THE ORDINARY YET EXTRAORDINARY EMOTIONS AND MOTIVES OF PRE-SERVICE MATHEMATICS TEACHERS

OANA G. RADU

The ordinary yet extraordinary emotions and motives of pre-service mathematics teachers

by

Oana G. Radu

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Abstract

This doctoral research is an account of the emotional experiences encountered by interns while teaching mathematics in the socio-cultural context of the junior and senior high school classrooms. Also, it describes similarities and differences existing between the emotional experiences of interns with different goal orientations. What kind of emotional experiences do interns encounter while teaching mathematics? What similarities and differences exist between the emotional experiences of interns with different goal orientations?

Basic qualitative research and case study research approaches were used to examine the complex relations between interns' emotions, goals, and actions. Data were collected using interviews, surveys, diaries, and classroom observations, as these generate in depth descriptions of interns' emotional experiences encountered while teaching mathematics, as well as attributed causes, thoughts, and perceived effects.

The case study portrayed the internship as a place where a mastery oriented intern can experience both pleasant and unpleasant emotions. It showed that unpleasant and pleasant emotions were experienced sporadically at the beginning of the internship. The case study revealed how unpleasant emotions have a constructive effect, and described modalities used to overcome such emotions and to use them to perfect teaching practices.

Mastery oriented and performance approach interns presented similarities in attributed causes of pleasant emotions, such as: students understand math, do their homework, or are engaged in classroom activities. However, for mastery oriented interns, pleasant emotions relate to students' understanding, while for performance approach

interns, pleasant emotions relate to their increased desire to appear talented at teaching. Performance avoidance interns attribute causes of pleasant emotions to getting positive feedback from supervisors and students, or to not encountering significant classroom disruptions.

Thoughts appearing in conjunction with unpleasant emotions show performance approach interns' affinity to attribute the causes to students' inappropriate behaviour or lack of attention. While experiencing unpleasant emotions, performance avoidance interns' thoughts run towards their inability to control the class, to questioning their choice of a career, and to thinking about avoiding and even leaving the teaching profession.

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To Mozart

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Chapter 1 Introduction

1.1 Background of the Study

As a mathematics instructor, I have been fascinated by the complex role emotions play in students' lives. During extensive university teaching of pure and applied mathematics, two common student comments became apparent. The first revolved around an emotional response to mathematics, such as in the phrase: "I really don't like math!" The second commonly involved some comment around students' perceived inability to excel in the higher level thinking of the subject, such as "I can't solve this problem." The first comment spoke to the affective domain, whereas the second linked more directly to cognitive and behavioural functioning. But the two always seemed to go hand in hand. The 'emotions' around the subject could not be separated from the 'thinking' involved.

By the same token, emotions played a similar role within my professional life. Shortly after delivering mathematics lectures, my emotions were obvious. Emotions reached a positive apex while noticing students' understanding and progress in the subject, but emotions could equally convert to despair when seeing students' lack of interest in mathematics. Thus, questions about what more could I do to motivate students to become closer to mathematics appeared often in my thoughts. Above all, emotions experienced seemed to have a huge potential in affecting the motivation to teach, as well as goals and values related to teaching. As such, I embarked on a journey that would help me better understand the place, role and potential of emotions in teachers' and students'

lives. This doctoral research zeroes in on the complex relations between emotions and achievement goals for teaching for interns specializing in teaching mathematics.

1.2 Statement of the Research Problem

Teacher motivation has been the topic of investigation for various researchers (Butler, 2007; Butler & Shibaz, 2008; De Jesus & Lens, 2005; Pelletier, Séguin-Lévesque, & Legault, 2002; Retelsdorf, Butler, Streblow, & Schiefele, 2010; Roth, Assor, Kanat-Maymon, & Kaplan, 2007; Watt & Richardson, 2008b). Retelsdorf et al. (2010) claimed that the paucity of studies in this area is explained on the basis of a deficiency in theoretical models about teacher motivation. In recent years, researchers aimed to draw on existing motivation theories, such as expectancy-value theory, goal theory, interest, and self-determination theories, and apply these to the context of teaching. De Jesus and Lens (2005) put forth a model that would make inquiries about teacher motivation "through the lenses of different cognitive-motivational theories in order to elaborate a model capable of explaining functional relations that exist between cognitive-motivational variables" (p. 121). This model suggested strategies that could be used to increase teacher motivation. Building on the research literature on students' motivation (Ames & Ames, 1984; Dweck, 1986; Nicholls, 1989), Butler (2007) filled in this theoretical gap, proposing achievement goal theory as a valid working framework for teachers' motivation.

Research findings connected teacher motivation to help seeking (Butler, 2007), helplessness (De Jesus & Lens, 2005), or instructional practices and interest in teaching (Retelsdorf et al., 2010). Butler and Shibaz (2008) linked teachers' achievement goals to

students' perceptions of teaching practices. Pelletier et al. (2002) show that students' motivation and teacher's behaviour are mediated by teachers' motivation. Teacher autonomous motivation for teaching was deemed to be an influencer on students' motivations for learning (Roth et al., 2007). Researchers (Richardson & Watt, 2006; Watt & Richardson, 2008a, 2008b) described motivations for teaching. Malmberg (2006) inquired whether interns "want to teach as they learn" or "learn as they wish to teach" (p. 74).

Emotions are integral parts of teachers' lives. Hargreaves and Fullan (1998) claim that emotions "are dynamic parts of ourselves, and whether they are positive or negative, all organizations, especially schools, are full of them" (pp. 55-56). Research in teacher emotion show that teachers' emotions connect with their well-being and effectiveness (Damasio, 2003; Day & Qing, 2009). Furthermore, teachers' emotions bond with their identities and emotion management in teaching (Goldstein & Lake, 2000, 2003; Hargreaves, 1998b, 2000b; Oplatka, 2007, 2009a; Meyer, 2009; Winograd, 2003; Zembylas, 2005c). Teachers' emotions are influenced by and influence the nature of teacher-student relationships (Chang & Davis, 2009; Davis, 2006; Muller, Katz, & Dance, 1999; Rosiek & Beghetto, 2009). Teachers' emotions are intertwined with social and cultural changes (Kelchtermans, Ballet, & Piot, 2009; Nias, 1996), and contribute to shaping educational and political changes (Hargreaves, 2000a, 2005; van Veen & Sleegers, 2009). Sutton and Wheatley (2003) call for research about teachers' emotions and motivation with focus on "management and discipline, adoption and use of teaching strategies, learning to teach, and teachers' motivation" (p. 327). Therefore, the role emotions play within teachers' motivations presents a vast, yet untapped area of research.

The purpose of this doctoral research is to produce a description of interns' emotional experiences encountered while teaching mathematics in the socio-cultural context of a selected group of junior and senior high schools. Furthermore, the research aims to describe similarities and differences that exist between the emotional experiences of interns who have various goal orientations. An emotional experience encompasses the underlying emotion, its attributed causes, other accompanying emotions, the thoughts generated while experiencing the emotion, and perceived effects. Therefore, the research describes interns' emotional experiences, and describes attributed causes leading to such emotions and thoughts accompanying emotions. Furthermore, it describes the perceived effects of goals on emotions, the bodily effects of emotions, and the perceived effects of emotions on interns' classroom actions. Emphasis is placed on the perceived effects of emotions on interns' confidence, tactics of teaching, time and effort, and on teaching skills that ultimately would foster positive emotional and motivational learning environments. The research considers how emotions relate to different goals. Although this study focuses on pre-service teachers and not in-service teachers, the significance of this study appears in the contribution it makes to the complex relations between emotions and motivations within teaching practices.

All emotions that interns mention are taken into consideration, as all are worthy of research. Emotions encountered while teaching might span quite a wide range from anticipation, joy, or excitement to disappointment, despair, or anger. Hargreaves (2005) asserts "the more volatile, passionate emotions (which are also the less easily managed ones) are kept off the educational agenda in favor of ones that encourage trust, support, openness, involvement, commitment to teamwork, and willingness to experiment"

(p. 219). However, various emotions surface while teaching, and each one of them has the potential of influencing teachers' thoughts and actions and even their motivation to teach.

Three types of achievement goals constitute the basis of the dialogue within the thesis. Mastery-approach goals toward instruction include the desire to continue developing teaching competences, desire to attain teaching mastery, desire to learn new things within mathematics and mathematics teaching practices, or desire to learn new teaching models regardless of how difficult these may be (Ames & Ames, 1984; Butler, 2007). Performance approach goals toward instruction might include: the satisfaction that comes with looking more proficient than other teachers, the desire to demonstrate competence, a wish to outperform colleagues, or the importance of performing better than others (Butler, 2007; Papaioannou & Christodoulidis, 2007). Examples of teachers' performance avoidance goals toward instruction include: the desire not to disclose lack of competence, to avoid solving problems in which they might look incapable, or to avoid teaching math topics in which they might look incapable (Butler & Shibaz, 2008; Papaioannou & Christodoulidis, 2007).

1.3 Research Questions

The research aims to uncover emotional experiences of pre-service mathematics teachers and to present how emotions relate to interns' achievement goals towards instruction. An emotional experience encompasses the underlying emotion, its attributed causes, other accompanying emotions, the thoughts generated while experiencing the emotion, and perceived effects. What kind of emotional experiences do interns encounter

while teaching mathematics? What similarities and differences exist between the emotional experiences of interns with different goal orientations?

1.4 Overview of the Study

To answer the study's questions, two research approaches are used: qualitative research and case study research. According to Merriam (2009), researchers carrying out a qualitative research study are interested in "(1) how people interpret their experiences, (2) how they construct their worlds, and (3) what meaning they attribute to their experiences" (p. 23). The overall purpose of this type of research is to "understand how people make sense of their lives and their experiences" (p. 23). As such, it is well suited to comprehend interns' emotional experiences, and how interns attribute meaning and actions to these experiences. Apart from the qualitative research, the case study research has huge potential to go behind the surface and reveal comprehensive portrayals of context, emotions, and behaviours, as well as the complex mesh of existing relations between an intern's emotions, goals, and actions. These research approaches were best choices for responding to the research questions, as they revealed emerging emotions, their attributed causes, the thoughts accompanying them, and how emotions relate to interns' achievement goals towards instruction.

The study's participants were interns sharing the following characteristics: a minor or a major in mathematics, completion of the secondary mathematics methods course immediately preceding the internship, enrolment in the internship, and teaching at least one mathematics course in this internship. The secondary mathematics methods course curriculum covers the following topics the purpose of mathematics, theories of

learning mathematics, and lesson planning and evaluation. The mathematics methods course applies the principles of effective teaching to the teaching and learning of mathematics. The main objective of this course is to provide intermediate and secondary mathematics interns with various experiences in the teaching and learning of mathematics. The internship is undertaken over the course of thirteen weeks in junior or senior high schools. Most interns were in their mid twenties and were from Newfoundland and Labrador with undergraduate degrees from Memorial University. Pre-service teachers have the opportunity to gradually take on teaching responsibilities within their teachable areas. The data collection process involved interviews, surveys, diaries, and classroom observations. Descriptions of interns' emotional experiences encountered while teaching mathematics and detailed accounts of interns' attributed causes and thoughts were generated. Data collection documents allowed an understanding of how interns' emotions relate to their achievement goals for teaching.

Data were collected between December 2009 and April 2010 while pre-service teachers were enrolled in the educational internship, a requirement of the Bachelor of Education program. Pre-service teachers completed internships in junior and senior high schools in various provinces across Canada. For the qualitative research, data were collected via three one-hour interviews with each of the thirteen participants and via diaries. These diaries contained interns' observations and comments germane to the emotions or moods experienced while teaching math. For the case study research, data were collected through daily classroom observations, in-depth discussions following the mathematics lectures, a survey, three one-hour interviews, and diaries of one intern.

The thesis has the following chapters: review of literature, methodology, the case study report, data analysis, and conclusion. The review of literature creates a synopsis of major theoretical themes related to the discourse of this research. Included in the methodology chapter are details of the design of the study, sample selection, pilot study, data collection, data analysis, and validity and reliability. The major findings of this research are presented in the case study report and data analysis chapter. Finally, the research findings are placed in the context of the current literature. Furthermore, the limitations of the study, and the future avenues of expanding research ideas are presented in the last chapter.

Chapter 2 Review of Literature

This chapter discusses major themes of research in the areas of motivation and emotion with particular emphasis on teacher motivation and teacher emotion research. The chapter is divided into five sections. The first section focuses on motivation research and presents a synopsis of findings and theoretical premises. The second section narrows the focus of research onto teacher motivation. The third section looks at emotions in teacher education, while the fourth section presents the theoretical foundation of emotions in the context of this doctoral research. The fifth section connects the two major areas of emotions and motivation research, and positions the objectives of this research study.

2.1 Motivation

This section discusses some of the motivation terms and theories, with an emphasis on the achievement goal theoretical framework used within the literature with a focus on students' achievement goals. Goal orientations are represented as "a set of behavioural intentions that determine how students approach and engage in learning activities" (Meece, Blumenfeld, & Hoyle, 1988, p. 514). Mastery goals, also known as learning goals (Dweck, 1986), or task involved goals (Kaplan & Midgley 1997; Midgley et al., 1998; Nicholls, 1984a), present the desire to develop competencies and increase knowledge and understanding through effortful learning (Ames & Archer, 1988; Archer, 1994). Performance goals, known as ego goals (Nicholls, 1984a), or ego/social goals (Meece et al., 1988; Nicholls, Patashnick, & Nolen, 1985), represent the desire to gain favourable opinions and avoid negative judgments of personal competencies, especially if

success was achieved through minimum effort (Dweck, 1986). Work-avoidant goals underline the desire to "get the work done with a minimum amount of effort" (Meece et al., 1988, p. 515).

Achievement goals represent "students' perceptions and beliefs about the purposes of academic achievement" (Urdan & Maehr, 1995, p. 215). This definition is aligned with definitions put forth by other achievement goal theorists (Ames, 1984, 1992; Dweck, 1986; Nicholls, 1984b; Pintrich, 1989). The basis of this theory presents students' behaviours as "a function of desires to achieve particular goals" (Seifert, 2004, p. 142). Researchers focus attention on investigating students' perceptions about "*why* they are trying to achieve in an academic situation rather than specifically *what* they are trying to achieve" (Urdan & Maehr, 1995, p. 215). Achievement goals have the potential to affect the quality of motivation, which in turn could contribute to changes in students' behavioural, cognitive and affective structures (Ames, 1992).

Covington (2000) describes learning goals as "increasing one's competency, understanding, and appreciation for what is being learned" (p. 174). Students pursuing such goals are described as being self-regulating and self-determining (Seifert, 1997a). They attribute success or failure to effort and to other internal and controllable factors (Nicholls, 1984b; Pintrich & Schunk, 1996), prefer engagement in challenging tasks (Seifert, 1995b), and believe "intelligence is malleable" (Dweck & Leggett, 1988, p. 259). Mastery oriented students have increased self-esteem and are more adaptive. Such students "maintain positive affect towards a task and a positive prognosis about the eventual outcome" (Diener & Dweck, 1978, p. 460). As well, they "report more positive affect and less negative affect, are more likely to take responsibility for success, and are

less likely to deny responsibility for failure" (Seifert, 1995a, p. 543). Mastery oriented students exhibit "constructive self-instructions and self-monitoring, positive affect, and effective problem-solving strategies" (Dweck & Leggett, 1988, p. 258). Such students appear to self-examine their understanding of the topics learned (Meece & Holt, 1993; Middleton & Midgley, 1997), "employ organizing strategies such as paraphrasing and summarizing" (Covington, 2000, p. 175), and "positively associate deep-level processing, persistence, and high effort, a combination that also led to increases in achievement" (Covington, 2000, p. 177). Students prefer pursuing tasks that maximize "the growth of ability and the pride and pleasure of mastery, quite apart from how one's abilities are showing up at any given moment" (Dweck & Leggett, 1988, p. 261). Mastery goals characterize students' "concern with developing competence and a focus on improvement and mastery" (Urdan & Maehr, 1995, p. 214).

Performance goals highlight students' emphasis on demonstrating ability and on making comparisons between self and others' performances (Ames, 1992; Dweck & Leggett, 1988; Urdan & Maehr, 1995). Performance goals are frequently associated with "superficial, rote rehearsal strategies and are unrelated or negatively associated with deep-level processing" (Covington, 2000, p. 175). Performance goals are "positive predictors of surface processing, persistence, effort, and exam performance" (Elliot, McGregor, & Gable, 1999, p. 549), and "work against the pursuit of challenge" (Dweck, 1986, p. 1041) as they compel students to focus on obtaining favourable judgments, rather than on developing competence. Performance oriented students worry about how their performance might be perceived in relation to that of others, as "the goal is to gain positive judgments and avoid negative judgments of competence" (Dweck & Leggett,

1988, p. 259). Performance students believe that "intelligence is a fixed trait" and "tend to orient toward gaining favourable judgments of that trait" (Dweck, 1986, p. 1041). Such goal orientation is highly related to "the use and perceived value of surface-level strategies only" (Nolen, 1988, p. 269). Success is filtered through "competitiveness and extrinsic factors such as impressing the teacher and the teacher's belief in the students' ability to do well" (Nolen, 1988, p. 271). Students tend to "make more negative self-statements, attribute success to uncontrollable factors" (Seifert, 1995a, p. 544), are not inclined to make future positive prognosis statements (Diener & Dweck, 1978), are governed by desires to achieve extrinsic rewards (Pintrich & Garcia, 1991), and to look superior to others (Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990; Seifert & O'Keefe, 2001). Students prefer tasks that maximize "positive judgments and pride in ability, while minimizing negative judgments, anxiety and shame" (Dweck & Leggett, 1988, p. 261). The performance goal student is "*self*, *other* and *failure* focused, processing information in terms of self and others" (Seifert, 2004, p. 143).

Work avoidance goals also emerge in the literature. The possibility that work avoidance goals are separate from mastery and performance goals appeared in various research works (Elliot & Harackiewicz, 1996; Jarvis & Seifert, 2002; Nicholls et al., 1990; Seifert & O'Keefe, 2001). Work avoidance students tend to "avoid putting in effort to do well, do only the minimum necessary to get by and avoid challenging tasks" (Seifert, 2004, p. 143). Work avoidance students find little significance and meaning in their work, possess a "sense of incompetence or a heightened sense of externality", and tend to place responsibility on external factors (Seifert & O'Keefe, 2001, p. 90). Students engage in this type of behaviour because they are failure avoidant or as a result of learned

helplessness (Jarvis & Seifert, 2002), because "work is a threat to ability perceptions of self-worth" (Seifert, 2004, p. 143), or simply because they do not see the benefits of being engaged in doing the tasks. Work avoidance might also emerge as a "passive-aggressive mechanism" (Jarvis & Seifert, 2002; Seifert, 2004), where students choose not to engage in completing their work to annoy their teacher or to seek revenge as a mean of externalizing antipathy or hate.

Students' goal formation is associated with classroom environment, teacher characteristics, and emotions. Environments where teachers are perceived as nurturing, respectful, and guiding are conducive to students being engaged in mastery goals (Seifert, 1997a). Teachers who make use of "interesting, novel and meaningful tasks and emphasise the process of learning are more likely to have students who are willing to engage cognitively with the work" (Seifert & O'Keefe, 2001, p. 90). Teachers' supportive comments, and their attitudes towards mathematics and teaching directly impact students' academic successes and influence students' goal attritions. Seifert and O'Keefe (2001) claim that a sense of competence and a sense of control stand out because confident and in control students are more likely to engage in self-regulated learning and in the pursuit of mastery goals. They argue that students who do not exhibit confidence and control are likely to avoid effort and self-regulated learning, as they do not believe in their ability to accomplish the work. Such students aim to avoid humiliation, shame, or failure.

2.2 Teacher Motivation

While studies on students' motivation and students' goals abound, significantly less research is devoted to teachers' goal orientations (Butler, 2007; Butler & Shibaz,

2008; De Jesus & Lens, 2005; Pelletier et al., 2002; Retelsdorf et al., 2010; Roth et al., 2007; Watt & Richardson, 2008b). This is explained through a lack of conceptual framework (Butler, 2007; Retelsdorf et al., 2010; Watt & Richardson, 2008a).

Within the task-mastery system, teachers are concerned with "what and how important educational goals should be accomplished for a student" (Ames & Ames, 1984, pp. 546-547). The task-mastery system comprises the mastery oriented individuals. Teachers' values are very much connected with students' progress and understanding, and their abilities and efforts are seen as tools directly contributing to increasing students' abilities, performance, learning, and efforts. Teachers' engagements in various academic tasks are undertaken on the basis of students' benefit and progress (Ames & Ames, 1984). Teachers are focused on strategies that help students become more independent, self-determined, and self-competent (Deci & Ryan, 1980). Consequently, students who perceive teachers as supportive of their autonomy tend to exhibit higher levels of intrinsic motivation, competence and self-determination (Ames & Ames, 1984; Rigby, Deci, Patrick, & Ryan, 1992; Pelletier et al., 2002; Vallerand, Fortier, & Guay, 1997). Mastery oriented teachers primarily focus "on task and processing of task-relevant information" (Ames & Ames, 1984, p. 549).

Recent research positions mastery goals as reflecting teachers' strivings to "learn, develop, and acquire professional understandings and skills" (Butler, 2007, p. 242). Mastery oriented teachers think of "a successful day when they had learned something new, when something in class made them think, and when they saw that they were teaching better than in the past" (Butler & Shibaz, 2008, p. 455). "Mastery goals were associated with more adaptive perceptions and behaviour than were ability goals and

especially ability-avoidance goals" (Butler, 2007, p. 251). Retelsdorf et al. (2010) claim that mastery orientation for teaching is associated with high intrinsic motivation in teaching and surfaces as "a significant protective factor against teacher burnout" (p. 42). Mastery approach goals toward instruction incorporate teachers' desires to continue developing teaching competences, to learn new teaching practices, or to learn new teaching models regardless of the level of difficulty (Papaioannou & Christodoulidis, 2007).

Within the ability-evaluative teacher motivational system, teachers' chief concerns relate to looking after their self-esteem. Teachers tend to focus on themselves, rather than on their students, and "are concerned with demonstration of high ability and avoidance of low ability" (Ames & Ames, 1984, p. 547). While interacting with mischievous students, teachers could feel threatened about losing control, as their sense of esteem is highly intertwined with their sense of control (Ames & Ames, 1984; Brophy & Rohrkemper, 1981; Cooper, 1983). Another study shows that "the less they are self-determined toward teaching, the more they become controlling with students" (Pelletier et al., 2002, p. 186). Ability approach goals underline teachers' attempts to demonstrate high ability in comparison to the performance of others (Butler, 2000, 2007). Performance approach goals are characterized by the satisfaction that comes with looking more proficient than others, by the desire to demonstrate competence, or by the hope to outperform others (Papaioannou & Christodoulidis, 2007).

Ability avoidance goals are characterized by strivings to "avoid the demonstration of inferior teaching" (Butler, 2007, p. 242). Ability avoidance oriented teachers verbalize success "when their classes did not perform worse than those of other teachers, when

students did not ask questions that they could not answer, or when the principal conveyed that they were not less competent than most other teachers" (Butler & Shibaz, 2008, p. 455). Papaioannou and Christodoulidis (2007) show that teachers' performance avoidance goal orientations relate to weak job satisfaction. Performance avoidance goals toward instruction are characterized by a desire to avoid solving problems or to avoid teaching topics where teachers might look incapable (Papaioannou & Christodoulidis, 2007).

Descriptions of mastery oriented, performance approach and performance avoidance comprise the foundation of the achievement goal theoretical framework for teacher motivation (Butler, 2007). This model is built upon existing models within research areas of student motivation (Ames & Ames, 1984; Dweck, 1986; Nicholls, 1989). It conceptualizes motivation, in particular achievement goal theory, for teaching and not only for learning. Butler (2007) proposes a new achievement goal theory for teachers that would mirror students' four kinds of achievement goals for learning. The four teachers' goal orientations would be mastery orientation, ability approach, ability avoidance and work avoidance. The latter is defined as getting "through the day with little effort" (Butler, 2007, p. 242). The model was further used by Butler and Shibaz (2008) to assess teachers' goal orientations with regards to help seeking and predicated that teachers exhibiting mastery orientation goals "endorsed positive perceptions of help seeking as beneficial for learning, preferred to receive help that could enable them to become more knowledgeable and effective, and reported high levels of actual help seeking" (p. 455).

De Jesus and Lens (2005) propose an integrated cognitive-motivational model for teacher motivation, which integrates ideas from self-efficacy theory (Bandura, 1977) and intrinsic motivation theory (Deci, 1975; Deci & Ryan, 1985). It aims to clarify teachers' strands of motivation, through a cycle of interactions between attributions, control expectancy, success expectancy, goal values, intrinsic motivation, and professional engagement. This model focuses only on the "quantity of motivation assessed by the level of job satisfaction or commitment" (Butler & Shibaz, 2008, p. 453). Butler's (2007) study is novel, as it proposes a comprehensive motivational framework for teachers.

Research links teacher motivation to help seeking (Butler, 2007; Butler & Shibaz, 2008; Dickhäuser, Butler, & Tönjes, 2007; Fasching, Dresel, Dickhäuser, & Nitsche, 2010), helplessness (De Jesus & Lens, 2005), instructional practices, interest in teaching, and burnout (Retelsdorf et al., 2010). Research also connects teacher motivation to behaviours and to actions, particularly when the latter are viewed as consequences of perceived pressure at work (Pelletier et al., 2002). Research also links teachers' achievement goals to students' perceptions of teaching practices (Butler & Shibaz, 2008). Research studies also focus on profiling motivating factors for pursuing teaching as a career (Brookhart & Freeman, 1992; Bush, 1986; Richardson & Watt, 2006; Schutz, Crowder, & White, 2001; Watt & Richardson, 2008b; Younger, Brindley, Pedder, & Hagger, 2004) and on examining the trajectory of pre-service teachers' goal orientations through their teacher education (Malmberg, 2008). Malmberg (2006) inquire whether student teachers "want to teach as they learn" or "learn as they wish to teach" (p. 74) and how instrumental goal-orientation is in pre-service teachers' long term motivation. Malmberg's (2006) study highlights links between interns' mastery goals and intrinsic

motivation, avoidance goals and extrinsic motivation, performance goals and previous achievement, as well as intrinsic motivation and entrance scores. Butler and Shibaz (2008) connect achievement goals for teaching with students' perceptions of instructional practices. Teachers' mastery goals associate with "higher levels of perceived teacher support and lower levels of perceived teacher inhibition" (p. 453). For ability avoidance goals, the reverse is true. Such goals are correlated with student cheating.

Another strand of research focuses on teachers' autonomous motivation for teaching, which is deemed to be an influencer of students' motivations for learning and to predict the use of autonomy supportive teaching techniques (Roth et al., 2007). Teachers' strategies for motivating students became subject to investigation (Ames, 1992; Nichols, Jones, & Hancock, 2003; Reeve, 2006). Pelletier et al. (2002) link teachers' motivation to behaviours and subsequent actions, because "the more self-determined teachers are toward their work, the more autonomy supportive they are with their students" (p. 194). Teachers' goals are deemed to act as motivators for instructional behaviours as "teachers who richly invest themselves in forming complex attachments to their content area and unashamedly share those interests with their students are effective, empowered, and energizing instructors" (Long & Hoy, 2006, p. 312). Kunter et al. (2008) predicate that teachers' "higher enthusiasm is related to higher quality instructional behavior" (p. 478). Teachers' enthusiasm or intrinsic motivation to teach is positively correlated with students' interest and excitement about learning (Patrick, Hisley, & Kempler, 2000). Hsee, Hatfield and Carlson (1990) use emotional contagion to show that people 'catch' others' emotions. Emotional contagion is defined as "the tendency to mimic the verbal, physiological, and/or behavioural aspects of another person's emotional

experience/expression, and thus to experience/express the same emotions oneself" (Hsee et al., 1990, p. 328).

2.3 Emotions in Teacher Education

Emotions are integral parts of educational systems for both students and teachers. Teaching is increasingly perceived as an act deeply rooted in emotional experiences (Hargreaves, 1998a; Nias, 1996). Hargreaves (2005) believes that "emotions are the heart of teaching" (p. 278). "Teaching is an emotional practice; teaching and learning involve emotional understanding; teaching is a form of emotional labor, and teachers' emotions are inseparable from their moral purposes and their ability to achieve those purposes" (Hargreaves, 1998b, p. 838). This statement presents teaching as more than just the sum of a finite number of technical competencies such as comprehensive subject knowledge and excellent teaching skills. Rather teaching is heavily flooded by emotions and emotional experiences. Four themes emerge in teacher emotion research.

The first theme discusses teachers' emotions relative to mentoring, emotion management, regulation, and student-teacher relationships. The influence of teachers' emotions on their emotional well-being and effectiveness was researched (Damasio, 2003; Day & Qing, 2009). Of interest for this doctoral dissertation are teachers' emotions relative to emotion management and regulation. As such, emphasis is placed on describing this connection and not the other parts of this theme. The relation between teachers' emotions and emotion management in teaching also received considerable attention (Hargreaves, 1998b, 2000b; Oplatka, 2007, 2009a; van Veen & Lasky, 2005; Winograd, 2003; Zembylas, 2005b, 2005c). Emotional management is defined as "the

process of regulating one's emotions while emotional labor focuses more on the consequences of this process" (Zembylas, 2005c, p. 50). Emotional management requires alterations of one's emotions by modifying facial expressions and bodily signs of the emotion (Zembylas, 2005c). This can be accomplished in two distinct ways: by faking it, i.e. modifying how they act without modifying how they feel, or by expressing true emotions, i.e. expressing the desired emotions alongside with living it (Hochschild, 1983). The notion of emotional dissonance appears when "one's displayed emotions differ from one's actual emotions (i.e., when one is behaving against his personal values and beliefs)" (Oplatka, 2009a, p. 59). Teachers manage and regulate "their positive emotions by 'getting themselves up' before school and to preparing themselves to be 'enthusiastic and energetic'" (Sutton, 2004, p. 386). Emotional management strategies become part of teachers' routines (Hargreaves, 1998b; Oplatka, 2009b):

> Emotional management strategies are often used as a natural aspect of teaching and learning without problematizing them in any way. Thus, emotion management over time becomes part of a teacher's habitus … that is so embedded in one's practices that no interrogation is involved (Zembylas, 2005c, p. 209).

Teachers' emotions are highly intertwined with teachers' identities (Meyer, 2009; Zembylas, 2003a, 2005c) and contribute to making a huge difference for beginning teachers' identities. Based on emotions experienced while teaching, student teachers identify classes of emotional tensions, which influence their identities. These include "finding autonomy in relation to the mentor teacher", finding fulfillment in student learning, and "building relationships with students" (Meyer, 2009, p. 81). Goldstein and

Lake (2000, 2003) recognize the importance of care within teachers' experiences and teacher education.

The second theme revolves around teachers' emotions as active factors within teacher-student relationships (Chang & Davis, 2009; Davis, 2006; Muller et al., 1999). Pleasant and unpleasant emotions are viewed as by-products of these interactions. Primary and secondary layers of appraisal are assigned (Lazarus, 1991b). Primary appraisal relates the situation to one's goals, and evaluates the extent to which these are matching. Primary appraisals consist of "*goal relevance, goal congruence* or incongruence, and *goal content*" (Lazarus, 1991b, p. 827). Goal relevance is used to diagnose if there exists potential for experiencing emotions. Goal congruence or incongruence assesses if the event is beneficial or not. Goal content is used to differentiate various emotions. Secondary appraisals establish blame, credit, and future expectations. Such appraisals appear as follow-ups of interpreting the meaning of a situation in terms of one's stimulus and history. Subsequently, coping mechanisms come into play to facilitate one's continued existence. Teachers' emotions resulting from appraisals of success or failure define teachers' achievement emotions. Teachers' emotions help in understanding how to create constructive environments for students (Frenzel, Goetz, Stephen, & Jacobs, 2009). Rosiek and Beghetto (2009) describe teachers' thought processes while reflecting on students' emotions.

The third theme presents the impact of teachers' emotions on educational reform and change. It highlights that teachers' emotions are interconnected with social and cultural changes (Kelchtermans et al., 2009; Nias, 1996), and contribute to shaping educational and political changes (Hargreaves, 2000a, 2005; van Veen & Sleegers, 2006,

2009). The fourth theme describes the interconnectedness of emotions, race, and gender, as well as the relationship between emotion and power (Winograd, 2009; Zembylas & Chubbuck, 2009). These themes are presented to understand main trends in teacher emotion research.

Studies about emotions in teaching include the following: care, concern, love, affection, and enthusiasm (Elbaz, 1992; Godar, 1990; Hargreaves, 1998b; Jackson, 1968; Nias, 1989; Woods & Jeffrey, 1996), satisfaction of seeing students learning and making progress (Hatch, 1993; Jackson, 1968; Lortie, 1975; Nias, 1989; Sutton, 2000), joy of spending time with students (Golby, 1996; Hargreaves, 2000b; Lortie, 1975; Nias, 1989; Sutton, 2000), and satisfaction of having strong and rewarding classroom relationships (Hargreaves, 2000b). Pleasure and pride appear when students cooperate and when no classroom disruptions are encountered (Hatch, 1993; Lortie, 1975; Sutton, 2000). Other emotions include hope (Elbaz, 1992), the excitement and discovery processes of teaching, particularly for beginning teachers (Huberman, 1993), and the excitement related to the unpredictability of teaching (Jackson, 1968; Nias, 1989). Hargreaves and Tucker (1991) discuss the guilt traps and the guilt trips of teaching. Unpleasant emotions occur in teacher emotion research. Frustration and anger are reported when students misbehave (Emmer & Stough, 2001; Hargreaves, 2000b; Jackson, 1968; Sutton, 2000). Nervousness emerged upon seeing "students' hostile or oppositional reaction" (Stough & Emmer, 1998, p. 347). Frustration appears when dealing with uncooperative colleagues (Nias, 1989).

It becomes apparent that emotions play a large role in teachers' lives. It also becomes apparent that emotions have various attributed causes, and could potentially

have various consequences for teachers' behaviours, actions, or motivations. Sutton and Wheatley (2003) call to further the research on the influence of teachers' emotions on the amount of effort they put into their teaching, on examining "the role that the multiple components of emotions play in moderating the influence of teacher efficacy or goal orientations" (p. 348). They also emphasize investigating the "individual differences in teachers' emotional goal orientations" (p. 348), because the "type of goal that individuals adopt is crucial for their cognition, motivation, and achievement behaviours, the relationship between teachers' emotions and the kinds of goals they adopt merits research" (p. 340).

2.4 Defining Emotions in the Context of This Study

This section highlights the operational definition of emotions and the three interrelated models supporting Plutchik's theory (1980) by presenting the language and characteristics of emotions. The theoretical framework is Plutchik's psychoevolutionary theory of emotions (1980). This theory is the backbone of this research study because it views emotions as complex feedback processes, as opposed to simple linear processes. Emotions have the delicate function of restoring lost equilibrium. Emotions, cognition, and actions are interwoven in a complex loop ultimately describing stimuli, cognition, feeling states, overt behaviour, and perceived effects.

Tomkins (1962), Izard (1972), Lazarus (1991a), Buck (1984, 1999), and Frijda (2000) are proponents of psychophysiological and motivational theories of emotion, while Plutchik (1980), Nesse (1990), and Cosmides and Tooby (2000) put forth evolutionary theories of emotions. These theories share a common characteristic,

emotions have an evolutionary history. Tomkins views emotions as amplifiers, Izard looks at emotions as facial responses, Lazarus investigates the relationship between emotions and adaptation, Buck analyzes emotions from the perspective of communication, and Frijda looks at emotions as charges for action. Plutchik and Nesse consider emotions as adaptive prototype reactions and as having adaptive functions, and Cosmides and Tooby view emotions as helping memory and action systems in dealing with survival related issues.

Plutchik's theory (1980) draws attention to the evolutionary nature of emotions. This theory has core elements that include the following: emotions have an evolutionary history, with different expression forms for different species, and emotions have an adaptive role which helps in survival issues for both humans and animals. Furthermore, eight basic emotions are conceptualized in terms of opposite pairs, while all other emotions are derived from these primary ones. Emotions vary in terms of intensity, levels of arousal, and degrees of similarity. Plutchik (1980) defines emotion as

> … an inferred complex sequence of reactions to a stimulus, and includes cognitive evaluations, subjective changes, autonomic and neural arousal, impulses to action, and behaviour designed to have an effect upon the stimulus that initiated the complex sequence. These complex reaction sequences may suffer various vicissitudes, which affect the probability of appearance of each link in the chain. These complex reactions are adaptive in the struggle in which all organisms engage for survival. At higher phylogenetic levels, the patterns of expression associated with each chain of emotional reactions serve to signal motivation or intent from one member of a social group to another. Finally, there are eight basic

> reaction patterns that are systematically related to one another and that are the prototype sources for all the mixed emotions and other derivative states that may be observed in animals and humans (p. 361).

