journal of Education, 15*, 37-56.

Hoy, W. K., & Woolfolk, A. E. (1990). Socialization of student teachers. *American Educational Research Journal, 27*, 279-300.

Hoy, W. K., & Woolfolk, A. E. (1993). Teachers' sense of efficacy and the organizational health of the schools. *The Elementary School Journal, 93*, 356-372.

HRDC. (2001). "Human Resource Profile Child Care Industry. Retrieved from http://www.hrdcdrhc.gc.ca/hrib/hrpprh/ssddes/english/industryprofiles/ChildCare/hrprofile.shtml/#300.

Hughes, J. N. Barker, D., Kemenoff, S. & Hart, M. (1993). Problem ownership, causal attributions, and self-efficacy as predictors of teachers' referral decisions. *Journal of Educational and Psychological Consultation, 4*, 369-384.

Humphreys, A. P., & Smith, P. K. (1987). Rough-and-tumble play in preschool and playground. In P. K. Smith (Ed.), *Play in animals and humans* (pp. 241-270). Oxford: Blackwell.

Iverson, R. D., Olekalns, M., Erwin, P. J. (1998). Affectivity, organizational stressors, and absenteeism: A causal model of burnout and its consequences. *Journal of Vocational Behavior, 52*, 1–23.

Jensen-Campbell, L. A., & Graziano, W. G. (2001). Agreeableness as a Moderator of Interpersonal Conflict. *Journal of Personality, 69*, 323–362.

John, O. P. (1990). The "Big Five" factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L.Pervin (Ed.), *Handbook of personality theory and research.* 66–100

John, O. P., & Srivastava, S. (1999). The big-five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & Oliver P John (Eds.), *Handbook of*

personality: Theory and research (2nd ed., pp. 102-139). New York: Guilford Press.

Jung, C. G. (1971). *Psychological Types* (H. G. Baynes, Trans., revised by R. F. C. Hull). Princeton: Princeton University Press. (Original work published 1921)

Goldstein, J. (1995). Aggressive toy play. In A. D. Pellegrini (Ed.), *The future of play theory* (pp. 127-147). New York: New York University Press.

Goldstein, N. E., Arnold, D. H., Rosenberg, J. L., Stowe, R. M., & Ortiz, C. (2001). Contagion of aggression in day care classrooms as a function of peer and teacher responses. *Journal of Educational Psychology, 93*, 708-719.

Gould D. (1996) Using vignettes to collect data for nursing research studies: how valid are the findings? *Journal of Clinical Nursing, 5*, 207-212.

Kaplan M., & Conn J, (1984). The effects of caregiver training on classroom setting and caregiver performance in eight community day care centers. *Child Study Journal, 14*, 79–93.

Klassen, R. M., Tze, V. M. C., Betts, S. M., & Gordon, K. A. (2011). Teacher efficacy research 1998-2009: Signs of progress or unfulfilled promise? *Educational Psychology Review, 23*, 21-43.

Keirsey, D., & Bates, M. (1984). *Please understand me: Character & temperament types.* Del Mar, CA: Prometheus Nemesis Book Company.

Kim, Y. H., & Kim, Y. E. (2010). Korean early childhood educators' multi-dimensional teacher self-efficacy and ECE center climate and depression severity in teachers as contributing factors. *Teaching and Teacher Education, 26*, 1117-1123.

Klassen, R. M., Bong, M., Usher, E. L., Chong, W. H., Huan, V. S., Wong, I. Y. F., &

Georgiou. (2009). Exploring the validity of a teachers' self-efficacy scale in five countries. *Contemporary Educational Psychology, 34*, 67-76.

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*, 741-756.

Kokkinos, C. M. (2007). Job stressors, personality and burnout in primary school teachers. *British Journal of Educational Psychology, 77*, 229–243.

Kokkinos, C. M., Panayiotou, G., & Davazoglou, A. M. (2005). Correlates of teacher appraisals of student behaviors. *Psychology in the Schools*, *42*, 79-88.

Kotaman, H. (2010). Turkish early childhood educators' sense of teacher efficacy. *Electronic Journal of Research in Educational Psychology, 8*, 603-616.

Langford, P. H. (2003). A one-minute measure of the Big Five? Evaluating and abridging Shafer's (1999a) Big Five markers. *Personality and Individual Differences*, *35*, 1127-1140.

