Perfectionism in the Classroom Environment: An examination of the roles of teaching styles and perceived teacher self-efficacy

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Dedication

"Give yourself completely to the act of listening. Beyond the sounds there is something greater: a sacredness that cannot be understood through thought."

Eckhardt Tolle

In memory of Margaret Lowe, William Merifield and Crouie.

Abstract

The main purpose of this study is to examine the relationship between teaching styles, personality traits associated with perfectionism and the perceived sense of teacher efficacy. Teachers (N=52) completed three questionnaires administered via online survey service (FluidSurveys.ca). These three questionnaires were; Grasha's Teaching Style Inventory 3.0 (Grasha, 1996), which identifies five teaching style clusters; The Frost Multidimensional Perfectionism Scale (Frost et al, 1990) which indicates levels of perfectionism associated with positive or negative characteristics associated with perfectionism; and the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) which measures individual teaching assumptions in relation to perceived efficacy. Correlations, a T-Test for demographic variables and a multiple regression analysis were conducted to provide information in relation to the three questionnaire responses and to identify associations between perfectionism, teaching styles and perceived teacher efficacy.

Results indicated significant correlations between Teaching Styles and Teachers' Sense of Efficacy. The Facilitator teaching style was found to be significantly correlated with Student Engagement ($r(52) = .35$, $p < .05$). and ClassroomManagement ($r(52) = .29$, $p < .05$). The Delegator teaching style was found to be significantly correlated to Engagement ($r(52) = .36$, $p < 0.01$ and Management ($r(52) = .28$, $p < .05$. Significant Multiple Regression results occurred where the Grasha's Teaching Styles significantly predicted the Frost Multidimensional Perfectionism Scale subset Concern over Mistakes ($F_{5, 46} = 2.5$, $p < .05$). The Facilitator Teaching Style held the strongest predictive value.

A hallmark of positive or adaptive perfectionism relates to problem solving in a sound and healthy manner (Fedewa et al, 2005). The Facilitator teaching style appears to coincide with this

sound and healthy approach by incorporating collaborative problem solving between a teacher and student (Grasha, 1996). The Frost perfectionism subset Concern over Mistakes reflects negative reactions to mistakes, a tendency to interpret mistakes as equivalent to failure, and a tendency to believe that one will lose the respect of others following failure (Frost et al, 1990). High endorsement on this subset may be a predictor of maladaptive perfectionism (Frost et al, 1990).

The Facilitator teaching style and the perfectionism measure Concern over Mistakes appear to reflect conflicting constructs. This supposed conflict is discussed along with other considerations associated with perfectionism, teaching styles and perceptions of teacher self-efficacy.

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Introduction

Brophy and Rohrkemper (1989) conducted the Classroom Strategy Research Project which aimed to determine the best teaching strategies to assist and support students experiencing problems. Perfectionism was identified as a problem area offering inimitable opportunities for teachers to apply strategies associated with cognitive restructuring techniques (Brophy and Rohrkemper, 1989). While the expectation does not suggest that teachers take on a mental health role, effective teachers may provide a counterbalance in the school environment through diminishing the demands and assumptions associated with the development of perfectionism in the home or other environments (Knaus, 1977).

Achievement and methods of evaluation are considered key elements in the strategies to better support perfectionism (Brophy, 1996). Perhaps teachers subscribing to certain teaching styles could be philosophically opposed to changing their style of teaching. Personality traits and beliefs may offer insights to explain a choice in teaching styles (Brophy, 1983) and possibly a resistance to incorporate new strategies associated with particular contexts such as perfectionism. Further to this is the question of whether a teacher with high scores on a multidimensional perfectionism scale would adhere to standards/methodologies that are more rigid and assume a high level of efficacy inherent in these methods?

Examining the various issues associated with perfectionism provides context for the most salient concerns relating to a classroom environment. If a teacher indicates a high level of perfectionism as a personality trait how does this impact the teacher's ability to teach utilizing a style associated with reducing obstacles for perfectionist students?

Teaching efficacy may be difficult to measure other than relying on perceptions supplied by the teacher, normative achievement results or supervisory impressions (Brophy, 1983). A

teacher may perceive a strong sense of efficacy yet may hold beliefs that defy a suggested effective teaching strategy aimed to support for example, perfectionist students, (Brophy, 1983).

This study will examine the associations between teaching style, perceived sense of teacher efficacy and dimensions of teacher perfectionism to attempt to better understand the issues and potential for student achievement related to different combinations of these three areas.

Perfectionism in a classroom environment is largely influenced by perceptions of achievement. As discussed by Brophy (1996) maladaptive perfectionism is often manifested in fear of failure and may precipitate avoidance of evaluation in social and achievement based settings. This may foster students to become "alienated underachievers" by setting low standards or unrealistic standards they do not intend to meet (Brophy, 1996).

Teaching styles are purported to a hold strong influence in terms of exacerbating or ameliorating characteristics and behaviors associated with perfectionistic students. Teaching styles generally indicate methods of evaluating achievement and perfectionism in relation to achievement may reflect the achievement domain as well as individual capabilities and aptitudes (Stornelli, Flett & Hewitt, 2009, p. 276 Stornelli, Flett and Hewitt (2009). Grasha, (1996) developed the *Teaching Styles Inventory: Version 3.0* which identifies four "Teaching Clusters" (Appendix D) pertaining to characteristics associated with teaching styles. These clusters outline methodologies that either support or thwart the achievement needs of perfectionistic students based on research findings examining achievement and perfectionistic students (Silverman 1999, Nugent, 2000, Brophy, 1996).

Literature Review

Perfectionism is a complex and often-illusory issue when considering academic performance and students' ability to achieve school standards and demands. Teachers may conceivably mistake perfectionism for procrastination, disinterest or inability when dealing with students (Rice, Ashby, & Slaney, 1998). Examining the various forms and contexts associated with perfectionism may help to identify the most salient concerns relating to a classroom environment. These concerns or issues may inform teaching practice by providing insight and a rationale for teachers to incorporate effective teaching strategies designed to address perfectionist tendencies in the student population.

While it may not be practical or ethical for teaching staff to attempt identification, implementing teaching strategies to benefit both perfectionistic and general school populations may assist in reducing stress associated with academic performance (Brophy and Rohrkemper, 1989). Helpful teaching strategies may address student behaviours associated with perfectionism, for example procrastination, while assisting the student to utilize relevant strategies without creating a label or context associated with the behaviour, which could be harmful to the student by causing stress (Brophy,1996).

Teaching strategies designed to support all students, including perfectionist populations, also appears to provide a practice to foster academic achievement (Brophy & Rohrkemper, 1989). Teaching attitudes, styles and expectations may conflict with this practice on both conscious and subconscious levels and teachers possessing perfectionist traits may conceivably utilize teaching methods ultimately reflecting unrealistic expectations and in the process reinforcing the maladaptive tendencies of perfectionistic students (Watts, Cage,Batley & Davis 2011). Grasha (1996) discusses the human tendency to ignore many aspects of personal bias and disposition which limits the ability to self reflect and analyze teaching practices. Some of the

teaching styles identified by Grasha appear to mesh with the suggested best strategies (Brophy & Rohrkemper) associated with teaching perfectionistic students and fostering achievement. Other teaching styles proposed by Grasha appear to thwart these suggested strategies and possibly relate to perfectionistic teaching perspectives Flett and Hewitt (2002) describe perfectionism as playing "both a moderating and mediating role in relation to stress and psychopathology" (p. 279). Implementation of teaching strategies designed to reduce stress within the classroom may serve to assist perfectionistic and other students alike.

Given the implications of perfectionist tendencies or behaviours, it is necessary to examine concepts of perfectionism, teaching practices and the potential influences on achievement. Insights pertaining to these contexts and the relationships associated with teaching styles, achievement and perfectionism may provide information indicating the level of potential impact to student populations.

Perfectionism Overview

Perfectionism is difficult to define in static or isolated terms and often borders on criteria associated with other psychological constructs (Flett &Hewitt, 2002). Research involving maladaptive perfectionism indicates a relationship with anxiety and depression (Flett & Hewitt). Effective teaching strategies in an inclusive educational environment should therefore consider the "multidimensional" nature of perfectionism since perfectionism could exist as an underlying factor and problematic behaviours may be misconstrued as solely relating to depression or other psychological constructs (Flett & Hewitt, 2002, Brophy 1996).

Most theorists make distinctions in perfectionism as "adaptive" or "maladaptive" (Flett & Hewitt, 2002) relating to productive and motivating aspects, or to a negative, debilitating factor, respectively. Hamachek (1978), who is often considered a founding theorist of perfectionism, distinguished normal perfectionism from neurotic perfectionism. Normal perfectionism is purported to elicit positive behaviours associated with striving for success through work ethic and practices rewarded generally in society and

particularly in academic and career environments. On the other hand, neurotic perfectionism may contribute to perceptions of failure due to unachievable standards (Hamachek, 1978).

In her study, "Overcoming Perfectionism," Smith (1990) describes perfectionism as an aspect of "co-dependency, [which] is a pattern of painful dependence on compulsive behavior and on approval seeking, in an attempt to gain safety, identity and self worth" (p. 4). Smith distinguishes between overt and covert perfectionism, stating, "The overt perfectionist looks totally functional and may even serve as a model whom others emulate, [yet] be perfect in one area and chaotic in another" (p. 15). Smith purports that covert perfectionism is much harder to identify because it is often more apparent in thinking rather than in specific behaviours. The notion that one should be perfect prevails in most areas of life (Smith). Characteristics of covert perfectionism may involve avoidance of risk-taking due to uncertain outcomes, and proceeding with heightened caution and exhaustive detail when attempting an action (Smith). Indecision often results in procrastination, since it is often difficult to ensure mastery of tasks, particularly at a high level of perceived perfection (Smith).

Along with distinctions such as, "covert/overt," "adaptive/maladaptive" and "normal/neurotic" perfectionism, there are various subtypes, such as self-oriented and socially prescribed perfectionism (Bieling, Israeli, Smith, & Antony, 2003). Self-oriented perfectionism is intrapersonal and involves the establishment of high standards while focusing on flaws (Bieling et al.). Socially prescribed perfectionism is interpersonal by nature and relates to standards set by others (Beiling et al.; Flett & Hewitt, 2002). Flett and Hewitt (2002) also identify "other oriented" perfectionism, which entails setting unrealistically high expectations for the behaviours of other people (p. 205).

Perfectionism researchers largely support the notion that susceptibility to a range of psychopathology and physical dysfunction is directly related to maladaptive perfectionist traits (Flett & Hewitt, 2002). Maladaptive, or negative perfectionism, has been associated with "social phobia and performance anxiety... depression and suicidality... eating disorders... and personality disorders..." and it has also "... been implicated in the development of various physical conditions, including ulcerative colitis, irritable bowel syndrome and abdominal pain..." (Brown, Heimberg, Frost, Makris et al., 1990 p. 99). Flett and Hewitt (2002) acknowledge perfectionism associated with Obsessive Compulsive Disorder (OCD), but distinguish the need in OCD to make "a thing" perfect rather than "a person" (i.e., the self or others)" (p. 9).

Because perfectionism is not easily defined, much current literature on the subject establishes a multidimensional context for analysis (Ashby & Rice, 2002, p. 198). Albert Ellis (2002), for example, defines perfectionism as:

> "The idea that one should be thoroughly competent, adequate, intelligent, and achieving in all possible respects - instead of the idea that one should do rather than desperately try to do well and that one should accept oneself as an imperfect creature, who has general human limitations and specific fallibilities" (p. 217).

Frost, Marten, Lahart, and Rosenblate (1990) identify factors associated with the multidimensional scope of perfectionism, as applied in the Frost Multidimensional Perfectionism Scale (MPS) (Flett & Hewitt, 2002). These factors include "concern over mistakes, setting very high standards along with harsh judgment regarding accomplishment of these standards, questioning one's ability and performance, ability to complete requirements or tasks, concerns regarding the perceived parental expectations and associated criticism,

concerns regarding organization and the need to maintain organization and control" (Frost, Marten, Lahart, and Rosenblate, 1990, p. 455).

