

RUNNING HEAD: INCIVILITY IN THE MATHEMATICS CLASSROOM

Teachers' Perceptions of Incivility in the Mathematics Classroom

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### Abstract

Exposure to incivility in the workplace is a type of job stressor that appears to be on the rise. Studies have claimed that incivility may be a precursor to more overt, deviant behaviours such as aggression and violence (Andersson & Pearson, 1999). The current study investigates incivility in a school context – with interactions occurring between students and teachers. There is a growing body of literature examining the nature of teacher–child interaction suggesting that teachers make a unique contribution to children’s social and cognitive development. The study attempts to capture teacher observers’ perceptions of incivility with special attention being placed on interactions between teachers and students with mathematics anxiety. Specifically, how individuals perceive uncivil behaviours that are in response to an initial uncivil behaviour versus how individuals perceive uncivil behaviours that are the result of mathematics anxiety symptoms. I hypothesize that teacher observers will mistake mathematics anxiety symptoms as uncivil behaviours in students. Furthermore, I hypothesize that when the teacher is responding to an uncivil action, participants will rate the uncivil response as more justifiable when no mathematics anxiety symptoms are explained than when mathematics anxiety symptoms are explained. I hypothesize the opposite for the student responding to an uncivil action – participants will rate the uncivil response as more justifiable when mathematics anxiety symptoms are explained than when no mathematics anxiety symptoms are explained. As such, 94 school teachers enrolled in Nova Scotia Master programs in Education completed questionnaires that involved reading and responding to questions about four scenarios related to teacher and student interactions. The description of the behaviour of the student was manipulated such that the respondent was either told that the student had mathematics anxiety, or no explanation was given. Moreover, there were two student actor vignettes, and two teacher actor vignettes. The initial and responding behaviour by either party, however, was always uncivil. The results of the study indicated that all four vignettes showed significant interactions between incivility ratings (for the instigators’ and respondents’ actions) and condition (mathematics anxiety depicted or no mathematics anxiety depicted). Both hypotheses were supported. This study provides a greater understanding as to how individuals may perceive the very same uncivil behaviour differently, based on whether or not they have an attribution for the behaviour. In one case, individuals may justify acting uncivilly if it is the result of mathematics anxiety symptoms. In the other case, individuals may justify acting uncivilly if it is in response to an initial uncivil behaviour; therefore, showing a tit-for-tat perspective.

Ms. Nelson's grade 4 class is nearing the end of the school term. Jacob has been struggling to meet the math outcomes all year. He usually does not finish his homework, and when he does it looks as though he put forth about 40% effort (the answers are scattered among the page with no work shown, and the more difficult questions are not even attempted). In math class, Jacob is either disrupting other students, or is off in his own world. For instance, when Ms. Nelson is instructing the class, Jacob is daydreaming and not participating; and during individual math activity time, he chats with his neighbours and does not complete his work. Ms. Nelson is exasperated and frustrated with his lack of motivation and effort in math class. Quite often she will keep him in during recess or after school to work on the math problems that he did not complete. This makes Jacob very angry because no other student has to stay in, and he thinks it is unfair. Ms. Nelson explains to Jacob that if he would just pay attention in math class and do his work, he would not be asked to do this.

This kind of scenario seems quite common in classrooms. There usually is at least one student who will just not do the work, and when faced with the consequences, finds it very unfair. But why is this? And what can be done to help both the student and the teacher in similar circumstances? This question is very difficult to answer, mainly because there are many different and often competing perspectives involved in such interactions. For example, suppose the student in this scenario is overwhelmed. Perhaps he just does not 'get' math. If this is the case, then he is likely feeling very low confidence and great levels of frustration during math class. The teacher, however, is probably feeling frustration for very different reasons. She perhaps views Jacob's lack of work and effort as defiance; he is not doing the work and disrupting other students just to 'be bad' and she may interpret his behaviours as rude. So where does this leave us? We have a teacher who keeps a student in class for being rude and defiant, and a student who feels like he is being kept in the classroom unjustifiably because he is not as smart as the other students. This scenario demonstrates how the very same situation has the potential to produce altered perceptions from the individuals involved.

Upon reading this scenario, most of you would be able to see both the perspective of the teacher and the perspective of the student. Both individuals involved view the other individual's behaviour as rude. Perceived rudeness is actually an underlying issue that is affecting many organizations today – it is called incivility. As can be seen in the scenario, incivility is an interactive event

involving the instigator(s), the target(s), the observer(s), and the social context. Therefore, all of these contribute to and are affected by the uncivil encounter (Andersson & Pearson, 1999). Since both individuals in this scenario feel that they are the victim (or target) of incivility, both are viewed by the other person as the instigator of the uncivil behaviours. The observers in this case would be the other classmates/students, and the social context is the grade four classroom. These rude behaviours, or incivility, deserve special attention, as they can affect individuals' perceptions of fairness and justice, and ultimately determine how they feel about their situation, themselves, and those with whom they interact.