Plutchik (1980) states that the basic emotions are acceptance, anger, anticipation, disgust, joy, fear, sadness, and surprise. The basis for inclusion is created upon the relation of these emotions to adaptive biological processes. Plutchik's theory consists of three interconnected models: structural, sequential, and derivative. The structural model consists of a three-dimensional model that illustrates existing relations between emotions. The sequential model provides a detailed description of the multifaceted feedback systems of emotions. The derivatives model illustrates relationships between emotions and personalities, personality disorders, and coping styles.

The structural model draws attention to the intensity of emotions, to the similarity of emotions, and to their bipolar nature. Combining these features creates a multidimensional model, represented as a three-dimensional cone (Plutchik, 2000). Its vertical dimension represents the intensity of emotions; while the cross-sectional circle represents similarity. Any two opposite points of the cross-sectional circle represent bipolarity, such as joy and sadness. Within the circular cross-section of the three-dimensional model (Plutchik, 2000), also known as the two-dimensional circumplex model, eight basic emotions are put forth. Their bipolar nature is recognizable as they are arranged as pairs of opposites: joy and sadness, acceptance and disgust, fear and anger, and surprise and anticipation. Combining basic emotions gives rise to new emotions. For example, mixing basic emotions gives rise to secondary and tertiary emotions. Mixing two adjacent emotions produces primary dyads, mixing two emotions once removed

produces secondary dyads, and mixing two emotions twice removed produces tertiary dyads (Plutchik, 1980).

The angular placement on the circumplex (Plutchik, 1980) consists of clusters of emotions formed around terms bearing similar meanings. Such clusters of emotions are closely connected to eight impulses to action mentioned in Plutchik's definition of emotion. The eight impulses to action are "to attack or hurt, to cry or mourn, to embrace or mate, to explore or search, to stop activity, to reject or get rid of, to welcome or to be with, to withdraw or get away" (Plutchik, 1980, p. 355). For example, emotions such as accepting, agreeable, serene, cheerful, and receptive directly relate to the impulse of welcoming and being with, while emotions such as timid, scared, panicky, afraid, or nervous connect with withdrawal or getting away. Terms such as sad, sorrowful, or apathetic are linked with immediate compulsions of cry, and subsequent impulses to withdraw or get away. Orientation emotions such as puzzled, bewildered, confused, or perplexed tie in with stopping the activity, exploring further, or withdrawing. Emotions such as resentful, revolted, or displeased connect with the instinct of rejection or withdrawal. Primary impulses of attacking or hurting are associated with being furious or aggressive, and secondary impulses are those of rejection. Being curious or expectant relate to exploration or welcoming new challenges, and being happy or delighted resonates with the urge to embrace or to explore (Plutchik, 1980). In the context of this doctoral research, emotions are referred to as pleasant and unpleasant. Examples of pleasant emotions include interested, affectionate, accepting, joyful, happy, enthusiastic, agreeable, or tolerant. Examples of unpleasant emotions include disinterested, unaffectionate, resentful, gloomy, unhappy, grief stricken, or revolted.

The sequential model details the complex feedback role of emotions. Emotions are not linear or independent entities. Rather, they interact with other systems and have the potential to restore equilibrium or to offer protection. The psychoevolutionary theory posits that initial internal or external stimuli set cognition in motion and trigger emotions. The emotion is subsequently followed by impulses to action, overt behaviour, and finally effect. Therefore, the key elements in the emotion sequence include the stimulus event, cognition, the emotion, the overt behaviour, and the effect.

Within the psychoevolutionary theory, the notion of derivative has one of the following three meanings: similarities exist between human and animal behaviours, adult behaviours are derivatives of ones observed in infants, and "certain concepts are derived from other, more primitive concepts" (Plutchik, 2003, p. 109). The last meaning has relevance within this theory, as it links emotions with personality (Conte & Plutchik, 1981), as well as with personality disorders and various forms of coping (Plutchik & Conte, 1997).

2.5 Emotions and Motivation

While considerable research is devoted to independent studies of emotion and motivation, far less emphasis is placed on the connectedness of emotion and motivation (Dai & Sternberg, 2004; Schutz & Pekrun, 2007). Important exceptions are links between affect and motivation from the work of Weiner (1985), emotions and goal orientations (Seifert, 1995a), and the asymmetrical bidirectional model of achievement goal theory and affect (Linnenbrink & Pintrich, 2002a). Motivation research includes emotions as a significant topic of discussion, and highlights the relevance of emotions in students'

involvement with mathematics, the reciprocal relationship between affect and goals, and the impact of instructional contexts and social interactions on emotions (Kaplan & Maehr, 1999; Linnenbrink & Pintrich, 2002a; Meyer & Turner, 2002; Patrick, Anderman, Ryan, Edelin, & Midgley, 2001; Seifert, 1995a; Schutz & DeCuir, 2002; Turner, Thorpe, & Meyer, 1998). Researchers agree on the importance of studying emotions together with attributed causes and consequences, because "to fully understand the role of emotions in education, it is imperative that we understand the context in which inquiry occurred" (Schutz & DeCuir, 2002, p. 131).

Conceptual research unilaterally linking achievement goals and emotions is the topic of investigation for different researchers. A direction of research focuses on the influence of achievement goals on emotions (Carver & Scheier, 1990, 1998; Dweck & Leggett, 1988). Carver and Scheier (1998) propose that approach goals are generally associated with elation (when one is close to achieving the goal) and sadness (when one is not approaching the goal at the desired rate). They also suggest that avoidance goals are associated with relief (if the goal is being avoided close to the assumed intention) and anxiety (when the goal is not being diverted at the desired rate). Predominantly, mastery goals are positively related to students' reports of positive affect in school (Anderman, 1999; Kaplan & Maehr, 1999; Kaplan & Midgley, 1999; Patrick et al., 2001). Moreover, mastery goals are believed to facilitate pleasant emotions (for instance enjoyment of learning) and to reduce unpleasant emotions such as boredom or lack of interest in teaching (Pekrun, 2006; Pekrun, Elliot, & Maier, 2006).

A second direction of research looks at the impact of emotions on motivational goals. Boekaerts (1993) puts forth the idea that emotions give rise to goal pursuits. Her

model for adaptable learning shows that anger or frustration direct students to embrace performance goals. Pekrun, Goetz, Titz, and Perry (2002) point out that positive activating emotions (e.g., enjoyment of learning) generally augment academic motivation, while negative deactivating emotions (e.g., hopelessness, boredom) may be detrimental.

While much research is focused on determining unilateral links between affect and motivation, some researchers look at the apparent symbiosis between emotions and academic goals. Seifert (1995a) investigates whether emotions can be predicted from motivational goal orientations or whether motivational goal orientations can be predicted from emotions. This research shows that for students, "emotions are better predictors of goal orientations than goal orientations are predictors of emotions" (p. 549). Furthermore, Seifert (1995a) suggests that various emotions are associated with goal pursuits. For example, mastery goals are correlated with competency and confidence, while performance orientation seem to be associated with "a sense of belonging and negative emotions .... feeling frustrated and stupid" (p. 549). Three years later, Turner et al. (1998) reinforced the idea that emotions play "an important role in the implementation of motivational goals" (p. 768). Their research shows that "when learning goals are lower and ability goals are higher or when both goals are relatively equal and low these patterns are associated with more negative patterns of affect" (p. 768). Kaplan and Midgley (1999) suggest a reciprocal relationship between perceived classroom goal structure and positive affect. Emotions appear to receive further attention and become "important mediators of motivated actions to approach or avoid learning rather than merely as outcomes" (Meyer & Turner, 2002, p. 110). Linnenbrink and Pintrich (2002a) discuss an asymmetrical and bidirectional model linking goals and affect. The model claims that moods are likely to

influence students' perceptions of goal structure and goal adoption. This is based on the volatile structure and ephemeral nature of emotions, and on the more unwavering nature of mood states. It assumes that mastery goal approaches result in an increase in pleasant emotions and a decrease in unpleasant emotions, and that performance approach goals are unrelated to pleasant emotions and increase unpleasant emotions. Avoid mastery and avoid performance goals are assumed to decrease pleasant emotions and increase unpleasant emotions.

Unidirectional and bidirectional relationships between emotions and achievement goals illustrate the research trajectory and the powerful yet developing links between emotion and motivation. While certain research links exist between students' emotions and achievement goals, further research might prove beneficial in understanding the role of emotions on teachers' motivation as well as about the influence of motivation on teachers' emotions. Calls for added integrated perspectives between emotions and motivation, for deeper understanding of the impacts of emotions on academic activities are put forth (Sutton & Wheatley, 2003). Researchers believe that there is a general need for a "comprehensive theoretical work that articulates how emotion, motivation, and cognition interact within classroom contexts" (Meyer & Turner, 2002, p. 112). Absent from education research are studies on how emotions help understand self-efficacy (Linnenbrink & Pintrich, 2002b). Sutton and Wheatley (2003) point to the lack of research about the role of emotions in learning to teach, and in disciplining and managing students. Missing from educational research are studies about the influence of emotions on teachers' motivation, and about the types of meta-emotions (i.e. emotions about one's and others' emotions) of beginning teachers (Sutton & Wheatley, 2003).

While analyzing research on teaching and teacher education, it becomes noticeable that apart from technical skills and extensive subject knowledge, teaching has an emotional side (Hargreaves, 1998b, 2005). Some of these emotional experiences have the potential to influence teachers' performances, identities, or relationships with colleagues (Zembylas, 2002, 2003b, 2005a). Current studies on teachers' emotions have examined the joy of noticing students' progress (Hargreaves, 1998b), the pleasure and pride from interacting with students (Hargreaves, 1998b; Sutton, 2000), and the frustration or anger when students misbehave (Emmer & Stough, 2001; Hargreaves, 2000b; Jackson, 1968; Sutton, 2000). New queries on teachers' emotions arise, such as the correlation between teachers' emotions and goals, the collaboration between teachers and parents, and the relation between teachers and students (Sutton & Wheatley, 2003).

In the context of teacher education, the relationship between emotion and motivation is complex. Motivation research shows that the type of goal a person assumes is key to subsequent motivation, cognition, and behaviour. Achievement goal theory (Ames, 1992) posits that individuals adopt two types of goals within achievement settings: performance and mastery goals. Researchers have challenged this dichotomous view and a trichotomous achievement goal framework has been proposed to revise the achievement goal orientations (Elliot, 1999). Teachers adopt achievement goals toward instruction to facilitate their performance, and to validate personal perceptions of competence and success in teaching. While definitions and various models have been proposed for researching achievement goals for both students and teachers, this doctoral research will use Papaioannou and Christodoulidis (2007) classification for teachers'

achievement goals, namely, mastery-oriented, performance approach and performance avoidance.

2.5.1. Aims of This Research Study

The purpose of this doctoral research is to present the emotional experiences of pre-service mathematics teachers and to describe the similarities and differences that exist between the emotional experiences of interns with different goal orientations. By using interviews and diaries, as well as classroom observations, the study offers an analysis and interpretation of pre-service teachers' emotions and corresponding emotional experiences. The research questions of this study follow. What kind of emotional experiences do interns encounter while teaching mathematics? What similarities and differences exist between the emotional experiences of interns with different goal orientations?

Chapter 3 Methodology

This chapter consists of the following sections: design of the study, sample selection, pilot study, data collection, data analysis, and validity and reliability. The research described the emotional experiences of pre-service math teachers during the internship. The research described similarities and differences between the emotional experiences of interns with different goal orientations. What kind of emotional experiences do interns encounter while teaching mathematics? What similarities and differences exist between the emotional experiences of interns with different goal orientations? To respond to these questions, the study described focal points of emotional experiences, possible attributed causes, thoughts, other commonly occurring emotions, and perceived effects of emotions on interns' time, effort, bodies, or actions.

3.1 Design of the Study

The research questions of this study focused attention to the emotional experiences of math interns within junior and high school classrooms. The research described the impact of classroom emotional experiences on interns' professional lives, and how emotions relate to interns' achievement goals. The study described the meanings interns give to their emotions, how they interpret the emotions experienced while teaching mathematics, and how interns with various goal orientations respond to emotions.

Due to the nature of this research study it seemed appropriate to analyze pre-service teachers' emotions using qualitative research. Qualitative methods were best

suited to explore the emotion phenomena and to generate theoretical hypotheses. Researchers advocated the use of qualitative research to uncover and understand personal experiences (Halling, 2008; Meyer & Turner, 2002; Michell, 2004; Pekrun et al., 2002; Rennie, Philips, & Quartaro, 1988; Seifert & Hedderson, 2010). Interviews and documents were the best avenues of collecting information about the essence of the emotion phenomena experienced by interns while teaching mathematics. The case study provided a detailed and significant account of an intern's emotional experiences, attributed causes, thoughts, and perceived effects. As such, in comparison with the qualitative research chapter, the case study report appeared to be more nuanced and personalized, with many detailed contextual descriptions of various emotional experiences.

Merriam (2009) defined case study research as "an in-depth description and analysis of a bounded system" (p. 43). Yin (2009) defined the case study as a procedure of inquiry "that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 18). Case study research examined a complex phenomenon, with units of analysis that can vary from a single individual to a large corporation, and entailed using a variety of lines of action as its data-gathering segments (Berg, 2009; Creswell, 2005; Merriam, 1988; Yin, 2006).

The case study research was applicable in the context of this doctoral research because it uncovered emerging emotions, attributed causes, and thoughts that occurred while emotional experiences were formed during teaching, and how these emotions relate to the intern's achievement goals towards instruction. The case study strived to describe

the emotional experiences of one intern. The criteria for selecting the case study was based on the fact that facial manifestation of emotions and body language pertaining to outside manifestations of emotions were not visible through written documents or interviews. The case study depicted an intern's world of emotional experiences as these come to life while teaching mathematics, as well as in the relation between emotions and achievement goals towards teaching. This descriptive case study provided a narrative chronological account (Cohen, Manion, & Morrison, 2007; Merriam, 1988; Yin, 2006) of one pre-service teacher's emotional experiences while teaching mathematics. Overall, this case study added a new facet to the research project, by offering an in-depth snapshot description with a narrow focus of an intern's world of emotions and achievement goals.

3.2 Sample Selection

The participants for the qualitative research part of the research study were interns teaching math as part of the Bachelor of Education training. Throughout this research, the term pre-service teachers or interns referred to undergraduate MUN students undertaking the internship between January and April 2010 with a focus on teaching mathematics. The term students refers to high school students, and the term undergraduate students referred to the students enrolled in the Teaching of Mathematics in the Intermediate and Secondary School course. Worth noting was that the undergraduate students enrolled in this course during the fall semester (i.e., September to December 2009) subsequently undertook the internship, and became pre-service mathematics teachers during the winter semester (i.e., January to April 2010).

Interns were selected based on the following characteristics: a minor or major in mathematics, completion of the mathematics methods course, enrolment in the internship, and teaching at least one mathematics course during the internship. In the fall semester, during a visit to the mathematics methods course, the research project was described to the undergraduate students. They were invited to participate in the doctoral research project, and were verbally introduced to the details pertaining to the purpose of the doctoral research. Undergraduate students were given information letters detailing the research study (Appendix A). Out of 33 undergraduate students enrolled in a mathematics methods course, thirteen agreed to participate in the research study. Seven were women and six were men. A copy of the research study consent letter was given to each study participant. Upon completion of the study, a $75 Empire Theatres gift card was given to each intern.

The criteria for selecting the participant of the case study included: a minor or a major in mathematics, completion of the mathematics methods course, and enrolment in the internship with one teaching course in mathematics. Out of the 13 study participants, one intern offered to participate in the case study. The case study data included: daily non-participatory observations when the intern delivered mathematics lessons to two different grade seven classes, in-depth discussions following the mathematics classes, a short survey, three one hour interviews, and as many diary submissions as the intern was able to complete.

3.3 Pilot Study

Prior to beginning the data collection process, a pilot study was conducted with one mathematics teacher, who completed the Bachelor of Education the year before. This teacher underwent the same internship training while completing the Bachelor of Education degree. She seemed best suited to be part of the pilot study because she had a major in mathematics, completed the mathematics methods course, and undertook the internship while a math course. In an effort to learn which questions were not worded properly, which seemed to be redundant, or which seemed to have a staggering effect on the interviewee, three interviews were conducted with the pilot study participant. Upon conducting these interviews, data were analyzed and questions were subsequently refined and reorganized. For example, the questions "Do you recall a significant learning moment that tilted the balance towards pursuing math as a teaching career? Could you describe and share this emotional moment? How would you explain the influence of this emotional experience on your teaching career goals?" were changed to "Why did you decide to enter the teaching profession? Was there a significant event that made you pursue teaching as a career? What was emotional about this event?"

3.4 Data Collection

For the qualitative research, data were collected through a series of interviews and diaries. For the case study research, data were collected through daily classroom observations, in-depth discussions following mathematics lectures, a survey, three one hour interviews, and diaries. Data collection was done between December 2009 and April 2010. The following subsections present details about interviews, surveys, observations,

and document data collection that help in uncovering meaning, understanding emotional experiences, and discovering answers to the research questions.

3.4.1. Survey

Papaioannou and Christodoulidis (2007) piloted an 'achievement goals' questionnaire with in-service teachers. Based on that pilot study, Papaioannou and Christodoulidis selected four items with the highest loadings on mastery orientation, performance approach and performance avoidance factors. The items were rated on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The survey had three subscales. The first subscale related to mastery-orientation and consisted of four items (e.g., "My goal is to continuously develop my abilities as a teacher"). The second subscale pertained to performance approach goals, and comprised four items (e.g., "I am absolutely satisfied when it looks that I'm a better teacher than others"). The third subscale related to performance avoidance goals and consisted of four items (e.g., "I feel relieved when I avoid teaching something in which I might look incapable"). Papaioannou and Christodoulidis (2007) had subscales with alpha reliability greater than .75, and had satisfactory goodness of fit indices. These features supported the use of this survey for assessing teachers' achievement goals. Researchers promoted the use of surveys as data gathering instruments in the context of achievement goal research (Elliot & Church, 1997; Middleton & Midgley, 1997). Within this doctoral research, the survey was used for the specific purpose of classifying interns' achievement goals towards instruction. The survey took about ten minutes to fill in, and was completed shortly before starting the first interview. A copy can be found in Appendix B.

3.4.2. Interviews

The interviews contained highly structured questions and open-ended questions. Interviews revolved around significant emotions encountered during the internship, attributed causes, thoughts, and perceived effects of emotions. Interviews were focused on describing the relation between interns' emotions and achievement goals towards instruction. A list of the questions for each interview is presented in Appendix C.

Out of the thirteen interns, seven participated in face-to-face interviews. The other six participated in a mixture of online and phone interviews due to distance. Three interviews were conducted with each of the thirteen interns between January and April 2010. The first interview took place at the end of January, the second at the end of February, and the last at the end of March. Each one-to-one interview took place shortly after the intern was involved in teaching a mathematics class.

Face-to-face interviews were conducted with seven interns at Memorial University or at the St. John's site where they were doing the internships. Each interview lasted about one hour. The interviews were audio taped and transcribed. Before data were included in the final report, each interview participant was able to review the interview's transcript, and to add, change, or delete information from transcripts as deemed necessary.

Because six pre-service teachers were not doing the internship in St. John's, interviews were conducted online or by telephone. Some of the information collected was recorded via computer-mediated communication individual interviews (CMC). Synchronous CMC is a form of qualitative research. Synchronous CMC, also known as

real time chat or instant messaging, assumed the "interchange of messages between two or more users simultaneously logged on at different computers or computer terminals" (Mann & Stewart, 2002, p. 604). This type of communication presents the opportunity to conduct interviews. Instant messaging "can be an effective tool for social interaction and rapport-building", and by using instant messaging, "students overcome feelings of isolation" (Murphy & Rodriguez-Manzanares, 2008, pp. 54-55).

CMC interviews were conducted through the Desire2Learn shell provided by Memorial University's Distance Education and Learning Technologies Center. Permission to conduct this research via the Desire2Learn shell was requested from representatives of the Distance Education and Learning Technologies Center. A Desire2Learn shell was created in January 2010, and interview participants were included as virtual participants in this shell. Six pre-service teachers were engaged in one-to-one discussions using the chat feature of the Desire2Learn. Each participant was interviewed individually. Interviews were saved as Word files. Transcriptions were not necessary since these were online interviews. Upon saving the CMC interviews, findings were checked for accuracy, completion, and interpretation. Member checking involved "taking the findings back to participants and asking them (in writing or in an interview) about the accuracy of the report" (Creswell, 2005, p. 252). Once the interviews and member checking concluded, the shell was closed. The first interview was conducted using CMC with the six study participants who were doing their internships outside St. John's. Due to the lengthy writing process and the limited number of words that can be sent through within one click of a button, subsequent interviews were conducted by telephone with four of the six participants. Telephone interviews facilitated the research process and data

transmission. Two study participants opted for continuing CMC interviews because they preferred not to use their cell minutes to converse with the researcher.

3.4.3. Observations

According to Creswell (2005), observation is the "process of gathering open-ended, firsthand information by observing people at a research site" (p. 211). The advantage of using observations was that the researcher had the opportunity to record information as this appears in the natural setting, to study the behaviours of the study participants, or to observe body language. Researchers adopt either the role of a participant observer or the role of a nonparticipant observer. A nonparticipant observer was an observer who paid visits to the research site, did not interfere, and did not become involved in activities.

Observations were only used for the case study research. In the case study, focus was placed on observing the intern's behaviour, the development of emotional experiences, the interactions between the intern and junior high school students, and recording the flow of conversation during lecture time. By using nonparticipant means of observation, this form of data collection offered the possibility to observe and record information that otherwise could have been missed. Babad (2007) emphasized the importance of nonverbal behaviour, such as gestures, facial expressions, posture, body language, voice, intonation, tonalities, pauses, silences, or eye contact.

Consent to conduct classroom observations was asked of the case study participant and her cooperating teacher. Approval to conduct classroom observations was requested and obtained prior to beginning the observation process from the Eastern

School District of Newfoundland and Labrador and the junior high school administration. Even if classroom observations were not directed towards and did not involve junior high school students, according to the guidelines of the Eastern School District of Newfoundland and Labrador, parental consent was necessary, requested, and obtained.

Informal visits to the school site were conducted in December 2009 and January 2010 and were subsequently followed by intense and targeted classroom observations, each day in February and March 2010. Classroom observations were conducted within two grade seven mathematics classes. Lectures were not taped. Written notes were taken. This raw data was further used for the case study research component of the doctoral research. Focus was initially placed on the physical setting of the classroom, how space was allocated, or what types of resources were available. Subsequently, focus shifted to the intern's emotions and how these influenced classroom activities and behaviours. Attention was given to the intern, cooperating teacher, substitute teachers, junior high school students, as well as to what brought these individuals together. Out of the daily interactions, an intern's emotional experiences develop, grow, or subside. Classroom activities and interactions played an important role in the development of emotional experiences for the intern, and consequently observations were taken about how people and activities connected, about the rules that governed these interactions, their length of time, attributed causes, and content of conversations. The focus of the observations turned from a wide angle to a narrow angle and on to subtle factors such as body language or the intern's facial expressions. *Facial Action Coding System* by Ekman, Friesen and Hager (2002) was used to monitor the intern's facial expressions. However, coding charts were

not used in this study. Rather, brief descriptions of the intern's facial expressions were included in the case study's storyline.

3.4.4. Diaries

Documents is an umbrella term which covers a wide variety of written, visual, audio, or physical materials that might include diaries, letters, photos, government documents, or research generated documents. Within this doctoral research, diaries were used to supplement information obtained from interviews, surveys, and classroom observations. Participants were asked to fill in the diaries when something emotionally significantly happened. Each intern completed the diary shortly after teaching a mathematics class. One study participant recorded emotions or moods using this type of diary eleven times; one intern used the diary nine times, one intern used the diary for seven times, three interns used the diary six times, two interns used the diary five times, one intern used the diary four times, two interns used the diary three times and an intern used the diary twice during the internship.

A diary is a document "that records events and ideas related to the particular experiences of the author" (Jupp, 2006, p. 68). In the context of this doctoral research, the diary was a way of collecting data pertaining to emotions and moods as experienced in classroom teaching. The diary focused on the emotions or moods associated with teaching mathematics, and on the manner in which emotions influenced interns' achievement goals toward instruction. Researchers have used diaries to uncover broader aspects of teachers' emotional lives (Oatley & Duncan, 1992; Zembylas, 2005c). Sutton and Wheatley (2003) highlighted that usage of diaries "should greatly explain knowledge about teachers'

emotions" (p. 335). Zembylas (2005b, 2005c) used a science teaching emotion diary in his research. This was structured with specific terms. For the purpose of this doctoral research, the diary was adapted from Zembylas (2005c).

Pre-service teachers were provided with diaries and asked to write brief observations and comments relevant to the emotions or moods they were experiencing while teaching mathematics. In addition to the above mentioned open-ended observations, certain items of the diary were closed-ended. Interns were not asked to fill in these diaries a specific number of times, rather, when they found the opportunity or when an exceptional emotional event occurred. The diaries were read on a regular basis. For a deeper understanding of their written statements, further probes were conducted using individual email or face-to-face meetings.

3.5 Data Analysis

Data for this doctoral research consisted of responses to the surveys, transcribed interviews, field notes from the classroom observations, and diaries. Data were organized into two groups. The first group consisted of all the surveys, transcribed interviews, and diaries. These became the object of data analysis for the basic qualitative part of the doctoral research. The second group consisted of field notes gathered from the classroom observations, a survey, interviews, and diaries written by the case study participant. In both cases, data analysis was inductive and comparative. The goal of data analysis was to answer the research questions of the study. Making sense of the data involved coding, analyzing, and interpreting.

Three one-hour interviews were conducted with each of the thirteen interns participating in this component of the research. Data consisted 407 pages of transcribed interviews, 81 pages of classroom observation notes, and 207 pages of sixty-seven diaries.

The first phase of the basic qualitative analysis consisted of preparing verbatim transcripts. The second phase consisted of coding the transcribed interviews. Upon reading the transcripts, participants' responses were broken down into units of analysis, also known as meaning units (Rennie et al., 1988). A meaning unit is "a piece of text that expresses a single idea", and can be "a few words, a phrase, or an entire paragraph" (Dupuis, Bloom, & Loughead, 2006, p. 66). A meaning unit should meet two criteria, the revealing of pertinent information to the study and the "smallest piece of information about something that can stand by itself – that is, it must be interpretable in the absence of any additional information other than a broad understanding of the context in which the inquiry is carried out" (Lincoln & Guba, 1985, p. 345).

For the qualitative research part of the study, the survey and sections of the first interview were used to classify interns' achievement goals towards instruction. Data were catalogued according to interns' mastery, performance approach, or performance avoidance goals. Researchers (Dweck, 1986; Dweck & Leggett, 1988) believe that students can pursue both mastery and performance goals. Interns' behaviours and reactions in the face of obstacles contribute to differentiating between the two apparent distinct goals. Seifert (1995b) claims that the high mastery/high performance student stops behaving in a mastery way and starts engaging in failure avoiding strategies in an effort to achieve the desired performance goal. Upon reading the survey data, the first

interview was used to clearly differentiate and classify the interns in three groups, mastery oriented, performance approach and performance avoidance. Therefore, six interns were mastery oriented, five were performance approach, and two were performance avoidance. Once the interns were classified in three groups, the classification was not revisited. It was assumed that interns kept the achievement goal orientations for the duration of the internship.

In each case, the meaning units were about different emotions that occurred while teaching math. Examples include frustration, nervousness, satisfaction, happiness, anxiety, pride, or relief. Meaning units were then compared with similar ones occurring in interviews and diaries in order to look for data regularities. Subsequent analysis entailed "classifying, comparing, weighting, and combining material from the interviews to extract the meaning and implications, to reveal patterns, or to stitch together descriptions of events into a coherent narrative" (Rubin & Rubin, 2005, p. 201). Concepts and themes (categories) were created. Some of the categories were later subdivided, while others were subsumed under larger categories. Ultimately, these categories contributed to creating answers to the research questions.

Data was sorted and summarized, ranked and compared, weighted and combined. Reading the data transcripts over and over again allowed seeing how apparently hidden patterns and categories shape up. The final categories included attributed causes, thoughts, and perceived effects. Examples of concepts that lead to forming the 'attributed cause' category included: students learn mathematics, students are involved in classroom activities, interns have good teaching skills, students don't behave, or interns lack management skills. Examples of concepts that lead to forming the 'thought' category

included: students perform well, teaching is the right career choice, or interns are concerned about teaching strategies. The 'perceived effects' category included the following concepts: immediate versus permanent, bodily effects, and interns' actions. The final stage of the data analysis was to put forth the theory and create a report that detailed descriptions of the research findings.

Upon several reads and multiple scanning processes, patterns and regularities were transformed into categories. No reference was made to students' names; rather pseudonyms and a number coding system were used. Units of information were used. These were the smallest piece of information that can stand out by themselves (Lincoln & Guba, 1985) and uncovered the most relevant information to the study. Upon using units of information to create categories, a theory on the phenomenon studied was formulated. Ultimately, the final case report was a comprehensive read of the story without annoying the reader with insignificant trivia (Merriam, 1988; Patton, 2002).

3.6 Credibility and Dependability

In qualitative research, terms such as credibility, transferability, dependability, and confirmability became surrogates for the quantitative research's internal and external validity, reliability, and objectivity concepts, thus creating "a legitimation crisis. It involves a serious rethinking of such terms as *validity*, *generalizability*, and *reliability*" (Denzin & Lincoln, 2000, p. 17).

3.6.1. Credibility and Transferability

Credibility is an alternative criterion and term for judging the validity of the qualitative research (Lincoln & Guba, 1985; Schwandt, 2007). This ensured that what was measured and observed within the study captures what is really out there, and that the study's results concur with participants' perspectives about emotional experiences. Methods that ensure the credibility of qualitative research include triangulation, member checks, and peer review (Merriam, 2009).

Using multiple methods of data collection such as interviews, nonparticipant observations, surveys, and diaries was a form of triangulation. Using multiple methods of data collection allowed the researcher to use the strength of one method to override weakness of another (Merriam, 1988; Schwandt, 2007). Upon transcribing the interviews, findings were checked for accuracy with the participants. Member checking involved "taking the findings back to participants and asking them (in writing or in an interview) about the accuracy of the report" (Creswell, 2005, p. 252). The description of each transcribed interview was checked for accuracy, completeness, and fairness. After the interview, and before the data was included in the doctoral research, interns were able to review transcripts, and to add, change, or delete information as they saw fit.

3.6.2. Dependability

Qualitative research does not aim to replicate results. Replication in the context of qualitative studies cannot generate similar results. Lincoln and Guba (1985) conceptualized reliability in qualitative research as dependability or consistency. By ensuring that the results can be replicated, the researcher ensured whether or not results

were consistent with collected data. This can be warranted through triangulation, peer review, researcher's position or reflexivity, and audit trail (Merriam, 2002). Reflexivity talked about the critical self-reflection the researcher takes on biases, theoretical orientations, and relationships to the study that had the potential to have an effect on the research process. The audit trail described in detail how data were collected, how categories were formed, and how decisions were made throughout the research process. Raw data were scanned, coded, and analyzed by a second reader. The second reader was blind to the first readers' analysis of data. The second reader analyzed the interviews for two interns. This peer review process was put in place to assess whether or not findings are credible based on the available data. Findings were similar in both cases.

3.6.3. Confirmability

Confirmability referred to the degree to which the results of the study can be confirmed or corroborated by others (Badenhorst, 2010; Lincoln & Guba, 1985; Schwandt, 2007). Badenhorst (2010) believed that rather than looking for general truths, a situation can shed light about others. In the context of this study, an emotional experience could provide insight into another emotional experience.

Chapter 4 Case Study Report

Forty-three students got 100. I was so proud I could do a dance ... all year we have been trying to get them all to get 100, and this was the first time in the whole year. And I was so proud, I taught them this part and now they all get 100, and I was so excited, they all got 100. I was so excited – I was like 'Oh, yeah!' (Petra)

This chapter details the blend of emotions, attributed causes, thoughts, perceived effects, goals, actions, and behaviours of one intern. The case study research facilitates an in-depth understanding and visualization of facial manifestation of emotions and body language pertaining to emotions that are not otherwise observable through diaries or interviews. The chapter has four sections. The first section describes the school setting where the intern completed her internship. The second section portrays Petra as an evolving intern with dreams, hopes, and aspirations that ultimately intertwine with her emotions of teaching. The third section focuses on Petra's emotions and goals. The fourth section presents assertions and closing statements.

4.1 The School Setting

On a crisp February morning when the sunrays were making a bashful attempt to break through a deep curtain of clouds, I embarked on a two-month journey. I started the car's engine for what was to become part of my daily routine. I pulled the car in the parking lot facing St. Mathew's Junior High building that housed for the past 33 years a large student population. Braving cold winter temperatures, I strolled past a series of cars driven by doting parents waiting to drop off their children in front of the school entrance,

and slowly walked up the stairs alongside with some of the school's students who looked at me most likely wondering if I was another substitute teacher.

I was there as a non-participant observer of two grade seven math classes taught by Petra. As part of the Bachelor of Education degree, she undertook the internship specializing in teaching mathematics and home economics. This case study would allow me to describe Petra's emotional experiences as these occurred while she taught mathematics, to discover attributed causes associated with her emotions, and to highlight her emotions and achievement goals. Through daily observations and discussions with Petra, the case study would offer a new side to my research. With the thoughts about my present appointment in mind, I found myself in the warmth of the main lobby.

During my first visit to the site, the principal gave me a tour of the school and introduced me to the school staff and to Alison, Petra's cooperating teacher. Knowing my way around the school, I walked past the set of doors that led to the basement of the school. As soon as I started to descend, my olfactory system was struck by the sweet fragrance combination of cinnamon and chocolate. I was close to the cafeteria, where a diverse palette of chocolate cookies, muffins, and brownies were baked. Down the corridor, flavours of freshly brewed coffee and orange pekoe tea were added to the mix. I walked into the home economics class where Alison and Petra greeted me and made me feel right at home offering me a cup of coffee. I was fascinated about the breakfast program, as it had huge benefits for students on the verge of failing, for those who needed to socialize, for the ones who were new and wanted to make friends. It helped in creating a cozy environment, and provided a sense of security, as students knew Alison and Petra cared for them deeply. Petra really wanted to get involved with the school's activities and

was more than happy to get involved with the breakfast program, as this quote illustrates: "it is so rewarding at the end of the day to see that kids are getting the breakfast and helping them achieve better in school." Petra got involved with the cheerleading program and with the sewing club, where she got to know her students "on another level."

4.2 Petra

Petra started her love affair with teaching at an early age. This quote describes incipient stages of Petra's love affair with teaching: "I had my flick flack board downstairs, and I every time I came back from school, I would get up in front of my dolls and I would teach them what my teacher taught me that day." By cultivating Petra's interests and by encouraging her to do well, a couple of teachers had profound effects on her future career choice. The grade seven teacher was "one of the best math teachers I had in my high school and he really inspired me to become a math teacher, that's why I decided to be a mathematics teacher." This decision came naturally after he made efforts to ensure that math was connected, real, applicable to other fields, worth pursuing, engaging, and conducive to experiencing fun, as this quote exemplifies: "he always made math interesting, it was not dull and boring." His teaching methods and style had a huge positive influence on Petra and led her to pursue teaching mathematics as a career:

> I really enjoyed his teaching methods. The way he approached math, all the topics, made me feel inspired. And if he can get up and teach math into this really inspiring interesting topics, then maybe I can become someone like him, and get the students involved in education.

The development of Petra's goal to become a teacher evolved over time. She was encouraged to become a teacher, and she subsequently modeled her teaching behaviour based on her teachers' examples. Petra was influenced to become a teacher by her grade seven math teacher. These attributes align with research conducted by Schutz, Crowder and White (2001), which point to teachers' "oblique transmission" type of influence (p. 306).

During two months of classroom observations it became clear to me that Petra was perfecting her style, that she developed care, compassion, and devotion for students just like her former teachers did. This quote illustrates her views about her former teacher: "he cared and really showed concern if you were not doing well, he made sure he spent extra time with you and he was really approachable, so whenever you had a problem you could go and see him." Petra was actively learning instructional methods. She portrayed math as fun and wanted to get to know each student, to know their learning patterns, and to get them motivated in different ways. Her math lessons did not follow strict patterns, as she aimed "to change, tweak it, and do a bit of different activities." She alternated notes, group activities, group discussions, power point presentations, or games in order to catch students' attention. Petra describes her teaching approaches: "what I am trying to do is a couple of worksheets here, and have a game or an activity, and spread it out around, so it is not the same seat work everyday." She made conscious efforts to engage all students and wanted to ensure that their performance increased, as this statement illustrates: "I wanted to make sure that I had all students taken into consideration … I wanted to make sure that they are consistently doing well the whole time I was there."