High scores on the MPS factors indicate a maladaptive type of perfectionism. Setting high goals and conscientious practices are related to adaptive perfectionism, while setting high standards and perceptions of performance inadequacies are related to maladaptive forms of perfectionism (Gilman & Ashby, 2003). Two higher-order dimensions of perfectionism have been found to represent "core dimensions" of clinical perfectionism (Dunkley, Blankstein, Masheb, & Grilo, 2006). Personal Standards (PS) and Evaluative Concerns (EC) are the two fundamental dimensions of perfectionism thought to "cut across many different existing perfectionism measures" (Dunkley et al., p. 80). Self-criticism is a "primary indicator" of maladaptive evaluative perfectionism and as such, "substantially accounts for the relation between perfectionism measures and depressive, anxiety and eating disorder symptoms" (Dunkley et al., p. 80) The distinction between adaptive and maladaptive PS relates to the degree or presence of self-criticism and whether the lack of attaining PS produces maladaptive levels of EC (Dunkley et al.). In a study of undergraduate students with eating disorders, Dunkley et al. found that self-criticism related to both self-oriented and socially prescribed perfectionism measures. Low self esteem was a mediating factor and high levels of perfectionism, suggested that "negative self evaluative processes" play a critical role in the relation between perfectionism and eating disorder symptoms" (Dunkley et al., p. 78).

In terms of psychopathology, both adaptive (positive) perfectionism and maladaptive (negative) perfectionism are linked to feelings of guilt and/or shame (Fedewa, Burns, & Gomez, 2005). Fedewa, et al. examines the relationship of shame, guilt and pride in the context of perfectionism. This study distinguishes shame as being "focuse[d] on the self, while guilt focuses on a specific action" (pp.1609-1610). Shame is

described as narcissistic and encourages concealing "the defective self from others," whereas guilt encourages the person to perform an act of reparation and is considered more adaptive (Fedewa et al., p.1610). Positive perfectionists are thought to resolve problems in a sound and healthy manner, in contrast to negative perfectionists who are thought to "react to stress in neurotic ways," indicated by avoidance of problems, rumination when dealing with depression and greater likelihood of engaging in dangerous activities (Fedewa et al., pp. 1611-1612). As well, negative perfectionism correlated with categorical thinking and intolerance and distrust of others (Fedewa et al.).

Tangney (Flett & Hewitt, 2002, pp. 199–213) discusses the "self-evaluative" nature of "shame, guilt, embarrassment and pride" and the propensity associated with negative perfectionism towards shame and embarrassment. The self-evaluative nature of maladaptive perfectionists is reported as a primary indicator in developing psychopathologies (Dunkley, Blankstein, Masheb, & Grilo, 2006). Self-recrimination is strongly linked to developing pathologies such as depression, anxiety and eating disorders, regardless of the existence of high standards (Dunkley et al.). Dunkley et al., suggest that a focus on feelings of shame, self-criticism and negative self evaluations and associated distortions, is a more effective treatment approach, without addressing or adjusting personal standards (p. 80). Socially prescribed perfectionism has been identified as the strongest predictor of developing a depressed state, (Enns & Cox, 1999), and yet the associated standards are socially established rather than individually established. This observation is indicative of the individual's assumption of the necessity to meet socially established high standards and is not necessarily reflective of his or her personal beliefs or support of the standards (Enns & Cox, 1999).

Socially prescribed perfectionism is associated with higher levels of hopelessness and greater suicide ideation (Hunter & O'Connor, 2003). In a study of three groups of hospital patients admitted based on deliberate attempts to self-harm, "socially prescribed perfectionism was negatively correlated with positive

future thinking," due to a reduction in the likelihood of encoding or retrieving positive future events (Hunter & O'Connor, p.363). Hunter and O'Connor state that fear of failure influences positive expectations and socially prescribed perfectionists are inclined towards negative associations with future achievement and meeting of standards. In contrast, self-oriented perfectionists were more inclined to think positively of the future and the study attributes this finding to the ability of self-oriented perfectionists as better at managing standards and expectations (Hunter & O'Connor). Appendix 'A' provides a clear comparison of positive and negative perfectionism and highlights the cumulative affect relating to maladaptive thoughts and actions.

Increased levels of anxiety associated with maladaptive perfectionism have been significantly correlated to both self-oriented perfectionism and socially prescribed perfectionism (Hewitt, Caelian, Flett, Sherry, Collins, & Flynn, 2002; Arthur & Hayward, 1997). As identified in Appendix 'A', anxiety concerning tasks and fear of failure may result in reduced ability to focus and consequently less favourable outcomes (Flett & Hewitt 2002). The development of a self-reinforcing pattern of reduced attention to tasks/more associated anxiety/less favorable results/failure to meet standards, contributes to strengthening maladaptive tendencies (Flett &Hewitt).

Difficulties may occur when characteristics relating to perfectionism exist comorbidly with other contexts of psychopathology. Bieling, Summerfeldt, Israeli and Antony (2004) examined the intersection of perfectionism and other Axis I Clinical Disorders (*Diagnostic and Statistical Manual of Mental Disorders IV-DSM-IV*). The DSM-IV Axis I details clinical disorders usually diagnosed during early ages through to adolescence and not including mental retardation. Bieling et al., suspecting a comorbidity between perfectionism and many of the Axis I disorders, examined a large sample of patients seeking anxiety treatment using the Frost Multidimensional Perfectionism Scales and the Multidimensional Perfectionism Scales (Flett

& Hewitt 2002). Results of this study indicated a strong association between perfectionism Axis I disorders, and in "maladaptive evaluative concerns perfectionism emerged as a significant predictor of comorbidity outcomes" (Bieling et al., p. 198). This study also suggests that recognition of comorbid perfectionism may offer more direct treatment strategies, due to the availability of reliable psychometric assessments yielding constructive information applied in targeting treatment (Bieling et al.). As well, cross cultural and gender studies focusing on perfectionism offer insights regarding the influence of cultural beliefs and expectations in motivating perfectionistic thoughts and behaviours.

These results reiterate previously discussed findings indicating that maladaptive perfectionism is relative to levels of self-criticism and negative assumptions regarding self-worth and self-evaluation. Moreover, the study suggests overarching associations with maladaptive perfectionism and negative individual disposition, despite cultural influences and expectations. In terms of gender, although manifestations of perfectionist behaviours may vary between males and females, the underlying catalyst appears to be relative to levels of self-worth, self-evaluation, negative assumptions and self-criticism (Flett, Hewitt, Oliver, & Macdonald, 2002). Flett et al. discuss parenting styles and the implications associated with gender and dimensions of perfectionism. Affectionless parents, mother and father alike, were associated with socially prescribed, self-oriented and other-orientated perfectionism in both genders, and all perfectionistic variations were related to hostile and contemptuous parents (Flett et al). The transition to the school environment serves to either reinforce or reduce perfectionist tendencies acquired in the home environment depending upon the demands, expectations and evaluation methods incorporated in the teaching philosophy endorsed by the classroom teacher (Brophy and Rohrkemper, 1989).

Learning Environment and Teaching Philosophy

In the school environment, perfectionism may be masked by behaviours not readily associated with perfectionism. Procrastination, for example, may be attributed to laziness, lack of focus or inability to complete school related tasks (Gilman & Ashby, 2003). LoCicero and Ashby (2000) examined multidimensional perfectionism in age-gifted and general students in the middle school environment. The results of this study indicate that perfectionism associated with age-gifted students was largely adaptive in nature and related to positive perceptions of school and achievement. The age-gifted students did not vary from the non-perfectionist general population in terms of responses and behaviours associated with less-than-expected results on school assessments and tasks (LoCicero & Ashby). Setting high standards was considered a motivating factor for both adaptive perfectionists and non-perfectionists, however, for those individuals demonstrating maladaptive perfectionism high standards were considered problematic due to the incongruity between the maladaptive perfectionist expectations or personal standards and the actual outcome or result (LoCicero & Ashby). Teaching strategies providing opportunities for all students to achieve relative success acknowledge a range of abilities within a classroom environment and develop a variety of achievement goals (Brophy and Rohrkemper, 1989).

Identification of adaptive and maladaptive perfectionism in relation to achievement may reflect the achievement domain as well as individual capabilities and aptitudes (Stornelli, Flett & Hewitt, 2009). Stornelli et al. compared 233 boys and girls in grades four and seven, examining perfectionism, achievement, perceived competence and affect in the general school population, which included intellectually gifted students. Socially prescribed and self-oriented perfectionism within the group of intellectually gifted students reflected higher achievement in mathematics, an outcome possibly associated with a dedicated effort to achieve coupled with the ability to achieve (Stornelli et al.). Perfectionism and achievement may be reflective

of the domain and "individual differences in aptitude and interest, as well as the performance domain being assessed" (Stornelli et al.p.276). Maladaptive perfectionism may relate to students without "superior" abilities for achievement who possess unrealistic expectations of achievement and who consequently experience perceived failure to meet expectations (Stornelli et al.). Again, teachers are presented with a unique opportunity to create a learning environment that recognizes attributes relative to aspects of successful living such as good citizenship or consistent effort rather than evaluation solely contingent on intellectual ability so that students derive success from attainable goals (Brophy and Rohrkemper 1989).

A research study analyzing the "Relationship of Perfectionism to Affect, Expectations, Attributions and Performance in the Classroom" (Brown, Heimberg, Frost, Makris, Juster, & Leung, 1999), examines motivation associated with adaptive (positive) and maladaptive (negative) perfectionistic traits demonstrated in college students. The Multidimensional Perfectionism Scale was administered to students in order to examine the relationship between two dimensions of perfectionism: "high personal standards (PS)" and "maladaptive concern over mistakes (CM)" "and equate them with failure" (p.115). The results of this study indicate that predisposed criticism yielded increased anxiety and "other maladaptive reactions," regardless of meeting standards. Students associated with "PS" and "CM" exhibited increased study time, preparation and anxiety prior to writing an exam, however, the general population of non-perfectionist students also exhibited increased study time, preparation and concern (Brown et al.). Of particular importance, this study suggests "high CM and self-blame may result in more anxiety, negative mood, and fear of others' reactions to the disclosure of their performance," and "although students high on CM reported increases in study behaviours for the final exam, their preparation was ineffective (possibly due to simultaneous increase in anxiety) given that CM was not predictive of final exam score" (Brown et al., p.118). Teaching strategies emphasizing learning from making mistakes could foster an environment where preparing for a final exam encompasses a

step by step approach to building knowledge and writing tests rather than a dichotomous, anxiety ridden event which interferes with a student's ability to demonstrate learning (Brophy and Rohrkemper,1989).

In terms of cognitive processes, maladaptive or negative perfectionists exhibit poor constructive thinking skills and difficulty coping with stress (Burns & Fedewa, 2005). Maladaptive perfectionists are limited through patterns of cognitive inflexibility, pessimism, avoidance techniques, rumination, and categorical thinking, as well as an inclination towards risky behaviours (Burns & Fedewa). Maladaptive or negative perfectionists also are more inclined to engage in superstitious thinking and, according to Epstein (1994), quoted in Burns and Fedewa, "Personal superstitious thinking serves to reduce the sting of disappointment by dampening enthusiasm and hope" (p111). Positive correlations are identified between personal superstitious thinking and measures of "pessimism, helplessness and depression" as well as with "measures of drug and alcohol abuse and everyday psychosomatic ailments" (Burns & Fedewa, p. 111).