Labone, E. (2004). Teacher efficacy: Maturing the construct through research in alternative paradigms. *Teaching and Teacher Education, 20*, 341-359.

Lanza, M. L,. & Carifo, J. (1992) Use of a panel of experts to establish validity for patient assault vignettes. *Evaluation Review, 17*, 82-92.

Larsen, R. J., & Buss, D. M. (2008). *Personality psychology: Domains of knowledge about human nature*. (3rd ed.). New York: McGraw-Hill.

Lazarus, R. S., and Launier, R. (1978). Stress-related transactions between person and environment. In Pervin, L. A. and Lewis, M. (Eds.), *Perspectives in International Psychology* New York: Plenum Press, pp. 287-327.

Leiter, M. P. & Maslach, C. (1988). The impact of interpersonal environment on burnout and organizational commitment. *Journal of Organizational Behavior*. 9, 297–308.

Lent, R. W., Brown, S. D., & Larkin, K. C. (1984). Relation of self-efficacy expectations to academic achievement and persistence. *Journal of Counselling Psychology, 31*, 356-362.

LePine, J. A., & Dyne, V. L. Voice and cooperative behaviour as contrasting forms of contextual performance: Evidence of differential relationships with big five personality characteristics and cognitive ability. *Journal of Applied Psychology, 86* , 326-336.

Liaw, E-C. (2009). Teacher efficacy of per-service teachers in Taiwan: The influence of classroom teaching and group discussions. *Teaching and Teacher Education, 25*, 176-180.

Lucas, R. E., & Fujita, F. (2000). Factors influencing the relation between extraversion and pleasant affect. *Journal of Personality and Social Psychology, 79*, 1039-1056.

Maccoby, E. E., Jacklin, C. P. N. (1987). Gender segregation in childhood. In: H. W. Reese (Ed.), *Advances in child development and behavior*. (pp. 239–287) (Vol. 20). San Diego, CA. Academic Press.

Macdaid, G., McCaulley, M., & Kainz, R., (1986). Myers–Briggs type indicator: atlas of type tables. *Center for Applications of Psychological Type, Gainesville, FL.*

Maddux, J. E. (1999). The collective construction of collective efficacy: Comment on

Paskevich, Brawley, Dorsch, and Widmeyer (1999). *Group dynamics: Theory, research, and application, 3*, 1-4.

Magdol, L., Moffitt, T. E., Caspi, A., Newman, D.L., Fagan, J., Silva, P.A. (1997). Gender differences in partner violence in a birth cohort of 21-year-olds: bridging the gap between clinical and epidemiological approaches. *Journal of Consulting and Clinical Psychology, 65*, 68–78.

Marsh, C. (1982) *The Survey Method.* London: Allen and Unwin.

Martin, A. J., Linfoot, K., & Stephenson, J. (1999). How teachers respond to concerns about misbehaviors in their classroom. *Psychology in the schools, 36*, 347-358.

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behaviour, 2*, 99-113.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory manual* (3rd ed.). Palo Alto, CA: Consulting Psychologist Press.

Maslach, C., Schaufeli, W.B., & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*. 52, 397–422.

McCartney, K., Scarr, S., Rocheleau, A., Phillips, D., Abbott-Shim, M., Eisenberg, M., et al., (1997). Teacher-child interaction and child-care auspices as predictors of social outcomes in infants, toddlers, and preschoolers. Merrill-Palmer Quarterly, 43, 426-450.

McCrae, R. R., & Costa, P. T. Jr. (1989). The structure of interpersonal traits: Wiggin's circumplex and the five-factor model. *Journal of Personality and Social Psychology, 56*, 586-595.

McCrae, R.R., & Costa, P.T. Jr. (1997). Personality Trait Structure as a Human

Universal. *American Psychologist, 5*, 509-516.

McCrae, R.R., & Costa, P.T. Jr. (2003). Personality in adulthood: a five-factor theory perspective. The *Guilford Press.*

McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, *60*, 175-215.

McDonald, D. A., Anderson, P. E., & Tsagarakis, C. I. & Holland, J. H. (1994). Examination of the relationship between the Myers-Briggs Type Indicator and the NEO Personality Inventory. *Psychological Reports, 70*, 339-344.