Petra checked the *strongly agree* box for each of the four items belonging to the survey's subscale defining mastery oriented interns. She checked the *disagree* box for each of the four items of the subscale defining performance avoidance interns. She checked one *agree* item and three *neither agree neither disagree* items for the performance approach subscale. The interviews cemented her mastery orientation, as in the face of obstacles she did not stop behaving in a mastery way and did not engage in failure avoiding strategies in order to achieve performance goals. Therefore, based on the survey data and on data retrieved from interviews, Petra was defined as mastery oriented, as she wanted to continuously develop her abilities as a teacher, to try even more to learn new things for what she taught, to constantly learn new things in the subjects she taught, and to learn new things in mathematics and mathematics teaching no matter how difficult they were (Butler, 2007; Papaioannou & Christodoulidis, 2007). This quote exemplifies her approach to learning mathematics:

> I like starting with something that you don't know the answer, but you keep moving around and switching it, and try to figure out what the values of x or y is, so kind of start from nothing and getting the answer, that's the best thing. Especially when you get the answer, ohhh, you know …

She hoped that throughout the internship she would become accustomed to teaching a large variety of students with different needs or personalities, that she would learn new evaluation strategies as well as strategies to teach students in smaller groups or as a whole class, and that she would learn new teaching mediums such as technology:

> I am hoping that during this semester I will adapt my skills of how to teach all students not just one particular group of students. I am hoping to learn how to do

> that and how to pick different types of evaluation like oral and presentations in class, or just do little group activities and walking around, so I am hoping to be using a wide variety of different things and learning, and change want needs to be done.

Petra built on the social and professional skills she previously acquired by volunteering with the cadets program and aimed to continuously develop her abilities as a teacher. During the internship, she aimed to "learn how to vary methods, teaching methods, instructional methods." Petra wanted to learn new things about mathematics and about the pedagogy of teaching, and considered such learning experiences relevant. Consistent with previous research (Henderson, 1992; Pollard, 2002), Petra talked about her desire to teach better by putting in effort to further her learning about teaching:

> You want to improve every time you get up. … when I started my first class two weeks ago: it didn't go exactly the way I wanted it, but the next time you wanted to improve on it and how my emotions that day felt 'Oh, next class I will plan this and make it better', and every time would go and make it better and better.

During the internship, it became obvious that Petra exhibited preferences for engaging in new and challenging tasks, had increased self-confidence and an adaptive nature, and aspired to continue developing competence and improving skills. These features are consistent with mastery oriented characteristics described by various researchers (Diener & Dweck, 1978; Seifert, 1995b; Urdan & Maehr, 1995). Her mastery goal orientation for teaching associates with "high intrinsic motivation, as expressed in teachers' didactic interest" (Retelsdorf et al., 2010, p. 42). Working towards accomplishing her goals became highly intertwined with her emotions. She recalls

"seeing that finally a student who might not understand at first, but you work with them and it finally clicks and you get a sense of accomplishment and pride." Petra felt pride learning new pedagogical skills because these would help students perform better. This quote exemplifies her desire to further her teaching strategies: "I am proud to evolve my teaching skills and learn different things." Her levels of confidence and comfort appear to increase as "every time you teach a good class, it is going better and better I think you feel more comfortable and at ease." Her desire to pursue teaching activities seemed to amplify as well, as this excerpt illustrates: "I feel really successful and proud that class went well, especially when you are just starting, oh well the class went well, it makes you just get up the next morning and do it again." Not being able to reach her mastery goals made her feel "a little disappointed." Yet she did not give up, she wanted to prove that she is capable of doing a tremendous job as a teacher, as this citation illustrates:

> You don't want to be seen as a grumpy teacher. You are never in a good mood when you are up in front of the class. Because they are the ones who are looking at you and you are a role model, and they say 'Miss is always contrary or grumpy, never in a good mood'.

Teaching was a life-changing experience tangled up with people's feelings, as it had the potential to be completely inspirational or utterly discouraging. Teaching required working heavily in establishing rapports with students, as this quote exemplifies: "you get involved with the youth and society, and you kind of built a relationship with them." Petra followed this path in order to help students make decisions, to make sure that the values and morals of the society are conveyed to students in a very subtle form, as this quote highlights: "you are helping them make their own decision, you are kind of

molding the youth to become better in our society." Petra's teaching efforts and values were directly connected with students' well-being and progress, thus making her part of the task-mastery teacher system (Ames & Ames, 1984). Petra defined teaching as "an arena for a lot of emotions, happiness, joy, excitement, disappointment, so all different emotions." At the start of the internship, she experienced frustration and disappointment:

> … because students don't really know you as a teacher, and they are trying to feel you, and are trying to see are you going to be able to lead them, and are going to talk, and this makes you frustrated when you deliver a lesson plan, and sometimes you kind of have to hide your frustration and disappointment, because you don't want to snap in front of your class, you want to enforce their listening skills, they have to listen to you so you can develop your lesson plan.

She talked about the exploring aspect of teaching occurring within the first teaching assignment and how fully charged with emotions the class was, as this quote exemplifies: "I remember the first class I had, a really chatting bunch, some were not listening, you feel a lot of frustrations, so you kind of have to cool down, you don't want to make a big scene." This translated into her desire "to handle them, to learn some classroom management." Shortly after the internship started, Petra's emotions changed to "happiness, enthusiasm, a sense of pride … a big sense of success." The classroom became the stage for experiencing tremendous excitement and enthusiasm when noticing students' progress, as this quote highlights: "I feel pride and I am always fascinated that they are so excited to do simple examples, but they get so excited, and they get a feeling of satisfaction themselves." The classroom was also a place where Petra noticed students' willingness to learn and the easiness with which they participate in math activities, as this

quote illustrates: "they want to show me that they can do the questions and they can do the answers and try to improve themselves." Teaching was abundantly loaded with emotions for both students and Petra:

> If they are feeding you positive emotions, they are kind of making you feel better about yourself and more confident in your teaching ability. But if they are feeding you negative things, you are going to have a negative feel towards that class.

This statement underscores the interconnectedness of the emotional dimensions of teaching and learning. The link between Petra and her students' emotions mirrors previous research findings where "teacher reflection on students' emotional response to the subject matter frequently elicits emotional responses from the teachers" (Rosiek & Beghetto, 2009, p. 175).

Teaching presented the opportunity to know, guide, and see how students improve their math skills. Petra talked about her eagerness "to get started and try something new with them and see how they are going to react … a lot of enthusiasm, positive feeling, and satisfaction at the end when they can do my problems." She discovered students' strengths, guided them through their weaknesses, and helped them to confidently utter: "Oh, I can do that!" Teaching became enjoyable particularly when students "kind of make it fun for you to get up there and deliver a class and you are excited the next day to wake up." Students were the ones who made her happy to teach math classes, and they were the ones who had the potential to "make or break the whole thing." Petra focused her efforts and skills to help students progress in their understanding of the subject. Thus, her actions were in line with descriptors of teachers' task-mastery system (Ames & Ames, 1984).

Apart from all these characteristics and goals, Petra was an individual full of life, eager to communicate, to socialize, and ready to embark on a journey that would ultimately turn her into an accomplished junior math teacher, as this quote exemplifies: "getting up and interacting with class, and teaching will be fun …. I knew that I wanted to become a teacher …. something that I really want to keep going." She seemed ready to tackle this new role with aplomb, professionalism, and ardor, while teaching two grade seven math classes: an English and a French stream.

4.3 Petra's Emotions and Goals

Anxiety, frustration, and disappointment were recorded during Petra's internship. Anxiety occurred only in the early days, as this quote illustrates: "I experienced a feeling of anxiety at the beginning of the lesson because it was the first math class I have taught." When students and Petra got acquainted, disappointment and irritation settled in. Attributed causes included students' reactions, when they did not do homework, when they "did not understand my examples", or when they had "a quiz, and they don't know what to do because they didn't do their homework." Unpleasant emotions also appeared when students acted out intentionally, as this passage illustrates: "students don't really know you as a teacher, and they are trying to feel you, and are trying to see if are you going to be able to lead them." Another attributed cause included Petra's teaching approach, as this quote exemplifies: "I moved too quickly through the easy examples and went to more difficult ones too soon." Students were not putting in the time and effort in doing their homework, and this ultimately led to their inability to contribute to the classroom's activities, as "they are all looking at you like dazed, and they don't know

what is going on." Subsequently, disappointment turned into frustration when students "don't feed you anything back because they did not spent the time doing the homework." Irritation and frustration set in when students did not validate her efforts, or when they chose to be involved in other activities, as this quote highlights: "you worked hard to develop this lesson and you are hoping to get them involved and all they are doing is listening to their ipod." Other sources of stress and frustration included classroom management techniques, e.g. "you are always constantly trying to remind them that you have to stay on task and do this and turn around, all the way around, do this, do this." It became apparent that Petra attributed unpleasant emotions to her incipient teaching techniques, but also to the powerful influence of students' emotions and behaviours.

Thoughts occurring in conjunction with unpleasant emotions were ones of control and aimed to revert to more upbeat emotions, e.g. "this is not something that you want to dwell on, you want to move on and make sure every time you enter a classroom, you are positive." Experiencing disappointment was immediately followed by the wish to self-improve in an attempt to experience satisfaction again as "I can now see where I need to improve so that I can experience satisfaction after teaching", or by a desire to become even more enthusiastic because "even if I might have a small disappointment I am always enthusiastic to say 'Ok, I can do better next time'." These statements present mastery characteristics described in the works of Nicholls (1984b), Pintrich and Schunk (1996), and Seifert (1997a). Thus, in the face of unpleasant emotions, Petra continued to pursue teaching with even more dedication. This is not always the case, as Winograd (2003) describes instances where "dark emotions" have dysfunctional dimensions and "often led to continued dark emotions, like when anger led to fear, or when anxiety led to depression

and despair" (p. 1662). Petra's proactive action aligns with those of other individuals who have mastery goals "associated with more adaptive perceptions and behavior" (Butler, 2007, p. 251). After the lesson concluded, Petra would analyze what went wrong and what could be changed in her teaching approach for the next class, in an effort "to improve to make the class better for the next one." This quote illustrates: "I always reflect back on that hour and say 'Ok well, this part did not go right', but now I can change it for the second class." This emphasizes her focus on self-improvement (Seifert, 1997a; Urdan & Maehr, 1995) and reflects self-examination of teaching practices (Meece & Holt, 1993; Middleton & Midgley, 1997). As students opened up to her teaching approaches and came up at the board showing their peers how they got their answers, they didn't realize that they were following on Petra's invisible thread as they created strong connections with mathematics. She would go to extra lengths to improve from one day to another:

> If I leave a class, and it did not turn the way I wanted it to be I will leave and go home and look at the next section, and say how can I change it from this happening, like seat work, and examples, and a little bit more interesting and getting them involved. I definitely try to go back and look at it and see how I can change it a bit more than just getting them to come up at the board, and show their peers on how they got their answer and try to get them to connect with themselves.

While analyzing her teaching, Petra seemed to be motivated by a sense of competence. This led Petra to increase her knowledge of teaching methods, to continue pursing her goals, and to make teaching even more rewarding. Petra's sense of competence, coupled with the autonomy enjoyed during the internship, and her self-

relatedness to students emphasized intrinsic motivation attributes (Seifert, 1997b). Experiencing disappointment or frustration was quite sporadic because Petra was determined to adjust her teaching style, to prepare more, to overcome such emotions, and to make way for who she really was: an exuberant, full of life intern who wanted to make a difference, and to share her passion for math with the students. Her desire to change and do better soon led her to create classroom activities that would capture students' attention. This attitude came in handy as students were "so tired of doing the same old, same old, that they might need a little bit of boost and something different." Therefore, she definitely shook things up not only for her students, but also for herself as she made mathematics interesting, fun, and accessible for all. The more students were involved in doing enjoyable math classroom activities, the more they would lean towards persisting doing such activities outside the classroom, thus increasing their interest in pursuing mathematics. Petra successfully learned to combine improving math teaching strategies with cultivating students' love and long-term interest for mathematics, as this passage exemplifies: "every class I come in, I want to make sure that I have a positive mood, and be energetic and be ready to start and I keep positive to them."

Emotions such as disappointment or frustration lasted a few minutes. Petra wanted to stay away from "harping" on them, as she wanted "to make sure that you don't want to let the disappointments ruin your mood." She didn't want to transform herself into a "grumpy teacher" as she was conscious that students look up to teachers, saw them as role models, and knew that her emotions certainly impact students' emotions and attitudes towards math. The bodily effects of such emotions were described as tenseness of body, stomach nausea, churning, or butterflies, as Petra described: "I say the first week you

were nervous, you had butterflies in your stomach, because you did not know the students and they did not know you, and they were just staring at you."

While initially she considered it beneficial to "show a bit of disappointment, to show that you are not happy with what they are doing, and they are disappointing you as a teacher" in retrospect "you probably would not show that, because you don't want them to feel like well why can't I understand this topic." Frustration, disappointment, or anxiety did not diminish Petra's desire to pursue goals, as this quote illustrates: "I try not to let a bit of disappointment affect my goals." Steering away from experiencing disappointment or frustration was an example of emotion regulation (Sutton, 2004; Zembylas, 2005c), underlining teaching as a process saturated with emotions. Petra took the negative energy and transformed it into constructive moods and upbeat attitudes. Disappointment was beneficial for her achievement goals, and made her even more motivated to improve, as Petra explains: "I try to reflect on the disappointment and make sure that I change it into more of a happy feeling and positive ways." This form of emotional management reflects expressing desired emotions as well as living them (Hochschild, 1983; Zembylas, 2005c).

She didn't raise her voice; rather she changed its inflections, making it more powerful, demanding attention, commanding students to work on math problems, as these exemplify: "I want to see work being done, not chatting … not a sound now … I hear people talking about other things besides what they are supposed to be doing … way too much talking … turn around and pay attention." Even if students were loud, at times even going ballistic and chatting constantly, Petra kept her composure and calm, unperturbed by all the commotion. It took a great deal of determination, but she was reaching new

levels in her teaching, and managed the class quite well. She was impressive as an intern, as she displayed versatile interaction and communication skills, adapting with ease to new situations. For example, she used subtle humor to disarm tensions in class and to revert students' attention to math while keeping a smile on their faces. Facing the board, Petra shushed one student to quiet down. He replied: "but you could not have seen me." Petra said: "I have eyes in the back of my head, that I just developed." He looked up in disbelief and smiled as Petra uttered: "That is right, in the past three months."

Apart from the very few such emotions that occurred at the beginning of her internship, Petra experienced almost daily a large variety of emotions such as happiness, satisfaction, enthusiasm, excitement, pride, joy, fascination, awe, and caring. These emotions were mentioned in interviews or diaries, and were visible during classroom observations. Students' cooperation, their willingness to sit down, open their books, and work diligently during mathematics lectures contributed to Petra's satisfaction and happiness when she saw students working together as a team:

> Their hands are shooting up, they are asking questions, they are really excited to give you the answer 'Oh, Miss, Miss, I know the answer!' and they all want to come up to the board and show their friends how they got the answer.

Petra's teaching methods were clearly geared towards supporting students' autonomy, promoting students' competences, and increasing their confidence. Teachers' autonomy and supportive behaviours positively influence students' perceptions of competence and autonomy (Pelletier et al., 2002; Vallerand et al., 1997). Such teachers, Petra included, help students become more independent and self-competent (Ames & Ames, 1984), and furthermore enhance their intrinsic motivation (Rigby et al., 1992).

Students' perception of Petra's teaching efforts added to her happiness as she saw "them reacting back to me, and doing the activity." Other contributing factors to Petra's happiness included students being actively engaged in doing and completing their homework, and realizing the importance of studying math:

> they all come in and say it is all done, and then I write the expression on the board, and they give me the answer, I know that they did their homework and that makes me happy .... students realized the correlation between studying and getting a good mark.

Correcting homework and becoming aware of how students advanced their math skills contributed to Petra's happiness, excitement, and pride. She was "beaming because they have all done so well, and got all 100 on their quizzies." High marks were the end result of students' ability to apply "the knowledge they learned in the previous sections to solve new problems" and to catch on new math topics "when they completely understood the topic after just one or two examples." Other attributed causes leading to pleasant emotions included seeing students involved in classroom activities and seeing students increasing their levels of confidence, as this quote exemplifies: "they were eager to come up to the board to explain their answers ... every time I looked students had their hands up ready to give me their answer."

Her enthusiasm also stemmed from seeing how students "touched the computer and the screen, and they were really enthusiastic about that, so that kind of proves to me: oh well, they are interested in that kind of thing, especially with technology." She built on the attraction she noticed in the students, on the timid yet caressing gestures with which they touched the smart board screen, on how they interacted with the computer, on how

attentive they became, and on their enthusiasm that developed and carried throughout that class. Teachers' enthusiasm for teaching is connected to instructional processes (Kunter et al., 2008). Emotional contagion (Hatfield, Cacioppo, & Rapson 1993; Hsee et al., 1990) occurred between Petra's enthusiasm and passion for teaching, and her students' enthusiasm for exploring and learning math, thus corroborating other research (Patrick et al., 2000).

While explaining math concepts at the board, Petra kept an active dialog with students, asking them for answers by using a soft and melodious voice, and by constantly maintaining eye contact. She used a language that students seemed to enjoy tremendously, like the use of diminutives such as a "baggy", a "quizzy", and a "foamie", as opposed to a "bag of algebra tiles", a "short quiz", and an "algebra tile made out of foam." Her serene face portrayed sequences of Duchenne smiles, and dimples appeared on her cheeks. Her body language showed a relaxed and confident intern. For each question she posed, one could count at least five students raising their hands eager to answer. When explaining things on a one-to-one basis, her body was half bended. With her head tilted forward, lips pressed almost withdrawing, and hands rubbing her chin, Petra awaited students' questions and explanations. Her eyes were focused on students' booklets; her hands pointed out mistakes while using a soft and soothing voice. Petra's dedication to her students was impressive as she embraced teaching in its various forms, and thrived to see students take deep breaths and affirming "Oh, I see it now" or "Oh, yeah." While waiting for students' responses, she exhibited an arched appearance of the shape of her eyebrows, raising the upper eyelids, apparently looking surprised. Her head was tilted forward, her lips were pressing almost disappearing while expecting correct

answers, and concentration radiated from her face. When she was approving students' answers, her head tilted back and forth in approval. Her eyes and hands moved up and down as if supporting students' statements. Exquisite teaching skills came forth through the language used, such as: "we are getting closer", "practice makes perfect", or "good job." Research shows that positive feedback conveyed in an autonomous way tends to "enhance intrinsic motivation by strengthening perceived competence" (Rigby et al., 1992, p. 175). Students responded to her teaching methods by being engaged, posing questions, and by asking for clarifications when they didn't fully understand a math concept. Students were conversing about math, and were eager to learn and help their colleagues. They were cracking up jokes while being completely engaged in classroom activities. On one such instance, Petra gave them a take home quiz, and a student piped up asking whether or not his parents can help. When Petra introduced algebra tiles, students were so mesmerized about colors and shapes that they went to the board, played with the tiles, and learned new math concepts while having a lot of fun. Students were so infatuated with her teaching style that they ended up drawing heart shapes on the board next to their final answer. These findings agree with research by Kunter et al. (2008), which describes that mathematics teachers' high enthusiasm for teaching is "significantly related to higher quality instructional behaviours, particularly in terms of teachers' monitoring of student behaviours and provision of social support" (p. 478).

Petra's emotions were influenced by students' emotions because "if they are feeding you positive emotions, they are kind of making you feel more good about yourself and more confident in your teaching ability." Students' actions and behaviours

had a significant impact on Petra's emotions, and led her to reflect on her actions and teaching methods:

> If they are reacting to you in a positive way, and are happy, and are smiling, and they are putting their hands up because they want to answer the questions, it kind of puts me in a better mood, because I think that they are confident in what I am trying to say and you know, I know the knowledge is there.

She also seemed to think that teachers have a lot of power in influencing students' moods, as this quote exemplifies: "if you have a positive attitude towards the topic your students will in turn enjoy what you are teaching them … as a teacher you have a lot of power influencing the moods of your students", and corroborates previous research (Patrick et al., 2000). Petra's satisfaction stemmed from her efforts as she "taught that section really well", as well as from her consistent care and devotion put in creating and organizing meaningful math classes, from doing a good job as an intern, or from choosing the right career, as this statement exemplifies: "I know I am on the right track."

Petra took pride in guiding students to succeed through layers of intricate math connections, as this quote states: "they are doing well, it makes me feel really well, really proud, beaming with pride every time." Pride intermingled with happiness was a consequence of her students flourishing and getting high marks under her supervision, care, and guidance. Petra stated: "happy and pride go together … because when I was correcting the test the night before, I was looking at it, a big sense of pride at the end when I've seen the marks."

On few occasions, when everybody got maximum grades, she felt "super excited that they all got ten out of ten … they picked it up really, really good." The excitement

increased her expectations that students "will do well tomorrow." On the occasion of the chapter six final review tests, both classes performed outstandingly with class averages of 94. Such success was unprecedented as both Alison and Petra were trying to improve students' performances throughout the academic year. Students' accomplishments made Petra feel "really, really excited and happy, kind of feeling success."

The essence of Petra's experiences of happiness could be best summarized in the overall care she developed for students, as she felt that "even though they are Alison's, it kind of makes you feel that they are my class, and I guided them through it." The essence of her enthusiasm was noticeable in her uncontestable yearning to go to the next class, and in her excitement to immerse herself in the activities of the next class, as she looked "forward to what we are going to do in class." Enthusiasm also emerged from her desire to establish a connection with the students, as well as from her desire to uncover and share the mystery and depth of beauty of such a purely logical science.

Care was listed as an essential component within interns' lives (Goldstein & Lake, 2000). Research described strains interns encounter while teaching, namely establishing identities as caring teachers, establishing boundaries between care and control, and coping with care for students who are only 'theirs' for the duration of the internship (Goldstein & Lake, 2003). However, this case study report steers clear from such dilemmas, perhaps in light of Petra's mastery goal orientations.

Petra experienced an assortment of emotions that rapidly moved away from the initial disappointment and frustration to combinations of different pleasant emotions. Examples include combinations such as: happiness and excitement "extremely happy, you are beaming … you are so happy and excited"; happiness and pride "I was happy … I

was filled with awe … filled with pride"; enthusiasm, excitement, and joy "I was very enthusiastic … I was excited … this made me filled with joy"; and wonder, awe, and, fascination "I was wondering … I was in awe … I left the class fascinated."

While encountering such powerful and positively charged emotions, Petra's thoughts were divided into two distinct classes. On the one hand, she was thinking about her teaching aptitudes and progress, and about doing a good job as a teacher, as this quote exemplifies: "I felt very good with the way my activity was going." Petra reflected upon improving her teaching skills, as she wanted "to shake it up a bit and make it interesting, make it fun." When experiencing joy, pride, satisfaction, or happiness she was thinking about how her actions positively affected her students. This statement highlights how Petra attributes success to her effort, an internal and controllable factor (Nicholls, 1984b; Pintrich & Schunk, 1996): "I am finally doing a good job myself because they are connecting and they are excited for what I am trying to present to them."

Petra was thinking about the time and effort dedicated to creating examples, finding worksheets and enticing mathematics games so that the students would benefit from a diversity of problems. She stated: "I spent all this time and effort and doing up the examples, finding worksheets, doing up worksheets, doing games, so that they can have lots of different methods and practice." Other thoughts revolved around her abilities in getting students motivated: "I can get them motivated this way – I have planned a game like jeopardy or some kind of activity and get them really excited about it", around the strong connection between self and students: "I know that they are connecting with me", or simply around continuing teaching: "I feel pride and happy and you feel enthusiastic for the next day to start, to give them back their quizzes."

On the other hand she was thinking about her students, about how much they had accomplished, "how well everyone adapted to the new material", about how they "were getting the answers right", how they enjoyed mathematics during her different and exciting lessons. Petra also contemplated how excited students seemed to be while they uttered: "Miss has to hear what I have to say … so I will shout over whomever." Thoughts about students' eagerness to show their knowledge and about how they had commonly worked towards establishing excellent communication avenues appeared, as this quote shows: "I know that they are connecting with me, and they want to show me that they can do the questions and they can do the answers and try to improve themselves."

Overall, Petra was thinking that students were adapting well to new mathematics topics and were answering their own questions. It became clear that students' progress was more important than her success, as this quote exemplifies: "I am proud of them and that everything they have done makes me full of pride and happy for them." She became happy through her students' accomplishments and happiness, and through the fact that no one was disappointed by their marks. All these events contribute to Petra growing to feel "warm and fuzzy that they are happy and excited with their marks." She describes her thoughts on the connectivity between happiness and enthusiasm as follows:

> Happiness kind of ties in with my enthusiasm. I feel happy about every class, every day. If I assign homework for the next day, and the next day they come in and say 'Oh, Miss I have my homework done!' and they all come in and say it is all done, and then I write the expression on the board, and they give me the answer, I know that they did their homework and that makes me happy – they are

practicing what we did the day before, so they must be in a positive note yesterday, so they must have said 'Oh, I am going to go home and do my homework because I understand it'. Because a lot of time they don't do their homework, because they might not understand what we did. And a lot of time their parents might not understand as well. Definitely I enjoy it, I feel very happy when their homework is done. We have a mini quiz, usually a couple of quizzes a week, so I will correct them at home, and I say 'Oh, they got 10 out of 10!' And that makes me feel happy. Because they know that they are doing well, and they understand what I am teaching, so it is kind of going back and forth, it is kind of reinforcement for me that I am doing a good job as their intern, or say teacher. So when I correct their tests, it makes me really happy to see that they are doing well. Because I kind of what to make sure that when I leave that they are doing a good job, and their marks are good, and they understood every thing.

Retrospective views of the thoughts appearing in connection with pleasant emotions led her to contemplate continuing the good work, as "today goes well, and tomorrow I go home and say today was really good class, and what can I do to make it good tomorrow, try to keep it." When everything goes smoothly, she doesn't "think about it a whole lot."

She wanted to share her thoughts with her students and to "let them know when they do a good job, and when they are behaving, and let them know to keep it up." Based on her teaching experiences she was willing to put more time and effort in creating better learning environments. Satisfaction, happiness, and enthusiasm made things seem easier for Petra, and she always appeared to tackle everything with ease, grace, and poise.

However, she disclosed that happiness, enthusiasm, and awe made her feel the urge to "actually act emotionally towards someone by moving closer" or to "pat every student on the back for a job well done." Experiencing pleasure contributed to overtly showing her emotion, as this quote highlights: "I showed my pleasure because the students were behaving and showing interest in the topic." Petra described the physical symptoms of happiness and enthusiasm as waves of "stomach butterflies", while her face revealed smile sequences, and she showed her excitement by "using hand gestures." One item of the diary pertained to the intensity of the emotions experienced. On an item scale ranging from 0 (*not really noticeable*) to 10 (*as intense as I have ever felt*), the intensity of Petra's emotions averaged 8.7.

The impact of satisfaction was considered as permanent, as it was an emotion she aimed to replicate "as long as I continue to do that, satisfaction will be there." She wanted to continue to experience satisfaction because it presented the prospect "to keep them motivated" and because it made her feel good "it is nice to have them, greet them with a smile." The perceived effect of happiness and enthusiasm on the time and effort she put in her subsequent class preparation increased, as these emotions were motivators to continue doing a good job. Enthusiasm, satisfaction, and pride led Petra to praise students "we let them know when they do a good job, and when they are behaving, and let them know to keep it up."

Satisfaction, happiness, and enthusiasm had a lasting perceived effect on Petra's mastery goals, as she realized she helped students progressing, because "if they are succeeding in my class, than maybe I am doing a good job as a teacher." Students contributed to increasing her levels of confidence as she felt "happy … moving forward

and building up confidence and teaching skills." Happiness inspired her to look for new teaching strategies, as this quote illustrates: "I want to go a little bit above and beyond and see what else is available out there to use, to try to find more resources." Happiness motivated her to "learn new things with different age groups" as she noticed that various methods work for different "age groups to keep them motivated to learn the subject … so that students would not sit there staring at the ceiling or the wall, always try to change the worksheets or group work." Enthusiasm and excitement increased the desire to study and incorporate new teaching strategies, as "I will not hesitate to try the smart board or other technologies in my future classes." Satisfaction made her acknowledge "after working hard to better prepare for a class, one is left in awe when everything works out." Happiness led to the peace of mind as "I did the best I can and all my students do well and they did not fail or go backwards." Enthusiasm heightens spirits as "it puts me in a good mood" and happiness "keeps you more positive and say I can keep doing this … you move forward."

Under the influence of her emotions such as satisfaction, happiness, or enthusiasm, her achievement goals became "achievable, more important to keep" as well as "easier to obtain because if they are reacting to me and are enthusiastic about my class … it feels that it is easier to grab." Her mastery goals became stronger as a consequence of students' active interactions with math and of her teaching successes, as this quote illustrates: "probably at the beginning it was not as strong, but as I get closer and closer to as the internship ends, it got stronger … definitely stronger than it was in the beginning" because students "are reacting to me and are enthusiastic about my class." Doing a good job was a strong motivating factor to continuing developing teaching abilities, as she had

"seen that it was successful." This quote further highlights the impetus to learn how to teach: "make it interesting and motivating for them so, you know I learn different ways to use worksheets or activities or games still teach the chapter but you do it in a fun way for them to learn."

Satisfaction, happiness, and enthusiasm projected a new light on how close she was in reaching these goals, as they felt "more realistic to complete." Petra was "happy about what happened throughout the last 13 weeks." She saw that students were "happy and they feed you back their emotions." She felt more in reach of her goals due to her emotions, as this quote exemplifies: "if you have positive emotions, you feel I can reach that goal." Reaching goals became more tangible particularly when "you see that you are happy and the students are happy … they feed you back their emotions." She was closer to achieving her goals, as this quote exemplifies: "you are happy and you are excited and all that it is closer." Emotions contributed to easiness in attaining goals because "if you are positive throughout your teaching and you are positive about students and enjoy what you are doing, it makes your goals so much easier." Her desire to continuously develop her abilities as a teacher and to try to learn new things in mathematics evolved during the internship. This evolution was influenced by the intersection between emotions, motivation, and confidence, as this quote exemplifies:

> At the beginning of the internship I probably just want to use different methods and try to figure out what is the best way to teach different topics. Now, I want to go a little bit above and beyond that and see what else is available out there to use, so try to find more resources, other things they can do in math, especially when I get in higher grades because the topics are going to be different.

Petra's mastery goals correlated with experiencing enthusiasm and satisfaction. She prepared her classes and strived to be the best teacher for her students, as this passage reveals: "I always try to be enthusiastic about the topic I am teaching and get them in a good mood, and hopefully get them so excited that they go home and want to do their homework right away."

The perceived effects of mastery goals on emotions are summarized here. Mastery goals contributed to her beliefs that the best approach was to go in the classroom and maintain a pleasant demeanor, as this quote exemplifies: "I always want to make sure that I am enthusiastic … trying to do it in an enthusiastic way, so I have a lot of enthusiastic energy when I go to class." Aiming to achieve such goals led to doing a good job and experiencing pride, as this quote highlights: "I always plan around that goal to make sure it was achievable and tangible and at the end to say I have reached that goal and so I could feel pride."

4.3.1. An Hour in Petra's Class: the Mathematics Jeopardy Game

This section presents a day in Petra's class, the level of interaction, the patterns of communication, classroom dynamics, and prevalent emotions encountered for both students and intern. Petra was always inclined to use a variety of teaching strategies to boost the level of interaction in her classes. One such instance was the use of the smart board technology to create an interactive jeopardy game for the duration of an entire mathematics class. She tried to have different settings, in an effort to do something different every class. As she guided students to the curriculum resources center, they seemed excited to participate in yet another adventure in Petra's class. The students were

paired up in four teams: Germany, Finland, U.S.A., and Canada. She hand picked students and placed them in groups, where high achievers were paired up with the low achievers in an effort to ensure that they were of different capabilities and levels. She did spread out the ones who talked a lot or had behavioural problems to create balance. In doing so she proved not only that she knew her students well, but also that she evolved as a teacher as she was managing both the class and the curriculum to perfection.

As each team rolled the dice, Petra counted which scored most points. Every team worked on a math question, and then they took turns just like in a real jeopardy game to see which one gets the right answer. They were all engaged and captured by the idea that that they were playing a game, completely forgetting that they were actually solving problem after problem. Team Germany won the first round with 200 points. Students had about 30 seconds to solve a math problem and were constantly encouraged to be active participants within their teams. Students seemed to thrive within the high paced environment and they didn't seem frazzled about the time frame. They all shouted out loud whenever they got an answer, no matter if it was right or wrong, and seemed overly excited to be involved in this game. The level of noise during this class reached its peak and Alison, who had not interfered at all with the proceedings of the class, had to quiet them down a bit, as they were all over the place and were overly excited about this class. This describes a 30 seconds snippet of the class interactions:

Petra: "Find the missing denominator: $\frac{6}{8}=\frac{15}{?}$."

Mark: "Miss, this is not possible!"

Petra: "Yes, it is possible. … We got our answer team Germany?"

Elizabeth: "Ding, ding. We got the answer."

As the conversation and the game carried on, I noticed that one student completely forgot about himself and got so carried away playing the game that he was standing on top of the chair, while his eyes seemed literally glued to the smart board screen. Hands went up all over the place; they felt like they were competing among themselves while they were highly engaged in solving math problems. Having Elizabeth as the main player, team Germany won most rounds. She was one of the most gifted students of the class. On one occasion, Elizabeth had a heated debate with Catherine, another member of the team. Dismissing her team with a quick stroke, "hang on Miss, hang on … guys you are not helping me", and she pursues the matter with Catherine and later on with Petra. As Elizabeth went on to explain the logic of the problem to Petra, the game came to a full stop as it became obvious that Elizabeth was really affected. Petra clarified the situation; team Germany won again, and Elizabeth was thrilled.

This was supposed to be a review class for the quiz they had the next day on adding and subtracting mixed numbers. Walking between the four round desks where the students were located and lovingly checking students' workings, she was tapping from time to time while waiting to hear students' comments. Some problems took longer than others to be solved. However, they solved an incredible amount of problems, and the success of this class was unprecedented. This group was always noisy and extremely curious, an interesting bunch to say the least, very volatile, very lively, and always asking questions. But today, unlike all other mathematics classes, nobody asked permission to go to the bathroom. They were so engaged in the game, that they completely forgot about indulging into their regular mini escapades.

Seeing students so engaged contributed to an increase in the frequency of large smiles on Petra's face, as she pulled her lips back and upward creating a semicircle shape to her mouth. The intensity of these smiles became obvious as her cheeks moved upward, inducing the outer band of muscles around her eyes to compress, wrinkling her round shaped eyes, bagging the skin below her eyes. Holding her hands almost like in a prayer, with her head tilted forward, and eyes wide open, Petra's body language revealed her most inner expectations of hearing correct answers and of seeing their progress. Her expectations were fully met since all students had their hands up every other minute, exuberantly shouting answer after answer, and staying focused on the task at hand, as this quote illustrates: "it was good, I liked it, it is definitely good, it went the way I wanted it to go."

It took her almost three days to put together this lesson plan, but regardless of the time and effort that was involved, she did it for the students:

> I found the template game and then I had to look at the book and see the review test, so it took two or three days. Two days to get the game all straightened away. Because I had to figure out which questions to use and it was not hard work, but it was tedious getting it to work and you put the questions in and the questions won't come up on the screen like you wanted it.

At the end of this class, Petra said that her prevalent emotions throughout this class were excitement and enthusiasm, because the more the students were getting excited, the more she was getting into the game and into the cheerful spirit of the class, as this quote exemplifies: "you are pretty excited, and enthusiastic and happy along with them because they get you going." When her students enjoyed an activity, she thought

that all the work that was put into it was worth it, and ultimately all worked out well. She ensured that a wide variety of problems were present, covering all six sections of the chapter. Petra managed to go through a lot of problems, as opposed to a regular class where she would have five or six examples done. At the end of today's class, students were so quick to figure out problems, that in a few seconds they were shouting "Oh, I know the answer." Due to the involvement and excitement, they seemed a totally different crowd:

> … engaged and focused on winning and if there is something a prize or something they could win, this is their focus, totally on that. So when they are focused and pay attention and they are really excited about something, they totally go through more examples. And they don't even realize I don't think they realize it. So, when they are focused and enjoy something they will definitely pay attention and learn it much faster. And when we do stuff on the board they stare up in space. So definitely games help them. You are trying to get the answer before the friend next to them, so they are really involved and really excited.

Looking back to how the class activities evolved, Petra could not help but acknowledge the pride felt as the lecture activities worked out well and all the work put into the preparing the class contributed to making it all worthwhile for students and self, as this quote shows: "it went really well … kind of proved to me and to them what they knew."

This represented a snap shot of how Petra's lessons bear the signature mark of beneficial interactions and constructive teaching elements. This class was an opportunity for students to apply their knowledge skills in a fun way. It described Petra's teaching

strategies as student centered and detailed her commitment to and love for teaching. Her emotions revealed a blend of satisfaction, enthusiasm, excitement, joy, cheerfulness, and zest for teaching. These emotions zero in on Petra's enthusiasm and passion for teaching. It accounted for her love and care for students, her kind and encouraging attitude, and passion for teaching. This snippet characterizes Petra as an effective intern (Ames & Ames, 1984; Witcher & Onwuegbuzie, 1999) who promoted a high quality of learning and creative classroom environment (Deci & Ryan, 1980; Rigby et al., 1992).