Understanding the constructs of perfectionism and, specifically, issues relating to maladaptive perfectionism, may inform teaching practice in developing a classroom that is receptive to the needs of students with maladaptive perfectionism. As previously mentioned, identification or labelling of students as perfectionists breaches professional ethics, yet it is possible to engage in teaching strategies that are beneficial to the entire student population as well as specifically those who are perfectionists. Pyryt (1994, p. 28) suggests that individuals experiencing maladaptive perfectionism may benefit from a learning environment where the teacher creates an understanding associated with the value of "constructive failure" as a means to benchmark performance and create future improvement relative to realistic concepts of success/achievement. As well, Pyryt emphasizes the distinction between "self-concepts" and success/achievement in that "self-worth" and "inherent dignity" is "unconditional" (p.28). Perfectionist individuals may benefit from teachers introducing expanded perspectives regarding the pursuit of excellence, which reinforces the view that

"commitment to excellence is a lifelong struggle" and each performance contributes to future improvement (Pyryt, p.28). Balance in individual activities may assist in reducing the constant focus on perfectionism by finding "avocational interests and pursuits that can bring joy" (Pyryt, p.28).

In reviewing the findings of LoCicero, Ashby and Kern (2000), Gilman and Ashby (2003) note the suggestion that, "teachers and adults may wish to validate a student's progress towards an achievement goal rather than rewarding the student only when the goal is attained. In this manner, acknowledging effort over outcome may help maladaptive perfectionistic students develop beliefs and behaviors more in line with adaptive perfectionists" (p. 687).

Background Theories to Effective Teaching Strategies

Cognitive restructuring may address the negative thought behaviours associated with maladaptive forms of perfectionism and relieve in part symptomology (Bieling, Summerfeldt, Israeli & Antony, 2004). Brophy and Rohrkemper (1989) developed *Teachers' Strategies for Coping With Perfectionist Students*, which highlights the involvement of Rational Emotive Education (Knaus, 1977), and cognitive behavior modification strategies (Brophy & Rohrkemper). Rational Emotive Education (REE) is a method of teacher training based on Albert Ellis' Rational-Emotive Therapy (Knaus, 1977) which focuses on developing positive thought processes and reducing or eliminating irrational beliefs and expectations (Brophy & Rohrkemper). In combination with REE, Brophy and Rohrkemper establish cognitive behavior modification strategies designed to be effective in a classroom environment to address "catastrophic emotional reactions focused on the self with task focused thinking" (p5) which serves to reveal positive associations with learning and making mistakes. Teachers subscribing to this model of teaching establish reasonable norms and expectations in an environment nurturing learning and skill development while recognizing the value in making mistakes

(Brophy & Rohrkemper). In this teaching model, teachers would be expected to acknowledge their own mistakes within the classroom domain and demonstrate effective coping strategies in conjunction with the mistake (Brophy & Rohrkemper). The cognitive restructuring is implicit in the continual "resocialization" associated with establishing realistic goals within the classroom setting (Brophy & Rohrkemper).

Grasha's Teaching Styles

Teaching styles suggest the role a teacher plays in a classroom setting (Grasha, 1996) and some styles are more compatible with strategies described as effective when addressing student perfectionism (Brophy and Rohrkemper, 1989). Grasha (1996) proposes five teaching styles that also relate to method clusters. The five teaching styles are: "expert", "formal authority", "personal model", "facilitator" and "delegator" (p.154). These five styles are not exclusive of each other and teaching styles may reflect a combination which Grasha (1996) associates with four teaching style clusters. These clusters are divided according to teaching methods most likely to reflect the teaching style. Primary and secondary styles are noted in the division of teaching clusters. Additionally teaching styles and philosophies are mainly based upon personal perspective and interpretation of what is the best approach for the students being taught (Grasha, p142). Certain teaching styles connect with the previously suggested strategies for teaching perfectionistic students more than others in Grasha's five teaching styles and associated methodology clusters. Teachers subscribing to the Expert/Formal Authority cluster provide more rigid, traditional and emphasis on exam/grade based achievement measures (Grasha, 1996) and conflicts with achievement measures emphasizing progression of learning. The Teaching Styles Inventory: Version 3.0 (Grasha, 1996) provides an instrument to measure where a teacher may be located in terms of teaching style clusters.

Teacher's perceptions of efficacy and the actual level of efficacy may vary according to teaching style (Brophy (1983). Perceptions of teaching efficacy may relate to the level of student achievement, however, the

expectation for student achievement may or may not consider the instruction methods geared toward low or high achievers in the classroom (Brophy, 1983). Teaching styles that consider efficacy in relation to meeting students' needs and "maximizing progress" of both low and high achievers may set individual standards and be less inclined to set normative standards and comparisons of student achievement (Brophy, 1983).

Effective Teaching Strategies

Further to the underlying theories associated with teaching perfectionist students, strategies that are more specific have been developed for more general classroom application. Nugent (2000) acknowledges many of the aforementioned theories in the following teaching strategies and additionally provides an outline for evaluation of students through a variety of evaluation strategies. These strategies could incorporate promoting personal excellence by including the empowering of students through involving their own evaluation, clearly communicating grading criteria, step by step approaches allowing for revision and learning insights, writing drafts with a particular aspect or purpose in mind, encouraging student feedback and student/teacher conferences and collaboration, and using likert measures to gain better understanding of student attitudes regarding knowledge acquisition, perceived achievement and interest (Nugent,2000). Teachers are recommended to apply active listening techniques encouraging students to express concerns, understand their concerns are important, and plan collaboratively to solve issues (Nugent, 2000)

Nugent (2000) also describes the tenets of creating a classroom culture that is nurturing, stimulating and supportive. These tenets include allowing students to successfully fail wherein mistakes are seen as pathways to learning, students can self-evaluate and reflect on their own perfectionistic tendencies or lack thereof and establish personal awareness in a safe non-threatening way, teachers share appropriate personal struggles with perfection and the associated coping strategies employed, teachers share personal examples of the goal setting process, teaching by modeling the appropriate steps necessary to complete a goal and the

achievement process and lessen the fear of failure/procrastination cycle and involving group discussions and share positive reinforcement/support from group members while allowing for other possible responses to situations.

The previous section outlining effective teaching strategies and classroom culture (Nugent) coincides with the strategies suggested by Brophy and Rohrkemper and the REE training program (Knaus). These strategies seek to better support perfectionist students through a cognitive restructuring approach which allows students to communicate perceptions of achievement and also develop positive concepts regarding the learning process rather than the end product (Brophy & Rohrkemper). Brophy further discusses the need for teachers to receive independent feedback in regard to teaching style since many teachers employ practices that reflect personal dispositions and these practices and expectations are inadvertently communicated to the students they teach.

Teacher Expectations, Personal Characteristics and Student Achievement

As discussed in the previous section effective teachers are progressive and thoughtful in their observations and goal setting for their students (Brophy, 1983). Individual differences and personal characteristics may relate to teaching styles and teacher expectations for their students (Brophy). Brophy discusses “teacher expectation effects” as varying according to individual teacher personal characteristics and beliefs regarding student learning and achievement.Teachers reported by their students to expect greater success from students deemed as high achievers are perceived to offer more learning opportunities and task choices to the high achievers while demonstrating restrictive, more negative practices with students considered by the teacher as a low achiever (Brophy). Teachers subscribing to this pattern of interaction with students accounted for approximately a 15% variation in year-end achievement results compared to the previous student achievement records where a “self-fulfilling prophecy effect” is attributed to this variation (Brophy).

Teachers subscribing to a more balanced, non-biased approach accounted for only a 3% variation in year-end achievement in comparison to previous student achievement records (Brophy). The "self-fulfilling prophecy effect" indicated that students in the classes taught by more biased teachers tended to perform more in keeping with the more biased teacher expectations and that teacher expectation effects are relative and variable in accordance with a "teacher's personal characteristics and beliefs about teaching and learning" (Brophy, 1983, p646).

Brophy further discusses teacher personal characteristics considered as mediating factors relating to teacher expectations and student achievement. In a study examining personality traits comparing teachers demonstrating high bias versus teachers demonstrating low bias towards student abilities, teachers described as demonstrating high bias considered themselves to be "more rational, objective, and reasonable, and as less emotionally extreme than the no-bias subjects" yet the "high bias subjects gave more extreme responses and showed frequent indicators of conventionalism, rigidity, and intolerance of ambiguity, all of which are interpreted as aspects of authoritarianism or dogmatism" (Brophy, 1983, p.647).

Teachers who interpret a lack of student achievement as a personal responsibility are more inclined to utilize different or repeated approaches to deliver instruction to a non-achieving student (Brophy, 1983). Teachers attributing lack of achievement to individual student ability are inclined to give up additional instruction and perceive the final result as a limitation on the part of the student (Brophy, 1983). Teachers with a strong sense of efficacy are more inclined to persist with instruction and tend to be confident that their set of teaching skills will enable effective instruction and improved student achievement (Brophy, 1983).

The effective communication of realistic teacher expectations to their students is correlated to the level of student achievement (Ozturk & Debelak, 2005). Teachers viewing student learning as their responsibility

and persistent in delivering instruction to students communicate an expectation that the student is capable of learning and therefore achieving ((Brophy, 1983).

Conclusion

Perfectionism and teaching is an area lacking a large body of research. If the assumption that teaching style is predicated on personal philosophies and perceptions then it seems reasonable that a teacher rating high on a perfectionism scale may contribute the associated philosophies and perspectives in teaching practice and style.

At the present time, demographic information regarding the percentage of perfectionistic students present in school populations does not appear to be available. If perfectionism correlates to comorbidity with DSM-IV Axis I disorders (Bieling, Summerfeldt, Israeli & Antony, 2004) it would seem reasonable to assume, therefore, that school populations contain significant percentages of students and possibly teachers experiencing maladaptive perfectionism, and concomitantly high levels of stress.

While research regarding teacher personality factors is limited and not necessarily predictive of successful or effective teaching (Watts & Cage, Batley, Davis, 2011), it does appear that certain personality factors relate to teaching styles and strategies (Watts &Cage, Batley, Davis). The teaching styles and strategies suggested as most beneficial to promote achievement in perfectionist and all students (Brophy & Rohrkemper, 1989; Nugent 2000) for the most part do not mesh with the practices associated with higher teacher effectiveness ratings (Watts& Cage, Batley, Davis). Teachers scoring high on the perfectionist measure on a 16 factor personality questionnaire (Watts & Cage, Batley, Davis) endorsed characteristics more strongly associated with maladaptive forms of perfectionism (Flett and Hewitt, 2001).

If teachers are to engage in effective strategies to better support perfectionist students Brophy & Rohrkemper, 1989; Nugent, 2000) perhaps certain personality traits are less compatible with the styles of

teaching associated with better supporting perfectionist students. It is hypothesized that more rigid, authoritarian, teaching styles (Grasha, 1996) will correlate with higher ratings of perfectionist personality traits (Watts & Cage, Batley, Davis, 2011) and higher scores of perceived teacher efficacy (Brophy, 1996). The high perfectionist/ high perceived efficacy teachers displayed several characteristics associated with maladaptive perfectionism such as dichotomous thinking, fear of failure, fear of social judgment and rigidity (Flett & Hewitt, 2001). These characteristic are not associated with improved student achievement (Brophy, 1983). Previously discussed research examining student achievement and expectations indicates that the premise for evaluation may provide different outcomes based on whether the teacher assumes responsibility for individual student learning or attributes failure to achieve as relative to a lack of student ability (Brophy, 1983). Teachers rated as confident in their teaching skills appear to accept more responsibility for student learning and delivery of instruction and are considered to offer better opportunities for student achievement due to repeated attempts to teach material to the students experiencing difficulty mastering concepts (Brophy, 1983). This study will examine relationships associated with teacher ratings on perfectionist traits, perceived teacher efficacy and teaching styles. As previously noted a combination of high teacher perfectionist ratings coupled with an authoritarian teaching style and a high sense of teacher efficacy may implicate actual reduced student achievement due to the inflexibility and lack of reflective practice associated with these contexts (Brophy, 1983).