McEvoy, M. A., Estrem, T. L., Rodriquez, M. C., & Olsen, M. L. (2003). Assessing relational physical aggression among preschool children: Intermethod agreement. *Topics in Early Childhood Special Education, 23*, 51-61.

McLaughlin, M. W., & Marsh, D. D. (1978). Staff development and school change. *Teachers College Record, 80*, 70-94.

Meijer, C., & Foster, S. (1988). The effect of teacher self-efficacy on referral chance. *Journal of Special Education, 22*, 378-385.

Melby, G. L. (2001). High teacher efficacy as a marker of teacher effectiveness in the domain of classroom management. *Paper presented at the annual meeting of the California Council on Teacher Education*, San Diego, CA.

Mills, L. B., & Huebner, E. S. (1998). A prospective study of personality characteristics, occupational stressors, and burnout among school psychology practitioners. *Journal of School Psychology, 36*, 103–120.

Moe, A., Pazzaglia, F., & Ronconi, L. (2010). When being able is not enough. The

combined value of positive affect and self-efficacy for job satisfaction in teaching. *Teaching and Teacher Education, 26*, 1145-1153.

Moore, W. L. & Cooper, H. (1984). Correlation's between teacher and student background and teacher perceptions of discipline problems and disciplinary techniques. *Psychology in the Schools, 21*, 386–392.

Moore, W., & Esselman, M. (1992, April). Teacher efficacy, empowerment, and a focused instructional climate: Does student achievement benefit? *Paper presented at the annual meeting of the American Educational Research Association,* San Francisco.

Myers, I. B., & McCaulley, M. H. (1985). Manual: A guide to the development and use of the Myers-Briggs Type Indicator. Palo Alto: Consulting Psychologists Press.

Pajares, F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*, 307-332.

Pajares, F. (1996). Self-efficacy beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*, 307-332.

Pajares, F., & Johnson, M. J. (1996). Self-efficacy beliefs in the writing of high school students: A path analysis. *Psychology in the Schools, 33*, 163-175.

Pajares, F., & Kranzler, J. (1995). Self-efficacy beliefs and general mental ability in mathematical problem-solving. *Contemporary Educational Psychology, 20*, 426-443.

Pajares, F., & Miller, M. D. (1994). The role of self-efficacy belief and self-concept beliefs in mathematical problem-solving: A path analysis. *Journal of Educational Psychology, 86*, 193-203.

Park, K., & Waters, E. (1989). Security of attachment preschool friendships. *Child Development, 60*, 1076-1081.

Parke, R. D., MacDonald, K. B., Beitel, A., & Bhavnagri, N. (1987). The role of the family in the development of peer relationships. In R. Peters (Ed.), *Social learning and systems approaches to marriage and the family* (pp. 17-44). New York: Bruner/Mazel.

Pas, E. T., Bradshaw, C. P., Hershfeldt, P. A., & Leaf, P. J. (2010). A multilevel exploration of the influence of teacher efficacy and burnout on response to student problem behaviour and school-based service use. *School Psychology Quarterly, 25*, 13–27.

Pellegrini, A. D. (1989). Elementary school children's rough-and-tumble play. *Early Childhood Research Quarterly*, 4, 245–260.

Pellegrini, A. D. (1993). Boys' rough-and-tumbleplay, social competence and group composition. *British Journal of Developmental Psychology, 11*, 237-248.

Pellegrini, A. D. (1995). A longitudinal study of boys' rough-and-tumbleplay and dominance during early adolescence. *Journal of Applied Developmental Psychology, 16*, 77- 93.

Pellegrini, A. D. (2003). Perceptions and functions of play and real fighting in early adolescence. *Child Development, 74,* 1522–1533.

Pellegrini, A. D., & Smith, P. K. (1998). Physical activity play: The nature and function of a neglected aspect of play. *Child Development, 69*, 577–598.

Perrewe, P. L., Hochwarter, W. A., Rossi, A. M., Wallace, A., Maignan, I., Castro, S. L.,

et al., (2002). Are work stress relationships universal? A nine-region examination of role stressors, general self-efficacy, and burnout. *Journal of International Management, 8*, 163-187.