4.4 Assertions and Closing Statements

Having presented my classroom observations as well as Petra's own interpretations of her emotions, within this section I summarize what I believe I understood about this case. Petra pursued her internship at St. Mathew's, a school where the level of care for students reached maximum levels. Embraced by this caring environment, Petra flourished as an intern. Her emotions progressed from initial anxiety, disappointment, and frustration to a world of enthusiasm, excitement, satisfaction, happiness, pride, joy, awe, wonder, care, and fascination. On the one hand, experiencing a large palette of emotions was a direct consequence of interacting with students. Students' performances, increased confidence, and cooperation during mathematics lectures fueled Petra's emotions. Their willingness to apply knowledge in solving new problems, their high grades, or their attitudes towards math, emotions, actions, and behaviours led her to experience happiness, joy, or enthusiasm. By being hyper, bubbly, constantly happy, or by simply showing interest in mathematics, students contributed to Petra's pleasant emotions. On the other hand, such emotions were caused by her efforts. Prominent

attributed causes included constant care and attention directed towards students, her role in students' understanding, or seeing students flourishing under her guidance. Other attributed causes included the realization that she had chosen the right career, or that she was consolidating her teaching skills.

While experiencing such emotions, Petra's thoughts ran to her students, to how accomplished they became, how eager they were to learn mathematics and to share their thoughts and questions about math, how well they adapted to her teaching style, how self-assured they became in answering math questions, and how well they performed in quizzes and chapter tests. At times, she thought about her accomplishments and progress as an intern, about doing a good job as a teacher, and about how her actions positively affected her students. She took into consideration the time and effort put into creating worksheets and attractive mathematics games so that students benefited from diverse problems. Petra contemplated her ability to get students motivated, the connection she shared with her students, and the enthusiasm she had for teaching. However, for Petra, students' progress was far more important than her progress as a teacher.

The essence of Petra's emotions such as satisfaction, happiness, pride, or joy was encompassed by the utmost devotion she had for her students, as if her whole universe revolved around them. Classroom observations and core descriptions of happiness or enthusiasm portray Petra as an exceptionally caring person, devoted to students, looking forward to the next class and discussions with students. The influence of these emotions on her body was best described as waves of stomach butterflies and sequences of large smiles on her face.

Satisfaction, happiness, and enthusiasm influenced Petra's goals, as she arrived to the realization that she was actively contributing to students' progress. Pleasant emotions increased her levels of confidence and inspired her to look for and learn new teaching methods. This aligns with Butler and Shibaz's (2008) research, which affirms that mastery oriented teachers describe successful teaching days when they gain knowledge of something new. Pleasant emotions motivated Petra to learn about methods that worked best for different students, and to study and incorporate new teaching strategies regardless of the levels of difficulty. Happiness contributed to Petra's peace of mind as she acknowledged she did the best she could to contribute to students' math understanding, while enthusiasm reinforced her mood. The influence of satisfaction, happiness, pride, or joy on Petra's mastery goals was long lasting. Emotions such as satisfaction, happiness, and enthusiasm increased Petra's goals in importance and they became more tangible and stronger. Her emotions contributed to a perceived easiness in attaining her goals. Satisfaction, happiness, and enthusiasm made her feel closer in reaching these goals, and learning new things about math or about teaching math became more real. Petra's goals were validated through students' successes and aspirations to learn. Witnessing students' happiness, Petra realized that her efforts and dedication were positive influences, and decided to increase the time spent in creating great lectures plans for students. She wanted to continue experiencing satisfaction as it had a double effect: it made her feel good and kept students motivated.

Petra's mastery goals contributed to her beliefs that the best approach was to maintain a pleasant demeanor. Aiming to achieve her goals led Petra in doing a good job and occasionally experiencing pride. Petra's mastery goals led her to control the initial

layers of emotions such as disappointment and anxiety, and to actively work towards changing these into satisfaction, happiness, or joy.

At the end of the internship, Petra believed that being positive about teaching, about students, enjoying the work involved, and experiencing emotions such as satisfaction, enthusiasm, excitement, or happiness, made reaching her goals easier and faster. Thinking about the internship she was "enjoying every second, whether it was mathematics, home economics, art, whatever it was." This contributed to learning and following up on her teachers' footsteps, as this quote exemplifies: "I do what Alison does that I can use in my teaching so I can take from her and grow that way." To reach such a powerful conclusion at the end of her internship, she needed more than just good analytical skills. She exhibited a rather perfect combination of mathematical knowledge and teaching skills. Petra taught in a school environment conducive to establishing trust between teachers and students.

Petra volunteered to participate in the case study. She displayed characteristics of effective teachers that made her most interesting to watch. Examples include: efficient organizational skills, flexibility on her approaches to teaching, excellent bonds with students, and a subtle sense of humor. Petra had developed an ability to design lesson plans that captured students' attention. She increased their motivation to study math. She had constant positive expectations. She showed enthusiasm, excitement, and passion for teaching. Petra demonstrated care for students. All these attributes are in alignment with descriptions of mastery oriented teachers (Ames & Ames, 1984; Witcher & Onwuegbuzie, 1999). Petra's teaching style is in agreement with Babad's (2007) description of effective teachers, which highlighted teaching strategies such as "great

interest and enthusiasm about their subject, they teach in a provocative and stimulating style, they use their faces, bodies, and voices to attract students' learning, and they take efforts to involve the students in the learning process" (p. 215).

Petra deeply cared for students' progress, and showed compassion for the ones who struggled. She used differentiated instruction, seemed close to students yet kept enough distance so they ultimately knew who was in charge, rewarded good behaviour, made jokes, and used her initial frustration and disappointment to become a more accomplished teacher and to succeed in doing a good job that would benefit students. Through her actions, emotions, and goals, she embodied the 'perfect intern'. The school's warm atmosphere and Alison's guidance contributed to her progress. However, what I really think made a difference in her emotional and professional development was the sum of her determination to succeed, passion for teaching, desire to follow into the footsteps of former math teachers, and all her emotions and goals. Petra wanted to help students learn, to see them striving in math, to do well, wanted to make a difference in their lives.

I would like to remind readers that this case study reported my own understanding about Petra's emotions and goals. This case study showed that mastery oriented interns experience all types of emotions during teaching. Those unpleasant emotions can be converted to pleasant ones, thus having the potential to improve one's teaching skills and to increase motivation. The case study brings back into the spotlight Harrison and Robb's (1985) query: "the moral question is not 'What do I feel?' but rather, 'What do I do with what I feel?'" (p. 14).

Chapter 5 Data Analysis

This chapter presents the major findings of this research as these relate to the research questions of the study. What kind of emotional experiences do interns encounter while teaching mathematics? What similarities and differences exist between the emotional experiences of interns with different goal orientations? The chapter has four sections that present similarities and differences between mastery oriented, performance approach, and performance avoidance interns' emotional experiences. The first section illustrates meaning units, emotions' frequency and core descriptions, and commonly occurring emotional patterns. The second section presents attributed causes of various emotions. The third section presents interns' thoughts while experiencing different emotions. The fourth section describes relations between emotions and achievement goals.

Data were catalogued based on interns' achievement goals: mastery oriented, performance approach, and performance avoidance, as these became apparent from surveys. It has been suggested that students could pursue two apparently exclusive goals, such as mastery and performance goals (Dweck, 1986; Dweck & Leggett, 1988). In the case of pursuit of multiple goals, research shows that differentiation appears when mastery goals are abandoned in favour of performance goals (Seifert, 1995b). "The high mastery/high performance student stops behaving in a mastery way and begins to engage in failure avoiding strategies in an effort to achieve the desired performance goal" (Seifert, 1995b, p. 135). As such, for the purpose of a clear demarcation of interns' goals, the first interviews were used to cement interns' goal orientations. For example, the

language used, the nature of interns' perceptions of ability and behaviour, and their actions in the face of failure place certain interns within the performance approach group, as this quote exemplifies:

> I think if my colleagues are doing their job and are being successful teachers, I would never try to outperform them. However, if I am not being successful then I am trying to outperform them. I always want to be successful. (9-2)

The meaning units were different emotions that conveyed the essence of interns' perceptions about their emotional experiences that occurred while teaching. Meaning units were then compared across interviews and diaries for data regularities. Throughout this chapter, citations from interns' interviews are labeled as (1-3), and this is interpreted as the third interview of the first intern. Citations from interns' diaries are labeled as (5-d2), and this is interpreted as an excerpt from the second diary of the fifth intern.

5.1 Prevalent Emotions and Their Frequency

This section presents two tables with structured information obtained from interviews and diaries about the nature and frequency of interns' emotions. Interns affirmed that some emotions occur on a daily basis, while others appear at a lesser intensity. In the following tables, the daily occurring emotions are listed in bold type, while emotions occurring twice or three times a week are underlined.

A list of predominant pleasant emotions as well as their frequency through interns' diaries and interviews is presented in Table 1. Based on the collected data, in the case of mastery oriented interns, daily occurring emotions are happiness, enthusiasm, and satisfaction. The most frequent mentioned emotions for performance approach interns are

satisfaction, pride, and happiness. Excitement, enthusiasm, pride, and happiness appear daily. Joy and satisfaction occur three times a week. The most frequent emotions for performance avoidance interns are happiness and surprise on a daily basis, while relief and satisfaction appear two or three times a week. The numbers in Table 1 present the ratio between the number of occurrences of emotions and the number of students in each group. The number of occurrences for each emotion was established by counting how many times interns described an emotional experience during interviews and diaries. For instance, there were six mastery oriented interns. Throughout their interviews and diaries, they described 24 emotional experiences where they encountered happiness. As such, within Table 1, the happiness ratio became 4.

Table 1. Pleasant emotions and corresponding ratios

Mastery oriented	Performance approach	Performance avoidance
Happiness (4)	**Happiness (2.8)**	**Happiness (4)**
Satisfaction (3.5)	Satisfaction (3.8)	Satisfaction (5)
Pride (2)	**Pride (2.8)**	Pride (1)
Enthusiasm (1.8)	**Enthusiasm (1.8)**	Enthusiasm (3)
Joy (1.3)	Joy (1.2)	
Excitement (1.1)	**Excitement (0.6)**	Excitement (2)
Hope (0.8)	Hope (0.6)	Hope (0.5)
Relief (0.8)		Relief (2)
Surprise (0.7)		**Surprise (1.5)**
Caring (0.5)	Caring (0.4)	Caring (0.5)
Fascination (0.5)	Fascination (0.4)	Fascination (0.5)
Awe (0.5)		
Pleasure (0.3)		
Wonder (0.2)	Wonder (0.6)	
	Anticipation (0.2)	Anticipation (1)

For mastery oriented interns, the essence of happiness and satisfaction revolves around students' understanding, in alignment with research by Ames and Ames (1984): "I feel that I help strengthen students' mathematical knowledge and their confidence with it" (2-2). Interns' satisfaction stems directly from students' satisfaction, as an intern uttered:

"I am very happy to see the kids' faces and that they achieved and that they did well. And I guess my satisfaction came from their satisfaction" (3-2). For performance avoidance interns, the essence of relief revolves around avoiding manifestation of inferior teaching (Butler, 2007): "I was relieved because my students behaved well when I was afraid they wouldn't" (7-3). For performance approach interns, the essence of happiness, pride, or enthusiasm revolves around self-image and self-confidence. This aligns with research about performance approach students that highlights their preoccupation with self and their tendency process information in terms of self and others (Seifert, 2004). Happiness makes one "continue to want to teach" (9-2). Pride contributes to making an intern "feel good about myself, that my teaching practices are up to par" (12-3). Enthusiasm presents the preoccupation with self-image, because it "makes you feel confident and it makes you feel good about what you are doing" (10-2). The significance of the joy of teaching is described in terms of self-image, as "I feel fulfilled and satisfied and confident that I made the right career choice" (13-2). Satisfaction is described in terms of dominance:

> The essence would be that people are happy with the results, that students and us are happy with the results, and what they find it is important is what I am finding important and this is the essence of satisfaction right there. (12-2)

A list of predominant unpleasant emotions as well as their frequency through interns' diaries and interviews is presented in Table 2. Based on data from interviews and diaries, for mastery oriented interns, frustration appears twice or three times a week. Interns mention that disappointment "is very sporadic" (1-2), "anger does not really come in often" (3-2), and the "tiny bit of nervousness and anxiety at the start of every class" turns into "a sense of satisfaction at the end of the day" (6-2). For performance approach

interns, anxiety appears daily, nervousness and frustration twice or three times a week. For performance avoidance interns, frustration appears daily, annoyance and worry twice or three times a week.

Table 2. Unpleasant emotions and corresponding ratios

Mastery oriented	Performance approach	Performance avoidance
Frustration (3.2)	Frustration (2.2)	**Frustration (4.5)**
Anxiety (2)	**Anxiety (0.8)**	
Irritation (1.5)	Irritation (0.4)	Irritation (1.5)
Disappointment (1)	Disappointment (0.6)	Disappointment (1.5)
Anger (0.8)	Anger (0.4)	Anger (1)
Nervousness (0.7)	Nervousness (0.6)	Nervousness (1)
Disillusion (0.5)		Disillusion (1)
Worry (0.3)		Worry (1.5)
Hopelessness (0.3)	Helplessness (0.2)	
Sadness (0.2)	Sadness (0.2)	
Fear (0.2)	Fear (0.6)	
	Powerlessness (0.2)	Powerlessness (1.5)
Shame (0.2)		Annoyance (3)
Panic (0.2)		Guilt (2)
Boredom (0.2)		Confused (0.5)

For mastery oriented interns, frustration occurs when students devalue interns' efforts, because "you are putting in effort for something that will benefit them, and they don't seem to have any interest in, and they don't respect the effort you put into it" (6-2). For performance approach interns, the core of frustration consists off:

> … a lot of behavioural issues, and it was insane … definitely a feeling of not knowing what to do next. It is a situation where you don't know how to react. You don't know what to do to get your job done. It is a feeling of being lost. (9-2)

For performance avoidance interns, the essence of frustration derives from a sense of incompetence: "Why can't students just work? Why can't they just listen right now? Why can't they be working right now?" (8-2). This mirrors Seifert and O'Keefe's (2001) research, which suggests that "a sense of incompetence or a heightened sense of

externality could give rise to work avoidance" (p. 90). Performance avoidance interns interpret students' failures as possible threats to self-worth because "students didn't learn and I worried that it might be my fault" (7-2), mirroring Seifert's (2004) description of performance avoidance students. Description of annoyance reveals interns' sense of incompetence and poor self-esteem relative to students' comments: "perpetually misbehaving kid distracting others and twisting my words" (7-2).

5.2 Attributed Causes

This section describes attributed causes for the appearance of emotions. It has two subsections: one focusing on attributed causes of pleasant emotions and one for attributed causes of unpleasant emotions. To understand the emotional experiences encountered by interns while teaching, it is important to know the attributed causes of emotions. This section identifies similarities and differences between attributed causes for mastery oriented, performance approach, and performance avoidance interns.

5.2.1. Attributed Causes Leading to Experiencing Pleasant Emotions

This subsection presents attributed causes for emotions, such as satisfaction, happiness, enthusiasm, excitement, pride, excitement, joy, relief, surprise, awe, fascination, pleasure, wonder, hope, or anticipation. Table 3 offers a comparison between causes as described immediately after interns were experiencing such emotions. It presents five themes: students learn mathematics, students are involved in classroom activities, students exhibit reinforcing classroom behaviours, students' and interns' emotions play different roles within classroom teaching, and interns have good teaching

skills. Within Table 3 to Table 12, concepts in italics and underlined are comparable across three groups, the ones in italics and bold are comparable across two groups, and the italics ones present no correspondence at all. Tables 3 to 12 have counterparts in Appendix D, where excerpts from interns' interviews and diaries are presented, and which support the themes and concepts presented in this chapter.

Similarities in concepts are noticeable, yet subtle differences emerge. Mastery oriented interns' comments about how students understand mathematics reflect a complete focus and attention on students' comprehension. Students' understanding is described as a continuous learning process as "everyone is at a very different level, if they walk out knowing more than they walked in with, than that is more valuable" (4-1). Such attributed causes align with the analysis about task-mastery oriented teachers that depict teachers as concerned with students' understanding and progress (Ames & Ames, 1984). Performance approach interns view students' understanding as evidence of their teaching abilities. Satisfaction with their teaching emerges with statements, such as "when I know that they understand the material I feel satisfied with my teaching and the class" (10-d3). The pride of doing a good job is directly linked to the supervisor's comments, and highlights processing information in terms of others (Seifert, 2004), as this intern stated:

> But if he is finding that I am doing a good job teaching, he does not need to keep an eye on me, and he will send an email. So, if he sends me an email, that makes me feel like I am doing a good job. (11-3)

Concern with self-performance supports other research, which centres attention on performance approach students' demonstration of high ability (Ames, 1992; Dweck & Leggett, 1988; Urdan & Maehr, 1995). Performance avoidance interns' vocabularies

reflect more reserved statements about students' understanding: "I was happy because they seemed to understand the questions and because the class flew by" (7-d9).

Mastery oriented interns clarify the cooperation between themselves and students through the lens of happiness and active classroom participation, as this quote exemplifies: "they come in and are having a really good day and they are really happy and they participate a lot in class" (6-1). However, performance avoidance interns underline how students 'seem to understand' math ideas:

> And it did not stress me that we did not get through quite as much as we might have. But we did get through a lot. And at the end they seem to understand it, and by the end I was actually very happy about how the lesson went. And the students seemed to respond to me, or they were feeling different that day (8-2).

Being able to explain math concepts in different ways presents mastery oriented interns' sustained efforts in facilitating students' understanding, in helping them arrive to an 'Aha' moment. For example, an intern affirmed that "they don't understand and I can explain something in a different way, and they say 'Oh, yeah!'" (5-1). For performance approach interns, being able to explain math concepts differently ties in with their satisfaction of being able to deliver content in various styles. An intern stated: "I was re-teaching what was taught yesterday because the students didn't grasp the concept but I explained it differently which lead to satisfaction" (9-d5).

For mastery oriented interns, connecting with students symbolizes relationships with students, helping them make connections with math, as this intern points out: "I really feel that I make connections with people and help them make connections in their

mathematical knowledge" (2-2). While conjecturing such connections, performance avoidance interns use more cautious terminology:

> being able to talk to them, seeing their reactions, being able to joke a bit ... it is the response that I get from the students, that I get the impression that they are learning or that they enjoy being in the class (8-2).

Table 4 presents attributed causes from a retrospective view, namely after interns take the time to reflect upon the emotional experience, analyze each step that might have contributed to the experience, and discern between major or minor causes. For mastery oriented interns, attributed causes leading to pleasant emotions are focusing on: students' actions, students' progress, or on building connections with students. When self is mentioned as cause, this is done in connection with students' progress and in connection with establishing relations between self-actions and emotions. For performance approach interns, the corresponding attributed causes are tied with self-image, as interns relate attributed causes of pleasant emotions to their performance, such as: doing a good job, obtaining positive feedback from the supervisor, or being influenced by cooperating teacher's actions. Less emphasis is placed on attributed causes related to students. These findings mirror research focusing on students, which presents performance goal oriented students' desire to obtain positive judgments from others (Dweck & Leggett, 1988).

Table 3. Attributed causes contributing to the development of pleasant emotions

Mastery oriented	Performance approach	Performance avoidance
Students learn mathematics	Students learn mathematics	Students learn mathematics
understand math *express interest in learning math* *link different math concepts* *know how to apply previous facts*	*understand math* *advance without interns' help* *have other accomplishments*	*understand math*
Students are involved in classroom activities	Students are involved in classroom activities	Students are involved in classroom activities
do their homework *do well on evaluations* ***pay attention, are engaged in classroom activities*** ***lower achieving students succeed*** *ask questions* *are progressing well*	*do their homework* *do well on evaluations* ***pay attention, are engaged in classroom activities*** ***lower achieving students succeed*** *apathetic students solve problems* *weaker students have other successes*	*do their homework* *do well on evaluations* *enjoy the class*
Students exhibit reinforcing classroom behaviours	Students exhibit reinforcing classroom behaviours	Students exhibit reinforcing classroom behaviours
behave ***work together*** ***cooperate with interns*** *reinforce interns' self image* *react to interns' efforts*	*behave* ***work together*** *enjoy the way interns teach*	*behave* ***cooperate with interns***
Students' and interns' emotions play different roles within classroom teaching	Students' and interns' emotions play different roles within classroom teaching	Students' and interns' emotions play different roles within classroom teaching
students' emotions influence interns' emotions ***interns' emotions influence students' emotions*** *students' emotions sway interns' confidence* *interns' teaching influence students' emotions*	*students' emotions influence interns' emotions* ***interns' emotions influence students' emotions*** *students' emotions influence interns' teaching*	*students' emotions influence interns' emotions*
Interns have good teaching skills	Interns have good teaching skills	Interns have good teaching skills
do a good job teaching ***are able to explain concepts in different ways*** *get positive feedback from the cooperating teacher* ***connect with students*** *increase students' confidence in their math abilities* *have chosen the right career* *help students achieve good grades* *distinguish different levels of students' progress*	***do a good job teaching*** ***are able to explain concepts in different ways*** *know that the class did well under their guidance* *have good teaching skills* *have a good rapport with the class* *have positive effects on students' performances*	*get positive feedback from the cooperating teacher* ***connect with students*** *think positively about the future* *draw energy from others* *receive positive feedback from students* *don't have significant disruptions* *are able to help students and thus*

get along with coworkers *their teaching impacts students* *contribute to students' education* *have good management skills*	*help students who didn't understand math before* *are knowledgeable in math* *correct students' behaviour* *reach out to all students* *assess students' work* *make a difference*	*have fun teaching* *relate to students' understanding* *take the time to know students* *interns' attitudes seem to create a self-surprise effect*

Table 4. Attributed causes contributing to the development of pleasant emotions – retrospective view

Mastery oriented	Performance approach	Performance avoidance
obtain positive feedback from the supervisor teacher *are influenced by students' actions* *are influenced by students' progress* *are in a good place* *build connections with students* *establish relations between behaviours and emotions*	***do a good job*** ***obtain positive feedback from the supervisor teacher*** *are influenced by students' and cooperating teacher's actions* *are influenced by students' emotions*	***do a good job*** *do something students will enjoy*

5.2.2. Attributed Causes Leading to Experiencing Unpleasant Emotions

This subsection presents attributed causes of frustration, anxiety, anger, irritation, disappointment, nervousness, disillusion, worry, guilt, fear, or sadness. Table 5 offers comparisons between attributed causes described immediately after emotions occurred. It presents concepts classified under five themes: students don't behave, students have reduced work attitudes, emotions affect teaching and learning, interns lack management skills, and interns lack teaching abilities.

Students' emotions and moods influence interns' emotions and moods in different ways. Mastery oriented interns acknowledge that students' emotions have the power of swaying their own emotions. However, the language used seems fairly mild, e.g. "it kind of brings your mood down a bit" (6-2). Performance avoidance interns' vocabulary

reflects a more powerful influence, particularly when they say that students' "emotions play a role in my emotions while I'm teaching because if they're upset or disgruntled or shy about something, then I'm going to be too" (7-2). Performance approach interns use a more dramatic tone in portraying such influence, as this quote exemplifies:

> One day, this little girl started breaking down crying while I was teaching math. And I just froze. And I sort of just froze and she was not very loud, but she was sitting at the back of the class. But I noticed and I said to my cooperating teacher 'She is crying back there'. So I am thinking this is not that bad, and I started to really feel for them, because I am thinking if this is math we have real problems here. … So, their emotions are a big part of mine. (12-2)

For performance approach interns, lack of confidence in teaching abilities means questioning what to do or wondering how receptive students will be to their teaching methods. Such questioning occurs when interns are "uncomfortable when students ask questions that I don't know, and when students just won't listen to the instruction" (10-1). For a performance avoidance intern, the lack of mathematics knowledge ties in with deeply rooted insecurities about being good teacher: "I was unable to solve a problem (that I should be able to)" (8-d2). In time, the lack of confidence in their math skills translates into verbalizing shortcomings as teachers as they "can't get anything out of them, it just feels like it is a very draining experience" (8-2). Ultimately, an acute sense of lack of classroom management skills prevails, as they do not feel "particularly capable at that moment" (8-2) and think that they could "probably handle the material, but the material and the students at the same time this is what I am finding difficult" (8-2).

Salient particularities appear when performance avoidance interns describe the pressures of the internship and express overt displeasure about the educational system, such as "inclusive education is a pain" (7-d7) or "this is a really easy topic and the textbooks really drag it out" (7-d8). One performance avoidance intern expresses disinterest in helping students: "I should not have to deal with it and I say almost a desire to not help with anymore, almost a desire to punish them because I was angry at them" (8-3). This verbalized lack of understanding and significance of the educational system reflects research conducted about work avoidance students that don't see the benefit of being engaged in academic tasks (Seifert & O'Keefe, 2001; Seifert, 2004) and engage in a passive-aggressive mechanism (Jarvis & Seifert, 2002).

Table 6 presents attributed causes from a retrospective view, namely after interns take the time to evaluate the steps that might have contributed to the appearance of unpleasant emotions. Overlapping attributed causes listed in Tables 7 and 8 include interns' teaching strategies and students' behaviours. It is apparent that performance approach oriented interns associate the attributed causes of unpleasant emotions with students' behaviour, poor performances, and reduced work attitudes. Questioning their teaching strategies is done through the lens of students' behaviours. One intern stated: "if students are behaving a certain way, how are you going to get them into what you are doing?" (10-3). This is similar to research done by Pelletier et al. (2002), that describes performance approach teachers' controlling tendencies. Mastery oriented interns directly link attributed causes of unpleasant emotions to teaching strategies because they "could have dealt better with what [students] were presenting" (2-3).

Table 5. Attributed causes contributing to the development of unpleasant emotions

Mastery oriented	Performance approach	Performance avoidance
Students don't behave	Students don't behave	Students don't behave
are disrespectful *are chatting* ***disregard interns' efforts*** ***use forbidden electronic devices*** *interfere with others' abilities to learn*	*are disrespectful* *are chatting* ***disregard interns' efforts*** ***use forbidden electronic devices*** *don't pay attention to interns' explanations*	*are disrespectful* *are chatting* *make teaching complicated* *are not focused*
Students have reduced work attitudes	Students have reduced work attitudes	Students have reduced work attitudes
don't care about learning *choose not to work* ***don't care about each other*** ***don't pay attention*** ***are not cooperating*** ***don't take responsibility for their actions*** *lack interest in math* *don't learn even if are mathematically inclined* *don't understand certain math topics* *fail tests because they choose to underperform*	*don't care about learning* *choose not to work* ***don't care about each other*** ***don't pay attention*** ***are not cooperating*** ***don't take responsibility for their actions*** *verbalize hatred for math* *question the value of math* *don't comprehend math despite interns' efforts* *have low levels of math skills* *don't understand math, make teaching difficult*	*don't care about learning* *choose not to work*
Emotions affect teaching and learning	Emotions affect teaching and learning	Emotions affect teaching and learning
students' emotions and moods influence interns' emotions and moods ***inters' emotions affect students' emotions*** *students' moods create challenges in teaching*	*students' emotions and moods influence interns' emotions and moods*	*students' emotions and moods influence interns' emotions and moods* ***inters' emotions affect students' emotions***
Interns lack management skills	Interns lack management skills	Interns lack management skills
lack classroom management strategies ***are unable to get students to work*** *are unable to deal with students' behaviours* *are unable to get students settled down*	*lack classroom management strategies*	*lack classroom management strategies* ***are unable to get students to work*** *are unable to run the lesson as desired* *express disinterest for helping students*
Interns lack teaching abilities	Interns lack teaching abilities	Interns lack teaching abilities

are tensely anticipating teaching ***are unable to engage students*** *compare their teaching abilities with others* *do not performing to the best of their abilities* *are unable to properly explain math concepts*	*are tensely anticipating teaching* ***lack confidence in their knowledge of math*** ***lack confidence in their teaching abilities***	*are tensely anticipating teaching* ***are unable to engage students*** ***lack confidence in their knowledge of math*** ***lack confidence in their teaching abilities*** *feel the pressures of the internship* *express overt displeasure for the educational system* *express dissatisfaction with textbooks*

Table 6. Attributed causes contributing to the development of unpleasant emotions – retrospective view

Mastery oriented	Performance approach	Performance avoidance
interns question their teaching strategies ***students do not behave***	*interns question their teaching strategies* ***students do not behave*** *students have reduced work attitudes* *math* *students perform poorly*	*interns question their teaching strategies*

5.3 Thoughts

This section describes interns' thoughts while experiencing various emotions, and has two subsections: one describing thoughts appearing in conjunction with pleasant emotions and one describing thoughts appearing in conjunction with unpleasant emotions. To understand the emotional experiences encountered by interns while teaching, it is important to know what they are thinking of in those moments.

5.3.1. Thoughts Appearing in Conjunction with Experiencing Pleasant Emotions

This subsection gives an overview of the thoughts that occurred while experiencing pleasant emotions. Table 7 presents interns' thoughts while they

experienced pleasant emotions. It lists different concepts classified under six themes: students perform well, students don't behave, interns have good teaching skills, teaching is the right career choice, emotions affect teaching, and interns work on their teaching strategies.

When mastery oriented interns think about doing a good job as teachers, they directly relate their experiences to students' progress, as they "successfully communicated an idea to a student" (2-2). This agrees with Ames and Ames (1984) research that points out how mastery task teachers engage in activities that contribute to students' benefit. Performance approach interns evaluate doing a good job through the lens of becoming successful at the job. This attitude towards teaching makes performance approach interns feel on top of the world, as one has "thoughts of being successful. I felt like more in reach. I felt like I could actually do this and be successful" (9-2). Ultimately, it leads to making one feel like "I had the world at my fingertips, that I could do whatever I wanted as a teacher" (11-2).

For mastery oriented interns, having good teaching skills means being happy for competently explaining problems, engaging in activities that lead to experiencing satisfaction again, having strong connections with students, making a difference in students' lives, improving their teaching skills so that students can benefit more, helping students and getting them motivated, or being glad to put in the time and effort to create well designed lessons so that students understand. These findings follow Butler and Shibaz's (2008) research that highlights mastery oriented teachers reporting good day when they gain knowledge of something new:

> I am glad that I did put the effort into planning the lesson the way I did, and I am glad I took the time to think about different ways of explaining it to different students so that everybody would understand. (6-3)

For performance approach interns, having good teaching skills equals thinking about self. The following thoughts appear: doing a good job, being able to accomplish anything, thinking highly of self, getting positive feedback from students, feeling old, or seeing students thriving as a direct consequence of their teaching actions. An intern illustrates the latter statement: "I knew I must have been doing a good job. All these 100*s* and these good marks, I could help these students do this well" (12-2). This parallels Seifert's (2004) research where performance goals students are described as self and other focused, and as processing information in terms of others.

While mastery oriented and performance approach interns think that they made the right career choice, performance avoidance interns think about their increased desire to teach and to interact again with students, as this snippet described the latter group:

> The class went well, kids seem to understand, there seemed to be some interaction between myself and the class, the students were reacting positively. … Some of them I was able to joke with, so it was pleasant. … Can't wait to get started, I can't wait to teach. (8-2)

Some concepts from Table 7, such as students understand mathematics, and students are excited about their accomplishments overlap with concepts listed in the attributed cause section of Table 3. This could be explained though the powerful impact of the stimulus event on interns (Plutchik, 2003). Subsequently, the cognition has been one of embracement of stimulus.

Table 7. Thoughts appearing while experiencing pleasant emotions

Mastery oriented	Performance approach	Performance avoidance
Students perform well	Students perform well	Students perform well
understand ***are excited about their accomplishments*** ***have come to realize that are capable of solving problems*** *are ready for their test* *connect with math*	***understand*** ***are excited about their accomplishments*** ***have come to realize that are capable of solving problems*** *are working hard*	*grasp math*
Students don't behave	Students don't behave	Students don't behave
		behave badly
Interns have good teaching skills	Interns have good teaching skills	Interns have good teaching skills
do a good job as teachers *engage in activities that will lead to more satisfaction* *have good marking skills* *have strong connections with students* *progress well* *improve their teaching skills* *make a difference in students' lives* *help students* *get students motivated* *put time and effort in developing lesson plans*	***do a good job as teachers*** *can accomplish anything* *get positive feedback from students* *think highly of self* *are old* *students are performing well, as a consequence of their teaching skills*	
Teaching is the right career choice	Teaching is the right career choice	Teaching is the right career choice
made the right career choice ***desire to teach again***	***made the right career choice*** *enjoy teaching* *enjoy classroom activities* *love mathematics*	***desire to teach again*** *interact with students* *students said something funny*
Emotions affect teaching	Emotions affect teaching	Emotions affect teaching
emotions are important	***emotions are important***	
Interns work on their teaching strategies	Interns work on their teaching strategies	Interns work on their teaching strategies
follow the lesson plan	***improve teaching strategies*** *help students* *motivation is important* *students are lost*	***improve teaching strategies*** *made false assumptions about the class*

Table 8 presents thoughts from a retrospective view, namely after interns take the time to evaluate the steps that might have been factors for the appearance of pleasant emotions. Thoughts overlapping Tables 7 and 8 relate to interns doing a good job

teaching and having good teaching strategies. However, there are instances when interns don't put a lot of thought in. When all classroom activities go well, mastery oriented interns don't take the time to reevaluate the situation: "sometimes it goes extremely well and I don't think about it a whole lot" (1-3). Performance avoidance interns seem to think about pleasant emotional experiences in the context of work: "I don't usually analyze the emotional part of it unless I have to fill out one of your journals or the experience was particularly emotional" (7-3).

Table 8. Thoughts appearing while experiencing pleasant emotions – retrospective view

Mastery oriented	Performance approach	Performance avoidance
have good teaching strategies	***have good teaching strategies***	
do not think about it		***do not think about it***
do a good job as teachers	***do a good job as teachers***	
share the experience	*students are receptive of their teaching*	*reflect on their teaching*

5.3.2. Thoughts Appearing in Conjunction with Experiencing Unpleasant Emotions

Table 9 presents interns' thoughts while experiencing unpleasant emotions. It classifies concepts under four themes: students don't behave, interns are concerned about students, interns are concerned about teaching strategies, and emotions affect teaching. Table 9 presents what mastery oriented interns think of while experiencing unpleasant emotions. Mastery oriented interns acknowledge that students misbehave. With this in mind, these interns put a lot of thoughts into teaching strategies that would be more beneficial for students. They think of strategies that could be used to improve the given situation, they compare their teaching across groups, and think of tactics that could be used to regain control over the class. Furthermore, they think of their continuous desire to

continue teaching, and critique themselves for perhaps doing a less perfect teaching job, as these quotes illustrate: "I am constantly thinking 'Am I doing this ok?', 'Is there another way I should be doing this?', 'Is there a better way I could explain something that I just said?'" (6-2). This presents mastery oriented interns' adaptive nature (Butler, 2007). On the other hand, performance approach interns think more about students' poor behaviour than about their teaching skills. Unpleasant emotions trigger thoughts about students' less desirable behaviour during class, about their lack of commitment in doing their homework, about their lack of cooperation. However, not a lot of thought is put into furthering their teaching strategies. Interestingly, performance avoidance interns seem to have expectations from students as they wonder "why can't the students just behave?" (8-d2).

Mastery oriented interns put things into perspective and use unpleasant emotions and corresponding thoughts to grow as professionals: "good and bad emotions are necessary. The good reinforces, while the bad makes me aware of my shortcomings and how to improve myself. So, I think that is good to be in touch with both of them" (2-3). While experiencing frustration, performance approach oriented interns feel trapped:

> I don't want to teach junior high school classes. This was the first thing. And I am saying to myself, you know one week, I just got a week left. And I mean, is not to a point where I am not so stressed that I can't handle it, but the days are taking a toll, and even when I am teaching all I am thinking is my God, I just think that there is a seat in heaven reserved for any junior high teacher. Anyone who has been a junior high teacher they are good persons, they have patience, these are things that are going through my head, what can I do to stop them? (12-3)

When performance avoidance interns experience unpleasant emotions, their attention is diverted towards the inability to control the class, and their wish of avoiding dealing with a rowdy class. They experience turmoil while teaching, worry about their career choice and about the internship, and end up questioning a full time career in teaching:

> Certainly if my classes are like that every day, it would not be worth it to me. … I was really seriously thinking if I was wasting my time trying to become a teacher. Yeah, so in terms of future stuff, I think what I would like to do is like a part time position available or substitute the first year, rather than have a full time job. (8-3)

Table 10 presents thoughts from a retrospective view, namely after interns take the time to evaluate the situation that led to the appearance of unpleasant emotions and corresponding thoughts. Overlapping thoughts emerging from Tables 9 and 10 relate to interns' desire to manage their emotions, and to reflect and improve teaching strategies. Nevertheless, important differences appear. One performance avoidance intern contemplates the future with skepticism: "I thought more about frustrations and the difficulties involved, and I had considered seriously whether I want to teach at all" (8-2).