Methodology

Research Premise

Teachers subscribing to rigid, authoritarian teaching methodologies appear to exacerbate perfectionist tendencies in the classroom environment and thwart achievement associated with these students (Brophy & Rohrkemper, 1989). Furthermore, teachers may hold either an accurate or a flawed sense of teaching efficacy relative to the type of teaching methodology endorsed (Brophy, 1983). Teachers with rigid expectations of normative achievement may perceive achievement and teaching efficacy in terms of grades or exam/test results (Brophy & Rohrkemper, 1989). Nugent (2000) maintains that teachers with achievement philosophies supporting individual student achievement through measures of individual progression and mastery may view teacher efficacy in terms of student progress rather than normative standards. These philosophies supporting student achievement through individual progression and mastery coincide with Grasha's (1996) Facilitator and Delegator Teaching Styles

The following four hypotheses will be examined to respond to the above statements:
1) Teachers indicating high levels of perfectionism on the Frost Multidimensional Perfectionism Scale (FMPS) would subscribe to a more rigid and authoritarian teaching style; 2) Teachers scoring high on the perfectionism scale are thought as likely to rate themselves as high in teacher efficacy perceptions and subscribe to more rigid, authoritarian teaching styles; 3) Teachers scoring within an average range on the FMPS would score within a high range on the measures of teacher efficacy, however, would subscribe to a teaching style that is more flexible and facilitative to student involvement; 4) Teachers scoring low on the FMPS overall perfectionism measure and low on organization may indicate lower levels of perceived teacher

efficacy and would likely subscribe to a teaching style involving less structure, reflecting a personal model of teaching.

Participants

Participants (N=52) were recruited by online invitation (FluidSurveys.com). FluidSurveys meets Canadian Privacy law requirements and information is stored securely on the FluidSurveys.com server in Montreal, Quebec, Canada. A participant pool of licensed teachers residing in Canada were recruited and randomly selected through FluidSurveys in conjunction with Cint. Participants confirmed consent online prior to participation and then completed a preliminary demographic section indicating years of teaching experience, level of teaching and if they teach in a rural or urban setting.

Measures

The *Frost Multidimensional Perfectionism Scale (MPS)* Frost et al., 1990.

The FMPS is a 35 item questionnaire designed to measure perfectionism. Each of the six subscales is scored by summing the items. Additionally, the overall perfectionism score compiles the sum of the subscales except Organization. The subscales include; Concern over Mistakes (CM) which reflects negative reactions to mistakes a tendency to interpret mistakes as equivalent to failure, and a tendency to believe that one will lose the respect of others following failure; Personal Standards (PS) which reflects the setting of very high standards and the excessive importance placed on these high standards for self-evaluation; Parent Expectations (PE) which reflects the tendency to believe that one's parents set very high goals; Parental Criticism (PC) which reflects the perception that one's parents are (or were) overly critical.

Doubting of Actions (D) consists of items from the Maudsley Obsessive-Compulsive Inventory doubting subscale (Rachman & Hodgson, 1980) and reflects the extent to which people doubt their ability to accomplish

tasks. The Organization (O) subscale is the tendency to be orderly or organized and reflects an emphasis on order and orderliness that has often been associated with perfectionism (Frost et al, 1990).

There are no published norms for the FMPS (Frost et al, 1990). Reliability is reported as α=.77–.93 for the Perfectionism subscales (Frost et al, 1990) and test validity is reported as maintaining strong correlations with other instruments measuring perfectionism such as the Multidimensional Perfectionism Scale (Flett & Hewitt, 1991) and Burn's Perfectionism Scale (Burns, 1980) and several other similar measures (Frost et al,1990).

The Teaching Styles Inventory: Version 3.0 (Grasha, 1996),

The Teaching Style Inventory is a 40 item measure that categorizes teaching characteristics into five styles. These styles are expert, formal authority, personal model, and facilitator and delegator (Grasha, 1996). Teacher participants rated statements associated with teaching practices on a scale of 1(strongly disagree) to 7 (strongly agree). Examples of the statements are "Facts, concepts, and principles are the most important things that students should acquire" "Students are encouraged to emulate the example I provide" and "lecturing is a significant part of how I teach each part of class sessions" (Grasha, 1996). Test reliability is reported as α=.68–.75 for individual items and α=.72 for the overall inventory (LaBillois, 2003). Test validity is reported as an ongoing process (LaBillois, 2003).

Teachers' Sense of Efficacy Scale (Long Form) Tschanne n-Moran & Woolfolk Hoy, 2001.

Empirical and theoretical research links teacher sense of efficacy, teacher performance and student achievement (Heneman, Kimball & Milanowski, 2006). The Teachers' Sense of Efficacy Scale is a 24 item questionnaire measuring teachers' sense of efficacy or teacher's perceptions concerning their own ability to teach their students and meet their learning needs (Woolfolk Hoy, 2004). This instrument involves three areas associated teacher roles in student engagement, classroom management, and instructional practices. Examples

of questions on this scale are "How much can you do to get through to the most difficult students?" How much can you do to foster student creativity?" and "How well can you establish a classroom management system with each group of students?" The data associated with these factors is considered reliable (α =.95). The Teacher Sense of Efficacy Scale is considered reliable and valid (Heneman, Kimball & Milanowski, 2006).

Statistical Analysis

Data was collected through an online process through FluidSurveys.com. FluidSurveys meets Canadian Privacy law requirements and information will be stored securely on FluidSurveys.com. Participants agreed to consent prior to completing non-identifying demographic information and the Frost Multidimensional Perfectionism Scale, Teacher Sense of Efficacy Scale and Grasha's Teaching Styles Inventory. Instructions of how to proceed were clearly stated for participants prior to commencing the questionnaires.

All data was screened for examined for outliers, homogeneity of variance and linearity. Correlations were completed between demographic variables and perfectionism measures, demographic variables and teacher efficacy and demographic variables and teaching styles. A multiple regression analysis was applied to identify the interception and relationships between teaching styles, perfectionist traits and perceived teacher efficacy.

Results

The central focus of this study was to examine the relationship between measures of perfectionism, teaching styles and perceived teacher self-efficacy. Correlations were run between all continuous demographic variables (identification of grade level taught and years of teaching experience) and FMPS scores, teaching style and reported teacher efficacy. Teaching environment was treated as a nominal variable and coded as 1=Urban, 2=Rural. See Tables 1, 2 and 3 for statistics relating to demographic percentages.

Table 1

Demographic Information

Percentage of Respondents Teaching in an Urban or Rural Environment

	% Percentage of Respondents
Urban	**65.4**
Rural	**34.6**

Table 2

Demographic Information

Respondents and Years of Teaching Experience

Number of Years Experience	% **Percentage of Respondents**
1 - 5	**27.4**
5 - 10	**38.8**
10 - 15	**9.7**
15 -20	**11.7**
20 -25	**5.8**
25+	**7.8**

Table 3

Respondents and Grade Levels Taught

Grade Level	% Percentage of Respondents
Elementary K -2	**37.3**
Middle School 3 - 6	**29.5**
Junior High 7 - 9	**-**
High School 10 - 12	**32.2**

Descriptive Statistics between Urban or Rural Teaching Environments

Independent measures t-test was conducted between demographic variables Urban or Rural teaching environments (N=52) and years of teaching experience, grade level taught, the FMPS, Grasha's Teaching Styles and the Teachers' Sense of Efficacy Scale. Results did not reveal statistically significant findings indicating differences between Urban or Rural teaching settings (see Table 4)

Correlations between Continuous Demographic Variables and FMPS

The Frost Multidimensional Perfectionism Scale overall score indicates the level of individual perfectionism traits (Frost et al, 1990). Correlations were conducted for continuous Demographic Variables (Grade level Taught and Years of Teaching Experience). No significant correlations were found in this analysis (see Table 5).

Correlations between Continuous Demographic Variables and Grasha's Teaching Styles

Teaching Styles are described by the five following categories (Grasha, 1996): Expert, Formal Authority, Personal Model, Facilitator and Delegator. Correlations were conducted for continuous Demographic Variables (Grade level Taught and Years of Teaching Experience) and Grasha's five Teaching Styles. No significant correlations resulted in this analysis (see Table 6).

Correlations between Teachers' Sense of Efficacy Scale and Demographic Variables

No significant correlations were found between the Teachers' Sense of Efficacy Scale and continuous Demographic Variables (see Table 7)

Table 4

Descriptive Statistics for Urban or Rural Teaching Environments

URBAN	*M (SD)*	**RURAL**	*M (SD)*
Teaching Experience	**12.5 (8.0)**		**13.4 (7.4)**
Grade Level	**2.3 (1.3)**		**2.11 (1.1)**
FMPS	**85.3 (17.5)**		**92.9 (22.1)**
Expert	**5.0 (.94)**		**4.9 (.86)**
Formal Authority	**5.0 (.83)**		**4.8 (.80)**
Personal Style	**5.2 (.95)**		**5.2 (.89)**
Facilitator	**5.4 (.84)**		**5.2 (.99)**
Delegator	**5.0 (.64)**		**4.8 (1.2)**
Engagement	**7.0 (.85)**		**6.9 (.96)**
Instruction	**7.4 (.88)**		**7.3 (.62)**
Management	**7.1 (.89)**		**6.9 (1.3)**

Table 5

Correlations between FMPS and Demographic Variables

Demographic Variable	FMPS Correlation
Teaching Experience	.15
Grade Level	-.06

Table 6

Correlations between Years of Teaching Experience, Grade level Taught and Grasha's Teaching Styles

Teaching Style	Years of Experience	Grade Level Taught
Expert	**.06**	**.16**
Formal Authority	**.25**	**.21**
Personal Model	**.16**	**.11**
Facilitator	**.15**	**.05**
Delegator	**.06**	**.04**

Table 7

Correlations between Teachers' Sense of Efficacy Scale and Years of Teaching Experience and Grade Level Taught

Teaching Efficacy Area	Years of Experience	Grade Level Taught
Engagement	**-.05**	**-.07**
Instruction	**.16**	**.06**
Management	**.11**	**-.15**

Correlations between Grasha's Teaching Styles and Teachers' Sense of Efficacy Scale.

The Teachers' Sense of Efficacy Scale is categorized according to specific areas of teaching competencies. These competencies are identified as Engagement (indicating the teacher's perceived efficacy in student engagement), Instruction (indicating the teacher's perceived efficacy in instructional strategies), and Management (indicating the teacher's perceived efficacy in classroom management). The Facilitator teaching style was found to be significantly correlated with student Engagement ($r(52) = .35$, $p < .05$). The Facilitator teaching style was also found to be significantly correlated to Management ($r(52) = .29$, $p < .05$). The Delegator teaching style was found to be significantly correlated to Engagement ($r(52) = .36$, $p < 0.01$ and Management ($r(52) = .28$, $p < .05$. (Please see Table 8).

The Facilitator and Delegator teaching styles share some common characteristics in terms of promoting independent student learning and greater emphasis on student interests and learning styles (Grasha, 1996).

Correlations between the FMPS and Grasha's Teaching Styles

Correlations were completed between measures of perfectionism (FMPS) and teaching styles (Grasha). The FMPS is scored by summing six subscales. The overall perfectionism score is comprised of five of the six subscales and does not include the Organization subscale (Frost et al., 1990). The Organization subscale demonstrates the least intercorrelation of all six subscales and therefore does not contribute to the overall score total (Frost et al, 1990).

Table 8

Correlations between Teachers' Sense of Efficacy Scale (Engagement, Instruction, Management) and Teaching Styles (Expert, Formal Authority, Personal Model, Facilitator and Delegator)

	Engagement	Instruction	Management
Expert	.09	-.10	.11
Formal Authority	-.01	.03	.08
Personal Model	.25	.08	.22
Facilitator	.31*	.20	.29*
Delegator	.36**	.23	.28*

* 0.05 level
** 0.01 level

A significant correlation was found between the FMPS subscale Concern over Mistakes (CM) and the Facilitator teaching style ($r(51) = .46$, $p < .05$) (see Table 9). Correlations were completed to determine if the Organization subscale held any relationships to teaching styles and no significant correlations occurred in this analysis.