Pettinger, D. J. (1993). The utility of the Myers-Briggs Type Indicator. *Review of Educational Research, 63*, 467-488.

Pianta, R. C., Steinberg, M. S., & Rollins, L. B. (1995). The first two years of school: Teacher-child relationships and deflections in children's classroom adjustment. *Developmental Psychopathology, 7*, 295-312.

Podell, D., & Soodak, L. (1993). Teacher efficacy and bias in special education referrals. *Journal of Educational Research, 86*, 247-253.

Preachers, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behaviour Research Methods, Instruments, and Computers, 36*, 717-731.

Ostrov, J. M. & Keating, C. (2004). Gender differences in preschool aggression during free play and structured interactions: An observational study. *Social Development, 13*, 255-277.

Ostrov, J. M., Woods, K. E, Jansen, E. A., Casas, J. F., & Crick, N. R. (2004). An observational study of delivered and received aggression, gender, and social-psychological adjustment in preschool: "This white crayon doesn't work..." *Early Childhood Research Quarterly*, *19*, 355-371.

Ozben, S. (2010). Teachers' strategies to cope with student misbehavior. *Procedia Social and Behavioural Sciences, 2*, 587-594.

Randhawa, B. S., Beamer, J. E., & Lundberg, I. (1993). Role of mathematics self-efficacy

in the Structural model of mathematics achievement. *Journal of Educational Psychology, 85*, 41-48.

Reeve, M. (2009). Why Teachers Adopt a Controlling Motivating Style toward Students and How They Can Become More Autonomy Supportive. *Educational Psychologist, 44*, 159-175.

Reid, J. K., & Dixon, W. A. (1999). Teacher attitudes on coping with grief in the public school classroom. *Psychology in the Schools, 36*, 219-229.

Relich, J. D., Debus, R. L., & Walker, R. (1986). The mediating role of attribution and self-efficacy variables for treatment effects on achievement outcomes. *Contemporary Educational Psychology, 11*, 195-216.

Rich, Y., Lev, S., & Fischer, S. (1996). Extending the concept and assessment of teacher efficacy. *Educational and Psychological Measurement, 56*, 1015-1025.

Richardson, V., & Placier, P. (2001). Teacher change. In V. Richardson, V. (Ed.), *Handbook of research on teaching*, (4th ed. pp. 905-947). Washington, DC: American Educational Research Association.

Riggs, I. (1995). The characteristics of high and low efficacy elementary teachers. *Paper presented at the annual meeting of the National Association of Research in Science Teaching*, San Francisco, CA.

Riggs, L., & Enochs, L. (1990). Toward the development of an elementary teacher's science teaching efficacy belief instrument. *Science Education, 74*, 625-638.

Rivers I., & Smith, P. K. (1994) Types of bullying behaviour and their correlates. *Aggressive Behaviour, 20*, 359–368.

Roberts, G. T., Harlin, J. F., & Briers, G. E. (2007). The relationship between teaching

efficacy and personality type of cooperating teachers. *Journal of Agricultural Education, 48*, 55-66.

Roberts, G. T., Mowen, D. L., Edgar, D. W., Harlin, J. F., & Briers, G. E. (2007). Relationships between personality type and teaching efficacy of student teachers. *Journal of Agricultural Education, 48*, 92-102.

Ross, J. A. (1992). Teacher efficacy and the effects of coaching on student achievement. *Canadian Journal of Education, 17*, 51-65.

Ross, J. A. (1994). Beliefs that make a difference: The origins and impacts of teacher efficacy. *Paper presented at the annual meeting of the Canadian Association for Curriculum Studies,* Alberta.

Rotter, J. B. (1966). Generalized expectancies of internal versus external control of reinforcement. *Psychological Monographs, 80*, 1-28.

Rubeck, M., & Enochs, L. (1991). A path analytic model of variable that influence science and chemistry teaching self-efficacy and outcome expectancy in middle school science teachers. *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Lake Geneva, WI.

Rudow, B. (1999). Stress and burnout in the teaching profession: European studies, issues, and research perspectives. In R. Vandenberghe & A. M. Huberman (Eds.), *Understanding and preventing teacher burnout: A sourcebook of international research and practice* (pp. 38-58). Cambridge, UK: Cambridge University Press.