Table 9. Thoughts appearing while experiencing unpleasant emotions

Mastery oriented	Performance approach	Performance avoidance
Students don't behave	Students don't behave	Students don't behave
behave inappropriately ***don't pay attention***	*behave inappropriately* ***don't pay attention*** *don't do their homework* *don't cooperate* *are missing out on the benefits of studying math*	*behave inappropriately*
Interns are concerned about students	Interns are concerned about students	Interns are concerned about students
wonder if students progress *wonder if students understand math* *wonder about students' feelings*	*are unable to understand math* *hope that students will continue their work* *wonder if students enjoy math*	
Interns are concerned about teaching strategies	Interns are concerned about teaching strategies	Interns are concerned about teaching strategies
look for alternate teaching strategies ***lack classroom management*** *improve the situation* *compare students' performances* *compare own teaching across different groups* *learn about new teaching methods* *want to continue doing a good teaching job* *take actions in dealing with behavioural situations* *wonder if cooperating teacher would intervene* *critique themselves*	*look for alternate teaching strategies* ***lack teaching skills***	*look for alternate teaching strategies* ***lack classroom management*** ***lack teaching skills*** *are unable to control the class* *do not want to deal with a rowdy class* *hope they would acquire more experience* *question a full time career* *worry about their career choices* *adjust teaching plans* *experience turmoil teaching* *disregard students' performances* *worry about the internship*
Emotions affect teaching	Emotions affect teaching	Emotions affect teaching
restrain from expressing themselves ***acknowledge the emotions' existence*** ***connect with emotions*** *put teaching in perspective* *it is important to be less affected by such emotions* *emotions are important* *want to escape the classroom*	***restrain from expressing themselves*** ***acknowledge the emotions' existence*** ***connect with emotions*** *are trapped in this job*	

Table 10. Thoughts appearing while experiencing unpleasant emotions – retrospective view

Mastery oriented	Performance approach	Performance avoidance
improve teaching strategies *manage their emotions*	*improve teaching strategies* *manage their emotions* *students don't take responsibility*	*improve teaching strategies* *manage their emotions* *focus on teaching* *focus on future*

5.4 Perceived Effects

This section describes how emotions relate to interns' achievement goals towards instruction. It has two subsections, one for pleasant and one for unpleasant emotions.

5.4.1. Perceived Effects of Pleasant Emotions

This subsection gives an overview on the perceived effects that occurred while interns experienced pleasant emotions. Table 11 presents concepts classified under three themes: immediate versus permanent, bodily effects, and interns' actions.

For mastery oriented interns, satisfaction, happiness, and other pleasant emotions are essential as they make interns "want to go to the next class and of the same kind of thing" (2-3). This parallels descriptions by Kunter et al. (2008), which link teachers' enthusiasm with high quality instruction. Performance avoidance interns view happiness as a compulsory element in the continuation of a teaching career. An intern believes that "if my job doesn't make me happy, then I'll quit and I won't have a professional life" (7-2). For performance approach interns, pride is important to experience as it reinforces work performance and social status. Pride is viewed as a compulsory ingredient for experiencing success in the long run because "if you don't have pride, I don't think there would be much to wake up for" (9-3). Another quote highlights the latter idea:

> You have to be very proud of what you are doing. If you are not taking pride in teaching and helping these kids, in what you are doing, what is the sense of it? I am proud of myself that I am such a great teacher that they all know it now. … So, it is very important. (12-2)

Pride seems to be a driving factor for interns in reinventing themselves and their teaching strategies. Furthermore, an intern believes that pride experienced within the internship or the first year of teaching is not as strong as what the future might have in store:

> You need to be able to create new feelings of pride, and in that way reach new feelings of pride. … You are just working up the pride in the first year of teaching. I don't think it is a strong feeling. The feeling of pride might continue for the rest of your career, but it won't be as strong of a feeling unless you reinvent yourself, so that you get new strong real feeling of pride. (11-2)

When mastery oriented interns externalized emotions, they "felt like patting every student on the back for a job well done" (1-d10) and even "thanked the students" as they "felt flattered" (3-d5). On the other hand, performance approach interns "feel like talking a lot" (10-d9) and "try to show enthusiasm by just talking in a certain tone and doing certain activities and being up in spirits, happy" (10-2). Performance avoidance interns are more reserved in externalizing even the pleasant emotions. An intern explains the manner used to deal with pleasant emotions: "I take a few deep breaths, I got to calm down, I got to control what I will say, probably just calming down" (8-2). While mastery oriented and performance approach interns are willing to put in more time and effort into

subsequent classroom preparations, performance avoidance interns have mixed opinions on the amount of time and effort they are willing to put into preparing for classes.

Table 11. Perceived effects of pleasant emotions

Mastery oriented	Performance approach	Performance avoidance
Immediate versus permanent	Immediate versus permanent	Immediate versus permanent
are desirable to encounter in the future *increase interns' confidence* ***are important to experience***	*are desirable to encounter in the future* *increase interns' confidence* ***are important to experience*** *positive emotions rub off on students*	*are desirable to encounter in the future* *increase interns' confidence*
Bodily effects	Bodily effects	Bodily effects
feel sweaty ***laugh*** *use hand gestures* *feel stomach butterflies*	***feel sweaty*** *are tense*	***laugh***
Interns' actions	Interns' actions	Interns' actions
share experiences with others *externalize what they feel* ***encourage students*** ***increase time and effort*** *create good classroom environments*	*share experiences with others* *externalize what they feel* ***increase time and effort*** *raise awareness about the importance of experiencing pride* *work to reinvent themselves*	*share experiences with others* *externalize what they feel* ***encourage students*** ***mixed opinions*** *find emotions rejuvenating*

5.4.1.1. Perceived Effects of Pleasant Emotions on Mastery Goals

Caring, satisfaction, and happiness reinforce teaching as a good choice because "the satisfaction and positive experiences help to solidify that this career is indeed what I want to do for many years to come" (3-d1). Satisfaction increased interns' drive to continue on the teaching path with even more passion and determination, and contributes to thinking of what might benefit students more:

> Satisfaction definitely makes me want to keep going. Like I said, I think I made the right career choice. So, definitely makes me want to continue on and makes me want to do my best and strive to engage every student. Because it feels good to know that you helped and the kids are doing well. (3-3)

Satisfaction, happiness, and enthusiasm increase an intern's confidence and reinforce current teaching strategies: "I am making a difference, I am getting through to the kids, I am helping out" (3-2). Another intern felt that "teaching goals must be coming true and developing into something better" (1-2). All this aligns with self-confidence characteristics and adaptive nature of mastery oriented students described by Diener and Dweck (1978). Happiness inspires mastery oriented interns to build on their current teaching practices and to look for alternative tactics of teaching. Enthusiasm and excitement contribute to an increased desire to integrate new teaching strategies, such as the use of technology in the future teaching classrooms:

> At the beginning of the internship I probably just want to use different methods and try to figure out what is the best way to teach different topics. Now, I want to go a little bit above and beyond that and see what else is available out there to use, to try to find more resources. … I will not hesitate to try the smart board or other technologies in my future classes. (1-3)

Satisfaction increases interns' desire to learn new things in mathematics no matter how difficult (Butler, 2007; Papaioannou & Christodoulidis, 2007). It highlighted progress and ability to succeed in the long run and it "confirmed that I knew I could become a better teacher. Doing these things it seems like they learned it. It confirmed a step of becoming a better teacher" (5-2).

Satisfaction contributes to recognizing that "every class is different, every student is different, so you have to keep working to achieve this, to come up with new methods to engage them, new methods to teach them, more tactics to handle classroom behaviour"

(3-3). Satisfaction adds to interns' desire to advance their knowledge about teaching strategies as they notice that students benefit from being exposed to a variety of teaching styles. Mirroring other research (Henderson, 1992; Pollard, 2002; Seifert 1995b), mastery oriented interns present a preference to self challenge by putting effort into learning new teaching methods to accommodate various learning styles:

> I want to learn as many different ways of teaching the curriculum as I can, because I know a lot of different students learn in different ways. When I am able to do that I do feel satisfied with that, it makes me want to learn more because it will pay off .... students responded really well when you incorporate a lot of different strategies into the classroom. (6-3)

Happiness "pushes me along" (2-3) in developing teaching abilities. Satisfaction motivates interns directly and students indirectly, as "it definitely makes me want to keep striving to do better myself which in turn would better the students" (3-3).

Developing abilities as a teacher and learning new things in mathematics increase in importance upon experiencing satisfaction because interns become conscious of "the hard work and extra time and the level of caring that goes into teaching" (3-3). Satisfaction makes interns acknowledge the "amount of work that goes in and the type of work that goes into it and how students respond to that" (6-3). In the long term interns believe that developing teaching abilities is beneficial because "when you put your mind and effort into something it does pay off" (6-3). Satisfaction triggers changes in "the way you see things" (6-3), and subsequently leads to improving "your effectiveness in the classroom and your teaching abilities" (6-3). Interns appreciate "the sense of satisfaction much more" (3-3) and get that "extra sense of hope that you can reach it" (3-3).

Ultimately, happiness leads to the peace of mind at the end of the day as "I did the best I can and all my students do well and they did not fail or go backwards" (1-3).

Satisfaction underlines the importance of interns' efforts, but not through the lens of intrinsic benefit, rather because "it benefits the students in the long run" (6-2). Therefore, pursuing teaching abilities becomes "a positive thing to do" (2-2). Pride and satisfaction lead interns "to always try and go the extra distance for students who struggle and need extra support" (6-d2) and "to put my best effort forward to reach my goals" (3-d7). So, interns devote extra time and effort for students in need.

Satisfaction heightens spirits as it "made me feel good about myself as an upcoming teacher in training" (3-d1). Caring "makes me feel good … makes all the struggle worthwhile" (3-d5). Goldstein and Lake (2000) describe tensions in caring teaching, but these findings simply highlight caring as an emotion that reinforces interns' actions. Experiencing enthusiasm leads an intern to "want to make topics as interesting and as relevant for students as I can to inspire enthusiasm in them as well" (6-d1). Satisfaction "makes the hard work worthwhile and reinforces my positive attitude towards teaching" (6-d6), and pride "makes my attitude towards teaching and towards the students much more positive" (6-d1). It becomes apparent that for mastery oriented interns, a group of pleasant emotions such as satisfaction, happiness, enjoyment, enthusiasm, or excitement is conducive to a pattern of behaviour.

Developing teaching abilities and learning new things in mathematics "got stronger and stronger and stronger as you got to the end" (1-3) because "it feels pretty good to know that you helped kids and they did well" (3-2) and because students "are reacting to me and are enthusiastic about my class" (1-2). Experiencing satisfaction and

doing a good job are encouraging factors to continuing developing teaching abilities as it motivates interns "to continue to set goals to always be prepared and work hard to plan interesting and engaging lessons" (6-d6). Happiness and satisfaction make interns feel "capable of achieving those goals" (2-2), give more "impulse to go towards these goals" (2-2), offer "the extra push, the extra sense of hope that you can reach it" (3-3), and ultimately, "it sort of reinforces them" (2-2). Satisfaction and happiness make them aware that "teaching can be a very frustrating profession" (6-d6). However, "being able to feel this emotion makes the hard work worthwhile and reinforces my positive attitude towards teaching" (6-d6). Enthusiasm makes one contemplate the "rewarding side of the profession … and be more enthusiastic about accomplishing the goals" (2-d3), and happiness leads one in being "more hopeful about the future … it is refreshing to see such a gesture of appreciation from students" (2-d5). Helping students leads to experiencing satisfaction and contributes to thinking about an idyllic future:

> It would feel good down the road when you bump into a student and they happen to say 'Oh, I really enjoyed this activity with you, do you remember the time we did this?' Even if you might not remember every single activity or every single day, you will remember the overall feeling and the overall success. (3-3)

Developing teaching abilities evolved during the internship:

> In the short term you want to try and you want the students to achieve the highest quality of education as possible. It is something that is on my mind every day: what can I do to really make them engaged, what can I do to really help them understand. But it is also a long term goal, you want to keep achieving over the course of your career. (3-3)

Satisfaction, happiness, and enthusiasm make interns feel closer about reaching these goals. Developing teaching abilities becomes more tangible because interns feed off students' emotions and because "you have seen the positive, you have seen that you can achieve it, so it makes it more tangible and makes your need to achieve it stronger" (3-3).

5.4.1.2. Perceived Effects of Pleasant Emotions on Performance Approach Goals

Performance approach interns are satisfied by their teaching accomplishments as they feel that they are doing a better job than others. This mirrors research about performance approach students (Ames, 1992; Dweck & Leggett, 1988; Urdan & Maehr, 1995). An intern described the link between satisfaction and the desire to look good while teaching, as follows "when you feel satisfied, you feel that you are performing as well as others or getting closer to perform as well as your colleagues who are a lot more experienced than you" (10-2). Happiness contributes to increasing interns' desire to look talented, as this exemplifies: "I want to look talented as a teacher, but for me being happy makes me feel like I am talented in some ways as a teacher" (10-3). However, other emotions contribute to the close bond with the wish of appearing more talented at teaching than others. Pride is crucial in driving goals, as "I like to be prouder of myself and of my students, and increasing my knowledge and being a better teacher. I am becoming more talented in my area" (12-3). Statements connecting pride to self-accomplishments are specific to performance approach interns, while mastery oriented interns tend to link pride to seeing students excelling in understanding math. Feeling pride pushes interns towards reaching superiority in teaching:

> When I am feeling proud … I really feel like I have taken a step above some teachers just push them to the side, and it really makes me feel like I am doing a better job, I am better than some teachers, and it makes me want to keep doing better, because if I treat the students with respect … that really makes me feel like I am being a better teacher and makes me want to be a better teacher than some people. (12-3)

In agreement with other research (Dweck & Leggett, 1988; Nolen, 1988; Seifert, 2004), performance approach interns want to make a lasting impression on others, as this quote highlights: "I wanted the parents leaving with the impression that I was a professional rookie teacher" (13-3). Interns are proud of their efforts as these contribute to making a difference in students' progress. Receiving praise from parents, e.g. "Oh, she is paying extra attention now, because she got you teaching"(12-2) leads interns to pursue their goals more passionately. Teaching topics that are not their strongest area makes interns experience pride, and, in turn, increases their confidence. Therefore, pride underlines interns' capacity to demonstrate ability (Dweck & Leggett, 1988; Urdan & Maehr, 1995):

> A great sense of accomplishment. … I feel like if I can do this, I can definitely do anything. … It makes me feel like I will be better than others to get a job. It made me realize that I can do anything in terms of teaching. It made me feel like I was completely capable to do anything, which makes me a better teacher and makes me better to the students. (11-2)

Performance approach goals represent "short term accomplishment, your success" (9-3), but also highlight long-term characteristics "certainly it would take a long time to

make a name for yourself" (13-3). Pride is the emotion interns would like to experience again and again, as one intern uttered: "once you feel pride you want to keep that coming. … you want to keep being successful" (9-3). Experiencing enjoyment leads interns to dream about becoming famous. Success is gauged through others' accomplishments (Seifert, 2004) because "the better the class does, the more likely I will become a figure in the community" (13-3). Happiness contributes to increasing performance approach interns' desire to perform as well as others, as this quote exemplifies:

> Sometimes it makes me feel as if I perform as well as others even if I don't have the experience they have … but sometimes when you feel happy in the classroom you feel like they understand what you are teaching, you feel like you are as good at achieving as someone else. (10-3)

Looking more talented at teaching than others seem to increase in importance "as time goes by" (10-2). Pride reinforces performance approach goals and makes them seem "more tangible because when I am feeling proud of my own abilities … I already know that I am doing better than some people … I know some teachers don't give them that sort of encouragement" (12-3). An attraction repulsion game occurs, since "if they are tangible, it makes me push them away a little more so I can be even better" (11-2).

Joy leads performance approach interns to strive in becoming better teachers. The language is quite suggestive and underlines competence through the lens of others (Nolen, 1988; Seifert, 2004):

> As I increase my abilities as a teacher, the students increase their performance which will then me feel better about what I am doing, so its like a cycle, the better

they do, the better I feel about helping them do better, which makes me want to be a better teacher, ha, ha, ha, that's a lot of betters. (13-2)

Pride prevails as motivator in boosting interns' confidence as "it makes me feel like I am good at what I am doing, that I will keep getting better" (11-3). Pride has a "big effect" (12-2) on developing teaching abilities because it "will make me want to be a better teacher … if I am proud of my abilities now, I will be even more proud that I am a better teacher" (12-3). Pride contributes to "reinforcing the goals … it makes me think that everything I am doing is good, I mean it is working out, it makes me just want to keep going, become better at what I do" (9-3). Pride leads an intern in dreaming about becoming better in developing teaching abilities:

> I want to be a better teacher, now I want to be an extremely better teacher, or I want to support the students, now I want to be the best supporting teacher for students. I increased the severity of the goal. (11-2)

Happiness, enthusiasm, and pride contribute to increasing interns' desire to learn new things and become more knowledgeable in mathematics. Therefore, teaching is perceived as a "continuously learning experience" (11-2) because

> You want to go home and get ready for the next day, it makes you excited to start … it makes me want to continue. … Pride wants you maybe to learn more, become more knowledgeable on your subject, and to present the material more successfully. (9-3)

5.4.1.3. Perceived Effects of Pleasant Emotions on Performance Avoidance Goals

Excitement has no perceived effect on an intern's desire to avoid teaching something where might look incapable: "I am not sure that it did, to be honest" (8-2). Satisfaction offers a glimpse that teaching might still hold something rewarding:

> I just get a general sense that teaching is worth the effort I put into it. So, I don't avoid classes, even if I feel like it, partly because it is your responsibility, but partly because I go in and often enjoy it. (8-2)

Even if interns end up teaching sections that they don't feel capable to teach, relief makes them realize that "there's a chance it might not be so bad" (7-3). Relief makes them less worried about avoiding teaching things where might look incapable "because you can't predict what's going to happen even if you know the material inside out and have taught it before" (7-3). This underlines performance avoidance interns' tendency to attribute responsibility to external factors (Seifert & O'Keefe, 2001).

Satisfaction, excitement, and happiness make avoiding teaching things where one may look incapable decrease in importance as interns feel they can handle teaching better, and this quote highlights: "the happier I was, the more I felt able to handle new challenges" (7-2). Pleasant emotions increase their desire to teach, and temporarily raise their levels of confidence. An excerpt augments the claim:

> When I feel like I am doing well, I feel like I could keep doing well, in which case, if I can keep having lessons like that it would be no need to pick days to come in. … If you are excited about what you do you want to come in every day and do it. (8-2)

Surprise makes interns conscious about the challenges they face while teaching. But, one intern sees no hope in changing the status quo. As the internship progressed, experiencing surprise contributed to avoiding teaching something where one may look incapable:

> Surprise made me not worry about it as much, because it's inevitable that at some point I'm going to be asked a question I can't answer or have to teach something I don't know really well. … I still want to avoid teaching things that I'm unprepared for, even more now. (7-3)

Interns' desire to avoid teaching mathematics where they may look incapable or to avoid teaching concepts that they don't feel qualified to teach becomes stronger as a consequence of experience relief and surprise, and weaker as a consequence of experiencing satisfaction, excitement, and happiness. Relief makes her think that the goal to avoid teaching things where one looks less capable is "even more important" (7-3). Upon feeling relief, the goal to avoid teaching things where interns may look incapable becomes long-term.

Enthusiasm makes an intern think that "on days like today teaching feels like it is worth it" (8-d5). Happiness, enthusiasm, and satisfaction make interns want "to have more classes like this one" (7-d5). Hope "makes me strive to teach them well so they are able to do well on my tests" (7-d9). Feeling satisfaction leads interns into believing that they would perform well and enjoy teaching. However, satisfaction is conditioned upon being able to select the working days. Consequently, satisfaction is bound to be a short-term felt emotion. These findings are in agreement with Papaioannou and Christodoulidis

(2007) who predicate weak job satisfaction in the case of performance avoidance teachers:

> I would still prefer to pick my days. Obviously, some days I am better than others. If I can pick the days when I feel good, then I can do well. … When I enjoy it, I want to keep doing it. It is still a short-term thing. … That is the only reason for which I want to continue – there are times when it is right. (8-2)

Happiness contributes to making interns remember that "students can make me feel good" (7-d2). Pride makes interns want to "continually develop new and better lessons" (7-d3). Hope and happiness improve "my attitude towards teaching" (7-d9). Satisfaction seems to be a short-lived emotion as it "sometimes induces 'a you've just gotta get it done attitude'" (7-d8). Surprise, excitement, and relief make interns feel further away from wanting to avoid things where they may look incapable or from avoiding teaching something they don't feel qualified to teach. Surprise makes interns want "to watch the clock" (7-d6).

5.4.2. Perceived Effects of Unpleasant Emotions

This subsection gives an overview on the perceived effects of unpleasant emotions. Table 12 presents concepts classified under three themes: immediate versus permanent, bodily effects, and interns' actions. Particularities emerge. Mastery oriented interns consider that unpleasant emotions last a few minutes. In time, frustration or anxiety contribute to increasing mastery oriented interns' desire to improve because:

> You learn from it. So once you kind of go back and analyze it say ok, maybe I will try this next time. Maybe this approach was not the best one, and you can use this

in your future. And if you teach this topic, you can approach it in a different way. (3-3)

Performance avoidance interns consider that they will encounter annoying students in the future, and thus, unpleasant emotions shall be a part of their lives. Oftentimes, frustration associates with "a loss of control, like powerlessness" (8-2) because:

> Its influence would last at least until the following class with the same students … frustration will always be with me throughout my career, but I don't think it will be as frequent as when I try to learn how to incorporate all the different aspects involved in teaching. (8-2)

However, performance avoidance interns make contradictory statements. On the one hand, frustration acts as an inspiring factor, and on the other hand, worry and nervousness increase the desire to escape. The latter could be interpreted as threats to self-worth (Seifert, 2004), and the following excerpts are indicative:

> Frustration is the main motivator for trying to do better. I don't want it to be my drive but certainly in my internship it was what pushing me more than anything else. (8-2)

> I think at that point what I wanted to do was just go home and sleep for a while, so I think it was more – not necessarily sleep but not do anything that involves having to think about things, or having to do things. (8-3)

While mastery oriented and performance approach interns want to increase the time and effort dedicated to classroom preparation, performance avoidance interns have mixed views about the time and effort dedicated to preparing subsequent lessons upon

experiencing unpleasant emotions, as these quotes exemplify: "I barely have enough time to prepare the basics" (8-3) and "I would definitely take more time to consider how I would present it, what attitude I would have" (8-2).

Table 12. Perceived effects of unpleasant emotions

Mastery oriented	Performance approach	Performance avoidance
Immediate versus permanent	Immediate versus permanent	Immediate versus permanent
are important for their teaching ***don't last long*** *increase interns' confidence* *lead interns away from wallowing*	*are important for their teaching* ***don't last long***	*are important for their teaching* *last a while*
Bodily effects	Bodily effects	Bodily effects
feel sweaty, feel hot ***experience stomach nausea, churning, butterflies*** ***experience tenseness of jaws***	*feel sweaty, feel hot* ***experience stomach nausea, churning, butterflies*** ***heart beats noticeably***	*feel sweaty, feel hot* ***heart beats noticeably*** ***experience tenseness of jaws***
Interns' actions	Interns' actions	Interns' actions
externalize what they feel *attempt to control emotions* *improve teaching techniques* ***share experiences with others*** ***increase time and effort*** *check the time*	*externalize what they feel* *attempt to control emotions* *improve teaching techniques* ***share experiences with others*** ***increase time and effort*** *effects on future actions* *want to reduce the levels of frustration*	*externalize what they feel* *attempt to control emotions* *improve teaching techniques* ***mixed opinions*** *act as motivator* *want to escape*

5.4.2.1. Perceived Effects of Unpleasant Emotions on Mastery Goals

Unpleasant emotions such as frustration, anxiety, disappointment, and anger appear sporadically at the beginning of the internship. This aligns with research about mastery oriented students who are reported to have less negative affect and more positive affect (Seifert, 1995a). Nevertheless, unpleasant emotions influence interns' goals in important ways. Initially, frustration negatively impacts interns, but ultimately positively affects their mastery goals. This proactive action associates with the adaptive perceptions and behaviours described by Butler (2007):

> I think that frustration would have a positive effect on your teaching goals, because at the time when you are teaching and you are feeling frustrated, it is kind of negative feeling, but when you actually sit back and kind of analyze the lessons and analyze the overall internship, it can give you new methods. … It definitely has a positive effect, because it can make you a better teacher and it makes you achieve those goals. (3-3)

Frustration acts as a "reality check" (3-3) and puts teaching in perspective. Frustration leads interns into acknowledging teaching shortcomings and instills in them the desire to build better classroom environments. An intern believes that "teaching is a daily struggle and sometimes not everything you plan will go as planned" (6-d4). Another intern uttered:

> If anything it [frustration] points to the shortcoming I have and I need to improve upon. It is a positive reinforcement. … I never dealt with some of the factors appropriately. If anything it makes me want to have a more and better learning environment for the students. (2-3)

Therefore, frustration, irritation, disappointment, and anger contribute to interns' beliefs that goals are tougher to achieve than initially anticipated. Goals require more effort and hard work than initially planned, and augment interns' aspiration to attain them, as it "made my desire stronger to attain my goals" (3-d6). Acknowledging the existence of unpleasant emotions coupled with the pleasant ones provides the drive to continue their quests. The desire to switch from unpleasant to pleasant emotions aligns with emotion regulation processes (Hochschild, 1983; Zembylas, 2005c):

> Frustration kind of makes you realize that your goals are going to be more difficult to obtain, but the satisfaction when the kids do well on a test, that kinds of makes you think 'Oh, this is not as hard as I thought'. So it is kind of coming from both sides, you have to reach a median. (3-2)

Frustration and irritation contribute to increasing the desire to improve teaching skills because "there are things I have to change about myself to make my teaching better" (2-d4). Frustration, irritation, and anxiety make interns wish to develop their teaching skills, wanting to learn more about effective strategies, to become more articulate in applying classroom management strategies, and to better relate to students. Ultimately, irritation increases interns' ability "to handle such situations more effectively" (6-d3), and anxiety makes interns over prepare in order "to eliminate any doubt" (5-2). An intern describes such influence:

> It [frustration] made me want to learn more effective classroom management strategies. And different ways of handling situations like that. … when you experience a frustrating situation, you learn from it. I think that that emotion helps you to just learn about your class and learn about effective strategies, ones that work and ones that don't. (6-3)

Anger, irritation, and frustration contribute to raising awareness about the importance of keeping the temper, and even lead to a desire "to continue to control my emotions as I realize that letting your anger show through to students it will make little to no difference" (6-d4). Disappointment is an emotion that motivates interns to improve teaching practices, even if such motivation is undertaken with the hope of avoiding a future encounter with such an unpleasant emotion. Such actions are compatible with

notions of emotional management and emotional labor (Hargreaves, 1998b; Oplatka, 2009b).

> The negative experiences are more impactful on my goals than anything else because they are so negative that I want to avoid them in the future. And they are probably more motivating than the positive experiences in many ways. … it modifies my ambition to achieve my goals. (2-2)

The caring nature of teaching (Goldstein & Lake, 2000) is revealed through experiencing unpleasant emotions, as these make interns "realize more how motivating and encouraging and sometimes more mothering a teacher must be" (6-d3). Even if frustration makes one "second guess abilities as a teacher" (3-d4), it ultimately increases the importance of continuing and developing abilities as a teacher and of learning new things about teaching math as "it makes my goal stronger, I want to achieve it more" (3-3). Interns rationalize the importance of learning new things in the face of unpleasant emotions because it ultimately benefits students' understanding:

> It definitely increases the importance of the goal of learning new things. Because the curriculum is always changing, and new techniques are coming in, and that goal goes ahead for me. I want to be able to teach students to the best of my ability. And if I don't put effort onto learning new things and leaning new topics is not going to benefit the students. (6-2)

In the face of unpleasant emotions, mastery goals continue to be long term. Even if one needs to work more and harder to get through to weaker students, frustration will not limit interns' efforts or desires to continue and develop abilities as teachers. Upon experiencing emotions, such as frustration, disappointment, or anxiety, interns feel closer

to accomplishing their goals. Such emotions make goals seem more tangible. An intern described the perceived effect:

> In proper hindsight [unpleasant emotion] helped me increase my desire to achieve my goals, and also has helped me actually achieve those goals. …it makes it more tangible because with each of these experiences I hopefully will improve on it, and become closer to my goal. (2-3)

5.4.2.2. Perceived Effects of Unpleasant Emotions on Performance Approach Goals

Even if performance approach interns feel like acting on their frustration, they refrain from doing so they can become better then others. Interns gauge the extent of their practices and of their evident emotional reactions in terms of how other teachers might deal with similar situations, underlining again the self and other focus (Seifert, 2004). An intern described his reaction in comparison with other teachers:

> As soon as the kid asks the same question four times, they yell, they get very frustrated, it is a very outward frustration, and I wasn't. And I can see that in myself and already it makes me feel that 'Ok, I got one up on some people'. (12-2)

Comparisons are made through the lens of others' teaching approaches, because "I tend to deal with my frustration a little better, and when I am getting frustrated it helps me. I know I want to be better than some of those teachers" (12-3).

Frustration has the potential of putting things into perspective. Thinking about giving into the frustration weakens goals as "it kind of puts it in reality, because when you lose control of a class, you don't feel successful and you don't feel like you are

performing at the highest level" (9-2). Furthermore, frustration contributes to making interns reevaluate teaching strategies. This is done while keeping an eye on controlling students (Ames & Ames, 1984; Brophy & Rohrkemper, 1981; Cooper, 1983), as this quote exemplifies: "you rethink what you did and what you could have done differently, and how you were successful at the end, because at the end of the day you had the classroom under control" (9-2).

Frustration also acts as a reminder that goals could shift from being a better teacher than others to developing abilities as a teacher for students' benefit. An intern stated: "I realized the importance of keeping them on task was more important than being well liked, and if one has to be higher than the other then it must be keeping them on task" (13-3).

Some performance approach interns assess self-performance in terms of students' appraisals: "not to sound full of myself, but I know that for the most part I am well liked, which is great, but a lot of kids are saying they don't want me to go and stuff" (13-3). Nervousness prompts interns to assess their performance in comparisons between self and others. This aligns with research describing performance approach characteristics (Nicholls et al., 1990; Seifert & O'Keefe, 2001):

> It made me want to perform as well as others more. It made me keep thinking 'What would this person do in this situation?' And I did do things and they did work fine, I just wondered what others would do. (10-3)

Initially, sadness puts a damper on performance approach interns' classroom actions. Shortly after, sadness acts as reinforcement because:

> Once you actually feel the emotion it probably brings you down a little bit, makes you feel like you are not performing at the highest level … and shortly after it is a push when you just desire to perform better and better. (9-3)

Being a better teacher than others and being more talented at teaching than others increase in importance as nervousness and frustration occur, as these emotions "made me want to become better so I could perform as well as others" (10-2). Experiencing nervousness or frustration is perceived as important "because you want to be the best teacher that you can" (11-3).

Upon experiencing frustration and nervousness, goals become stronger and reflect a long-term nature. Comparisons with others highlight performance approach characteristics (Nicholls et al., 1990; Seifert & O'Keefe, 2001): "I realize that I am not going to be as good as my cooperating teacher" (12-3). In one case, upon experiencing nervousness, the intern feels "on my way to achieving it" (11-3). Interns feel closer to the goal of becoming better than others, simply because they keep it together while facing extreme frustration:

> I feel like you are going to send me to the Waterford. Yes, I feel like I am going to lose it, but I am not. I don't send you to the office, I haven't yelled or screamed at you ever since I have been here. I might look like I am going to lose it, but no I am not. So yes, I feel like I am closer to the goal when I am frustrated. (13-3)

Frustration and nervousness help performance approach interns reflect on teaching practices and on what could be done to further develop their teaching abilities, as this quote exemplifies: "it sort of helped, because it forced me to reflect what I was doing and to evaluate myself" (12-2). Frustration contributes to increasing interns' self-awareness

and desire to work out ways of diminishing or even eliminating the appearance of such emotions. An intern wonders: "do I want to be so frustrated to have to deal with this every day that I get used to it?" (12-3) Frustration has a reinforcing perceived effect on developing teaching skills and a self-motivating effect, as this excerpt highlights: "made me want to develop my ability to better motivate and control the students" (13-3).

Sadness helps in restructuring lesson plans and teaching strategies in an effort to further teaching abilities. For example, an intern tries "to think of different ways of presenting the material that might make it interesting to different students … it makes me want to be more thoughtful in the way I deliver my material" (9-3). Nervousness contributes to "staying positive and looking at things in a positive way" (10-2). Nervousness makes wanting to learn new things in mathematics a priority because "I want to know as much as I can … it is probably one of the most important things" (13-3).

Experiencing nervousness makes the objective of continuously developing abilities "a lot higher" (10-3) by virtue of analogies as one tries "to think about how another teacher would deal with a situation like this" (10-3). Comparisons are a recurrent theme (Nolen, 1988; Seifert, 2004).

As performance approach interns experience frustration, their efforts to work with "those students who have problems and students who are struggling, borderline students" (12-3) increase. Interns desire to develop their teaching abilities evolve because they self-analyze reactions. Ultimately, frustration acts as a reinforcement device, because "by being able to look at my goal and say I know I want to be a better teacher, it has really helped me see how I can fulfill my goal" (12-3).

5.4.2.3. Perceived Effects of Unpleasant Emotions on Performance Avoidance Goals

Annoyance acts as a reminder of their teaching skills. One intern stated "that there are going to be times where I can't avoid things I'm less capable of, so I had better get capable at them!" (7-2) Frustration acts as eye opener for interns in terms of teaching capabilities, and reinforce improving teaching skills:

> At first I would be feeling it was a bad thing, the class went terrible, I am not sure if I can do a good job at being a teacher. And then I eventually get to the point where I would start thinking 'Well, how can I do that better? What changes can I make that would help with that situation?' (8-2)

Subsequently, worry reinforces the desire of interns to avoid things where they look less capable, and things they don't feel qualified to teach. Frustration acts as a propeller to leave the teaching trade, as interns do not see the benefits of being engaged in teaching (Jarvis & Seifert, 2002; Seifert, 2004). Performance avoidance teachers are characterized by striving to avoid demonstration of inferior teaching (Butler, 2007):

> I think it would be more during certain classes I wish I would leave permanently. As opposed to now; it is certain days I just don't want to deal with it. … And there are some classes that you can just wish to give them to someone else. You don't know what to do with them. (8-3)

The goal of avoiding teaching things where one could look incapable increased and became stronger upon feeling worry, annoyance, or frustration. Upon experiencing unpleasant emotions, the goal to avoid teaching things where one may look incapable became "just more important" (7-2), as this quote highlights:

> Well, probably increase particularly when I was not feeling one hundred percent. When I knew even what I was fully capable I had difficulties teaching that class. Even then there was a problem in getting students attention. When I was tired and I lack energy it was almost impossible. So, even when I came already feeling bad definitely that contributed to me not wanting to teach more. (8-3)

Abandoning teaching during the internship is an impossible task, as this quote illustrates: "while I want to avoid teaching when I am feeling frustration, I know I can't just leave. Once I have committed to teaching a class, this wish is less tangible" (8-3). However, in the long run, things have a huge potential to change. Frustration contributes to the desire to pursue teaching as a part time career as opposed to a full time one. However, another intern views avoiding teaching things where one may look incapable as short-term:

> I might prefer working part time or substituting at first, so I can gain experience without getting overwhelmed by the amount of work. Also with subbing I know I can choose my days. … And after that, if I still enjoy teaching I would take on more. (8-3)

Frustration heightens the pressure of time since "I guess I need more time to get things ready … there is never enough time to do anything" (8-3). Frustration makes interns realize that they don't have enough power to control the classroom. However, statements are volitionally generalized: "I wish teachers got more control over what happened in their classroom" (7-d8). Performance avoidance interns rationalize pessimistic views about teaching in terms of unmet expectations and preferences for constant guidance and help, as this quote exemplifies: "makes me have a more negative

view toward teaching because you get such little help to deal with students of so many levels" (7-d7). Powerlessness contributes to acknowledging that teaching is a job that requires a tremendous amount of work, dedication, and care. However, unpleasant emotions such as irritation lead interns into parting ways with teaching, at least on a theoretical level. An intern felt "helpless as a teacher and not want to do it anywhere" (7-d2). Guilt made an intern realize that "teaching is a real time sucking job" (7-d8).

5.4.3. Perceived Effects of Goals on Emotions

5.4.3.1. Perceived Effects of Mastery Goals on Emotions

Goals seem to consolidate interns' beliefs that the best way to teach is by maintaining a positive demeanor because "if you want to reach your goals you have to keep a positive attitude, you have to have a positive outlook" (3-3). Being mastery oriented seems to motivate interns to be positive because "when you have goals set, it is motivating to be more positive and try and feel those emotions like satisfaction and pride" (6-3). Without goals it seems that there would be nothing to accomplish, no emotions, and no desire to get up in the morning and go to work:

> If I did not have goals, and I did not have things that I wanted to achieve, or outcomes I wanted to meet, you would not really feel any satisfaction, you would not be striving for anything, you would not have anything to strive for. So if you got up every day and had no goals, and nowhere to be and no one to meet, there would not be much point. Without goals you can't achieve anything, so you can't feel satisfaction, or you can't feel disappointment if you don't achieve them. (3-2)

Developing teaching abilities and learning new things in math no matter how difficult act as control elements for keeping frustration or disappointment in check. An intern states: "I could have just totally lost it, I could have flipped out to the kid, I could have sent him to the office" (3-2). Goals keep interns grounded in reality when frustration creates volatile environments: "I don't let these things sidetrack me too much" (3-2). Goals act as suppressors of such emotions because: "if you constantly get down or depressed, or frustrated or angry, then you are stressed … you kind of just have to look at a negative situation, look for the positives and try and fix it next time" (3-3). Goals contribute to interns' awareness of emotions' short life span: "my goals are long term ones and I do what I can, I realize that these are short term emotions" (2-3).