Correlations between FMPS and Teachers' Sense of Efficacy Scale.

Correlations were completed between FMPS and Teachers' Sense of Efficacy. The Teachers' Sense of Efficacy scores consist of three separate categories measuring self- perceptions of teaching efficacy in Student Engagement, Instructional Strategies and Classroom Management. No significant correlations were found between the FMPS and these three areas of Teachers' Sense of Efficacy (see Table 10). Correlations were completed to determine if the Organization subscale held any relationships to teaching efficacy and no significant correlations resulted from this analysis. The Organizational subscale is not included in the overall perfectionism score on the Frost Multidimensional Perfectionism Scale.

Multiple Regression Analyses

Following correlational analyses involving the Frost Multidimensional Perfectionism Scale (FMPS), Grasha's Teaching Styles Inventory, 3.0 and The Teachers' Sense of Efficacy Scale additional analyses were conducted. The purpose of these additional analyses was to examine the relationships between levels of perfectionism, teaching styles (TS) and perceived teaching efficacy (TSE) more thoroughly.

One may aggregate individual scale scores of the Frost Multidimensional Perfectionism Scale (FMPS) to obtain a general perfectionism score (omitting the Organization subscale score).

Table 9

Correlations between the Frost Multidimensional Perfectionism Scale (FMPS) and Teaching Style

Teaching Style	FMPS
Expert	.00
Formal Authority	.06
Personal Model	-.07
Facilitator	-.24*
Delegator	-.14

* 0.05 level
** 0.01 level

Table 10

Correlations between FMPS and Teachers' Sense of Efficacy Scale

Teaching Efficacy Area	FMPS
Engagement	**-.02**
Instruction	**.04**
Management	**.03**

The perfectionism scales include: CM- concern over mistakes, PS-personal standards, PE-parental expectations, PC- parental criticism, D-doubts over actions, and O-organization. This data was examined in a multiple regression analysis with the overall FMPS scores**.** No significant results were found in this analysis between the overall FMPS scores, TS and TSE. Of note, the TSE frequency data indicates mean scores for Student Engagement (7.07), Instructional Strategies (7.41) and Classroom Management (7.07) which may signify a consistency in perceived teacher self efficacy across areas of teaching ability. The respondents scoring highest on the FMPS did not yield high TSE ratings and conversely the low scores on the FMPS did not yield low TSE ratings.

In a further examination of the data, the FMPS subset scores were examined separately in a multiple linear regression analysis to determine if they could be predicted by TS and TSE. In these analyses, no significant associations were found to predict FMPS Concern over Mistakes (CM) from TSE subsets ($F_{3,48}$ = .91, $p > .05$) and Parental Criticism (PC) from TSE in PC ($F_{3,48} = 1.3$, $p > .05$).No significant multiple regression analyses were found to predict Personal Standards (PS) from TSE ($F_{3,48} = 1.4$, $p > .05$) and Doubts (D) from TSE ($F_{3,48} = 1.0$, $p > .05$). No significant multiple regression analyses were found to predict Parental Expectations (PE) from TSE is ($F_{3, 48} = .93$, $p > 05$) and Organization (O) from TSE ($F_{3, 48} = .81$, $p > 05$).

The FMPS subsets were analyzed to determine if significant results could be gleaned between FMPS and TS. All teaching styles were entered into a multiple regression analysis with each FMPS subset as the dependent variables. A significant multiple regression analysis was found to predict FMPS subset Concern over Mistakes from Teaching Styles Facilitator Teaching Style ($F_{5,46} = 2.5$, $p< .05$) with the Facilitator TS holding the strongest predictive value (please see Table 11). No significant multiple regression analyses were found to predict Personal Standards (PS) from TS ($F_{5,46} = .68$, $p > 05$, ns), and Parental Expectations(PE) from TS ($F_{5,46} = .84$, $p > 05$, ns).As well, no significant multiple regression analyses were found to predict Parental

Criticism (PC) from TS ($F_{5,46} = 1.1$, $p > 05$, ns) and Doubt (D) from TS ($F_{5,46} = ,57$, $p > 05$, ns). No significant multiple regression analyses were found to predict Organization (O) from TS ($F_{5, 46} = .69$, $p > 05$).

Please see Appendix 'F' for Regression Analysis results.

Table 11

Multiple Regression for Perfectionism (FMPS) Subset, Concern over Mistakes, and the Facilitator Teaching Style

	Dependent Variable FMPS Concern over Mistakes (Perfectionism)		
	β	**Adjusted R Square**	**Sig**
Facilitator	**-.649**	**.129**	**.04[b]**

Beta Coefficient, Model Variance and Significance
***p=.04, p< .05**

Discussion

The main purpose of this study was to examine how perfectionism may predict choices of teaching styles and the perceived sense of teaching efficacy. Four main hypotheses were proposed based upon a review of the research in perfectionism, teaching styles and teacher perceived efficacy. Each of these will be discussed in consideration of the results obtained by this study.

The first hypothesis indicates that teachers endorsing high levels of perfectionism on the Frost MPS would subscribe to a more rigid and authoritarian teaching style. While research supports this statement (Flett & Hewitt, 2001), significant evidence was not found in this study to confirm this assertion. Teachers surveyed reported a range of teaching preferences, however, significant results were found indicating the FMPS subset Concern over Mistakes as predicted by Grasha's Teaching Styles, collectively. The Facilitator teaching style figured most prominently, approximating individual significance (.007). The Concern over Mistakes (CM) subset is thought to reflect negative reactions to mistakes, a tendency to interpret mistakes as equivalent to failure, and a tendency to believe that one will lose the respect of others following failure. High CM endorsement is considered a predictor of maladaptive perfectionism (Frost et al, 1990) and is associated with higher levels of self-blame, anxiety, negative mood and fear of recriminations from others with the disclosure of performance issues (Brown et al, 1999).

Maladaptive perfectionists are thought to display poor constructive thinking skills, cognitive inflexibility, rumination and difficulty coping with stress (Burns and Fedewa, 2005).The Facilitator teaching style promotes greater independence and less control over student learning, allowing for flexibility and guidance in the teaching role (Grasha, 1996). It is interesting that the Facilitator teaching style held the

strongest predictive value in conjunction with the perfectionism subset Concern over Mistakes. When considering that the Facilitator teaching style allows greater teacher flexibility, less personal control, and more focus on the individual student, mistakes become vehicles to facilitate learning. While simple mistakes may be dichotomous, for example, a math computation is either right or wrong, concepts of mistakes pertaining to student centered progression and achievement could thwart conventional ideas of what constitutes a mistake. In the Facilitator teaching style, the measure of success most likely relates to student ability and individual progression rather than relying solely on test scores (Brophy, 1983). This raises the question of how one determines that a mistake has been made. Perhaps the notion of making mistakes becomes more of a personal rationale. In the Facilitator teaching style, mistakes may relate more to providing appropriate challenges to individual students, establishing benchmarks to guide the teacher's assessment of the student's ability. On a larger scheme, the interpretation of teacher-based mistakes likely relates to expectations outlined by school boards and the guidelines associated with the role of teacher. The underlying assumptions could vary from teacher to teacher, school to school and district to district. The point is that Concern over Mistakes may imply different things to different people.

The rationale underlying Concern over Mistakes is not revealed in the Frost Multidimensional Perfectionism Scale and the subset item only requests a rating associated with making a mistake, for example "people will probably think less of me if I make a mistake" (Frost et al, 1999). What type of mistake is being referenced? Is the mistake serious or minor? The interpretation of what constitutes a mistake is left up to the respondent. In consideration of this notion of what constitutes a mistake, the Facilitator teaching style may relate more holistically to teaching principles and the teacher's perspective regarding meeting the needs of individual students.

A hallmark of positive or adaptive perfectionism relates to problem solving in a sound and healthy manner (Fedewa et al, 2005). The Facilitator teaching style incorporates the notion of collaborative problem solving between a teacher and student (Grasha, 1996). This method of problem solving appears to coincide with a sound and healthy approach perceived as valuable in the learning process. Perhaps the teacher respondents indicating higher scores on perfectionism scales whom endorse the Facilitator teaching style experience more adaptive, positive forms of perfectionism, such as striving to be a good teacher.

When considering the predictive influence associated with all teaching styles and Concern over Mistakes, it would seem necessary to create an understanding of the respondents' criteria with regard to what constitutes making a mistake and to differentiate making a mistake from teacher concerns of upholding teaching expectations or standards by maintaining a level of teaching competency.

The results of this study do not provide sufficient evidence to identify individual respondents experiencing maladaptive levels of perfectionism. The prominence of the Facilitator teaching style as a significant predictor of Concern over Mistakes would indicate more so that maladaptive perfectionism is not a component in the teacher responses. Even those respondents indicating higher perfectionism ratings did not endorse items on the Teaching Styles Inventory that would suggest maladaptive perfectionist traits such as categorical thinking, rigidity and authoritarian perspectives (Flett & Hewitt, 2001).

It is interesting that Concern over Mistakes is significantly predicted by Teaching Styles in multiple regression analyses since not all teaching styles incorporate a negative connotation associated with making mistakes. It is unclear if the idea of making mistakes is relative to the student or teacher. Is the teacher concerned when they think one of their students is making mistakes or is the teacher concerned with making mistakes themselves? The second hypothesis asserts that teachers scoring high on the perfectionism scale are thought as likely to rate themselves as high in teacher self-efficacy (TSE) perceptions and subscribe to more

rigid, authoritarian teaching styles. No significant evidence was found to support this assertion. The TSE mean scores indicate that most respondents were confident in their teaching efficacy regardless of teaching style preference and FMPS scores.

The survey respondents completing the Frost Multidimensional Perfectionism Scale for the most part endorsed average ratings on this scale. The small number of respondents who did endorse higher ratings on the perfectionism scale did not endorse an authoritarian method of teaching such as Grasha's Formal Authority style.

The Facilitator and Delegator teaching styles were significantly correlated with Teacher Sense of Efficacy subsets Student Engagement and Classroom Management. These teaching styles coincide with suggested teaching practices to increase engagement and achievement for all students including perfectionist students (Nugent, 2000). The respondents represent a fairly broad demographic range considering rural or urban teaching environments, various grade levels and years of teaching experience. The demographic variables provide fodder for discussion when considering teaching style choices and teaching efficacies such as student engagement and classroom management.

Demographic information indicates that no respondents taught at the Junior High School level, 37.3% of respondents taught elementary school, 29.5 % taught middle school and 32.2% taught at the high school level. Certain teaching styles may have more to do with the requirements associated with teaching at certain grade levels, however, the Facilitator teaching style was chosen most frequently as the style of choice compared to the other styles. As mentioned, the Facilitator teaching style is in accordance with practices associated with greater student engagement (Nugent, 2000) yet demographic differences may serve to raise the question of whether the Facilitator teaching style and teaching efficacies, such as student engagement and classroom management, represent the same concepts when considering these differences.

Teaching styles and teaching efficacies may indicate demands at the high school level in terms of classroom management that are quite different from those associated with the younger grades. This potential difference raises speculation concerning the context of the responses provided for both teaching styles and efficacies depending on the grade levels taught. Teachers at the elementary level may subscribe to completely different criteria when considering classroom management, instruction or student engagement than teachers involved at the high school level. In addition, the teaching style may hold different implications dependent on the age and grade level of the students.

The scope of this study does not include substantive information pertaining to the student populations taught by the respondents. Information associated with the student population taught may provide greater insights pertaining to the teacher responses, for example, information regarding the type of classroom management required is not distinguished. It is possible that teachers in very different circumstances could rate their efficacy in classroom management as similar. Without in depth knowledge of the challenges associated with the teaching environment it is difficult to assume a level playing ground.