There is more occurring in this particular scenario than simple incivility, however. The question raised is: why is Jacob behaving this way? It is plausible that Jacob's behaviours in math class are the result of his anxiety towards Mathematics; in fact, the behaviours may be symptoms caused by Mathematics Anxiety. Main characteristics of Math Anxiety include: dislike, worry, and fear. Specific behavioural manifestations may involve tension, frustration, distress, hopelessness, and mental disorganization (Ma & Xu, 2004). Bringing forward the concept of incivility in this scenario, it seems possible that symptoms of Math Anxiety can mimic uncivil behaviours. Therefore, the perception of incivility by the teacher may be the result of her not knowing that math anxiety is the cause of the student's behaviours. This phenomenon needs to be looked at much more closely if incivilities in the classroom are to be kept to a minimum.

### **Current Study**

The current research seeks to accomplish two main objectives: (1) to investigate teacher observers' judgments of incivility, and (2) to determine if teacher observers' judgements of incivility change in relation to whether or not math anxiety symptoms were the explained cause of the incivility.

The majority of research on incivility is set in the workplace. However, incivility is evident in all aspects of life – in culture as a whole. More empirical evidence is required to determine the effects of incivility in non-co-worker relationships, such as those involved in student and teacher interactions. Accordingly, this study introduces a different context in which uncivil behaviours occur – within a school setting.

Like most forms of anxiety – the individual experiencing math anxiety has physiological, cognitive, and behavioural symptoms. According to Hopko, Ashcraft, Gute, Ruggiero, and Lewis (1998), there are many negative outcomes related to math anxiety, including decreased effort and negative attitudes. The current study incorporates these negative outcomes as emotional and behavioural manifestations in the students. Are teachers going to misjudge these math anxiety symptoms as uncivil behaviours?

In light of the research conducted by Andersson and Pearson (1999) on the spiralling effects of incivility, the current study is designed to examine the perceptions of teacher observers on these ‘tit for tat’ behaviours. More specifically, do teacher observers (1) detect uncivil behaviours, and (2) are they more forgiving of uncivil acts when they are in response to a perceived uncivil behaviour, rather than an explained mathematics anxiety symptom?

Based on the two main objectives, the research questions are:

1. Will teacher observers mistake behaviours of math anxiety as incivility in students?
2. Will teacher observers perception of the uncivil response change based on whether or not math anxiety symptoms were described?

Researchers have given much attention in the past few years to uncivil behaviours in the workplace, and evidence of students’ high levels of anxiety toward mathematics is abundant, and long-standing. The current study examines student and teacher interactions in regards to both uncivil behaviours and math anxiety symptoms. As such, this study reviews published research on several

variables that relate to mathematics anxiety and incivility, including: their effects, their causes, and their relevance to the classroom environment. An important backdrop for this discussion is the quality and impact of student and teacher relationships; therefore, literature in this area is reviewed as follows.

### **Teacher-Student Relationships**

According to Davis (2001), education is fundamentally interpersonal in nature. The school environment is a primary developmental context for youth, a major source of influences that guide the evolution of social behaviour (Sutherland & Oswald, 2005). Teachers are charged with helping students with learning and behaviour problems, including students with emotional and behavioural disorders (EBD), overcome the effects of developmental influences (Sutherland & Oswald, 2005). Therefore, within this school system, the relationships that develop between a student and teacher can be a powerful motivator (Davis, 2001). This is particularly true of elementary school students, whose physical context is still the self-contained classroom and where they may spend up to six hours a day interacting with a single teacher (Davis, 2001, p. 431). The quality of teacher-student relationships is not a child characteristic but a reflection of the day-to-day interactions of a dyad, reflecting characteristics of each partner as well as their interactions (Hughes, Cavell, & Jackson, 1999).

The growing body of literature examining the nature of teacher–child interaction suggests that relationships with teachers make a unique contribution to children’s social and cognitive development (Davis, 2003). According to Liljequist and Renk (2007), second only to primary caregivers, teachers are the most important adults in the lives of children and adolescents and can enhance or retard their development in a variety of different domains. A positive relationship with the teacher can act as an additional resource for a student while a difficult relationship may act as obstacle to academic success (Davis, 2001).