Saklofske, D., Michaluk, B., & Randhawa, B. (1988). Teachers' efficacy and teaching behaviors. *Psychological Report, 63*, 407-414.

Saggino A., Cooper, C., & Kline P., (2001). A confirmatory factor analysis of the Myers-

Briggs Type Indicator. *Personality and Individual Differences, 30,* 3-9.

Schaufeli, W. B., & Enzmann, D. (1998). The burnout companion to study and practice: A critical analysis. London: Taylor and Francis.

Schindler, P. J., Moely, B. E., & Frank, A. L. (1987). Time in day care and social participation of young children. *Developmental Psychology, 23,* 255–261.

Schwartz, N. H., Wolfe, J. N., & Cassar, R. (1997). Predicting teacher referrals of emotionally disturbed children. *Psychology in the Schools, 34*, 51-61.

Schaufeli, W. B., Maslach, C., & Marek, T. (Eds.). (1993). *Professional burnout: Recent developments in theory and research.* Washington, DC: Taylor & Francis.

Schunk, D. H. (1981). Modelling and attribution effects on children's achievement: A self-efficacy analysis. *Journal of Educational Psychology, 73*, 93-105.

Schunk, D. H. (1984). Sequential attributional feedback and children's achievement behaviors. *Journal of Educational Psychology, 76*, 1159-1169.

Schunk, D. H. (1987). Peer models and children's behavioral change. *Review of Educational Research, 57*, 149-174.

Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist, 26*, 207-231.

Schunk, D. H., & Cox, P. D. (1986). Strategy training and attributional feedback with learning disabled students. *Journal of Educational Psychology, 78*, 201-209.

Schunk D. H., & Gunn, T. P. (1985). Modeled importance of task strategies and achievement beliefs: Effect of self-efficacy and skill development. *The Journal of Early Adolescence, 5*, 247-258.

Schunk, D. H., & Gunn, T. P. (1986). Self-efficacy and skill development: Influence of

task strategies and attributions. *Educational Research, 78*, 201-209.

Schunk, D. H., & Hanson, A. R. (1985). Peer models: Influence on children's self-efficacy and achievement behaviors. *Journal of Educational Psychology, 77*, 313-322.

Silova, I., Moyer, A., Webster, C.. & McAllister, S. (2010). Re-conceptualizing professional development of teacher educators in post-Soviet Latvia. *Professional Development in Education, 36*, 357-371.

Silver, W. S., Mitchell, T. R., & Gist, M. E. (1989). *The impact of self-efficacy on causal attributions for successful and unsuccessful performance.* Unpublished manuscript, University of Washington, Seattle.

Skaalvik, E. M., & Skaalvik, S. (2007). Dimensions of Teacher Self-Efficacy and Relations With Strain Factors, Perceived Collective Teacher Efficacy, and Teacher Burnout. *Journal of Educational Psychology, 3*, 611–625.

Smith, P. K., & Boulton, M. (1990). Rough-and-tumble play, aggression, and dominance: Perceptions and behaviour in children's encounters. *Human Development,33*, 271-282.

Soodak, L., & Podell, D. (1993). Teacher efficacy and student problem as factors in special education referral. *Journal of Special Education, 27*, 66-81.

Soodak, L., & Podell, D. (1994). Teachers' thinking about difficult-to-teach students', *Journal of Educational Research, 88*, 44–51.

Soodak, L., & Podell, D. (1996). Teaching efficacy: Toward the understanding of a multi-faceted construct. *Teaching and Teacher Education, 12*, 401-412.

Soodak, L. C., & Podell, D. (1997) Efficacy and experience: Perceptions of efficacy

among preservice and practicing teachers. *Journal of Research and Development in Education, 30*, 214–221.

Stein, M. K., & Wang, M. C. (1988). Teacher development and school improvement: The process of teacher change. *Teaching and Teacher Education, 4*, 171-187.

Stricker, L. J., & Ross, J. (1964). An assessment of some structural properties of the Jungian personality typology. *Journal of Abnormal and Social Psychology, 68*, 62-71.

Strutton, D., Pelton, L. E., Lumpkin, J. R. (1995). Personality characteristics and salespeople's choice of coping strategies. *Journal of Academy of Marketing Science, 23*, 132–140.