5.4.3.2. Perceived Effects of Performance Approach Goals on Emotions

Some interns acknowledge the difficulty in pinpointing how emotions relate to goals: "I don't know if the goals influence the emotions reaction or vice versa, but I think they are definitely related" (9-2). Continuously developing teaching abilities influence interns when feeling frustration or nervousness:

> If I did not have strong teaching goals, I may have actually given up, or I may have reacted differently, or may say something inappropriate, but where I have such strong goals, I kept myself calm and I did get the class back under control. (9-2)

Goals seem to heighten experiences of pride: "it is going to affect how I feel in the classroom. If I didn't have so many important goals I would not care about what I did in the classrooms … maybe my emotions would not be as strong" (11-3). Wanting to be a better teacher than others makes interns work towards creating better lessons and

activities, such that students like the class activities and like them more than others. Ultimately, it contributes to increasing pride because:

> You want to be better you know … I wanted to make it so that the students enjoy it and get a lot of it at the same time and in doing it and being better than someone else, being better than another teacher made me feel proud of my abilities. (12-3)

Wanting to be better than others leads interns to treat students with more respect. Students' math progress is viewed as a direct consequence of interns' work and effort, and increases interns' levels of pride:

> Just knowing that I am treating these students with the respect they deserve, while some teachers aren't. I mean that really has an effect on the amount of pride I feel in myself. I think this is more for myself. I feel that I am doing a better job than some other teachers, in different subjects even. And they are doing well. And math is a hard subject; at times it can get very abstract. And they are doing well. And I think that doing a better job than other teachers it really makes me feel pride. (12-2)

Being a better teacher than others influences the levels of anxiety. Rather than simply calling it 'anxiety', the 'positive anxiety' label is attached. Interestingly, the language reveals the positive effect anxiety has on performance approach goals:

> I always want to be better, I always want to be growing, so that makes me feel like I want to learn more things, and be better at what I am doing and that helped me push the positive anxiety, it is a cycle, they push each other. (11-2)

Wishing to become a better teacher than others influences interns to "stay positive and look at things in a positive way" (10-2). Being a better teacher than others can also

become a source of frustration because there are certain restrictions that come with having such goals. One cannot act on the impulse of sending someone to the office, as the effort of being perceived as a better teacher than others reigns supreme:

> When I want to send a student to the office … I get frustrated with myself that this was the first thing that came to my mind, because I know certain teachers that is exactly what they do. And I know I want to be better than that, I don't want that to be my first reaction when someone is misbehaving. (12-3)

5.4.3.3. Perceived Effects of Performance Avoidance Goals on Emotions

Rational thoughts are bound to overcome emotional aspects of teaching. A conscious attempt to hide less pleasant emotions appears. Emotional management (Hochschild, 1983; Zembylas, 2005c) resonates through the words of an intern:

> I made a conscious decision more than once to come in and be enthusiastic, to show that it can be fun, and I find that even if it started up and coming in and talking in a certain way it became how I felt – even if it was a show to start. (8-2)

However, even with the best intentions, and even if interns wish and take action to overcome unpleasant emotions, the final perceived effect is not the desired one. The desire to avoiding teaching things where one may look incapable contributes to increasing frustration, particularly because interns cannot avoid teaching. This quote exemplifies:

> If anything these [goals] might have increased frustration. I had to come in even when I was feeling less than prepared or capable, and I still had to teach and manage the classroom. My most frustrating days were always the ones where I came in tired, ill, or in a poor mood already. (8-3)

Chapter 6 Conclusion

This doctoral research focused on presenting emotional experiences encountered by math pre-service teachers, and illustrated the similarities and differences existing between the emotional experiences of interns with different goal orientations. What kind of emotional experiences do interns encounter while teaching mathematics? What similarities and differences exist between the emotional experiences of interns with different goal orientations? To address these issues, I described in detail interns' emotions, based on corresponding emotional experiences encountered while teaching mathematics. Attention was given to core descriptions of emotional experiences as well as to the attributed causes, thoughts, frequency, and perceived effects. The latter described the immediate versus permanent effects of emotions, the bodily effects of such emotions, as well as perceived effects on interns' actions and goals. I described how goals grew or decreased in importance upon experiencing such emotions. I analyzed whether or not goals become more or less tangible, or if interns feel closer or further away from reaching them.

To best present the answers of these questions, I divided the research findings into two major parts. The first part presented a case study. The case study research incorporated classroom observations, interviews, and diaries submissions. It provided a detailed description of an intern's teaching experiences, viewed as a sum of emotions, goals, and teaching actions. It offered a thorough description of an intern's world of emotions and achievement goals as these evolved during teaching mathematics. Overall, the case study adds flavour to the qualitative research described in the second part.

The second part was a qualitative analysis. This was chosen for its suitability to explore and uncover the emotion phenomenon (Rennie et al., 1998; Seifert & Hedderson, 2010). To collect information about the essence of the emotions phenomena, the research analysis was based on interviews and diaries. Three one-hour interviews were conducted with each of the thirteen interns participating in this component of the research. Sixty-seven emotional diaries were collected and analyzed for data regularities. The next two sections present the main research findings of the case study and data analysis.

6.1 Case Study Report

This section presents a summary of Petra's emotional experiences, goals, teaching actions, and behaviours. It offers an overview on interchanges between these, with a focus on descriptions of emotions on goals, behaviours, and actions. Upon presenting a summary of Petra's internship emotional experiences, the section concludes with a discussion about the case study's strengths and weaknesses.

From an early age, Petra showed affinity toward mathematics. Different teachers picked up on her interest, and guided her through the intricate maze of mathematical terms and theorems. Ultimately, she became engaged in a constant and fluent conversation with mathematics. Thus, Petra became closer and closer to the subject and eventually decided to pursue teaching as a career. The case study traces her teaching experiences during the educational internship within a junior high school setting. Focus was placed on Petra's emotions, attributed causes, thoughts, teaching actions, interactions with students, and goals.

Petra was defined as mastery oriented. She exhibited preferences for new and challenging tasks (Seifert, 1995b), and demonstrated increased self-confidence and an adaptive nature (Diener & Dweck, 1978). She aspired to develop and improve her math skills (Urdan & Maehr, 1995). She aimed to continuously develop her abilities as a teacher, and to learn new things about mathematics and mathematics teaching practices no matter how difficult they were. Her teaching efforts and skills were directly directed towards students' well-being and toward their mathematical progress. All these characteristics align with mastery oriented teacher descriptions put forth by researchers (Ames & Ames, 1984; Butler, 2007; Papaioannou & Christodoulidis, 2007).

For Petra, teaching was an emotionally rich practice. At the beginning of the internship, she experienced unpleasant emotions such as frustration, disappointment, irritation, or anxiety. But what defined Petra was her ability to take such unpleasant emotions and convert them into something beneficial for both self and students. As the internship progressed, her emotions shifted toward joy, enthusiasm, excitement, satisfaction, or happiness. Shifting emotions from one end of the spectrum to the other is a form of emotional management (Hochschild, 1983; Zembylas, 2005c).

Unpleasant emotions appeared when students acted out intentionally, when they lacked participation in classroom's activities, or when they did not put effort into doing their homework. Other attributed causes included students' disobeying behaviours, their subsequent poor math performances, or when they did not validate her efforts. These attributed causes are aligned with research (Emmer & Stough, 2001; Hargreaves, 2000b; Jackson, 1968) highlighting teacher's frustration or anger when students misbehave. Her teaching approaches were also listed as causes. Thoughts accompanying unpleasant

emotions were ones of control and of aspiration to revert to pleasant emotions. Deep thinking about choices of strategies occurred. Such thoughts and approaches were immediately put into action. Petra did not hide her unpleasant emotions from students, but in retrospect she did not think it was a great idea, as it could potentially deter students from pursuing learning. The perceived effects of unpleasant emotions on her body include tenseness of body, stomach nausea, churning, or butterflies. Changes in her voice inflections were noticeable, as her voice became more powerful and commanded more attention. Her overall appearance was calm and unruffled by students' unpredictable behaviours. In the face of disappointment or anxiety, Petra pursued teaching with even more dedication and passion. Unpleasant emotions were thus used to improve her teaching, and to ensure that goals were ultimately fulfilled. If anything, they contributed to increasing Petra's efforts to pursue such goals. She wanted to make a difference in students' lives and to be a model teacher. She was determined to overcome such emotions and revert to her self, namely, exuberant, full of life, caring, and passionate about teaching. Overall, Petra displayed versatile interactions and communication skills, adapting to and learning from difficult situations.

Based on Petra's reactions in the face of unpleasant emotions, it is anticipated that if students were not successful, Petra would increase her efforts to help them understand and be proficient in mathematics. These endeavors would take some time, but Petra would eventually overcome the associated unpleasant emotions and revert to more pleasant ones. Ultimately, unpleasant emotions would be converted to pleasant emotions, thus having the potential to improve Petra's skills and increase her motivation to teach.

Within a short period of time, Petra began experiencing happiness, satisfaction, enthusiasm, excitement, joy, fascination, awe, caring, or pride. Pride was experienced sporadically, and was primarily caused by seeing students progressing, applying previous math knowledge, actively participating in class, or performing well on tests. Within this setting, sources of pride are different than the ones of performance approach interns. For the latter group, pride is directly connected with being better than others. Fascination is an emotion of the enjoyment type and is deemed to be a "responding emotion" (Frijda, 1987, p. 356). As such, based on their similarity, frequency, and angular placement on Plutchik's circumplex model, the following dominant cluster of emotions emerged: enthusiasm, excitement, happiness, joy, and satisfaction. This cluster acts as a united force in propelling Petra's behaviours and goal pursuits.

Contributing sources for the appearance of the pleasant emotions included students' cooperation and engagement in class activities, seeing students completing assigned homework, or seeing students interested in technology. Other attributed causes include students' high marks, their ability to apply knowledge to new situations, their eagerness to solve problems, their increased levels of confidence, or their math progress. The satisfaction of seeing students learning, making progress or completing tasks on time coincides with other studies describing satisfaction in teaching (Hatch, 1993; Jackson, 1968; Lortie, 1975; Nias, 1989). At times, satisfaction was caused by her own efforts in putting together a really nice lecture, from feeling that she had chosen the right career path, or even from her efforts in succeeding at guiding and helping students make math connections. In this context, self as a source of pleasant emotions was strongly connected with the struggle to help students understand mathematics, and to see them succeed.

Oftentimes, her emotions aligned with the ones experienced by her students (Rosiek & Beghetto, 2009). Emotional contagion (Hatfield et al., 1993; Hsee et al., 1990) occurred between Petra's passion for teaching and her students' enthusiasm for learning math. She fed off her students' happiness and joy, and she strived upon seeing them react positively to her teaching methods and progressing so much under her guidance. This interplay between Petra and students' emotions furthered findings from previous research (Woods & Jeffrey, 1996). The latter described children as emotional people, and highlighted the importance of building relations between teachers and students. "A warm, personal relationship is important because children will feel that they can take risks, and not be rejected as people" (Woods & Jeffrey, 1996, p. 63). Overall, the essence of her pleasant emotions emerged as a tiny yet powerful nugget of complete care and commitment for students such that they could attain a deeper understanding and appreciation for this science.

While experiencing such pleasant emotions, Petra's thoughts were divided into two large groups, specifically self and students. She considered the evolution of her teaching skills, her progress as a teacher, her desire to improve, her wish to make lectures more interesting, and her reinforced desire to continue teaching. She reflected over the perceived positive effects of her teaching actions over her students, the amount of time and energy put in, and over techniques that engaged students. Petra also thought of her students' accomplishments, their excitement and eagerness to be actively engaged during lectures, or about their enjoyment and love of math. She reflected upon how well they worked together in establishing better communication opportunities, how well students were adapting to new math topics, and how well they were progressing in answering their

own questions. As the internship unfolded, it became obvious that her thoughts were focused primarily on students and much less on self.

Experiencing pleasant emotions increased Petra's desire to replicate them. Even if students were making progress, Petra was willing to supplement the time and effort in preparing for future lectures. Her teaching actions supported students' autonomy, promoted competences, and were conducive to increasing their self-esteem and confidence levels. Her actions helped students become more independent and self-competent (Ames & Ames, 1984), and contributed to enhancing their intrinsic motivation (Rigby et al., 1992). Petra kept an active dialogue with students during class activities. She used diminutives while talking about math terms, and students related to the language used and seemed to enjoy it. Petra's face depicted serenity or frequent sequences of smiles. Her body language also revealed approval, as her head moved back and forth. Students responded positively to her teaching style and to the nonverbal language used. Her whole demeanor showed an individual full of confidence. Petra shared her thoughts with students, as she reinforced and approved their actions when they did a good job, by using expressions such as "good job" or "practice makes perfect."

The central cluster of emotions had long-lasting perceived effects. It contributed to increasing Petra's levels of confidence, and to realizing that she helped students' cognitive development. Happiness inspired her to look for alternative teaching methods that would speak to and help a large variety of students. Happiness motivated her to learn new teaching strategies for different age groups, and to look for alternative teaching styles that would keep students engaged in math activities as opposed to day-dreaming. Enthusiasm and excitement increased her desire to examine and incorporate new teaching

strategies, such as technology in her future classes. Her goals increased in importance, became stronger and more achievable. Goals seemed more important to keep and even easier to attain, as students cooperated and seemed enthusiastic about math. Satisfaction, happiness, and enthusiasm made goals seem more realistic. Goals became more tangible when she noticed students' happiness and how "they feed you back their emotions." Satisfaction made her appreciate even more the benefit of preparing well designed lessons. Happiness provided piece of mind, and enthusiasm heightened her spirits.

Petra's actions, behaviours, and goals were validated through students' successes and through their motivation to further their learning. For example, her desire to continuously develop her abilities as a teacher and to try to learn new things in math evolved. At the beginning of the internship she wanted to use distinctive methods and was aiming to figure out what was the best way to teach different topics. As the internship progressed, she wanted to further her knowledge, to see what other techniques are available to use, and to make a significant difference in students' lives. Her mastery goals influenced her teaching approaches and led her to maintain steady pleasant demeanor. She used mastery goals to control and convert initial unpleasant emotions into a cluster of pleasant emotions.

Embarking on this journey led Petra to encounter flow like experiences. These are characterized by a challenge-skill balance, clear goals, immediate feedback, perception of control, intense and focused concentration, altered perception of time, loss of self-consciousness, and intrinsic reward (Csikszentmihalyi, 1975, 1990). Central to the flow experience is the balance between Petra's abilities and the perceived challenges of the teaching job. This flow state is pleasurable and ties in with experiencing a range of

emotions such as satisfaction, enjoyment, excitement, enthusiasm, or happiness. After the first two weeks of the internship, Petra experienced a wide range of pleasant emotions on a daily basis. Furthermore, flow offers intrinsic rewards and motivates one to repeat the experience. Flow is an autotelic experience (Csikszentmihalyi, 1990, 1997). This assumes that the activity is pursued "not with the expectation of some future benefit, but simply because the doing itself is the reward" (Csikszentmihalyi, 1990, p. 67). This description aligns with Petra's teaching experiences. For example, the link between emotions and the desire to repeat teaching experiences is described through the lens of the derivatives model. Following Plutchik's derivatives model, the key elements of Petra's joy of sequence embrace the following pattern. The gain of a valued object, namely the teaching activity, led Petra to think of students as her own, to think about possession and distribution of her knowledge. Her overt behaviour was one of repetition, as part of an increased effort to experience joy and other comparable emotions. The perceived effect of joy was one of acquiring resources that would allow her to experience joy yet again. Such resources included, and were not limited to, learning about new teaching strategies, becoming more skilled as a teacher, or finding more teaching resources.

The case study increased my understanding about the emotional experiences of a mastery oriented intern. It described the blooming evolution of an intern within a caring environment. It revealed the internship as a place where a mastery oriented intern can encounter both pleasant and unpleasant emotions. It detailed modalities used to overcome unpleasant emotions, and to convert them into pleasant emotions and experiences. The case study answered the research question of the study by detailing Petra's emotional experiences, attributed causes and thoughts accompanying the main cluster of emotions,

as well as her goals, behaviours, and teaching actions. It described how unpleasant emotions, such as disappointment, frustration, or anxiety help develop, strengthen, and shape Petra's behaviours, achievement goals, and teaching actions.

Previous research showed that students' mastery goals were related to task efficacy and engagement, as well as to persistence in face of obstacles (Meece et al., 1988; Pintrich, 2000; Pintrich & Garcia, 1991; Roeser, Midgley, & Urdan, 1996). Mastery oriented students were shown to prefer engagement in challenging tasks (Seifert, 1995b). Furthermore, mastery goals were associated with "joy that would allow more cognitive creativity" (Nichols et al., 2003, p. 60). Mastery oriented students accounted instances of more positive affect (Diener & Dweck, 1978; Seifert, 1995a). The information provided by this case study research was consistent with findings from previous research, but shifts focus from the mastery goal orientation of the student to that of the intern.

The context of teaching and learning is built up on the teacher, students and the topic taught. The focus of this dissertation has been the teacher, and the subject taught was mathematics. However, students' emotions, actions and reactions to mathematics are intertwined throughout the research. Even if these do not create a distinct topic of discussion, students' actions and emotions are factors connected to interns' attributed causes, thoughts and perceived effects. Therefore, teaching is a complex endeavour, subject to various types of influences. Some are vertical; others are horizontal influences. Examples of vertical influences from above include administrative directives and curriculum content dictated by school boards. Examples of vertical influences from below include students and their different needs. Such needs lead teachers to subsequently

employ differentiated instruction. Horizontal influences come from parents or colleagues. Apart from these influences, teachers could be influenced by their personal lives or other factors. Teaching is a complex and difficult performance act encompassing teachers' emotions and actions; students' emotions and actions; as well as vertical, horizontal, and other types of influences.

The case study research findings could have been improved by a deeper analysis of the connectivity between Petra and students' emotions, and between her teaching strategies and students' mathematical performances. Classroom observations were used to depict how Petra promoted high quality of learning and a student autonomy supportive classroom environment (Deci & Ryan, 1980; Rigby et al., 1992). However, a survey assessing students' emotions could have perhaps been beneficial in describing this connectivity in more detail. This research could be further improved by undergoing a multiple-case study that would answer the same questions in different environments. For example, comparisons between emotions' attributed causes and consequences in the case of mastery oriented and performance avoidance interns could be beneficial. Such detailed comparisons are not available as of now. Certain differences are visible in the second part of the data analysis, however much more could be revealed by case study comparisons between performance avoidance and performance approach interns.

6.2 Data Analysis

Data was divided based on interns' achievement goals. Meaning units were about emotions that occurred while interns were teaching mathematics. Mastery oriented interns experienced daily pleasant emotions such as happiness, satisfaction, or enthusiasm.

Mastery oriented and performance approach interns present a number of similarities in concepts and themes underlining the attributed causes of such pleasant emotions. Similarities include the following concepts: students understand mathematics, do their homework, do well on evaluations, pay attention, are engaged in classroom activities, behave well, work together, and lower achieving students succeed. Other similarities between the two groups of interns include: doing a good job teaching, or being able to explain concepts in different ways. Salient particularities differentiate the two groups. Mastery oriented interns' descriptions of happiness revolve around students' understanding and reflect students' comprehension, aligning with task-oriented descriptions by Ames and Ames (1984). For mastery oriented interns, being able to explain concepts in different ways represents their unrelenting effort in smoothing students' progress in mathematics. When self is listed as an attributed cause for experiencing satisfaction or happiness, this is done in connection with students' progress.

When experiencing pleasant emotions, mastery oriented interns think about students' understanding, about their excitement upon accomplishing something in math, or about their strong connection with math. Mastery oriented interns also think about their teaching performance through the lens of students' progress. Interns' happiness and satisfaction leads them to think about their strong connections with students, their ability to make a difference in students' lives. Mastery oriented interns reflect on improving teaching skills and on devoting time and effort to create well-designed lessons such that students can benefit even more. This type of thinking corresponds with Butler and Shibaz's (2008) research that highlights that mastery oriented teachers report having a good day when they learn something new.

Satisfaction and happiness lead mastery oriented interns to pursue high quality instruction and to create good classroom environments. Such emotions reinforce their choice of a career and increase interns' drive to pursue teaching with more passion. Satisfaction, happiness, and enthusiasm boost their confidence and reinforce the choice of teaching strategies. Happiness inspires interns to look for unconventional methods of teaching, while enthusiasm and excitement contribute to integrate such new methods into daily teaching practices. Satisfaction increases interns' desire to learn new things in mathematics no matter how difficult (Butler, 2007). They exhibit preference for engaging in challenging new tasks. They do so, with the desire to attend to students' various types of learning. Satisfaction makes them believe that their efforts were worthwhile and reinforces their positive attitudes toward teaching. Interns' mastery achievement goals become stronger and are more in reach.

Using Plutchik's derivatives model, the key components of the mastery oriented interns' sequence follow the next pattern. The gain of a valued object, meaning their desire to learn more, led interns to think about students' understanding, about their excitement upon accomplishing something in math, or about their strong connection with math. Their overt behaviour was one of repetition, as part of an increased effort to experience happiness, satisfaction, and enthusiasm. The perceived effect of such emotions was one of acquiring resources and techniques that would allow them to experience pleasant emotions again, and of exhibiting preference for engaging in challenging new tasks. Examples include learning about new teaching strategies, becoming more skilled as a teacher, or finding more teaching resources.

Mastery oriented interns also experience unpleasant emotions while teaching. However, such emotions appear sporadically at the beginning of their internship. This aligns with other research that points out how mastery oriented students report more positive affects and less negative affect (Seifert, 2004). For example, frustration appears when students don't pay attention and don't respect the effort put in by interns. Other representative attributed causes include students' chatting, disrespect, lack of cooperation, or lack of interest in math. Personal abilities to manage the classroom, inability to get students to work, or to deal with their behaviours are also listed as attributed causes for experiencing frustration, anxiety, or irritation. When experiencing unpleasant emotions, mastery oriented interns recognize that students misbehave. Interns wonder if students progress, if they understand math, and question how they feel. These thoughts lead interns to put a lot of consideration into strategies that will help students to focus and progress, and into tactics that could be used to regain classroom control. This points out mastery oriented students' adaptive nature (Butler, 2007). Frustration and anxiety help mastery oriented interns to put things in perspective, and help them develop as professionals.

The perceived effects of unpleasant emotions are constructive. Frustration and anxiety contribute to increasing mastery oriented interns' desire to perfect teaching styles, as well as to increasing their time and effort to classroom preparation activities. At the beginning, frustration and anxiety appear to have a negative influence, but in time, lead mastery oriented interns to accepting own teaching deficiencies and increasing their desire to overcome them. Thus, unpleasant emotions highlight mastery oriented interns' adaptive actions and behaviours (Butler, 2007). Unpleasant emotions act as a reality check and point out the difficulty of achieving the goals. Frustration, irritation, and

anxiety contribute to interns' desire to develop teaching skills, wanting to learn more about effective strategies, and to better relate to students. Interns use emotional regulation (Hochschild, 1983; Zembylas, 2005c) when experiencing unpleasant emotions.

Using Plutchik's derivatives model, the key components of mastery oriented interns' sequence follow the next pattern. The stimulus events include students don't pay attention, don't respect the effort put in by interns, interns' inability to get students to work, or deal with students' behaviours. The gain of a valued object, meaning their desire to learn more, led interns to think about strategies that will help students to focus and progress, and into tactics that could be used to regain classroom control. Interns' overt behaviour was an adaptive one. It underlined mastery oriented interns effort to revert to experiencing pleasant emotions. The perceived effect of such emotions was one of emotional regulation.

For performance approach interns, daily occurring pleasant emotions include happiness, pride, enthusiasm, and excitement. Performance approach interns view students' understanding as a direct result of their teaching performances. Remarks about pride reflect a strong dependence on supervisors' comments (Seifert, 2004). Performance approach interns show preference for demonstrating high ability (Ames, 1992; Dweck & Leggett, 1988; Urdan & Maehr, 1995). For performance approach interns, being able to explain concepts in various ways highlight own abilities to teach the same material differently. Their satisfaction is also described in terms of domination over students' behaviour (Pelletier et al., 2002). For performance approach interns, retrospective attributed causes are tied to self-image, as they relate pleasant emotions to doing a good job, obtaining positive feedback from the supervisor, or being influenced by cooperating

teacher's actions. Thoughts appearing in conjunction with pleasant emotions point to doing a good job and being successful at it. Furthermore, having good teaching skills, leads them to thinking about highly about self, or that students' accomplishments are a direct result of their teaching skills. This highlights how performance approach interns process information in terms of self and others (Seifert, 2004).

Satisfaction and happiness contribute to performance approach interns' increasing desire to appear talented at teaching. Joy also contributes to their desire to become better teachers. For performance approach interns, pride reinforces social status and self-performance. Furthermore, pride is viewed as an essential component for interns' ability to experience success, for reinventing themselves, or for future development of teaching strategies. Pride also acts as a motivator for enhancing interns' confidence. Performance approach interns are driven by the desire to make a lasting impression on others, and take great pride in impressing parents and students about their teaching abilities. This supports research connecting performance approach with demonstration of ability (Dweck & Leggett, 1988; Urdan & Maehr, 1995). Interns take pride in their teaching efforts, which are seen as directly contributing to students' progress. The desire to look more talented than others increases as time passes. The constant battle between self and others highlights their perceived competence through the lens of others (Nolen, 1988; Seifert, 2004). Interestingly, if interns feel that they are within reach of their goals, then they feel like taking a step back, pushing back a little so that they can pursue goals again with more ardor. Pride is also conducive to dreaming about becoming famous and reinforces performance approach interns' goals.

Using Plutchik's derivatives model, the key components of the performance approach interns' sequence follow the next pattern. The gain of a valued object, meaning their desire to appear talented at teaching, led interns to think about students' understanding as a direct result of their teaching performances, or to think highly about self. The overt behaviour was one of repetition, as part of an increased effort to experience happiness, pride, enthusiasm, and excitement. Repetition occurred because pride reinforces their social status and self-performance, and acts as a motivator for enhancing confidence. The perceived effect of such emotions was dreaming about becoming famous.

Performance approach interns experience unpleasant emotions such as anxiety, frustration, nervousness, or disappointment. Lack of confidence in teaching abilities relates to questioning how to approach teaching next as well as to how receptive students would be to teaching methods. Retrospective views link performance approach goal interns' attributed causes of unpleasant emotions with student behaviour, poor performances, and poor work ethic. Questions about teaching strategies could be interpreted through the lens of students' behaviour, mirroring research underlining performance approach teachers' controlling predispositions (Pelletier et al., 2002). Thoughts appearing in conjunction with unpleasant emotions show an increased tendency to attribute such causes to students' inappropriate behaviour, or to their lack of attention and cooperation. At the same time, less emphasis seems to be placed on thoughts about teaching strategies.

While experiencing unpleasant emotions, performance approach interns tend to refrain from expressing them. They do so to appear more composed than others.

Frustration acts as a reinforcement mechanism. Comparisons with others are essential for these interns (Seifert, 2004). Frustration contributes to putting things into perspective, and interns don't feel that they can give into unpleasant emotions. Frustration and nervousness contribute to increasing the importance of being more talented at teaching than others. Frustration and nervousness help performance approach interns pause on their teaching strategies and help them think of what can they do to further develop teaching skills. Experiencing nervousness makes interns want to further develop their teaching abilities.

Using Plutchik's derivatives model, the key components of the performance approach interns' sequence follow the next pattern. The stimulus events include students' behaviours, poor performances, and poor work ethics. The gain of a valued object, meaning their desire to appear more talented at teaching than others, led interns to attribute such causes to students' inappropriate behaviour, or to their lack of attention and cooperation. The overt behaviour underlined performance approach interns' efforts to refrain from expressing anxiety, frustration, nervousness, or disappointment. One perceived effect of such emotions was to consider avenues to further develop teaching skills and strategies. A perceived effect of frustration was a reinforcement mechanism, in an effort to appear more composed and in control than others.

Performance avoidance interns report encountering happiness or surprise on a daily basis. For performance avoidance interns, attributed causes leading to experiencing pleasant emotions include: students understand math, do their homework, do well on examinations, or cooperate with interns. Other attributed causes include getting positive feedback from cooperating teachers, receiving positive feedback from students, or not

encountering significant classroom disruptions. Performance avoidance interns reflect on pleasant emotions when they have to fill in diaries. However, they acknowledge that without experiencing some happiness, they would quit teaching. Satisfaction makes them realize that teaching can hold something rewarding. Experiencing relief contributes to making them feel less worried about teaching. Experiencing satisfaction, excitement, or happiness contributes to feeling that they can handle the challenges of teaching. This temporarily increases their levels of confidence and desire to teach. Performance avoidance interns' wish to avoid teaching math topics where they may look incapable turns out to be stronger upon experiencing relief and surprise, and weaker upon experiencing satisfaction, excitement, and happiness. Enthusiasm makes interns believe that during such days, teaching is worthwhile. At the same time, interns feel that given the opportunity to select teaching days would contribute to a far better performance on their part. This thinking underlines how pleasant emotions are bound to be short term ones. These findings agree with other research (Papaioannou & Christodoulidis, 2007), which highlights weak job satisfaction for performance avoidance teachers.

Using Plutchik's derivative model, the key components of the performance avoidance interns' sequence follow the next pattern. The gain of a valued object, meaning their desire to avoid appearing unprepared while teaching, led interns to think about students understand math, do their homework, do well on examinations, cooperate with interns, receiving positive feedback from cooperating teachers and students, or not encountering significant classroom disruptions. The overt behaviour was one of repetition, because relief contributes to making them feel less worried about teaching. The perceived effect of such emotions was that teaching was worthwhile.

Performance avoidance interns experience frustration daily. Accounts of frustration present interns' sense of incompetence (Seifert & O'Keefe, 2001). Performance avoidance interns view students' failures as a threat to their self-worth (Seifert, 2004). For performance avoidance interns, experiencing relief circles around avoiding manifestation of inferior teaching, in accordance with other research (Butler, 2007). For performance avoidance interns, the lack of mathematics knowledge connects with their insecurities about being good teachers. They also express annoyance with the pressures of the internship and verbalize overt displeasure with the educational system. Performance avoidance interns feel that they are unable to get students to work and unable to run the lessons as desired. As such, performance avoidance interns lack interest in helping students. Their lack of understanding or perceived non-significance of the educational system aligns with research conducted on the work avoidance students who don't see the benefit of being engaged in academic tasks (Seifert & O'Keefe, 2001; Seifert, 2004) and consequently engage in passive-aggressive mechanisms (Jarvis & Seifert, 2002). While experiencing unpleasant emotions, performance avoidance interns' thoughts run towards their inability to control the class, and a desire to avoid dealing with a rowdy class. Furthermore, these interns think about the turmoil they experience while teaching and worry about both their career choice and the internship. Finally, they end up questioning a full time career in teaching. As such, they look at the future with uncertainty.

Annoyance acts as a reminder of the less developed teaching skills of the performance avoidance interns. Frustration makes them realize the level of their teaching skills and temporarily helps improve their teaching skills. Unpleasant emotions such as

worry, ultimately reinforce performance avoidance interns' desire to avoid teaching situations where they look less capable. Frustration even acts as a motivator to leave the teaching profession. This is considered with the hope of avoiding demonstration of inferior teaching (Butler, 2007). Unpleasant emotions contribute to thinking about avoiding teaching as being even more important. Thoughts about quitting during the internship occur, but they cannot be completed, as this is not a viable option. In the long run, interns contemplate pursing a part time teaching career, as opposed to a full time one. This is done with the hope of gaining experience over a prolonged time frame. Performance avoidance interns attribute pessimistic views about teaching to their perceived lack of constant guidance and help from their cooperating teachers.

Using Plutchik's derivatives model, the key components of the performance avoidance interns' sequence follow the next pattern. The stimulus events include interns' sense of incompetence, pressures of the internship, or insecurities about being good teachers. The gain of a valued object, led performance avoidance interns to think about their inability to control the class, about their desire to avoid dealing with a rowdy class, question teaching as a full time career. The overt behaviour underlined performance avoidance interns' efforts to escape teaching.

Goals influence interns' emotions. The desire to learn new things motivates mastery oriented interns to maintain a positive outlook. Mastery oriented interns believe that without goals there would be nothing to accomplish and the drive to go to work would be completely gone. The desire to improve teaching skills and to learn new things keeps frustration or disappointment in check. Goals also contribute to raising interns' awareness of the short life span of emotions.

Goals keep performance approach interns grounded in reality, keep them calm, and keep them focused to get the class under control. Wanting to be a better teacher than others leads these interns to work towards creating better lessons and classroom activities, and subsequently contribute to heightening their experiences of pride. Wishing to become a better teacher than others contributes to making them stay positive and contemplate things in a positive way.

For performance avoidance interns, rational thoughts overcome the emotional aspects of teaching and contribute to their conscious attempts to hide their unpleasant emotions. Even in light of emotional management of this nature, the desire to avoid teaching ultimately contributes to increasing their frustration because interns cannot avoid teaching.

6.3 Future Research Opportunities

This section presents the limitations of the study as well as possibilities to further expand this research. The first limitation of my research study is that it was directed only to mathematics pre-service teachers at the junior and senior high schools. It could be interesting to see if the emotional experiences, or if the similarities and differences of interns in different disciplines with different goal orientations are alike to those found here. The second limitation relates to the number of participants. While there were six mastery oriented interns and five performance approach interns, there were only two performance avoidance interns participating in this study. More insights into the development of emotions, thoughts, and perceived effects could have been obtained, particularly within the last group.

A possible avenue of furthering my research pertains to replicating this work in the context of in-service teachers, having different years of experience in teaching mathematics. Similarities or differences in emotional patterns for attributed causes, thoughts, and perceived effects could be traced. A new facet could be added to significantly narrate the connection between mastery goals and mathematical intimacy. For example, case studies could be used to learn how teachers' mathematical intimacy informs their achievement goals. DeBellis (1998) defined mathematical intimacy as a form of intimacy that consists of two components: intimate interactions and intimate relationships. A series of intimate mathematical interactions build up intimate relationships. Intimate interactions are characterized by intimate mathematical behaviours and intimate mathematical experiences. Intimate mathematical behaviours include "the distance a problem solver places between himself and his work, cradling his work, temporary loss of hearing external noises because he is so focused and consumed by the interaction, and hesitation in sharing mathematical solutions" (DeBellis, 1998, p. 437). Intimate mathematical experiences incorporate "positive feelings and perceptions of understanding which a problem solver incurs while solving a problem or thinking about a mathematical concept" (DeBellis, 1998, p. 437). Examples include warmth, passion, time suspension, vulnerability, loyalty, and positive emotions such as joy, excitement, affection, elation, or amusement. Experiencing mathematical intimacy is equivalent to "being highly engaged in problem solving, having a warm-hearted dialogue with various math concepts, analyzing and comprehending its most inner structures, or creating a close bond with mathematics" (Radu & Seifert, 2011, p. 3).

Another direction would be to follow the study's participants in their teaching careers and inquire into changes occurring within their achievement goals, or within the emotions they encounter while teaching.

Data suggest that mastery oriented interns are able to use unpleasant emotions to their advantage and use them for the improvement of their teaching practice. Data also suggest that unpleasant emotions may contribute to withdrawal from the teaching profession for interns with a performance avoidance orientation. I would like to emphasize that teaching is a very complex practice. I only looked at emotions and goals, and did not take into account other factors that might contribute to leaving the profession, such as: work tensions, workloads, work ethics, degree of preparedness, or the type of relationship an intern has with mathematics. I think that future research could inquire into the implications of teachers' fake emotions on their achievement goals and teaching actions. The study could also look into similarities and difference between situations when a teacher 'acts' enthused and happy and when a teacher is authentically enthused and happy.

6.4 Practical Implications

My study presents theoretical implications for the research field. It is a unique study that brings together emotions and achievement goals in the context of pre-service interns teaching mathematics. It has potential for future research options. It contributes to and furthers the links between the research fields of emotions and motivation.

However, apart from the theoretical implications of this study, I think that there are also practical implications. Education programs might benefit from incorporating

some of the findings of this study into their teacher preparation programs. This would ensure that other future interns learn that is normal to experience a variety of pleasant and unpleasant emotions. Relatedness to other interns' emotional experiences might help them think that they are not the only ones experiencing frustration, disappointment, or anxiety. I think that it would also bring awareness that frustration or other unpleasant emotions are not rare, and are not necessarily negative.