Research indicates the following favourable outcomes of positive teacher-student relationships: students who believe their teacher is a caring one also tend to believe they learn more (Martin, 2006); students' feelings of acceptance by teachers are associated with emotional, cognitive, and behavioural engagement in class (Martin, 2006; Hughes et. al., 1999; Davis, 2001); teachers who support a student's autonomy tend to facilitate greater motivation, curiosity, and desire for challenge (Martin, 2006; Davis, 2001); and teachers higher in warmth tend to develop greater confidence in students (Martin, 2006).

Perhaps most notably, and most relevant to incivility are the effects of teacher-student relationships on student behaviour. Research indicates that even as early as preschool, relationships with teachers are related to academic and social outcomes such as children's prosocial behaviour in the classroom and social competence (Davis, 2001, p. 432). Sutherland and Oswald (2005) suggest that more positive teacher responses might result in a slight improvement in students' classroom behaviour (i.e., a decrease in disruptive behaviours) further increasing the likelihood of positive teacher-student interactions. Therefore, teachers who praise their students' efforts, will likely receive improved behaviour in return. Davis and Dupper (2004) further emphasize this point by explaining that teachers who express confidence in their students and praise students when they do well set the foundation for building positive relationships and learning experiences. This type of positive regard enhances the students' motivation to do well and contributes to the development of a bond of loyalty between the teacher and the student. Furthermore, students' beliefs about their ability to interact with teachers may not only shape students' behaviour toward teachers but also influence the frequency of interactions with teachers (Davis, 2001).

Several researchers have suggested that a close and accepting relationship with a teacher may exert a positive influence on the development of children at risk for behavioural problems. In contrast, a teacher-student relationship characterized by high levels of conflict and controlling interactions and low levels of warmth and acceptance may serve to increase a child's risk for school maladjustment (Hughes

et. al., 1999, p. 173). Davis (2003) stresses the importance of the emotional quality of adults' interactions with children as well as their responsiveness (e.g., frequency and consistency) to children's needs. Pianta (1999) argued that teachers become increasingly important in the process of emotion regulation, through their ability to help children to accurately label, manage, and express the emotions experienced in the classroom. If teachers are able to do this, then behaviour problems will be less likely.

Performance is also influenced by teacher-student relationships. When students respect and have confidence in their teachers, they are likely to do their best. In return, when teachers respect and have confidence in students, they encourage and support the students' efforts (Davis & Dupper, 2004). Moreover, positive interactions may be interpreted by the teacher as not only reflecting social competence but intellectual competence (Davis, 2001). Hughes et al (1999) found that the degree of emotional security experienced by children in their interactions with teachers and classmates predicted teacher ratings of engagement in school. In essence, schools that nurture and support students allow learning and teaching to flourish (Davis & Dupper). These findings suggest that a supportive teacher-student relationship may exert its effect on student achievement through enhancing a child's academic motivation (Hughes et. al., 1999).

## **Math Anxiety**

### **What is Math Anxiety?**

Mathematics anxiety can be defined as "feelings of tension and anxiety that interfere with the manipulation of numbers and the solving of mathematical problems in a wide variety of ordinary life and academic situations" (Gierl & Bisanz, 1995, p. 141). In essence, it is a state of discomfort which occurs in response to situations involving mathematical tasks which are perceived as threatening to one's self esteem (Trujillo & Hadfield, 1999). According to Tobias (1993), it can cause one to forget and lose one's self-confidence. These feelings of anxiety can lead to panic, tension, helplessness, fear, distress, shame,

inability to cope, sweaty palms, nervous stomach, difficulty breathing, and loss of ability to concentrate (Trujillo & Hadfield, 1999).

Three common dimensions of mathematics anxiety include mathematics test anxiety (associated with anticipating, taking, and receiving mathematics tests), numerical anxiety (associated with number manipulation), and abstraction anxiety (associated with abstract mathematical content) (Ma & Xu, 2004). Although mathematics anxiety is not presently acknowledged by the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*; American Psychiatric Association, 1994), the suggestion has been made that mathematics anxiety be considered a genuine phobia, as it meets all of the standard diagnostic criteria for such reactions (e.g., a learned fear, stimulus and situation specific, etc.) (Hopko et al., 1998).

### **Effects of Math Anxiety**

Hopko et al. (1998) suggest that the emotional experience of math anxiety is consistent with the triple response framework of emotion, initially described by Lang (1968). This framework describes the expression of anxiety in three main systems: physiological, verbal (cognitive), and overt (behavioural). Math-anxious individuals exhibit physiological arousal, have faulty beliefs about their problem-solving abilities, and exhibit negative outcomes (Hopko et al., 1998, p. 344). In fact, anxiety about mathematics has been associated with a variety of negative outcomes, including: decreased mathematics performance, lower mathematics achievement, and fewer course enrolments in mathematics (Gierl & Bisanz, 1995). As a result, it has also been related to poor attitudes towards mathematics, low self-efficacy, and math avoidance (Cates & Rhymer, 2003). Looking back at the scenario from the beginning of the paper, Jacob seems to be experiencing many of these effects from Math Anxiety. Mainly, his performance and achievement have suffered, and he avoids math by talking to other students in his

class and not completing his homework. It is possible that he has developed a poor attitude towards mathematics and low self-efficacy in his mathematical abilities as well.