Teachers confident in their teaching efficacy are much more inclined to utilize a variety of teaching methods to reach students experiencing difficulties in learning (Brophy, 1983). Perhaps teaching styles are not static and may adjust according to the student population. This assertion coincides with Grasha's Teaching Styles (1996) that teaching styles may consist of a combination of styles or "clusters" and one of the styles within the cluster may be called to the forefront depending upon teaching context. Overall, the correlation between the Facilitator teaching style and student engagement and classroom management is a positive association considering that this teaching style was most often identified as the respondent's first choice. Also as previously stated, the Facilitator teaching style is consistent with suggested best teaching practices for perfectionist and all students (Nugent, 2000).

The third hypothesis maintains that teachers scoring within an average range on the FMPS would score within a high range on the measures of TSE, however, would subscribe to a teaching style that is more flexible and facilitative to student involvement. While there were no significant findings associated with FMPS scores and higher ratings of perceived teacher self efficacy, as previously mentioned significant correlations were found between the Facilitator teaching style and TSE subsets Student Engagement and Management. Also mentioned previously, the Facilitator teaching style is associated with higher perceptions of student engagement. The Delegator teaching style was significantly correlated to higher perceptions of student engagement and this teaching style is associated with more flexible and facilitative teaching methods. The Delegator teaching style promotes greater student autonomy while the teacher acts as a resource for the student (Grasha, 1996).

A rationale for utilizing the Facilitator and Delegator teaching styles is associated with stronger Student Engagement and Classroom Management, but also may serve students experiencing less overt forms of perfectionism. Underlying forms of perfectionism may be more difficult to detect (Smith, 1990). In terms of perfectionism Pyryt (1994) suggests that students experiencing maladaptive perfectionism and all students may benefit from a learning environment associated with the value of making mistakes to mark progress in learning and achievement relative to an individual ability level. Both the Delegator and the Facilitator teaching styles incorporate planning according to individual abilities and progression. It would seem reasonable that students working at a level relative to their ability would engage more in learning and require less classroom management.

LoCicero, Ashby and Kern (2000), Gilman and Ashby (2003) note the suggestion that, “teachers and adults may wish to validate a student’s progress towards an achievement goal rather than rewarding the student only when the goal is attained” (p.687). This suggestion is in keeping with the Facilitator and

Delegator teaching styles where individual achievement may be evaluated through a range of methods. The student is provided better opportunities to engage in skill development and schoolwork relative to the individual ability level (Brophy & Rohrkemper, 1989). Regardless of the perfectionist ratings, the Facilitator and Delegator teaching styles offer methodologies associated with supporting student progression, student engagement and a well managed learning environment.

The fourth hypothesis asserts that teachers scoring low on the FMPS overall perfectionism measure and low on organization may indicate lower levels of perceived teacher efficacy and would likely subscribe to a teaching style involving less structure, reflecting a personal model of teaching. No significant results in this thesis were found to support this statement.

While perfectionist traits were not associated with teaching efficacy, the Facilitator TS was found to be significantly associated with FMPS Concern over Mistakes. The Facilitator TS is also correlated to TSE Engagement and Management. This raises the question of how TSE Engagement and Management are perceived in terms of teacher concerns over mistakes. One suggestion could relate to a potential interpretation of concern over mistakes at an adaptive rating level on the FMPS as a positive focus by teachers. It would seem plausible that Concern over Mistakes at adaptive levels could reflect the intention to be competent as a teacher and to teach students effectively, making as few mistakes as possible.

In general, this thesis indicated that most teacher respondents rated themselves as efficacious in their teaching abilities regardless of FMPS scores. Frequency data associated with the current study of teacher respondents indicates mean scores for Student Engagement (7.07), Instructional Strategies (7.41) and Classroom Management (7.07) regardless of high/low scores associated with the FPMS. The responses endorsed by teacher participants did not appear to relate to levels of perfectionism scores and no significant correlations were established between perceived sense of teacher efficacy and perfectionism scores. Perhaps

these scores are more consistent with teacher training levels and education requirements associated with the teaching profession.

Previously discussed research examining student achievement and expectations indicates that the premise for evaluation may provide different outcomes based on whether the teacher assumes responsibility for individual student learning or attributes failure to achieve as relative to a lack of student ability (Brophy, 1983). Teachers rated as confident in their teaching skills appear to accept more responsibility for student learning and delivery of instruction and are considered to offer better opportunities for student achievement due to repeated attempts to teach material to the students experiencing difficulty mastering concepts (Brophy, 1983). The associations between the Facilitator and Delegator TS and the Student Engagement and Classroom Management TSE provides an indication of overall teacher confidence and assumed responsibility for student learning apart from FMPS results. These associations coincide with the aforementioned research and imply that the Facilitator and Delegator TS are more in keeping with the best strategies for teaching perfectionist students (Nugent, 2000).

Lack of detection of perfectionism does not necessarily confirm that perfectionism does not exist (Flett & Hewitt, 2002). Many aspects of perfectionism may be less obvious or covert than others (Smith, 1990). Socially prescribed perfectionism may exist in any environment (Enns & Cox, 1999). This type of perfectionism has been identified as the strongest predictor of developing a depressed state, (Enns & Cox), and yet the associated standards are socially established rather than individually established. In socially prescribed perfectionism, an individual may assume the necessity to meet socially established high standards that are not necessarily reflective of his or her personal beliefs or support of the standards (Enns & Cox, 1999). This could potentially influence choices of teaching styles and expectations or policies geared toward student learning. If a learning environment or school assesses student success in terms of high levels of achievement through more

traditional measures not reflective of individual ability, teachers may be held accountable for students not meeting this type of expectation. These teachers may be subjected to a form of socially prescribed perfectionism in which unrealistic achievement goals constitute the overriding expectation determined by school administration or some kind of governing body. Perfectionism is a multidimensional concept and may not be easily detected (Beiling et. al, 2004). This difficulty in detection leaves one to ponder whether perfectionist respondents were under detected or non- existent in this study.

Caveats and Conclusions

Some of the issues associated with the results of this study most likely relate to a small sample size when considering the requirements of the study. The second hypothesis states that higher ratings of perfectionist personality traits will correlate with more rigid, authoritarian teaching styles and higher teacher self-efficacy ratings. The sample size does not indicate a strong representation of respondents with high ratings of perfectionism on the FMPS measure. In addition, indicators suggesting maladaptive perfectionist traits are relative to high scores on the FMPS and it could be worthwhile to employ additional assessment instruments to provide a more thorough method to determine contexts associated with perfectionism. Obtaining a large sample size involving teachers would likely require access to a large organizational body such as a district school board. In order to better determine whether high levels of maladaptive perfectionism precipitate the endorsement of certain teaching styles and heightened perceived teacher self efficacy it would be necessary first to establish a sample population consisting of all respondents indicating maladaptive levels of perfectionism.

Demographic information did not yield significant results even when taking into account that some respondents were relatively new to teaching and others near to retirement with many more years of experience. Perhaps when considering the current level of available technology there is more support and available

resources for teachers in most environments and at all levels of teaching. This may somewhat explain more consistency in a knowledge base, methods of teaching and higher levels of teacher confidence that their teaching methods are on track with current teaching theory.

Considerations for future study would include recruiting a larger survey sample and conducting the survey in such a way as to ensure a respondent population indicating high perfectionism ratings. Another consideration might be to consider a range of instruments aimed at identifying perfectionist "typologies" rather than a single overall perfectionist score to better detect adaptive and maladaptive forms of perfectionism (Hawkins, Watt & Sinclair, 2006).

Recruiting licensed teachers to fulfill this survey requirement and meet perfectionist criteria may necessitate consideration of recruiting practices. This would indicate recruiting a wide range of teacher respondents and conducting initial surveys related to perfectionism including specific determinants with regard to adaptive/ maladaptive perfectionism. Following this initial screening, the respondents indicating high levels of perfectionism could continue with survey instruments providing more information associated with teaching styles and efficacy.

One further area for future study could involve a current review of teaching styles to determine the Grasha's Teaching Styles have evolved because of better access to information regarding teaching practices through technology. Perhaps the less flexible, authoritarian methodology is utilized in a different mode or holds reduced prominence in comparison to other teaching methodologies.

In conclusion, this study has produced many considerations for future investigation and highlights research parameters to contemplate in the design of a subsequent study. The data is based on the respondents' perceptions of perfectionism, teaching styles and teaching efficacy. Future study could involve student perceptions and information pertaining to the learning environment, expectations associated with

teaching/administrative staff and parental expectations. Other considerations might involve public versus private schools, cultural populations and gender. It appears that this study may have simply tapped the surface relating to how perfectionism impacts school environments, methods of teaching and the assessment of teaching efficacy.

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APPENDIX A

Table 1

Differences between Maladaptive ("Neurotic") and Adaptive ("Normal") Perfectionism

Maladaptive Perfectionism	**Adaptive Perfectionism**
Unable to experience pleasure from labours	Able to experience satisfaction or pleasure
Inflexibly high standards	Standards modified in accordance with the situation
Unrealistically or unreasonably high standards	Achievable standards
Overly generalized high standards	High standards are matched to the person's limitations and strengths
Fear of failure	Striving for success
Focus on avoiding error	Focus on doing things right
Tense/anxious attitude toward tasks	Relaxed but careful attitude
Large gap between performance and standards	Reasonable match between attainable performance and standards
Sense of self-worth dependent on performance	Sense of self independent of performance
Associated with procrastination	Timely completion of tasks
Motivation to avoid negative consequences	Motivation to achieve positive feedback/ rewards
Goals attained for self-enhancement	Goals attained for enhancement of the society
Failure associated with harsh self-criticism	Failure associated with disappointment and renewed efforts
Black and white thinking: perfection versus failure	Balanced thinking
Belief one should excel	Desire to excel
Compulsive tendencies and doubting	Reasonable certainty about actions

Note: Table derived from Adler (1956), Burns (1980), Hamachek (1978), Hollender (1965)

APPENDIX B

Appendix B (1)

FluidSurveys is secure online software that makes survey creation fast and easy, while lowering your costs.

US Offices:

1203 Geiger Ln., Suite 100
Bridgewater, New Jersey

Canadian Offices

1729 Bank Street
Ottawa, Canada

Security

Physical Security
FluidSurveys servers are located in data centers that provide biometric access controls, constant surveillance, redundant power feeds and generators, robust fire suppression, and carefully monitored climate control to protect the servers that store your data.

Login Protection
All accounts are password protected and all passwords are encrypted and never stored in clear text. Account logins also have brute-force login protection by preventing individuals/bots from attempting to guess a password too many times.

SSL
FluidSurveys login (i.e. when a user logs in by typing their username/password) and data import/export (i.e. export of survey data) are protected using Secure Socket Layer Encryption (SSL). This is a default feature of all accounts.
FluidSurveys also offers SSL protection for surveys as an add-on on for additional security (this will add an SSL connection to all surveys created by a user's account). SSL will encrypt communications (256 bit) between the respondent's browser and our server.

Firewalls
The FluidSurveys application - including your data - rests securely behind firewalls.

Virus Scanning
FluidSurveys servers are scanned for viruses and other threats throughout the day.

Reliability

Redundant servers and data centers
FluidSurveys infrastructure uses redundant storage and servers to keep the application and your data available in the case of hardware failure - and another set of servers and storage in a geographically separate data center in case our primary data center is made unavailable by a disaster or other disruption.

FluidSurveys uses iWeb.com as its primary data center. iWeb's data centers are equipped with a wide range of security, power management, cooling and network access equipment. Biometric sensors, security cameras and secure access are the first items encountered on-site. In addition to thousands of servers, power regulation systems, diesel generators and air conditioning systems are vital aspects of the facilities. All these infrastructures are totally controlled and managed by iWeb's team of hosting infrastructures experts.