As well, in-service training might benefit from presentations about my research. It would bring awareness for in-service teachers about the relation between emotions and goals. It could help them reflect on the myriad of emotions interns experience during the internship as well as on the powerful perceived effect emotions have on interns. Furthermore, it could help them reflect on how they think about interns, how they feel about internship programs, or to consider thinking about internships from a different angle: the emotional one.

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Appendix

Appendix A Research Study Consent Form

I wish to cordially invite you to participate in my doctoral research project "The emotional experience: its significance for preservice and in-service secondary mathematics teachers". The purpose of my doctoral dissertation is to produce a detailed description of the interplay between the preservice and in-service teachers' emotions and their achievement goals towards instruction, as grounded within the socio-cultural context of the intermediate and high school classrooms teaching arena.

I invite you to participate in a one-page survey that will tell me more about your achievement goals toward instruction. I anticipate that it will take approximately 5 minutes to complete the survey. You are invited to put your name or student number on the survey's cover page. Your participation is important and greatly appreciated, as you will be able to tell me about your motivation to teach.

I invite you to participate in three audio taped interviews of approximately half-hour's duration. The interviews will revolve around the following ideas: the influence of your teaching goals on the emotions you felt while teaching, your emotions and emotions experiences encountered during teaching a math class, the weight of your emotional experiences on your teaching goals. I anticipate that all interviews will be conducted between January 4 and April 1, 2010. Your participation is important and greatly appreciated, as you will be able to tell me about your teaching goals and emotional experiences.

I invite you to participate in keeping a two-page diary that will tell me more about the emotions you experience while teaching math. I anticipate that it will take approximately 15 minutes to complete the diary. You are invited to put your name or student number on the diary's cover page. Your participation is important and greatly appreciated, as you will be able to tell me about your emotions or moods associated with teaching mathematics, and about the manner emotions influence your goals toward instruction. You are kindly asked to fill in this diary especially if something significant (positive or negative) happens. I will collect the diaries twice: before the second interview and before the third interview. I will read these diaries on a regular basis, and based on your written responses, I will further probe for a deeper understanding of your statements, using individual email. It would be desirable that you will record your emotions or moods using this diary as often as possible.

If you are not doing your internship in St. John's, the surveys and interviews will be conducted online. If you are interviewed online, I will upload the survey on the Desire2Learn interface, so that you can complete the survey online, and I will provide two prepaid stamped envelopes that you can use to mail your diaries.

Your participation is entirely voluntary and you are free to withdraw from the study at any point in time, and there are no adverse consequences from accepting or refusing to participate in this study. Your responses will remain confidential and anonymous throughout the study. If you wish to participate, simply sign this research study consent form. The data obtained from the research study will not be seen by other participants, other members of the academic community, or anyone else, except the researcher conducting this study and her supervisor. The surveys, diaries and the transcribed data obtained from the interviews will be stored for five years in a secure location. Even if identifying personal information is being requested, this information will be used only to connect data obtained from each individual through the three different channels: survey, interview and diary. You do not have to answer any or all the questions of the diary, survey or interview if you so choose. There are no penalties associated with your refusal. I do not foresee any risks involved with completing the diary, the survey, or in participating in the interviews.

Although the data from this research study will be published and presented at conferences, the data will be reported in aggregate form, so that it will not be possible to identify individuals. Moreover, the consent forms will be stored separately from the transcribed interviews, so that it will not be possible to associate a name with any given set of responses. After your interview, and before the data are included in the final report, you will be able to review the transcript of your interview, and to add, change, or delete information from the transcripts as you see fit.

I anticipate that there will not be any risk of harm as a consequence of participating in this research study. If you decide to participate in the study, you will not benefit from any compensation grade wise. If you decide to participate in the survey, interviews and the optional diary submissions, you will receive an Empire Theatres' gift certificate in the value of $75.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at (709) 737-8368.

You are welcome to ask questions at any time during your participation in this research. If you would like more information about this study, please contact

Researcher: Oana Radu, Faculty of Education, Memorial University of NL, St. John's, NL, A1B 3X8, oradu@mun.ca, 737-6928.

Researcher's supervisor: Dr. T. Seifert, Faculty of Education, Memorial University of NL, St. John's, NL, A1B 3X8, tseifert@mun.ca, 737-3402.

Appendix B Survey

1.	My goal is to continuously develop my abilities as a teacher.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
2.	I intend to try even more in order to learn new things for what I teach.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
3.	It is important for me to learn new things all the time in the subject that I teach.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
4.	I like learning new things on the subject that I teach, no matter how difficult they are.	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
5.	I am absolutely satisfied when it looks that I'm better teacher than others.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
6.	My attitude is to be better teacher than the others.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
7.	I will always try to outperform my colleagues.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
8.	It is important to my life to perform better as a teacher than others.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
9.	It is my attitude to avoid teaching things for which I may be gibed at, for my abilities.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
10.	I'll continue avoiding exercises in which I may look incapable.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
11.	I want to avoid teaching things in which I may look incapable.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐
12.	I feel relieved when I avoid teaching something in which I might look incapable.	Strongly agree ☐	Agree ☐	Neither agree nor disagree ☐	Disagree ☐	Strongly disagree ☐

Appendix C Interview Questions

First interview

1. Have you had any previous teaching experience before entering the B.Ed.?
2. Why did you decide to enter the teaching profession? Was there a significant event that made you pursue teaching as a career? What was emotional about this event?
3. What do you think about the following statement "teaching is just a technical job"? How do you define teaching?
4. At the start of your internship, how would you define successful teaching?
5. How would you define the classroom arena: as an intense environment where emotions prevail, or as an environment where there is no space for emotions and where teachers should hide their true emotions from students?
6. What math topics interest you most? What is it about these topics that fascinate you? Would you want to learn more about these topics? Would this influence your future teaching performance? What interests you most about teaching? What seems to be most appealing for you about teaching?
7. How would you define a fun activity? Would you describe teaching as fun? What makes it fun?
8. Which math topic would be the least bit interesting for you to teach? How would you teach this topic for the first time? What it is about this topic that makes it so dreary?
9. What kinds of teaching situations would make you uncomfortable? What kinds of classroom situations might irritate you? Are there times when you feel frustrated by students' comments or attitudes towards math?
10. How does looking more talented at teaching than the other interns make you feel? How important is it for you to perform better than other interns? Why? How does this make you feel? Are you proud about your teaching skills? Are you hopeful that your teaching will improve throughout the internship?
11. Are there times when you do not feel like teaching? What do you do when you have to teach but you don't feel like it? Do you worry about teaching? Do you feel like you are not going to make it when you teach? In other words, do you sometimes worry that you are not doing well enough? What do you do to overcome this state of mind? Do you feel anxious while teaching math topics?
12. Do you think that you are equally knowledgeable in all math areas? Have you ever tried not to disclose your lack of competence in certain math areas? How did this make you feel? Would you try to avoid teaching certain math topics in which you might be perceived as incapable? Have you tried to avoid solving math problems where you might look incapable?
13. How would you describe the role of your emotions in your approach to instruction?

Second interview

1. When you think about emotions and classroom teaching what comes to mind?
2. Which emotions would you associate your teaching with? Please describe one significant emotional experience where you recently experienced the emotion just mentioned.
3. Do you recall any other emotions that occurred together with (list emotion)? What was the order of appearance of these emotions?
4. Do you have any other significant memories related to this emotional experience?
5. How often does this emotion appear in the span of a week?
6. State in one short sentence the essence of this emotional experience.
7. What do you consider to be the causes of this emotion?
8. What were you thinking of when you felt (emotion)?
9. Do you show this emotion, or you try to keep it for yourself while you teach?
10. Did this goal increase or decrease in importance for you? Did it become stronger or weaker? While experiencing (emotion) do you feel closer or further away from achieving this goal? Is this a long-term goal or short-term goal? Does the goal seem more tangible or less tangible?
11. How long do you think the influence of (emotion) will last?
12. Considering its frequency, how important do you consider this emotion to be for the development of your professional life?
13. Did you try to reduce your negative classroom emotions? Did you try to increase your positive classroom emotions? What did you do?
14. How do you handle your emotions right after they occur in a classroom setting? Could you give some examples?
15. Shortly after the emotion occurred, did you try to physically move away, take deep breaths, control your facial features, thinking of a serene place, or subsequently increase or decrease the amount of physical activity? How did you feel after that? Did you notice any physiological changes?
16. Do classroom emotions influence the amount of hours you put into your next classroom preparation?
17. Did your goals influence your emotional reaction? In what way?
18. After you finished teaching, did you think about what happened? What causes did you attribute to your emotion? Did you try to analyze your emotional experiences?

Third interview A replica of the second interview.

Appendix D Interns' Quotations

Table 13. Attributed causes contributing to the development of pleasant emotions – quotes

Mastery oriented	Performance approach	Performance avoidance
Students learn mathematics	Students learn mathematics	Students learn mathematics
understand math "if they understand more than when they started … everyone is at a very different level, if they walk out knowing more than they walked in with, than that is more valuable" (4-1) "when you notice students understanding a topic or idea for the first time" (2-1)	*understand math* "successfully knowing that students learned what you taught them" (10-2) "they were understanding what I was saying ... when students are good at what they are doing" (11-2) "I was proud of them for comprehending it and understanding it quickly" (11-2) "when I know that they understand the material I feel satisfied with my teaching and the class" (10-d3) "knowing that 80% of the students are getting it, just with the math, and that really makes you feel that you are doing a good job" (12-2) "if the happiness comes from the success of your students, then you will feel pride and accomplishment" (9-3)	*understand math* "they actually followed the instructions and did a really good job, so that made me happy" (7-2) "they seemed to understand the questions and because the class flew by" (7-d9) "class went well, and I had the impression the students understood" (8-1) "they really seemed to grasp the concept being taught" (7-d5)
express interest in learning math "the kids seem interested, they seem engaged, they are giving you answers, they are asking questions, they are providing feedback, they really seem interested in what they are doing" (3-3)	*advance without interns' help* "some students even moved on, completing homework not assigned or taught yet" (12-d3)	
link different math concepts "students seemed to understand the lesson well enough to apply it	*have other accomplishments* "just this sense of success of my students, and by success I mean	

to examples even through it was a new idea for them" (5-d2) "they understood the material, remember the material … when I asked them as a group they were all pretty unanimous on how to do it" (5-3)	either academically or they just feel good about themselves" (9-3)	
know how to apply previous facts "they put the learning into practice" (3-3) "students applied the knowledge they learned in the previous sections to solve new problems" (2-d5)		
Students are involved in classroom activities	Students are involved in classroom activities	Students are involved in classroom activities
do their homework "they can solve it, and it showed that they were able to do this" (5-3)	*do their homework* "students had completed their work" (9-d4)	*do their homework* "I was happy that the kids were behaving and had mostly done their homework" (7-d2)
do well on evaluations "they did well on the exam" (3-2)	*do well on evaluations* "students were writing the quiz and were doing very well" (9-d6) "on assessments when they do well, you feel excitement for them" (11-2) "a lot of students did really good" (12-2)	*do well on evaluations* "I corrected more and they were much higher grades" (7-2) "the correcting I did last night was good and most of the kids did it" (7-d4)
pay attention, are engaged in classroom activities "they are paying attention, they understood, they were engaged" (3-2) "kids involved in answering questions, you can tell they understand it" (6-2) "when I started to see the responses of students to the different questions and to see their understanding" (6-3)	***pay attention, are engaged in classroom activities*** "they listened well" (10-d9) "students asked many questions about things that were not exactly clear" (10-d6) "they were cooperative" (10-3) "I was satisfied with the students' participation and interest" (10-d5) "participation by the students, when they are motivated to work and they feel better" (11-2)	

	"students were following along and participating" (9-d4) "the kids are showing strong work habits" (13-3) "working on word problems with the class, they were into it" (13-d2)	
lower achieving students succeed "the lower achieving students see a little bit of a light, and say 'Oh, this is how you do it!'" "when I see that students are struggling with math and pass things" (4-2) "this student in my grade 7 class, who struggles a lot with math … when I asked the questions, nobody answered, she was actually one of the ones who spoke up and answered … she was actually able to voice an answer" (6-2)	***lower achieving students succeed*** "I was also proud that he could do it himself and he was doing it" (12-3) "one student successfully completing something that she had trouble with" (9-2) "today he was working by himself and also participating in group activities and he got up and did the example on the smart board and this made me extremely happy" (9-3) "one girl really has not been doing so well on her math, and she finally got it, and she stayed after class and she told me she really starts to like math" (9-2)	
ask questions "they were asking questions" (3-2)	*apathetic students solve problems* "when I see some of the bad students actually doing some work" (12-2)	*enjoy the class* "they actually seemed to learn and enjoy themselves" (7-3) "the kids were having fun" (7-3)
are progressing well "classes are going really well, students are doing really well" (3-2)	*weaker students have other accomplishments* "accomplishment by the students, when they are not failing the course" (11-2)	
Students exhibit reinforcing classroom behaviours	Students exhibit reinforcing classroom behaviours	Students exhibit reinforcing classroom behaviours
behave "students have been behaving" (3-3)	*behave* "they behaved" (10-2)	*behave* "they were actually enjoying the activity and learning, I was proud because they behaved so much better than when I took them to the computer lab at the beginning of the year" (7-3)

work together "all my students worked together as a team to solve the problems" (1-d3) "students cooperated more (listening) then they had in a while" (4-d2)	***work together*** "success of students, people working together" (9-3) "students were working very well together and showed true interest and understanding in the properties of normal distribution" (13-3)	
cooperate with interns "they come in and are having a really good day and they are really happy and they participate a lot in class" (6-1)		***cooperate with interns*** "students seemed to respond to me" (8-2)
reinforce intern's self image "kids are pretty positive towards me" (3-2) "just the way they act around me, makes me feel that ok I am doing a pretty good job" (3-2) "way students are responding to you, talking to you in the hallway" (3-3)	*enjoy the way interns teach* "when kids were saying things to me like 'good lesson sir', 'I like this stuff sir', 'it's pretty cool you can figure stuff like that out sir' I was on a high for the rest of the day" (13-2)	
react to interns' efforts "how they are reacting to what I am doing" (2-3) "they think you are a good teacher" (3-2) "it's great to get such feedback from students above all else" (2-d5) "she came in at lunch time in the staff room and had a big letter written, personally thanking us, so that it just felt really good to know that you are making a difference in one kid's life" (3-2) "that they respect you enough even if they might hate what you are doing, they respect you enough as a person to control themselves" (3-1)		
Students' and interns' emotions	Students' and interns' emotions	Students' and interns' emotions

play different roles within classroom teaching	play different roles within classroom teaching	play different roles within classroom teaching
students' emotions influence interns' emotions "if they are reacting to you in a positive way, and are happy, and are smiling, it kind of puts me in a better mood, it makes you feel nice and happy" (1-2) "their emotions definitely influence your emotions … it is kind of like you are interconnected, obviously your emotions affect them, their emotions affect you" (3-2) "I feel a lot of enthusiasm because they are always so hyper and bubbly and they are always so willing to get started" (1-2)	*students' emotions influence interns' emotions* "basically anything that goes on and they feel happy about, makes me happy" (9-3) "if the class is really positive I am going to be very positive … if they are really negative I am trying to be positive, but it will be hard to be positive" (10-2)	*students' emotions influence interns' emotions* "if they're happy and engaged then that will make me happy and engaged" (7-2)
interns' emotions affect students' emotions "if you have a positive attitude towards the topic your students will in turn enjoy what you are teaching them" (1-d7)	***interns' emotions affect students' emotions*** "if you are enthusiastic about a topic and you enjoy the topic, they enjoy it" (10-2)	
students' emotions sway interns confidence "if they are feeding you positive emotions, they are kind of making you feel more good about yourself and more confident in your teaching ability" (1-2)	*students' emotions influence interns' teaching* "you have to take your kids emotions into consideration when you are teaching, without a doubt" (9-2) "if all my students are having a bad day; teaching is not going to be fun … and the other way around" (11-2)	
interns' teaching influence students' emotions "what you do influences their emotions, their emotions will influence you in return" (6-2)		
Interns have good teaching skills	Interns have good teaching skills	Interns have good teaching skills
do a good job teaching "the main thing would be my performance in the classroom" (2-2)	***do a good job teaching*** "I made math notes … I was very satisfied with those notes myself, because I explained in detail	

"I've delivered the best possible math lesson for my abilities" (2-1) "I felt satisfaction with the execution of the lesson I had prepared" (6-d6) "the satisfaction I felt at the end of the lesson made me feel good about myself as an upcoming teacher in training" (3-d1) "I am happy with the way things went, I felt organized" (3-2) "just feeling that I am doing my job properly … that I am getting better at it" (2-3)	everything I was going to do" (12-2) "it makes you feel like you've done a better job" (11-2) "mainly success in the classroom would be the main cause, it would be a class I teach … but mainly just things that happen in classroom" (9-2) "I was proud of myself for teaching it well" (11-2) "while teaching the class I felt very enthusiastic, after the class I felt satisfied with the class" (10-1) "I felt really good about myself for seemingly being an effective teacher" (13-3) "I was proud of myself for teaching it" (11-2) "successfully doing what was meant to be doing, teaching material to students" (10-2) "I felt like I had done a good job teaching the unit" (13-3) "relived that things went good, or that things went ok, that the class was successful or efficient" (10-2) "being satisfied with my teaching" (10-d3) "accomplishment by me" (11-2)	
are able to explain concepts in different ways "they don't understand and I can explain something in a different way, and they say 'Oh, yeah!'" (5-1) "I sat with a student who struggles and was able to explain	***are able to explain concepts in different ways*** "I was re-teaching what was taught yesterday because the students didn't grasp the concept but I explained it differently which lead to satisfaction" (9-d5)	

it in another way she understood" (6-d2)		
get positive feedback from the cooperating teacher "my supervisor teachers are giving positive comments" (3-3) "I've been told I was doing a good job – that they like me" (3-2) "pride for myself that I am evolving as a teacher and I seem to be doing well and based on how the kids are responding and based on comments from my supervisor teacher, so just pride for myself" (3-3)		***get positive feedback from the cooperating teacher*** "my supervising teacher said it had gone well" (8-d3) "another teacher came in and said 'Great Lesson Idea!'" (7-3)
connect with students "I am building relationship with kids" (3-3) "you kind of build on their answers" (3-2) "I make connections with people and help them make connections in their mathematical knowledge" (2-2)		***connect with students*** "being able to talk to them – seeing their reactions, being able to joke a bit … the response that I get from the students, that I get the impression that they are learning or that they enjoy being in the class" (8-2)
increase students' confidence in their math abilities "know that you are making a difference in one kid's life" (3-2) "I help strengthen a student's mathematical knowledge and their confidence with it" (2-2) "I have helped somebody and help them realize that they can do this themselves" (2-2)	*know that the class did well under their guidance* "I feel satisfied that I am doing a good job … I feel that if one person is getting it, I must be doing something right" (12-3) "pretty pleased with how the first part went" (13-3) "but a source of satisfaction of what I've done and that there is nothing more that I could do" (12-2) "I was really satisfied with that class" (10-3) "the class was very well balanced but some students were having problems with the seatwork, so I	*think positively about the future* "just anticipation of something about to happen, something I have been looking forward to" (8-2)

	therefore cared for how they did and was satisfied when I knew they understood the material" (10-d3) "the class did very well and I was pretty happy with the result" (13-d4) "I was really proud to make the right choices for the class" (11-3)	
have chosen the right career "satisfaction with myself and greater hope for teaching being a good choice for myself" (2-d3) "this is in fact the career that I want to do" (3-1) "feel joyful that I have chosen the right career" (2-2) "where I am in my career so far just makes it seem in an overall positive experience, and makes it seem like I made the right choice and this contributes to satisfaction" (3-3)	*have good teaching skills* "being very knowledgeable in the area, being able to make the area to accommodate the needs of different students, being able to make the topic applicable for different types of learners" (10-2) "you make the topic fun for students and they enjoy it and make the best out of it" (10-2)	*draw energy from other people's energy* "just the energy in the school or the other teachers" (7-2)
help students achieve good grades "the sense of pride developing because I helped them go through the chapter and we did all the worksheets – and I taught the whole chapter – and they understood it so well, and made it seem like easy for them, because a lot of them got 100" (1-3) "I was extremely happy to see all my students get 100 on the quiz because I work hard preparing interesting lessons" (1-d9)	*have a good rapport with the class* "I was satisfied in the end about how the class cooperated with me and my teaching" (10-d9) "I did examples and I even got some students to get to come up to the board and I made the examples more real" (10-3) "I felt a lot of pride that they came to me and told me about that, so it made me feel closer to them and a lot of pride that we have this relationship" (9-3)	*receive positive feedback from students* "the kids thanked me for the awesome lesson" (7-d5)
distinguish different levels of students' understanding "I scaffold the problem and sat down and explained the problem to them they discovered that they already knew the question" (2-2)	*have positive effects on students' performances* "I was proud of them, of him and myself. I was doing a good job either my notes are working, or the teaching is working" (12-2)	*don't have significant disruptions* "the lesson was over without any problems" (7-d1) "class time seemed to fly by" (7-d6)

	"I was really happy that my teaching really got to him, he understood it and he knew it" (12-3) "the more I put into teaching, the more I get out of it … they appreciate my way of teaching it to them, I am influencing them in their academic career in a positive way, and know they are glad to have me there doing it" (13-2)	"I just feel content, happy with the way things have progressed" (8-2) "I was excited because I thought my lesson was going to be a good one, then enthused because it was going well" (7-d5)
get along with coworkers "how I get along with my coworkers" (2-2)	*help students who didn't understand math before* "after the lesson a student told me that they understood for the first time" (9-d2)	*are able to help students and thus have fun teaching* "getting to teach, helping students" (8-d1) "I was having fun" (7-3)
their teaching impacts students "the lesson I planned went really well" (5-d2) "you feel you have a good lesson" (3-2) "to know that things went fairly well" (3-2) "everything going correctly" (5-2) "you have a lesson planned out, and you get through that lesson in the way you planned it" (6-2)	*are knowledgeable in math* "I was familiar with the material" (10-d5) "I was happy to teach trigonometry because I enjoy the unit" (10-d8)	*relate to students' understanding* "caring when a couple of kids still didn't understand" (7-d6)
contribute to students' math progress and education "the work that you put into something actually pays off the next day" (6-2) "the work I put into planning those questions and explaining them did actually help them understand it afterwards" (6-3) "satisfaction that you are contributing to their education" (3-3)	*correct students' behaviour* "when I addressed the issue [i.e. students' disruptive behaviour] I felt satisfaction" (9-d2)	*take the time to know students* "I took some time during the lesson to talk to a couple of students about themselves, and this seemed to make them more open and I felt some happiness" (8-d5)

have good management skills "students start to act up and you manage to get things under control and get the lesson running smoothly" (6-2) "students who normally act up, even if you get thorough them – and if you get them answering questions, and not disrupt the class" (6-2) "when you get through a class, without too many disruptions" (6-2)	*reach out to all students* "when I am able to help out one of these bad students" (12-2) "I also think individual success is more a sense of an accomplishment. It is not really a sense of accomplishment or pride, but if you reach a student that you know is in trouble, that would be a sense of pride" (9-2)	*interns' attitudes seem to create a self-surprise effect* "what happens is not usually what I expect. Usually I expect my grade eight to be excitable and semi-involved and my grade nine to be bored and badly behaved" (7-3)
	assess students' work "I feel that they are really prepared for evaluation" (9-3)	
	make a difference "lecturing I felt enthusiasm when I began helping students achieve and I felt satisfaction" (9-d1)	

Table 14. Attributed causes contributing to the development of pleasant emotions – quotes – retrospective view

Mastery oriented	Performance approach	Performance avoidance
	do a good job "I feel good after getting the impression the class got a lot out of my lesson" (12-3)	***do a good job*** "I personally felt like I had done a good job that day – and it was in my abilities to do that" (8-2)
obtain positive feedback from the supervisor teacher "supervisor teacher are giving positive comments" (3-3)	***obtain positive feedback from the supervisor teacher*** "when he tell me it was a good class, or when he seems to enjoy it" (11-3) "if he is finding that I am doing a good job teaching, he will send an email, so, if he sends me an email, that makes me feel like I am doing a good job" (11-3)	
are influenced by students' actions "the way students are responding	*are influenced by students' and cooperating teacher's actions* "to the actions of the class, to the	

to you, talking to you in the hallway" (3-3)	students, and the teacher who was supervising me at the time, observing her in the past" (10-3)	
are influenced by students' progress "students achieving" (5-3)	*are influenced by students' emotions* "how enthusiastic they were" (10-3) "when they are enjoying something" (11-3)	*do something students will enjoy* "doing something new – thinking that someone will enjoy something I will do" (8-2)
are progressing well "the way things are going seem to be positive" (3-3)		
build connections with students "I am building relationship with kids in that way, but overall where I am in my career so far just makes it seem in an overall positive experience, and makes it seem like I made the right choice" (3-3)		
establish relations between behaviour and emotion "do become aware of the connections with how I feel and how I performed and there is certainly a clear connection there" (2-3)		

Table 15. Attributed causes contributing to the development of unpleasant emotions – quotes

Mastery oriented	Performance approach	Performance avoidance
Students don't behave	Students don't behave	Students don't behave
<u>*are disrespectful*</u> "if kids are being disruptive, disrespectful" (3-2) "typical classroom behaviours, people chatting, or turning around in their seats" (3-2) "it was solely his disrespectful behaviour … he is trouble in the classroom, and he does not do his work, and he is chit chatting with other people, and just being	<u>*are disrespectful*</u> "I saw a lot of behavioural issues and it was insane" (9-2) "students are not listening, if they try to speak over you, they are getting up from their seats, they lack respect" (9-2) "inattentive, loud classes, I find it very frustrating when I feel like nobody is listening or can ever hear what I am saying" (13-2)	<u>*are disrespectful*</u> "perpetually misbehaving kid was distracting others and twisting my words" (7-2) "the student basically yielded at me" (8-2) "your behaviour is inappropriate" (8-3) "students who were normally well behaved were now talking

disrespectful" (3-2)	"the rest of the class was just going wild and really hard and that is very frustrating when you are trying to do something and 80 percent of the class is not listening and talking and doing all this" (12-3) "students were being disruptive" (9-d2)	over one another (and me)" (8-d4) "two seconds later they were misbehaving and getting scolded by the people running their field trip" (7-2)
are chatting "as I went through the next questions, they were turning around and talking to each other, they really were not paying attention whatsoever" (6-2) "they are all chatting, and even if you tell them to be quiet, as soon as you turn to the board, they start chatting" (5-1) "there is too much noise in the room" (2-1) "they are coming in and they are so not interested in your thing" (1-2)	*are chatting* "the other half didn't want to do anything but talk" (13-3)	*are chatting* "they were still talking a lot" (8-3)
disregard interns' efforts "students who just don't care" (6-1) "she said 'My dad is a math teacher and he can help me at home, so I don't need to do it now'" (4-2) "when you are putting in effort for something that will benefit them, and they don't seem to have any interest in, and they don't respect the effort you put into it" (6-2)	***disregard interns' efforts*** "I get little appreciation from students" (9-2)	
use forbidden electronic devices "I've noticed the use of electronic devices, kids always have the cell phone out, texting, always trying to sneak the ipod out, they put one head phone in" (3-1)	***use forbidden electronic devices*** "cell phones in class, it drives me up the wall" (12-1)	

interfere with others' abilities to learn "students being disrespectful or rude in a way that it is making it more difficult for other students to learn, or just keeping themselves from learning" (4-2)	*don't pay attention to interns' explanations* "no one is paying attention" (12-1) "I have one person in class constantly talking, not even looking in my direction" (12-3) "students will not listen after being spoken to several times" (10-1)	*make teaching complicated* "the students are hyper active or I can't get anything out of them it just feels like it is a very draining experience" (8-2)
		are not focused "that particular class was noisy, it was unfocused, they were doing some work they had an assignment to finish up, they worked in groups that I was not sure how many of them actually understood it" (8-3)
Students have reduced work attitudes	Students have reduced work attitudes	Students have reduced work attitudes
<u>*don't care about learning*</u> "after giving a student 3 copies of the project, when I asked her when she would be passing it in (it was already 3 weeks late) her response was 'I don't know', meaning she won't pass it in" (4-d5) "want to have to think and are repulsed by the idea of having to think or by doing any amount of work" (4-3)	<u>*don't care about learning*</u> "I find students really don't care about how well they do in that course or how it will affect their future" (9-3) "she didn't want to be there.... she got up and stormed out, slamming the door behind her" (11-d3) "they are not learning the material, they don't understand it, they don't want to do more work on it" (10-3) "kids were not paying attention, then they would not put much effort into the assigned questions" (13-d3)	<u>*don't care about learning*</u> "the attitude can be problematic ... there is quite a poor work ethic in some of the classes" (8-1)
<u>*choose not to work*</u> "people who choose not to do any work at all" (5-1)	<u>*choose not to work*</u> "students refusing to listen, just ignoring, when they are completely unmotivated they refuse to work" (11-2) "grade eight refusing to do any	<u>*choose not to work*</u> "they refuse to try to work on math problems" (7-1) "some of them didn't have their homework done" (7-d6)

	work that isn't worth marks, they say things like "I haven't passed math since grade 6, I'm not gonna get this now" its very frustrating when the kids have given up" (13-2)	
don't care about each other "students being mean to each other" (4-d1) "they are not just rude to me, they are rude to each other" (4-2) "I could feel the animosity between certain students" (6-d4) "kids are saucy, or come from different backgrounds, or have a whole different slate of problems" (3-3) "there was a lot of bickering going back and forth like from one end of the classroom to the other" (6-3)	***don't care about each other*** "when students have little respect for each other" (9-1)	
don't pay attention "there is always a couple of students in every class, that are not going to pay attention, and are going to be rude and they are not gonna listen" (6-1) "they just don't seem to listen" (6-2) "just an environment with a lack of respect, someone not paying attention, chatting" (3-1) "there is a group of them who talk through the whole class, and they do not pay attention" (4-3) "students don't listen, and so nothing gets done … especially when they are capable" (4-2)	***don't pay attention*** "they don't get it because they don't pay attention" (12-3)	
are not cooperating "students were reluctant to get prepared for class with books, pencils, etc." (6-d3)	***are not cooperating*** "the students not cooperating, and their refusal to do work unless it's for marks" (13-3)	

"if the class is not engaged, they are not learning" (3-3)		
don't take responsibility for their actions "they have no concept of consequences at all … maybe your mark is based on what you have done" (4-3)	***don't take responsibility for their actions*** "their attitude mainly because most don't realize that they are in charge of their own learning; they look to us as teachers for so much help and that everything is our fault" (12-2)	
lack interest in math "if the class is not engaged, or if they are not really paying attention, if they are not learning … if the kids don't care about it, if they are bored, if they are indifferent" (3-3) "students were unresponsive and wouldn't cooperate or listen" (4-d4)	*verbalize hatred for math* "they might start a class off with 'I hate math' or 'Math is stupid' or 'Math is hard', there is nothing I can do" (12-1) "I ask them 'Why? Why is math hard?' or 'Tell me why you hate math?' And they can't, they can't really express, they really don't know why they hate math" (12-1)	
don't learn even if are mathematically inclined "when they choose to underperform there is this kid, who is very good mathematically, but he also chooses not to do anything at all, he will not write anything down, he would not show working … he chooses to do absolutely nothing" (5-1)	*question the value of math* "when students ask 'Will do they ever need it?' because a lot of the math is useless" (9-2) "they say 'it just does not matter because they won't come back next year', they don't care if they graduate or not" (9-3)	
don't understand certain math topics "kids are not understanding a concept" (3-2) "they don't understand some of these models" (4-3)	*don't comprehend math despite interns' efforts* "you are trying to teach a subject and they are not understanding it" (9-2) "if you are doing the best you can and they still don't get it" (9-2) "no matter what I did she didn't understand and this led to frustration and a sense of powerlessness" (9-d1)	
fail tests because they choose to underperform "watching him do nothing and	*have low levels of math skills* "they did not possess the basic	

failing all his tests miserably, because he just chooses to be that way" (5-1)	math skills and academic strength and cognition to proceed" (12-d1) "I get very frustrated when you have a certain topic to teach and they don't even have the skills to do the topic, so you have to go back to the basics and teach them the basic skills, times tables, kids don't know their times tables anymore" (12-2)	
	don't understand math, make teaching difficult "when I find out they are not getting it, this is going to be so much harder to teach" (12-3) "when I go through a step, go through a problem, and very, very detailed step by step and I get through it, and this one kid is 'I don't get it, I don't get it'" (12-2)	
Emotions affect teaching and learning	Emotions affect teaching and learning	Emotions affect teaching and learning
Students' emotions and moods influence interns' emotions and moods "when they are in a bad mood, I guess that can be frustrating" (5-2) "they come in, they are in a bad mood, it kind of brings your mood down a bit" (6-2)	*Students' emotions and moods influence interns' emotions and moods* "one day, this little girl started and breaking down crying while I was teaching math, and I just froze, and I started to really feel for them … their emotions are a big part of mine" (12-2)	*Students' emotions and moods influence interns' emotions and moods* "if a student is angry at me, it can generate the same feeling in me, their emotions definitely affect mine" (8-2) "their emotions play a role in my emotions while I'm teaching because if they're upset or disgruntled or shy about something then I'm going to be too" (7-2)
Inters' emotions affect students' emotions "your emotions can make or break your class" (1-d3)		***Interns' emotions affect students' emotions*** "because when I am stressed, it affects their mood too" (8-3)
Students' moods create challenges in teaching "if they are kind of off the walls, they are upset about something that happened, or they are excited about the weekend, you have to approach every lesson with a		

clean slate" (3-2)		
Interns lack management skills	Interns lack management skills	Interns lack management skills
lack classroom management strategies "negative emotions are definitely based on classroom management" (4-2) "if you try to manage a classroom or teach a lesson and not succeed" (3-2) "my ability when it comes to classroom management" (2-2) "it was a little rowdy at the end of the day because it was such a nice day" (2-3)	*lack classroom management strategies* "things will not go the right way" (11-3) "frustrated with the topic, something is not going right" (12-3)	*lack classroom management strategies* "I am not feeling particularly capable at that moment. Like I can probably handle the material, but the material and the students at the same time this is what I am finding difficult" (8-2)
are unable to get students to work "trying to get kids to do seatwork" (3-d6)		***are unable to get students to work*** "I can't get the class to do the tasks I need them to do whether it is listening or working or just settling down" (8-2) "I came into the class tired, while I was prepared I couldn't get the class settled" (8-d3) "the class gradually went from bad to worse, I kept being interrupted when trying to teach and I ended up wasting a lot of time" (8-d2) "what I find most frustrating is actually classroom management" (8-2) "I was nervous because I was not sure what was going to happen" (8-2)
are unable to deal with students' behaviours "the inability to deal with the students' behaviour in class" (2-2) "I had to stop the lesson and try and control their behaviour" (6-3)		*are unable to run the lesson as desired* "I wanted to do an example on the board but didn't want to interrupt the other two teachers helping with the seatwork" (7-d2)

are unable to get students settled down "trying to get the students settled down and on task, and especially if they are coming back from lunch, or if it is the last period" (3-3)		*express disinterest for helping students* "I should not have to deal with it and I say almost a desire to not help with anymore, almost a desire to punish them because I was angry at them" (8-3)
Interns lack teaching abilities	Interns lack teaching abilities	Interns lack teaching abilities
are tensely anticipating teaching "when I started my very first class it was a bit of anxiety, I was anxious to get started and to see how it flows" (1-2)	*are tensely anticipating teaching* "it was my first time teaching a math class so I was very nervous" (10-d1) "I did not taught this class before, and I was just nervous of how this class would go" (10-2) "you don't know what to expect when you go into a classroom" (10-2)	*are tensely anticipating teaching* "I was nervous at the beginning because it was a new experience" (7-d1) "I was nervous all week because I knew I had to teach on Monday for the first time and that my cooperating teaching was watching" (7-d1)
are unable to engage students "just trying to get though a lesson when you have zero focus from your students" (6-3) "I try my best sometimes to get students working and to not have them sit there and doing nothing" (6-1) "it became difficult to get their attention and keep them on track" (2-3) "their emotions are off the wall all the time that makes it a lot harder to built up relationship" (3-2)		***are unable to engage students*** "Why can't students just work? Why can't they just listen right now? Why can't they be working right now? How do I motivate them to work?" (8-2) "I am unable to get the response I want from the students" (8-2) "it was frustrating trying to get students' attention and get them working" (8-1) "I was barely able to get their attention for even a few minutes during the whole class" (8-3)
	lack confidence in their knowledge of math "when it comes to my ability or my knowledge" (11-3) "when students ask questions that I don't know" (10-1)	***lack confidence in their knowledge of math*** "I was unable to solve a problem (that I should be able to)" (8-d2)
	lack confidence in their teaching abilities "found myself questioning what I	***lack confidence in their teaching abilities*** "I realize that I don't do a very

	should do" (13-3) "I had no idea if the students were going to be open to my ideas, because they are not usually very expressive" (11-3)	good job at explaining something" (8-2) "I have not done a very good job that day" (8-2) "I couldn't think of a way to make this interesting for the kids" (7-d8) "powerlessness because some of the kids still just don't get it and some are so far ahead and I can't teach everybody individually" (7-d4) "my own insecurities about being a good teacher" (7-2) "I can't get anything out of them it just feels like it is a very draining experience" (8-2) "how do I know if they are learning?" (8-2) "I was worried that I made it the test too hard or did a bad job of teaching them" (7-2) "students didn't learn and I worried that it might be my fault" (7-2) "if I can't explain it well, how can they understand it well?" (8-2) "I do get a bit worried when my students don't understand and I can't think of another way to explain it" (7-2)
compare their teaching abilities with others "she is pretty quick to jump in and discipline the kids, or speak up and say something – and I don't really – and I speak up as well, but I am often not as quick as her – because I think my threshold of dealing with things it is a bit higher than hers" (3-2)		*feel the pressures of the internship* "I was feeling some pressure to try and actually complete a certain section of work" (8-3) "I think my supervising teacher has made a certain request that I get through a certain amount of material and I should be doing