Swanson, H. E., O'Connor, J. E., & Cooney, J. B. (1990). An information processing analysis of expert and novice teachers' problem solving. *American Educational Research Journal, 27*, 533-556.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics, 5th ed.* Boston: Allyn and Bacon.

Tannock, M. T. (2008). Rough-and-tumbleplay: An investigation of the perceptions of educators and young children. *Journal of Early Childhood Education, 35*, 357-361.

Thompson, B., & Ackerman, C. (1994). Review of the Myers-Briggs Type Indicator. In J. Kapes, M. Mastie, & E. Whitfield (Eds.), *A counselor's guide to career assessment instruments* (3rd ed., pp. 283-287). Alexandria, VA: American Counseling Association.

Tieger, P. D., & Barron-Tieger, B. (1993). Personality typing: A first step to a satisfying

career. *Journal of Career Planning and Employment, 52*, 50-56.

Tillery, A. D., Varjas, K., Meyers, J., & Collins, A. S. (2010). General education teachers' perceptions of behaviour management and intervention strategies. *Journal of Positive Behaviour Interventions, 12*, 86-102.

Tremblay, R. E., Napin, D. S., Seguin, J. R., Zoccolillo, M., Zelazo, P., Boivin, M., Perusse, D., & Japel, C. (2004). Physical aggression during early childhood: Trajectories and predictors. *Pediatrics, 114*, 43-50.

Tschannen-Moran, M., & Woolfolk Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805.

Tschannen-Moran, M., & Woolfolk Hoy, A. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education, 23*, 944-956.

Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research, 68*, 202-248.

Trentham, L., Silvern, S., & Brogdon, R. (1985). Teacher efficacy and teacher competency ratings. *Psychology in Schools, 22*, 343–352.

Underwood, M. K. (2003). *Social aggression among girls.* New York: The Guilford Press.

Vaughn, B. E., Vollenweider, M., Bost, K. K., Azria-Evans, M. R., & Snider, J. B. (2003). Negative interactions and social competence for preschool children in two samples: Reconsidering the interpretation of aggressive behavior for young children. *Merrill-Palmer Quarterly,49,* 245–278.

Vestre, N. D. (1984). Irrational beliefs and self-reported depressed mood. *Journal of Abnormal Psychology*, 93, 239–241.

Villa, R. A., Thousand, J. A., & Chapple, J. W. (1996). Preparing teachers to support inclusion: Preservice and inservice programs. *Theory into practice, 35*, 42-50.

Watson, D., & Hubbard, B. (1996). Adaptational Style and Dispositional Structure: Coping in the Context of the Five-Factor Model. *Journal of Personality, 64*, 737–774.

Webb, R. (1982, March). Teaching and the domains of efficacy. *Paper presented at the annual meeting of the American Educational Research Association,* New York.

Welch, A. (1995). The self-efficacy in primary teachers in art education. *Issues in Educational Research, 5*, 71-84.

Wenner, G. (2001). Science and mathematics efficacy beliefs held by practising and prospective teachers: A five-year prospective. *Journal of Science Education and Technology, 10*, 181-187.

Wilhelm, K., Dewhurst-Savellis, J., & Parker, G. (2000). Teacher Stress? An Analysis of Why Teachers Leave and Why They Stay. *Teachers and Teaching, 6*, 291-304.

Wolfgang, C. H. (1995). *Solving educational problems: Strategies for classroom teachers* (3rd ed.). Boston: Allyn and Bacon.

Wolters, C. A., & Daughterty, S. G. (2007). Goal structures and teachers' sense of efficacy: The relation and association to teaching experience and academic level. *Journal of Educational Psychology, 99*, 181-193.

Woolfolk Hoy, A., & Burke-Spero, R. (2005). Changes in teacher efficacy during the

early years of teaching: A comparison of four measures. *Teaching and Teacher Education, 21*, 343-356.

Woolfolk, A. E., & Hoy, W. K. (1990). Prospective teachers' sense of efficacy and beliefs about control. *Journal of Educational Psychology, 82*, 81-91.

Wright, T. A., & Cropanzano, R. (1998). Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology*. 5, 84–94.

Yoon, J. S., (2004). Predicting teacher interventions in bullying situations Education and Treatment of Children. *Education & Treatment of Children*, 27, 37–45.