Connectivity to the Internet is assured by multiple black fibers getting into the buildings' telco rooms through diverse entry points. Multi-gigabit connectivity is used to link iWeb's data centers to each other and to connect upstream providers to iWeb's own network. iWeb's team monitors the data center and network operations 24 hours a day, 7 days a week, 365 days per year.

Backups
The data in your FluidSurveys account is replicated across multiple database servers in two locations to prevent a single failure from causing data loss. Additionally, that data is backed up nightly and stored in a secure offsite location to ensure that, even in the event of a catastrophe like a tornado or flood, your information will be safe and your records can be quickly restored.

Scalability

FluidSurveys servers can easily handle 25,000+ responses per survey per day and does not limit the number of responses that a user can get for their surveys. If you do have an unusually large project where a large number of respondents will be taking the survey at once, please do let us know and we can increase our cloud capacity during that time so that you will have no server load issues.

Section 508 Compliance

Surveys made using FluidSurveys.com are section 508 compatible. For the purpose of compliance testing, the following survey has been created: http://fluidsurveys.com/s/508-Compliance/ **FluidSurveys has used the following website tool in order to analyze the compliance of this survey:** http://www.contentquality.com/

Further notes:

- 3d Matrix, Multiple Choice Grid, and Checkbox Grids are displayed using tables not for styling reasons but for the input of tabular data.
- Google Analytics <script> tags do appear in the <body> or surveys on FluidSurveys.com but not on Enterprise Instances.

W3C – Priority I & II Compliance

Surveys made using FluidSurveys.com are W3C compliant. For the purpose of compliance testing, the following survey has been created: http://fluidsurveys.com/s/508-Compliance/
FluidSurveys has used the following website tool in order to analyze the compliance of this survey: http://www.contentquality.com/

Further notes:

- For 3d Matrix, Multiple Choice Grid, and Checkbox Grid questions, since a label tag cannot be associated with column2+ control fields, alt text is used instead.

CLF 2.0 Compliance

FluidSurveys does also supply CLF2.0 Compliant surveys in its enterprise instances. The large portion of CLF 2.0 compliance is based on W3C compliance. The rest of this compliance is based on common templates used. FluidSurveys does offer compliant templates in the deployment of Enterprise instances.

Appendix B (2)

Additional information regarding CINT

Contact-Gordanna.Krunik@cint.com

Tel: 647-989-8178

Ms. Krunik represents CINT in Canada and is based in Toronto, Ontario, Canada

CINT is able to provide respondents accessed through panelists in collaboration with several companies recruiting panelist populations for the purpose of survey/questionnaire responses. The panelists (respondents) are provided a unique id number and CINT does not have access to respondent names or identifying information. The panelists are selected according to occupation and required demographics. These panelists are sent invitations to participate in a particular survey and are informed of their right to decline the invitation. If a panelist completes approximately four minutes of a survey they receive payment for their participation. Under this period the respondent is not paid. The average payment for completion of each survey is $1.00 and this money is placed in an individual account corresponding to the unique id number of the respondent.

Ms. Krunik stated that the respondents and the information are Canadian based and all data remains in Canada with the server location in Montreal, Quebec.

APPENDIX C

Title of Project: Perfectionism in the Classroom Environment: An examination of the roles of teaching styles and perceived teacher self-efficacy.

Dear Participant,

The purpose of this study is to examine teaching styles, perceived teacher efficacy and perfectionism. The three areas will be compared and analyzed to distinguish relationships and the results of this study are intended to provide information teachers may consider valuable to incorporate in their teaching strategies.

I am requesting your participation as a teacher to respond to three questionnaires relating to the areas described above. The questionnaires are: The Frost Multidimensional Perfectionist Scale, The Perceived Teacher Efficacy Scale and the Grasha Teaching Style Inventory. Prior to the questionnaires, there is a brief demographic questionnaire to complete. All of these sections should require approximately twenty minutes in total to complete.

The questionnaires will be conducted through *FluidSurveys*, a Canadian based internet instrument that meets Canadian privacy and security standards. All data will be stored on FluidSurveys servers and participant confidentiality will be protected and respected. Names of schools (if identified by choice) and participant names will not be indicated in this thesis.

Participants may withdraw from the study at any time without adverse effects and have the right to skip any answers they do not wish to answer. Data collected in this study will be used for a graduate thesis. The results of this study will be provided to all participants upon thesis completion in the form of a summary.

This study has been reviewed by, and received ethics clearance through the Research Ethics Committee of the Graduate Studies Department at Mount Saint Vincent University. If you have questions about how this study is being conducted and wish to speak with someone not involved in the study, you may contact the

Chair of the University Research Ethics Board (UREB) c/o MSVU Research Office, at 457-6350 or via e-mail at research@msvu.ca.

Please check the following box to indicate consent for your participation in the following online questionnaires. ☐

Sincerely,

Jane Lowe Dr. Daniel Seguin

Mount Saint Vincent University

APPENDIX D

Appendix D (1)

Multidimensional Perfectionism Scale (MPS)
Frost et al., 1990

Description: The MPS is a 35 item questionnaire designed to measure perfectionism.

Scoring: Each of the six subscales is scored by summing the items. Additionally, there is an overall perfectionism score which is the sum of the subscales except Organization.

Subscales: The Concern over Mistakes (CM) subscale (Item #'s: 9, 10, 13, 14, 18, 21, 23, 25, 34) reflects negative reactions to mistakes, a tendency to interpret mistakes as equivalent to failure, and a tendency to believe that one will lose the respect of others following failure.

Personal Standards (PS) (Items #'s: 4, 6, 12, 16, 19, 24, 30) reflects the setting of very high standards and the excessive importance placed on these high standards for self-evaluation.

The tendency to believe that one's parents set very high goals comprises the Parent Expectations (PE) scale. (Items #'s: 1, 11, 15, 20, 26).

The perception that one's parents are (or were) overly critical constitutes the Parental Criticism (PC) scale. (Item #'s: 3, 5, 22, 35).

Doubting of Actions (D) (Item #'s: 17, 28, 32, 33) consists of items from the Maudsley Obsessive-Compulsive Inventory doubting subscale (Rachman & Hodgson, 1980) and reflects the extent to which people doubt their ability to accomplish tasks.

The Organization (O) (Items #'s: 2, 7, 8, 27, 29, 31) subscale is somewhat separate but related to certain dimensions. It measures the tendency to be orderly or organized and reflects an emphasis on order and orderliness, which has often been associated with perfectionism.

Norms:

While there are no published norms, some normative information can be found in the various articles published using the scale. Below is a list of the articles which have come out of my laboratory using the scale.

Frost, R., Marten, P., Lahart, C. and Rosenblate, R. (1990) The dimensions of perfectionism. Cognitive Therapy & Research, 14, 449-468.

Frost, R. and Marten, P. (1990) Perfectionism and evaluative threat. Cognitive Therapy & Research, 14, 559-572.

Frost, R. and Henderson, K. (1991) Perfectionism and Reactions to Athletic Competition. Journal of Sport and Exercise Psychology, 13, 323-335.

Frost, R., Lahart, C. and Rosenblate, R. (1991) The Development of Perfectionism. Cognitive Therapy & Research, 15, 469-490.

Frost, R., Heimberg, R., Holt, C., Mattia, J. and Neubauer, A. (1993). A comparison of two measures of perfectionism. Personality and Individual Differences, 14, 119-126.

Frost, R. and Gross, R. (1993). The hoarding of possessions. Behaviour Research and Therapy. 31, 367-382.

Frost, R. Steketee, G., Cohn, L. and Griess, K. (1994) Personality traits in subclinical and non-obsessive-compulsive volunteers and their parents. Behaviour Research and Therapy, 32, 47-56.

Frost, R. Turcotte, T., Heimberg, R., Holt, C. and Mattia, J. (1995). Reactions to mistakes among subjects high and low in perfectionist concern over mistakes. Cognitive Therapy and Research, 19, 195-206.

Juster, H., Heimberg, R., Frost, R., Holt, C., Mattia, J., & Faccenda, K. (1996). Social phobia and perfectionism. Personality and Individual Differences, 21, 403-410.

Frost, R. & Steketee, G. (1997). Perfectionism in obsessive compulsive disorder. Behaviour Research and Therapy, 35, 291-296.

Frost, R., Trepanier, K., Brown, E., Heimberg, R., Juster, H., Makris, G., & Leung, A. (1997). Self-monitoring of mistakes among subjects high and low in concern over mistakes. Cognitive Therapy and Research, 21, 209-222.

Brown, E., Makris, G., Juster, H., Leung, A., Heimberg, R., & Frost, R. (1999). Effect of perfectionism and affect on expectations, attributions and performance in the classroom. Journal of Social and Clinical Psychology, 18, 98-120.

Reliability:

The internal consistency alpha values are the following:

overall perfectionism measure = .90
concern over mistakes = .88
personal standards = .83
parental expectations = .84
parental criticism = .84
doubts about actions = .77
organization = .93

The six scales are highly correlated with one another but the Organization scale showed the weakest pattern of intercorrelation with the other subscales and with the total of the other items in the perfectionism scale.

Validity: The MPS is highly correlated with other measures of perfectionism, specifically the Burns' Perfectionism Scale (Burns, 1980), the Self-Evaluative (SE) Scale from the IBT (Jones, 1968), the Perfectionism Scale from the EDI (Garner et al., 1983), and the Self-Oriented Perfectionism and Socially-Prescribed Perfectionism scales on Hewitt and Flett's (1991) Multidimensional Perfectionism Scale.

Multidimensional Perfectionism Scale

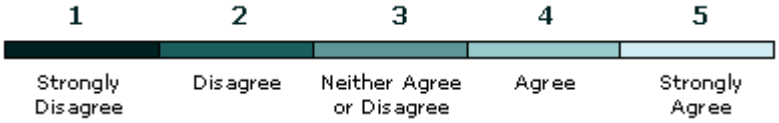
This questionnaire is designed to measure how much of a perfectionist you are.

It has 35 questions and should take no more than 10 minutes.

It was developed by **Dr Randy Frost** of Smith College, Massachusetts.

.

Please circle the number that best corresponds to your agreement with each statement below. Use this rating system



Strongly Disagree ⟺ Strongly Agree

1. My parents set very high standards for me.	1	2	3	4	5
2. Organization is very important to me.	1	2	3	4	5
3. As a child, I was punished for doing thing less than perfectly.	1	2	3	4	5
4. If I do not set the highest standards for myself, I am likely to end up a second rate person.	1	2	3	4	5
5. My parents never tried to understand my mistakes.	1	2	3	4	5
6. It is important to me that I be thoroughly competent in everything I do.	1	2	3	4	5
7. I am a neat person.	1	2	3	4	5
8. I try to be an organized person.	1	2	3	4	5
9. If I fail at work/school, I am a failure as a person.	1	2	3	4	5
10. I should be upset if I make a mistake.	1	2	3	4	5

11. My parents wanted me to be the best at everything.	1	2	3	4	5
12. I set higher goals for myself than most people.	1	2	3	4	5
13. If someone does a task at work/school better than me, then I feel like I failed the whole task.	1	2	3	4	5
14. If I fail partly, it is as bad as being a complete failure.	1	2	3	4	5
15. Only outstanding performance is good enough in my family.	1	2	3	4	5
16. I am very good at focusing my efforts on attaining a goal.	1	2	3	4	5
17. Even when I do something very carefully, I often feel that it is not quite done right.	1	2	3	4	5
18. I hate being less than the best at things.	1	2	3	4	5
19. I have extremely high goals.	1	2	3	4	5
20. My parents have expected excellence from me.	1	2	3	4	5
21. People will probably thing less of me if I make a mistake.	1	2	3	4	5
22. I never felt like I could meet my parents' expectations.	1	2	3	4	5
23. If I do not do as well as other people, it means I am an inferior human being.	1	2	3	4	5
24. Other people seem to accept lower standards from themselves than I do.	1	2	3	4	5
25. If I do not do well all the time, people will not respect me.	1	2	3	4	5
26. My parents have always had higher expectations for my future than I have.	1	2	3	4	5
27. I try to be a neat person.	1	2	3	4	5
28. I usually have doubts about the simple everyday things I do.	1	2	3	4	5
29. Neatness is very important to me.	1	2	3	4	5
30. I expect higher performance in my daily tasks than	1	2	3	4	5

most people.					
31. I am an organized person.	1	2	3	4	5
32. I tend to get behind in my work because I repeat things over and over.	1	2	3	4	5
33. It takes me a long time to do something “right”.	1	2	3	4	5
34. The fewer mistakes I make, the more people will like me.	1	2	3	4	5
35. I never felt like I could meet my parents’ standards.	1	2	3	4	5