"the teacher was undermining my authority in the classroom" (3-d4)		this … but I was not able to do it" (8-3)
do not performing to the best of their abilities "I feel disappointed when I have not taught a lesson as efficiently as I could have" (2-2) "when you are teaching, you are looking around, and you don't quite think you taught it enough" (6-2) "you put effort into something, and you could just tell it was not quite enough" (6-2)		*express overt displeasure for the educational system* "inclusive education is a pain" (7-d7)
are unable to properly explain math concepts "not properly communicating the lesson, not fully living up to my potential for teaching a lesson" (2-2) "for not being clear enough to bring on her questions, for not dealing with her questions with the class properly … with my teaching during that lesson" (2-2) "if students can't grasp a concept, that means for myself that maybe I am not teaching it at a level where they can understand or I am not teaching it in the best possible way, so that would be kind of irritating to myself that I am not able to help these students" (3-1)		*express dissatisfaction with textbooks* "this is a really easy topic and the textbooks really drags it out" (7-d8)

Table 16. Attributed causes contributing to the development of unpleasant emotions – quotes – retrospective view

Mastery oriented	Performance approach	Performance avoidance
interns question their teaching strategies "at the time I though I had a very rigid structure to a lesson plan, whereas now I realized that I	*interns question their teaching strategies* "if students are behaving a certain way, how are you going to get them into what you are doing?"	*interns question their teaching strategies* "I had to get through a certain amount of material, and when I could not – that made it worse"

have a lot of lesson plans and they are really never always going to go as planned" (5-3) "myself because I could have dealt better with what they were presenting" (2-3)	(10-3)	(8-3)
students do not behave "why certain students act the way they do and try to look for triggers, is it one student who starts it and it is a chain reaction, or is it a group of students that get together and cause it … you realize it was a different student that was the root cause of everything" (6-3)	***students do not behave*** "the behaviours of one or two students in the class" (10-3)	
	students have reduced work attitudes "a lot of the times my sadness comes from the attitude of students and they don't care about their success and they don't realize that even though math does not seem very important to them now, it will be in the future" (9-3)	
	math "it is usually subject specific" (11-3)	
	students perform poorly "poor performance and motivation in the classroom, and marks, nothing worse than correcting tests where you know the students are more than capable, but aren't reaching their potential" (13-3)	

Table 17. Thoughts appearing while experiencing pleasant emotions – quotes

Mastery oriented	Performance approach	Performance avoidance
Students perform well	Students perform well	Students perform well
understand "they seem to have learned something" (5-2)	***understand*** "that students are actually understanding it … I would get students to come up at the board and do some examples" (10-3)	
are excited about their accomplishments "how pleased they were that they did well" (3-2)	***are excited about their accomplishments*** "about the success, and they can do it and hopefully there is always going to be someone there to push them harder because they need that sometime, a little push, a little confidence" (9-3)	
have come to realize that are capable of solving problems "I was happy that the students realized that they are quite capable to do it themselves" (2-2)	***have come to realize that are capable of solving problems*** "I was just thinking that for the first time in her life she starts to enjoy math" (9-2)	
are ready for their test "I knew that they would be good for the test tomorrow, that they knew the material" (5-3)	*are working hard* "I think of everything the student is accomplishing, where they are going to go, how hard they worked" (9-3)	*grasp math* "finally figure out the answer to a problem, it just makes you smile" (7-2)
connect with math "I was a little surprised on how well everyone adapted to the new material" (1-d8)		
Students don't behave	Students don't behave	Students don't behave
		behave badly "how unbelievably bad they were last time, like when they taped themselves to CPUs and drew on the monitors" (7-3)
Interns have good teaching skills	Interns have good teaching skills	Interns have good teaching skills
do a good job as teachers "about how my lessons were effective" (3-2) "happy with myself for competently explaining the problem" (2-2)	***do a good job as teachers*** "I had thoughts of being successful. I felt like more in reach. I felt like I could actually do this and be successful" (9-2)	

engage in activities that will lead to more satisfaction "you have to try and do things that will lead to that emotion … what you are looking for at the end of the day: to be satisfied with the way you taught it" (6-2)	*can accomplish anything* "I can teach anything if I put my mind to it. It made me feel like I had the world at my fingertips, that I could do whatever I wanted as a teacher" (11-2)	
have good marking skills "I thought just about my marking scheme … "O.K., maybe I marked that one too hard? Did I mark too easy?" (3-2)	*get positive feedback from students* "getting positive feedback from the students" (13-2)	
have strong connections with students "I know that they are connecting with me" (1-2)	*think highly of self* "I was proud of myself'(12-3)	
progress well "I feel that I am a good teacher, that I feel I do a good job" (3-3) "my test might have been a bit easy if they all did so well" (3-2)	*are old* "sometimes I am in the classroom thinking that I feel like my grandmother or something" (12-2)	
improve their teaching skills "I definitely want to shake it up a bit and make it interesting, make it fun" (1-2) "trying to figure out what on earth did I do to make it happen again" (4-2) "that went well, or that went without disaster, they did not kill each other in the groups" (5-2)	*students are performing well, as a consequence of their teaching skills* "I knew I must have been doing a good job. … I could help these students do this well" (12-2) "I feel that maybe the fact that I reached out, was the reason he did that good" (9-3) "I would like to think that I had something to do with students' understanding" (9-2)	
make a difference in students' lives "I am making a difference, I am getting through to the kids" (3-2)		
help students "help them increase their understanding" (2-2)		
get students motivated		

"I can get them motivated this way – I have planned a game … and get them really excited" (1-2)		
put time and effort in developing lesson plans "I am glad that I did put the effort into planning the lesson" (6-3)		
Teaching is the right career choice	Teaching is the right career choice	Teaching is the right career choice
made the right career choice "I made the right career choice and I am thinking about the future and that it holds" (3-3)	***made the right career choice*** "I felt like I could be happy … that it will be a rewarding, challenging career" (13-2)	
desire to teach again "I feel pride, happy, enthusiastic for the next day to start" (1-2)		***desire to teach again*** "can't wait to get started, I can't wait to teach" (8-2)
	enjoy teaching "I can't believe people get paid to do this – type of thing. It is great. I enjoy it so much" (11-2)	*interact with students* "there seemed to be some interaction between myself and the class" (8-2)
	enjoy classroom activities "this thing will be a common occurrence in the future" (13-3)	*students said something funny* "a student says something funny and appropriate" (7-2)
	love of math "how much I liked it" (10-2)	
Emotions affect teaching	Emotions affect teaching	Emotions affect teaching
emotions are important "I think I am going to need those encouragement" (4-2)	***emotions are important*** "I should go into each section with an open mind" (13-3)	
Interns work on their teaching strategies	Interns work on their teaching strategies	Interns work on their teaching strategies
	improve teaching strategies "this is a strategy that was successful in that class" (10-3)	***improve teaching strategies*** "thinking what I will do next" (8-d1)
follow the lesson plan "you want to go according to plan" (6-3)	*help students* "some students are not doing so well, so what more can I do to help them?" (12-2)	*made false assumptions about the class* "how my expectations for this class were off" (7-3)
	motivation is important "I think motivation is a big thing for students" (12-2)	

	students are lost "this generation is a lost cause" (12-2)	

Table 18. Thoughts appearing while experiencing pleasant emotions – quotes – retrospective view

Mastery oriented	Performance approach	Performance avoidance
have good teaching strategies "how the class went, how did I handle that, I did that well, but maybe I could have said this, or done this" (3-3) "today goes well, and tomorrow I go home and say today was really good class, and what can I do to make it good tomorrow, try to keep it" (1-3)	***have good teaching strategies*** "I always think about what I may be able to do differently, that maybe something else would have worked better if I tried it in a different day, but I always do re-evaluate my class after" (9-3) "I tried to analyze why the class went so well, and I pick up points where the students enjoyed and I was thinking about how I can use the same method and same strategy from that class in a different one" (10-3)	
do not think about it "sometimes it goes extremely well and I don't think about it a whole lot" (1-3) "it does not really make a huge turn around in emotion in any way" (5-3)		***do not think about it*** "I thought about a little bit – but not as much what caused these" (8-2) "I don't usually analyze the emotional part of it unless I have to fill out one of your journals or the experience was particularly emotional" (7-3) "I didn't really think about it much, it was the last period before Spring Break!" (7-3)
do a good job as teachers "I felt satisfied, because I had goals and I achieved them and the kids did well" (3-2)	***do a good job as teachers*** "I will always be proud of what I am doing" (12-2) "in reflection afterwards I believe I'm doing a good job" (13-3) "I feel good after getting the	

	impression the class got a lot out of my lesson" (13-3)	
share the experience "I kind of reflect on the day and I remember to repeat the good things and avoid the bad ones … just on the way home with my fellow intern I just discuss the day and kind of communicating that way" (2-3)	*students are receptive of their teaching* "'Oh yeah, they are enjoying it' or 'Oh, I am loosing them here'" (11-3) "interested in teaching, because students can surprise you" (12-d2)	*reflect on their teaching* "when I have either a good or bad class I need to think about what worked, what didn't and what can be done better" (8-d5) "become a more effective teacher and won't just be left reacting to what is going on" (8-d5) "I was glad I was finished. I was more thinking about the bad things that I thought happened – it took a while to realize that there were good things too" (8-2)

Table 19. Thoughts appearing while experiencing unpleasant emotions – quotes

Mastery oriented	Performance approach	Performance avoidance
Students don't behave	Students don't behave	Students don't behave
behave inappropriately "I was worried about whether or not they were able to stop yelling … things were racing through my head how to create a quiet environment that is good for students who are trying to do the quiz" (4-3)	*behave inappropriately* "I thought that they respect me more and it turns out that they didn't" (9-2)	*behave inappropriately* "why can't the students just behave" (8-d2)
don't pay attention "I just could not understand why they were not listening" (6-2)	***don't pay attention*** "Yes, ok, this student is not paying attention" (12-2) "students are not going to listen no matter how you are going to teach it. How are they going to deal with this?" (10-3)	
	don't do their homework "students didn't do their work" (13-d3)	
	don't cooperate "How were the students going to behave? Were they going to listen to me? Were they going to understand the material I was	

	going to teach? Would they cooperate in class? Do their work?" (10-2)	
	are missing out on the benefits of studying math "just feel sad because I feel like those students who don't realize what they are missing out on" (9-3)	
Interns are concerned about students	Interns are concerned about students	Interns are concerned about students
wonder if students progress "Oh my God, is there any hope for this student?" (3-3)	*are unable to understand math* "Why aren't they getting it?" (12-2) "I thought because they hated it, they did not understand" (12-3)	
wonder if students understand math "Are students understanding that lesson?" (6-2)	*hope that students will continue their work* "students would continue to listen and do their work" (10-d2)	
wonder about students' feelings "I was thinking about a couple of students who were receiving these comments, about how they must feel" (6-3)	*wonder if students enjoy math* "Will they like it? Will they take to it? Will they understand it?" (11-3)	
Interns are concerned about teaching strategies	Interns are concerned about teaching strategies	Interns are concerned about teaching strategies
look for alternate teaching strategies "I am running out of tactics to regain control" (4-d1) "How can I get this lesson back on track?" (5-d4) "how can I reign them back in" (5-d2)	*look for alternate teaching strategies* "this activity goes to a completely different direction from what I expected" (12-d1) "how I could have avoided it" (11-d3) "what I will do next" (9-d1)	*look for alternate teaching strategies* "thinking what I will do next" (7-d4) "trying to think of a more interesting way to explain it" (7-d8) "I started thinking what can I do differently next time" (8-3)
lack classroom management "how will I get them to settle down, how will I get them on task, how am I going to get them started" (3-3) "I was trying to think about how to get them to stop" (6-3)		***lack classroom management*** "the student is being unreasonable … why can't I get the class to calm down, I just want them to pay attention right now" (8-2)

"I was trying to find ways to – things that I could say or do to make them listen" (6-2) "when I am not dealing with students behaviour as well as I think I could and then the classes are going off track" (2-3)		
	lack teaching skills "Am I doing something wrong? Am I doing O.K. up there?" (12-2)	***lack teaching skills*** "why can't I get them to be quiet and a regular teacher can?" (8-3)
improve the situation "Why can't I get things back on track and keep the class in the order I would like?" (2-3)		*are unable to control the class* "I think I tried to get their attention at the beginning, I might have had them quiet for about 20 seconds" (8-3) "thinking that this activity goes to a completely different direction from what I expected" (8-d4)
compare students' performances "I actually think about my other classes, and kind of compare, because the other classes I am teaching" (3-3)		*do not want to deal with a rowdy class* "I should not have to deal with this" (8-3)
compare own teaching across different groups "I kind of compare and is it hard to get these students on task, is it easier to do this, or is group work easier for this class" (3-3)		*hope they would acquire more experience* "I think it will mostly pass with experience" (7-d1)
learn about new teaching methods "I am constantly thinking 'Am I doing this ok?', 'Is there another way I should be doing this?', 'Is there a better way I could explain something that I just said?'" (6-2)		*question a full time career* "I think what I would like to do is like a part time position available or substitute the first year, rather than have a full time job" (8-3) "I would have a lot of extra time preparing stuff, and I won't be so busy all the time and I will have a lot of energy to deal with the class itself, to allow me to gain the experience I need to deal with these situations every day" (8-3)
want to continue doing a good teaching job		*worry about their career choices*

"I need to be quicker to offer extra help outside" (5-2) "What else can I do with them to fill out the rest of the time? Well, are there more questions I can give them?" (5-2)		"certainly if my classes are like that every day, it would not be worth it to me … thinking if I was wasting my time trying to become a teacher" (8-3)
take actions in dealing with behavioural situations "I just remember that how I handled the situation, and that I took away his privileges" (3-2)		*adjust teaching plans* "I was thinking that if this kid wasn't in my class, it would be a lot easier to teach it" (7-2) "just wondering if we were going to finish the activity in time" (7-d3) "what happens if I have a class that is even harder to deal with? And I am not sure what the answer is to that yet" (8-3)
wonder if cooperating teacher would intervene "I was also thinking how my supervisor teacher would react, if she would speak up and discipline him, or if she will let me handle it" (3-2)		*experience turmoil teaching* "I was thinking that it was unfair to the kids for me to test them if I didn't teach it well" (7-2) "what I could get the other students to do while I helped a group of the class" (7-d7)
critique themselves "Why did I let that go on so long? Why did I allow these rather inconsequential questions continue take up class time and take up every one else's attention?" (5-2) "trying to figure out what went wrong" (6-2) "you are always going to wonder what you could have done better or differently" (6-2)		*disregard students' performances* "I got to the point towards the end where it is like, I don't care if you fail your test … you are not willing to listen to me, I don't feel like helping you" (8-3) "at this point I really don't care. You don't want to work and I don't want to deal with you. It is common that I would feel like that" (8-2) "they don't want to learn, fine, they can just do their test and see how well they do" (8-3)
		worry about the internship "I think it was partially because I was under certain instructions to get so much done, so I was

		feeling some pressure to try and actually complete a certain section of work" (8-3)
Emotions affect teaching	Emotions affect teaching	Emotions affect teaching
restrain from expressing themselves "is not something that you want to dwell on, you want to move on and make sure every time you enter a classroom, you are positive" (1-2) "it makes you strive to get over those emotions, and to be more comfortable in a classroom setting" (6-2) "you need to be able to control that feeling sometimes, and you need to realize that it is going to happen, you really going to get frustrated, you can't let that affect future instances, for future classes" (6-2) "you don't want it to control you … it is definitely important in that you try to avoid it, and you don't what to get too low or too high, you want to keep your emotions in check" (3-3) "it is not something that is easy to control, but you have to be prepared for any type of situation" (6-3) "being in control is important" (4-2)	***restrain from expressing themselves*** "I wanted to yell at the class, but wouldn't because half of them didn't deserve it" (13-3)	
acknowledge the emotions' existence "I think it is important to recognize it" (4-2)	***acknowledge the emotions' existence*** "I think all this stuff is stupid too, we hit algebra is going to be fun, they are going to love it, find it quicker and easy" (12-3)	
connect with emotions "I think good and bad emotions are necessary. The good reinforces, while the bad makes me aware of my shortcomings	***connect with emotions*** "Why was I being so frustrated?" (12-2)	

and how to improve myself. So I think that is good to be in touch with both of them" (2-3)		
put teaching in perspective "having those negative emotions makes you realize how much you have to learn" (2-2) "it is important to keep it into perspective, but you got to move on, and you still have to let yourself develop as a professional" (6-2)	*are trapped in this job* "when you get so bad you feel like you want to give up, so I felt giving up, I did not know where to go next, I did not know what to do to get these students to behave, or to learn, or to listen, so again I was lost, I felt like there was no way out" (9-2) "I don't want to teach junior high school classes … and I am saying to myself, you know one week, I just got a week left … even when I am teaching all I am thinking is my God, I just think that there is a seat in heaven reserved for any junior high teacher" (12-3)	
it is important to be less affected by such emotions "I think I need to become less affected negatively by any such experiences" (2-2)		
emotions are important "if I was frustrated all the time, I would stop teaching" (5-2) "if you are not happy maybe it is time to get out from that career and do something else" (3-2)		
want to escape the classroom "dreaming about a drum case where I can send them and I can see them and make sure they are safe, but I can't hear them" (4-2)		

Table 20. Thoughts appearing while experiencing unpleasant emotions – quotes – retrospective view

Mastery oriented	Performance approach	Performance avoidance
improve teaching strategies ""Why did that go wrong? Why were they not interested?" (3-3) "how I can make improvements,	*improve teaching strategies* "reflecting and replaying the situations in my head" (13-3) "Oh, my God, what am I doing?	*improve teaching strategies* "why was I so tense, what is causing that, and once I calmed down and I was thinking that way I was just upset with how it went

how could I have prepared more" (5-2) "I try and take lessons from that and fill it back into my teaching practice" (2-3) "what kind of management strategy does that student respond to, and what is the best way to deal with this students" (6-3) "every class it gives me the opportunity to reflect on what to do and what not to do" (4-3) "the frustration would have a positive effect on your teaching goals … when you actually sit back and kind of analyze the lessons and analyze the overall internship, it can give you new methods: ok maybe I will handle this situation differently" (3-3)	Am I doing something wrong?" (12-3) "did the students enjoy what I was doing, or were they falling asleep?" (11-3) "just think about what happened, think about what I could have done differently, did I do everything to the best of my ability" (11-3)	… Ok, what caused this, why were they acting that way, how can I do something differently" (8-3)
manage their emotions "I try to reflect on the disappointment and make sure that I change it into more of a happy feeling and positive ways" (1-2)	*manage their emotions* "I look and see where I was nervous. What did I have to do to get over that nervousness? What should I do?" (10-3) "if I am constantly frustrated I don't think I'd even be able to teach a class perfectly" (12-d1)	*manage their emotions* "I went home I started thinking what can I do better. I thought about my own mood possibly influencing students and decided to come in with more enthusiasm. I also thought about why I had been angry both a reaction to anger in the student and the general chaos in the classroom" (8-d3)
	students don't take responsibility "those students don't realize what they are missing out on" (9-3)	*focus on teaching* "I was actually upset before I went to the class, but when I went in I decided I am just going to focus on the class I am going to forget about all these other issues and I find that this really helps" (8-2)
		focus on future "Maybe this is not worth it" (8-3) "I thought more about frustrations and the difficulties involved, and I had considered seriously whether I want to teach at all" (8-

		2)

Table 21. Perceived effects of pleasant emotions – quotes

Mastery oriented	Performance approach	Performance avoidance
Immediate vs. permanent	Immediate vs. permanent	Immediate vs. permanent
are desirable to encounter in the future "you have to try and do things that will lead to that emotion" (6-2) "always try to be in a bubbly mood" (1-2) "as long as I continue to do that, satisfaction will be there" (1-2) "it will always be there" (6-2)	*are desirable to encounter in the future* "if you don't have pride, I don't think it would be much to wake up for" (9-3) "I will always be proud of what I am doing" (12-2) "hopefully for my entire career" (11-2) "stays with me for days, or longer" (9-2)	*are desirable to encounter in the future* "if my job doesn't make me happy, then I'll quit and I won't have a professional life" (7-2) "I hope that it becomes even more frequent" (8-2) "I definitely try to increase the positive ones" (8-2)
increase interns' confidence "the hope or the drive to achieve and to try and get positive results" (3-3) "it kind of opens you eyes, as to it is possible no matter how bleak it seems" (3-3) "I have done a good job and makes me feel more confident for the next time" (2-3) "it makes me want to go to the next class and do the same kind of thing" (2-3)	*increase interns' confidence* "increase my performance, which means in the future I wish to keep high energy productive lessons" (13-3) "I feel like when the students enjoy it, I will always feel pride" (11-3) "it will definitely impact other situations because I have something to pull from" (9-3) "I would try the strategy that is best with that class" (10-3) "that the next class would be as good as this one" (10-3)	*increase interns' confidence* "days like that makes it worth teaching … if I was not experiencing that during teaching I would loose what makes teaching worth for me" (8-2) "I think I am a nicer person, feeling like I am doing well" (8-2) "I imagine I will always be happy to be positively surprised and have the students' behaviour and enthusiasm exceed my expectations" (7-3)
are important to experience "it does not matter if you are a teacher or if you are driving a garbage truck, if you are not satisfied and happy with what you are doing, then every day it is going to seem to drag on, it is going to seem like a waste of time, so I think it is going to be extremely important" (3-2)	***are important to experience*** "I always will need to feel satisfied with myself" (12-2) "to be satisfied with what you do" (10-2) "it is important that students understand that you enjoy what you are trying to teach them" (11-	

	3) "my teaching abilities are up to par up where they should be, that I am always doing a good job" (12-2) "if you don't feel pride either you are not succeeding or you cut yourself off to that" (9-2) "if you didn't experience happiness then you would burn out at a very early stage" (9-3) "you have to be very proud of what you are doing … if you are not taking pride in teaching and helping these kids, in what you are doing, what is the sense of it? I am proud of myself that I am such a great teacher that they all know it now" (12-2) "you need to have pride in what you are doing … you need to be proud of what you are doing in the classroom if you want a better self, if you want to do the job properly" (12-3)	
	positive emotions rub off on students "it rubs off on students" (11-3) "if you come to class prepared, then you have a positive attitude and normally that is what they show you back" (9-3)	
Bodily effects	Bodily effects	Bodily effects
"churning, ***feeling sweaty, feeling hot***, heart beating noticeably" (6-d1)	"***feeling sweaty/ feeling hot***" (10-d8)	
"laughter" (1-d3) ***"smiling"*** (5-d2)		***"laughter"*** (7-d5) ***"smiling at students (intentionally)"*** (8-d5)
"showed my excitement by using hand gestures" (1-d7)	"tenseness (of body, jaws, fists)" (9-d4)	
"stomach butterflies" (6-d1)		
Interns' actions	Interns' actions	Interns' actions
share experiences with others	*share experiences with others*	*share experiences with others*

"we discussed how the kids did very well on the exam and she was actually pleasantly surprised, because a couple of the kids struggled in the grade 10 stuff, and their were kids that sometimes during the lessons, they kid of just sit there and don't seem very interested, so she was pleasantly surprised, and so was I" (3-2)	"I mentioned it to my cooperating teacher 'That went well. Did you see how good the student did? They were having such trouble before hand, but look at them now – how well they did this time'" (12-3) "after the class was over we talked about it and discussed the class" (10-3) "talking to people, sharing your experience with colleagues … I talk to the other interns about the positive experience that have happened, or my cooperating teachers" (9-3) "I asked my cooperating teacher after and he was like, the look on their faces should be enough" (11-3)	"I probably told my husband I had a great day that I just felt happy" (8-2)
externalize what they feel "feel the urge to act or actually act emotionally towards someone by moving closer" (1-d2) "felt like patting every student on the back for a job well done" (1-d10) "I showed my pleasure because the students were behaving and showing interest in the topic" (1-d4) "I thanked the students, I felt flattered" (3-d5)	*externalize what they feel* "feel an urge to act or actually act emotionally towards someone, by moving closer or touching" (9-d3) "felt like talking a lot" (10-d9) "try to show my enthusiasm by just talking in a certain tone and doing certain activities and being up in spirits, happy" (10-2) "smile, maybe laugh, you feel closer to people … made me feel good about myself" (9-3) "wore a smile on my face, and was in a good mood for the rest of the day" (13-3)	*externalize what they feel* "an urge to act or actually act emotionally by moving closer or withdrawing – depends on the student" (7-d3) "take a few deep breath, I got to calm down, I got to control what I will say, probably just calming down" (8-2)
encourage students "give them feedback and keep them motivated that way" (1-3) "I told you so, I told you it would get easier, the practice does pay off" (6-3)		***encourage students*** "by smiling and being really enthusiastic and encouraging the students to explore the websites" (7-3)
increase time and effort	***increase time and effort***	***mixed opinions***

"motivates you to put in that extra effort to your next lesson, for your future lessons" (6-3) "want to do more, to work hard, because you know how it felt when it did go well" (3-3)	"I work harder ... it sort of increases if you are proud of something, you want to make it better so it does increase" (12-3) "if you feel like your students are really enjoying what they are doing, and you feel good about what you do then you put in the extra time" (9-3)	"if anything, I may have actually prepared a little less. I did not need to spend as much time thinking about teaching strategies as I now had an idea of what worked" (8-2) "definitely, it made me spend more time thinking about them and more effort" (7-3) "always want to put in the time to write a fair test" (7-d9) "that it takes a lot more time to prepare for a subject that you don't know well" (7-3)
create good classroom environments "you want to approach every class with a positive attitude, whether you are having a great day, or the day is not going to go well, the students can pick up on that, not that you want to be fake and try and trick them and fool them, but you try and be positive and in that way it leads to positive emotions in their part, and leads to overall positive classroom" (3-3) "to engage the kids in a relatively exciting and fun manner and keep my classroom management in check" (2-3)	*raise awareness about the importance of experiencing pride* "this is really a key to get them to do better. Them feeling pride in their own work, getting them to respect their own work" (12-3) "you need to take pride in your work, you need to take it seriously … you should be proud you did this well, you should be proud that you tried your hardest" (12-3)	*find emotions rejuvenating* "almost rejuvenating … planning for my next lesson with more energy and creativity than I did when I wasn't happy" (7-2)
	work to reinvent themselves "you need to be able to create new feelings of pride, and in that way reach new feelings of pride. … the feeling of pride might continue for the rest of your career, but it won't be as strong of a feeling unless you reinvent yourself, so that you get new strong real feeling of pride" (11-2)	

Table 22. Perceived effects of unpleasant emotions – quotes

Mastery oriented	Performance approach	Performance avoidance
Immediate vs. permanent	Immediate vs. permanent	Immediate vs. permanent
are important for their teaching "a lack of satisfaction would have a negative influence on my professional life … if I was frustrated all the time, I would stop teaching" (5-2) "I think it is really necessary, because you require both negative and positive experiences to grow as a teacher … I think it is a necessary evil" (2-3) "the classroom can be quite frustrating at times, and that it is completely normal … it is important not to take this personally, and understand that it is a normal part of teaching" (3-3)	*are important for their teaching* "it helps better myself" (12-2) "want to strive to do better and to know more so that I will overcome it" (10-2) "keeps me grounded in reality" (11-3) "really helps to identify what my problems are, identify what is making me frustrated, it really makes me know I have to work on it" (12-3) "if you don't feel frustration, how do you know you are doing a good job?" (9-2) "indicator that things aren't going the way I'd like them to, which implies certain things need to be worked on" (13-3)	*are important for their teaching* "very important because it will remind me to develop my classroom management skills" (7-2) "it made me think about what I need to do to make things better" (8-2) "if you stop worrying that something might be your fault, then you stop evaluating yourself as a teacher and then you no longer develop professionally" (7-2)
don't last long "probably a few minutes … I try not to rehash it … definitely want to forget about it" (1-2) "hopefully with time those emotions will stick around for less and less time" (2-2) "fade into the background … will ease off as time goes on" (6-2)	***don't last long*** "the frustration itself it does not last long" (12-2)	*last a while* "as long as I teach as I'm sure there will be students who annoy me" (7-2) "its influence would last at least until the following class with the same students … frustration will always be with me throughout my career, but I don't think it will be as frequent as when I try to learn how to incorporate all the different aspects involved in teaching" (8-2) "annoyance will make me more prepared for disappointment" (7-2)
increase interns' confidence "I know that I can make up things on the fly if I need to ... that puts me more at ease" (5-2)		

"I think the more that you encounter it the better seasoned you will be and the better you will be at avoiding them" (2-3) "you learn from it … and if you teach this topic, you can approach it in a different way" (3-3) "it helps you to keep an eye out for students, where the problem is coming from … change the seating of the students, or respond to that student differently, or to keep them away for other students … it helps you in organizing your class better" (6-3)		
lead interns away from wallowing "I always want to make sure that you don't want to let the disappointments ruin your mood" (1-2) "forget about it and don't keep harping on it" (1-2)		
Bodily effects	Bodily effects	Bodily effects
"feeling sweaty, feeling hot" (2-d4)	*"felt a bit hot"* (10-2) *"feeling sweaty"* (11-d3)	*"feeling sweaty and feeling hot"* (8-d2) "feeling cold" (7-d2)
"stomach – nausea, churning" (6-d2) ***"stomach butterflies"*** (5-d1)	***"stomach nausea, churning, butterflies"*** (9-d1)	
	"heart beating noticeably" (9-d2)	***"heart beating noticeably"*** (7-d4)
"tenseness of body, ***jaws***, fists" (6-d5)		***"tenseness of jaws"*** (7-d8)
Interns' actions	Interns' actions	Interns' actions
externalize what they feel "I cried after school" (4-d1) "trembling" (6-d2) "facial expression such as frowning" (6-d4) "voiced displeasure with his actions" (3-d3)	*externalize what they feel* "generally act emotionally, such as talking a lot, or not all" (9-d1) "feel an urge to act or actually act emotionally towards someone, by moving closer or touching, making an aggressive move, or withdrawing" (9-d2)	*externalize what they feel* "purred my lips a lot" (7-d7) "frowning" (7-d6) "shrugged shoulders" (7-d8) "trembling" (7-d6) "talking a lot, frowning, I told a student I didn't like him because

"I think I came across as stone faced" (2-3) "feel like yelling / getting overly angry" (6-d3) "an urge to act emotionally towards someone, by moving closer or touching, making an aggressive move, or withdrawing" (3-d6) "became more tense and not so polite and as patient as I could/should be" (2-d4) "spoke less because they were not listening" (4-d1) "felt like voicing my displeasure to the teacher" (3-d4)		he did not bring his supplies" (8-d4) "generally act emotionally, such as talking or not at all" (8-d2)
attempt to control such emotions "I tied not too look too angry or frowned too much, I tried to keep as much of a straight face as I could" (6-3) "take a deep breath, a sigh" (6-3) "I actually think of a serene place … I got a couple of meditation techniques that get myself out of it and keep myself cool" (2-3) "whatever I learned in yoga" (5-3) "breathing in and out" (4-3) "I take a deep breath and relax any muscles that are tense like the rhomboids, like the shoulders" (5-3) "you need to be able to control that feeling sometimes … you can't let that affect future instances, for future classes" (6-2) "you don't want frustration to control you … you want to keep	*attempt to control such emotions* "just taking a breath, trying to actively calm yourself down" (13-3) "you don't want a scared look on your face and the students can watch your facial expression, you have to have a happy face for most of the time" (10-3) "just turning away for a second to regain control, holding my hands together … some kind of gesture to remind myself to stay in control of myself" (9-3) "able to control it … not be outward with it" (12-2) "try and always have a smile going in the classroom" (11-3) "to be patient and relaxed … it is important to be happy even if at times you feel sad and frustrated, keep a happy face" (10-3)	*attempt to control such emotions* "try to control my breathing and just sort of think about calmer thoughts, probably try to control my facial features … definitely I was controlling what expressions I was showing as well" (8-3) "control my facial features" (7-2) "I tried to pretend I wasn't annoyed so they wouldn't do it more" (7-2) "I ignored it [worry]" (8-2) "controlling irritation" (7-d2) "I acted like I was perfectly confident" (7-d1)

your emotions in check" (3-3) "some kind of balance to be aware of them but still be in control in order to be creative, or in order to improve" (4-3) "sometimes is not appropriate to react, to act in a certain way … you need to keep your emotions in check" (6-2) "you want to keep your level head" (3-3) "you may not feel that way going into it, but if you try your best to show your students that you are positive and in a positive mood it kind of reflects back on you, and eventually you do feel that emotion for real" (6-3) "because if you start reacting in a certain way, it feeds them and it becomes more and more negative, and I try to make light of the situation as much as I can, and try not to bring more negative emotions than are already there" (6-3)		
improve teaching techniques "once you are feeling frustration, you need to kind of in your mind step back for a second how is this lesson going? What can I do to make it better? … just a step back and kind of quickly analyze if you can find a different way" (3-3) "repeatedly tried to calm myself down, talk to them reasonably for the ones who had questions" (4-3) "just try and figure out if this is normal for them, and how to deal with this in the future" (6-3)	*improve teaching techniques* "try to prepare more, so I don't have to experience it" (11-3) "What did I do wrong? Is there anything I can do?" (12-3) "sat back reflected, thought was it my fault, what could I have done differently, would they been the same if it were someone else teaching them" (13-3) "try to relax, and say this may be a bad day, and try to carry on with the class … I try to address it immediately and see what the problem is" (10-3)	*improve teaching techniques* "in the subsequent class that I had with these students I was aware coming in that I could not act the same way as I had done and I started thinking about what can I do to make the class a little bit more interesting and we have at least a few minutes of something enjoyable in the class and we can do that" (8-3)
share experiences with others "it become the topic of discussion	***share experiences with others*** "I sit down with my cooperating	

Friday night with my girlfriend at home" (2-3) "I just try and talk it over either with my cooperating teacher or other teachers … you kind of talk it over with other people and bounce ideas back and forth" (6-3)	teachers and we talk about what I did or what I didn't do" (12-3) "I sat down in my stool … I just sat there and I just grieved and I just looked at my cooperating teacher, and she was smiling because she knew and she looked at me and she said 'They are something else, aren't they?' I just breathed … calmed down, took a breather, school is over now" (12-3) "I just talk it over with someone at the end of class, kind of calm myself down and see what has to happen next" (9-3)	
increase time and effort "I will have to work harder to achieve my goals" (3-2) "well, that class did not go quite right and I have got the same material but different group, and next time what am I going to do different, or tomorrow I have a new topic and how am I going to make it more interesting" (3-3) "will certainly increase the time spent prepping for the next lesson, as I would want to avoid such frustration the next time" (2-2) "I over prepare, and this is perhaps a result of being anxious … so I would over, over prepare" (5-2) "if I want to do a smart board activity for them, that takes a lot more time to set up the smart board, make it look pretty so it will work, it takes a lot more time for me to do that than just to write something on the white board. So when I repeatedly have experiences like this, there is no way that I take two hours every night so I can make smart board	***increase time and effort*** "when I feel nervous I have to prepare a lot more … and I do prepare a lot more" (11-3) "striving to do better" (10-3) "influences the amount of work I am doing that period" (12-3)	***mixed opinions*** "if I have the time … maybe 20 minutes … to spend a little bit of time trying to think about that, and how I would go in and act as opposed to what I would go in and teach" (8-3) "I would definitely take more time to consider how I would present it, what attitude I would have" (8-2) "I barely have enough time to prepare the basics" (8-3) "when I get annoyed at them I just want to plan an easy, boring lesson with lecturing and notes" (7-2)

files for the next day" (4-3)		
check the time "checked the time when convenient" (5-d1)	*effects on future actions* "find ways to get the parents more involved" (13-3) "was it a good way of coping with it? And if not I would try to find another way to cope with it, and if it worked how can I use it again next time" (10-3) "I need to adjust, to make sure that I am prepared" (11-3)	*act as motivator* "it will continue to be a motivating force to do better" (8-3) "is the main motivator for trying to do better. I don't want it to be my drive but certainly in my internship it was what pushing me more than anything else" (8-2)
	want to reduce the levels of frustration "I can't be this frustrated with it, they are only kids, they are only learning themselves" (12-3) "I try and hide it, so the students don't realize it, and the more nervous you are the harder it is to hide it" (11-3)	*want to escape* "at that point what I wanted to do was just go home and sleep for a while" (8-3)