Zellars, K., Perrewé, P., & Hochwarter, W. (2000). Burnout in health care: The role of the five factors of personality. *Journal of Applied Social Psychology, 30*, 1570–1598.

Zimmer – Gembeck, M., Gerger, T. C., & Crick, N. R. (2005). Relational and physical aggression, prosocial behaviour, and peer relations. *The Journal of Early Adolescence, 25*, 421-452.

Appendix A
Email Invitation

Good day,
We are writing to invite your participation in a brief **SURVEY OF ECE TEACHERS**. We are developmental psychology and education researchers from Carleton University (Ottawa, Ontario) and Brock University (St. Catharines, Ontario). We recognize that early childhood educators play a critical role in shaping children's social, emotional, and cognitive development. Therefore, we want to learn more about teacher attitudes, beliefs, and responses towards different child behaviours in the ECE classroom. To gather this information, we are conducting a survey study funded by the Spencer Foundation. Our research has been approved by the Carleton University Ethics Committee for Psychological Research.

We know you are busy! We are asking ECE teachers to anonymously complete a brief (i.e., 10-15 minutes) on-line survey. We are particularly interested in the views teachers who are currently (or have recently been) working in preschools and childcare centres.

We would greatly appreciate it if you could forward this invitation to potential participants.

We hope that findings from our study will provide a better understanding of ECE teacher beliefs and strategies in the classroom. This increased knowledge will be helpful for teacher-education, as well as in the identification and assistance of children who may be at-risk for school adjustment difficulties. Following data collection and analysis, we will provide a summary of our findings to participating childcare federations and preschools to distribute to members.
Participation in this survey is anonymous. For more information and to complete the survey - please click on the link below:

http://www.carletonecesurvey.ca/

Please do not hesitate to contact us if you have any questions or concerns. Thank you for your time and consideration! Your help is very much appreciated.
Sincerely,

Robert J. Coplan, Ph.D.
Professor, Dept of Psychology
Carleton University, Ottawa, ON
robert_coplan@carleton.ca
www.carleton.ca/~rcoplan/
Sandra L. Bosacki, Ph.D.
Associate Professor, Dept. of Education
Brock University, St. Catharines, ON

Amanda Bullock
Graduate Student, Dept of Psychology

Appendix B
Informed Consent Form

CARLETON ECE ATTITUDES & BELIEFS SURVEY

Thank you for considering participation in the **SURVEY OF ECE TEACHERS**. The brief survey explores teacher attitudes, beliefs, and responses towards different child classroom behaviours. Participation in this survey is anonymous. The first set of questions will ask for background information that will be used only to describe, in general, the group of teachers who respond to our questions. Several short scenarios are then presented, each followed by questions regarding your responses and attitudes concerning the behaviours. The final questions ask you to describe your feelings and responses to these different situations. You are free to withdraw from the study at any time and you can omit any questions you feel uncomfortable answering. This study has been approved by the *Carleton University Ethics Committee for Psychological Research.*

The data collected in this study are strictly confidential and will be made available only to researchers associated with this project and their students. Questionnaires will be used only to extract data for study and analysis and individuals will not be identified in any reports of this study. If you have any questions related to this study and/or concerns as a result of participation in this study, please feel free to contact me directly (Dr. Robert Coplan, Professor, Department of Psychology, Carleton University, robert_coplan@carleton.ca, 613-520-2600 ext. 8691). Should you have any ethical concerns about this study, please contact Dr. M. Sénéchal (Chair, Carleton University Ethics Committee for Psychological Research, monique_senechal@carleton.ca, 613-520-2600, ext. 6026) or Dr. J. Mantler (Chair, Dept. of Psychology, psychchair@carleton.ca, 613-520-2600, ext. 2648).

Once all the data has been collected and analyzed, a summary of the findings will be provided to the participating childcare federations and preschools, who will be asked to forward our results to you. We expect this summary to be available in the fall of 2011. We know how valuable your time is and therefore would be sincerely grateful to you if you do choose to participate. Thank you for your time and consideration.
Clicking on the link below indicates your consent to participate in this study:
***** insert link here*****
I consent to participate in the **SURVEY OF ECE TEACHERS**.