Appendix D (2)

Teaching Style Inventory: Version 3.0

Use the following rating scale when responding to each item:

1	2	3	4	5	6	7
Strongly Agree	**Somewhat Disagree**		**Neither Disagree or Agree**	**Somewhat Agree**		**Strongly Agree**

Very unimportant aspect in my approach to teaching — **Very important aspect in my approach to teaching**

---

01. Facts, concepts, and principles are the most important things that students should acquire _____

02 .I set high standards for students in my class _____

03. What I say and do models the appropriate ways for students to think about issues in the content _____

04. My teaching goals and methods address a variety of student learning styles _____

05. Students typically work on class projects alone with with little supervision from me _____

06. Sharing my knowledge and expertise with students is very important to me _____

07. I give students negative feedback when their Performance is unsatisfactory _____

08. Students are encouraged to emulate the example I provide _____

09. I spend time consulting with students on how to improve their work on individual/group projects _____

10. Activities in the class encourage students to develop their own ideas about content issues _____

11. What I have to say about a topic is important for students to acquire a broader perspective on the issues in that area _____

12. Students would describe my standards and expectations As somewhat strict and rigid _____

13. I typically show students how and what to do in order to master course content _____

14. Small group discussions are employed to help students to develop their ability to think critically _____

15. Students design one or more self-directed learning experiences _____

16. I want students to leave this course well prepared for further work in this area _____

17. It is my responsibility to define what students must learn and how they should learn it _____

18. Examples of my personal experiences often are used to illustrate points about the material _____

19. I guide students' work on class projects by asking questions, exploring options, and suggesting alternative ways to do things _____

20. Developing the ability of students to think and work independently is an important goal _____

21. Lecturing is a significant part of how I teach each part of the class sessions _____

22. I provide very clear guidelines for how I want tasks completed in my classes _____

23. I often show students how they can use various principles and concepts _____

24. Course activities encourage students to take initiative and responsibility for their learning _____

25. Students take responsibility for teaching part of the class sessions _____

26. My expertise is typically used to resolve disagreements about content issues _____

27. This course has very specific goals and objectives that I want to accomplish _____

28. Students receive frequent verbal and/or written comments on their performances _____

29. I solicit student advice about how and what to teach In this class _____

30. Students set their own pace for completing independent and/or group projects _____

31. Students might describe me as a "storehouse of knowledge" who dispenses the facts, principles, and concepts they need _____

32. My expectations for what I want students to do in this class are clearly stated in the syllabus _____

33. Eventually, many students begin to think like me about course content _____

34. Students can make choices among activities in order to complete class requirements _____

35. My approach to teaching is similar to a manager of a work group who delegates tasks and responsibilities to

subordinates _____

36. There is more material in this course than I have time available to cover it _____

37. My standards and expectations help students develop the discipline they need to learn _____

38. Students might describe me as a "coach" who works closely with someone to correct problems in how they think and behave _____

39. I give students a lot of personal support and encouragement To do well _____

40. I assume the role of a resource person who is available to students whenever they need help _____

Appendix D (3)

Sense of Efficacy Scale (long form)

Teacher Beliefs

How much can you do?

Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.

	Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal
1. How much can you do to get through to the most difficult students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2. How much can you do to help your students think critically?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3. How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4. How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5. To what extent can you make your expectations clear about student behavior?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7. How well can you respond to difficult questions from your students ?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8. How well can you establish routines to keep activities running smoothly?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9. How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10 How much can you gauge student comprehension of what you have taught?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11 To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12 How much can you do to foster student creativity?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
13 How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
14 How much can you do to improve the understanding of a student who is failing?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15 How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
16. How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
17. How much can you do to adjust your lessons to the proper level for individual students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
18 How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
19 How well can you keep a few problem students form ruining an entire lesson?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

20. To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
21 How well can you respond to defiant students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
22 How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
23 How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
24 How well can you provide appropriate challenges for very capable students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Directions for Scoring the Teachers' Sense of Efficacy Scale[1]

Developers: Megan Tschannen-Moran, College of William and Mary
Anita Woolfolk Hoy, the Ohio State University.

Construct Validity

For information the construct validity of the Teachers' Sense of Teacher efficacy Scale, see:

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

Factor Analysis

It is important to conduct a factor analysis to determine how your participants respond to the questions. We have consistently found three moderately correlated factors: *Efficacy in Student Engagement, Efficacy in Instructional Practices*, and *Efficacy in Classroom Management*, but at times the make up of the scales varies slightly. With preservice teachers we recommend that the full 24-item scale (or 12-item short form) be used, because the factor structure often is less distinct for these respondents.

Subscale Scores

To determine the *Efficacy in Student Engagement, Efficacy in Instructional Practices*, and *Efficacy in Classroom Management* subscale scores, we compute unweighted means of the items that load on each factor. Generally these groupings are:

Long Form
Efficacy in Student Engagement: Items 1, 2, 4, 6, 9, 12, 14, 22

Efficacy in Instructional Strategies: Items 7, 10, 11, 17, 18, 20, 23, 24
Efficacy in Classroom Management: Items 3, 5, 8, 13, 15, 16, 19, 21

Short Form
Efficacy in Student Engagement: Items 2, 3, 4, 11
Efficacy in Instructional Strategies: Items 5, 9, 10, 12
Efficacy in Classroom Management: Items 1, 6, 7, 8

Reliabilities

In Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing and elusive construct. *Teaching and Teacher Education, 17,* 783-805, the following were found**:**

	Long Form			Short Form		
	Mean	SD	alpha	Mean	SD	alpha
OSTES	7.1	.94	.94	7.1	.98	.90
Engagement	7.3	1.1	.87	7.2	1.2	.81
Instruction	7.3	1.1	.91	7.3	1.2	.86
Management	6.7	1.1	.90	6.7	1.2	.86

[1] Because this instrument was developed at the Ohio State University, it is sometimes referred to as the *Ohio State Teacher Efficacy Scale*. We prefer the name, *Teachers' Sense of Efficacy Scale*.

APPENDIX E

Appendix E (1)

From: Randy Frost
To: Elizabeth.Lowe@msvu.ca
Cc:
Date: 02/29/12 12:27 pm
Subject: Re: MPS for thesis
Attachments: FMPSinfo.doc (43KB)

Dear Jane,

I've attached the scale. Good luck with your project.

Sincerely,
Randy Frost

On Wed, Feb 29, 2012 at 9:36 AM, Mrs. Elizabeth Jane Lowe <Elizabeth.Lowe@msvu.ca> wrote:

Dear Dr. Frost,
Thank you very much for your offer to send me the Frost Multidimensional Perfectionism Scale. This is extremely helpful and I appreciate your willingness to share this scale.
Sincerely,
Jane Lowe

Appendix E (2)

Anita Woolfolk Hoy, Ph.D.

Professor
Psychological Studies in Education

Dear

You have my permission to use the *Teachers' Sense of Efficacy Scale* in your research. A copy of both the long and short forms of the instrument as well as scoring instructions can be found at:

http://www.coe.ohio-state.edu/ahoy/researchinstruments.htm

Best wishes in your work,

[redacted]

Anita Woolfolk
Hoy, Ph.D.
Professor

APPENDIX F

Results between FPMS Subsets and Grasha's Teaching Styles (TS)

1. Prediction of Perfectionism (FMPS) Subset, Concern over Mistakes and TS

	Dependent Variable FMPS Concern over Mistakes (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Expert	**.00**	**.12**	**.04[b]**
Formal Authority	**.24**		
Personal Style	**.08**		
Facilitator	**-.64**		
Delegator	**.08**		

***p=.04, p< .05**

Results between FPMS Subsets and Grasha's Teaching Styles (TS)

2. Prediction of Perfectionism (FMPS) Subset, Parental Expectations and TS

	Dependent Variable FMPS Parental Expectations (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Expert	**.10**	**-.01**	**.52[b]**
Formal Authority	**1.2**		
Personal Style	**.89**		
Facilitator	**-2.2**		
Delegator	**.15**		

Results between FPMS Subsets and Grasha's Teaching Styles (TS)

3. Prediction of Perfectionism (FMPS) Subset, Personal Standards and TS

	Dependent Variable FMPS Personal Standards (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Expert	**.81**	**-.03**	**.63[b]**
Formal Authority	**1.8**		
Personal Style	**-1.3**		
Facilitator	**-.40**		
Delegator	**.69**		

Results between FPMS Subsets and Grasha's Teaching Styles (TS)

4. Prediction of Perfectionism (FMPS) Subset, Parental Criticism and TS

	Dependent Variable FMPS Parental Criticism (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Expert	**-.29**	**.01**	**.34[b]**
Formal Authority	**.06**		
Personal Style	**.54**		
Facilitator	**-2.1**		
Delegator	**.09**		

Results between FPMS Subsets and Grasha's Teaching Styles (TS)

5. Prediction of Perfectionism (FMPS) Subset, Doubt and TS

	Dependent Variable FMPS Doubt (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Expert	**.02**	**-.04**	**.71[b]**
Formal Authority	**1.3**		
Personal Style	**-1 .1**		
Facilitator	**-.04**		
Delegator	**.11**		

Results between FPMS Subsets and Grasha's Teaching Styles (TS)

6. Prediction of Perfectionism (FMPS) Subset, Organization and TS

	Dependent Variable FMPS Organization (Perfectionism)		
	Coefficient Effects (β)	**($\underline{\Delta}R^2$)**	**Sig**
Expert	**-1.2**	**-.03**	**.63[b]**
Formal Authority	**3.6**		
Personal Style	**-1 .2**		
Facilitator	**-.40**		
Delegator	**.46**		

Results between FPMS Subsets and Teacher's Sense of Efficacy

7. Prediction of Perfectionism (FMPS) Subset, Concern over Mistakes and Teachers' Sense of Efficacy.

	Dependent Variable FMPS Concern over Mistakes (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Engagement	**-.29**	**-.00**	**.442[b]**
Instruction	**.05**		
Management	**.05**		

8. Prediction of Perfectionism (FMPS) Subset, Parental Criticism and Teachers' Sense of Efficacy

	Dependent Variable FMPS Parental Criticism (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Engagement	**-.31**	**.02**	**.27[b]**
Instruction	**.06**		
Management	**.39**		

9. Prediction of Perfectionism (FMPS) Subset, Personal Standards and Teachers' Sense of Efficacy

	Dependent Variable FMPS Personal Standards (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Engagement	**-.15**	**.26**	**.23[b]**
Instruction	**.12**		
Management	**.31**		

10. **Prediction of Perfectionism (FMPS) Subset, Doubts and Teachers' Sense of Efficacy**

	Dependent Variable FMPS Doubts (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Engagement	**-.26**	**.00**	**.39[b]**
Instruction	**.12**		
Management	**-.04**		

11. Prediction of Perfectionism (FMPS) Subset, Organization and Teachers' Sense of Efficacy

	Dependent Variable FMPS Organization (Perfectionism)		
	Coefficient Effects (β)	**(ΔR^2)**	**Sig**
Engagement	**-.01**	**-.01**	**.49[b]**
Instruction	**.13**		
Management	**.12**		