Appendix C
Debriefing Form

Thank you for participating in this survey! Once all the data has been collected and analyzed, a summary of the findings will be provided to participating ECE organizations and accessible from our website:

www.carleton.ca/~rcoplan/

If you have any questions related to this study and/or concerns as a result of participation in this study, please feel free to contact me directly (Dr. Robert Coplan, Professor, Department of Psychology, Carleton University, robert_coplan@carleton.ca, 613-520-2600 ext. 8691). Should you have any ethical concerns about this study, please contact Dr. M. Sénéchal (Chair, Carleton University Ethics Committee for Psychological Research, monique_senechal@carleton.ca, 613-520-2600, ext. 6026) or Dr. J. Mantler (Chair, Dept. of Psychology, psychchair@carleton.ca, 613-520-2600, ext. 2648).

Thank you again for participating in this study!

Appendix D
Demographic Questionnaire

Our first few questions are about you as an individual. These questions will help us describe, in general, the group of teachers who are filling out our survey.

Age _____
Male ___ Female___

Ethnicity (optional): Caucasian ___ Asian ___ Black ___
Hispanic ___ Aboriginal ___ Other ___

Last degree obtained: High School___ ECE certificate ___
(check one) University: B.A.___ B.Sc.___ B.Ed.___
Graduate: M.A.___ M.Ed. ___ Ph.D. ___
Other (please specify)___

Year last degree was obtained?_____

How many years have you been teaching? _____

Have you received training on managing children's behaviours? Yes____ No_____

If yes, where did you receive training:
(check all that applies)

one/more college or university courses ____
participated in a workshop/in-service training ____
received a specialized certification or degree _____
on-the-job training ____

Location of preschool, childcare centre or school where you are currently teaching:
Town/City_____
Province_____

What aged children are you currently teaching? _____

Appendix E
ECE Responses

1. What would you be likely to do in response to this behaviour?

(a) Intervene to stop the behaviour (e.g., tell child to stop, remove child from the situation, etc.)

not at all likely				*very likely*
1	2	3	4	5

2. I would feel adequately prepared to deal with this child.

not at all likely				*very likely*
1	2	3	4	5

Appendix F
Teacher Type Personality Inventory
Gosling, Rentforw, & Swann, (2003)

Here are a number of personality traits that may or may not apply to you. Please indicate the extent to which you agree or disagree with each statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

I see myself as:

1. Extraverted, enthusiastic.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

2. Critical, quarrelsome.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

3. Dependable, self-disciplined.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

4. Anxious, easily upset.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

5. Open to new experiences, complex.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

6. Reserved, quiet.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

7. Sympathetic, warm.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

8. Disorganized, careless.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

9. Calm, emotionally stable.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

10. Conventional, uncreative.

Disagree Strongly	Disagree Moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

Appendix G

Teacher Efficacy for Classroom Management subscale
(Tschannen-Moran & Woolfolk Hoy, 2001)

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Please indicate your opinion on each of the questions below by marking any one of the nine responses.

1. How much can you do to control disruptive behaviour in the classroom?

Not at all		Very little		Some degree		Quite a bit		A great deal
1	2	3	4	5	6	7	8	9

2. To what extent can you make your expectations clear about classroom behaviour?

Not at all		Very little		Some degree		Quite a bit		A great deal
1	2	3	4	5	6	7	8	9

3. How well can you establish routines to keep activities running smoothly?

Not at all		Very little		Some degree		Quite a bit		A great deal
1	2	3	4	5	6	7	8	9

4. How much can you do to get children to follow classroom rules?

Not at all		Very little		Some degree		Quite a bit		A great deal
1	2	3	4	5	6	7	8	9

5. How much can you do to calm a child who is disruptive or noisy?

Not at all		Very little		Some degree		Quite a bit		A great deal
1	2	3	4	5	6	7	8	9

6. How well can you establish a classroom management system with each group of children?

Not at all		Very little		Some degree		Quite a bit		A great deal
1	2	3	4	5	6	7	8	9

7. How well can you keep a few problem children from ruining a group activity?

Not at all		Very little		Some degree		Quite a bit		A great deal
1	2	3	4	5	6	7	8	9

8. How well can you respond to defiant children?

Not at all		Very little		Some degree		Quite a bit		A great deal
1	2	3	4	5	6	7	8	9