### *Mathematics Performance*

Among all negative impacts of mathematics anxiety, the most commonly discussed is the negative relationship between mathematics anxiety and mathematics performance. This negative relationship describes the consistent research finding that students with a higher level of mathematics anxiety perform at a lower level of mathematics achievement (Ma & Xu, 2004, p. 166). Researchers have now partitioned personal performance goal orientations into two components: (a) wanting to demonstrate ability (an approach component) and (b) wanting to avoid the demonstration of lack of ability (an avoidance component). The avoidance component is more strongly related to maladaptive outcomes, including avoidance behaviours, than the approach component (Turner, Midgley, Meyer, Gheen, Anderman, Kang, & Patrick, 2002). According to Turner et al. (2002), to protect self-worth, students who are uncertain about their ability to achieve competitively may develop strategies that deflect attention from their ability. Such strategies may include avoiding seeking help, resisting novel approaches to academic work, and purposefully withdrawing effort (self-handicapping). Again, referring back to Jacob, it is possible that he talks to students during individual activity time to detract from the fact that he does not know how to do the problems, and he does not want to look 'stupid' in front of his friends. Therefore, he avoids the work by socializing, and he does not attempt any problems or ask for help. According to Turner et al. (2002), there are three reasons for his behaviours: (1) many students perceive a threat to self-worth from both teachers and classmates when contemplating seeking help; (2) some students may prefer to avoid novel ways of solving problems and doing their work, fearing that they may make mistakes and appear unable; and (3) working hard can put self-worth at risk because trying hard and failing to do as well as others is compelling evidence of low ability. By not trying, the

student is able to stave off the public judgment of low ability and the causes of failure become uncertain (Turner et. al., 2002, p. 89). According to Bandalos, Yates, & Thorndike-Christ 1995), those attributing failure to a lack of effort consistently reported lower levels of anxiety than did those citing either ability or external causes, whereas those attributing success to external causes reported higher levels of anxiety.

Furthermore, Ashcraft (2002) found that for arithmetic problems with larger numbers (e.g., two-column), participants with high levels of anxiety routinely responded rapidly to these problems, sometimes as rapidly as participants with low anxiety, but only by sacrificing considerable accuracy. Therefore, by speeding through problems, highly anxious individuals minimized their time and involvement in the task, thus avoiding the uncomfortable experience that comes with the task. Although these avoidance strategies help to reduce the child's anxiety during math class, it is likely to continue to undermine performance and further hinder the individual's ability in the future.

### *Mathematics Achievement*

Avoidance strategies may not be the only factor involved in lower mathematics achievement, however. Ashcraft & Kirk (2001) suggest that Math anxiety has an impact during original learning of difficult arithmetic and mathematics, probably beginning in the early years of middle school. Math anxiety compromises the functioning of working memory on students in the math classroom, reducing the capacity needed for learning and mastery. The possibility exists that the lower working-memory capacity that seems characteristic of high-math-anxiety individuals may be at least partially responsible for the performance decrements commonly found with math anxiety. In a study performed by Cates & Rhymer (2003), students with lower mathematics anxiety were able to complete more digits correct per minute on all mathematical operations probes (i.e., addition, subtraction, multiplication, division, and linear equations). However, there were no differences between students with high or low anxiety on

the accuracy of the digits that were completed on any of the probes. Therefore, these findings support the notion that mathematics anxiety may be related to the level of learning (i.e., fluency) as opposed to overall mathematics performance (i.e., accuracy) (Cates & Rhymer, 2003). Reduced working memory capacity may have hindered the level of learning the child has achieved. Furthermore, recent research has suggested that slightly more complex problems that are longer (i.e., have more digits) and require additional operations such as carrying may interact with working memory and mathematics anxiety (Ashcraft & Kirk, 2001). It follows that cognitive performance is disrupted to the degree that the math task depends on working memory (Ashcraft, 2002). This would explain why Jacob, in the opening paragraph, was not completing the more difficult math problems in his homework assignments. It is possible that because of both students' long-term avoidance of math, and their lesser mastery of the math that could not be avoided, high-math-anxiety individuals are simply less competent at doing math (Ashcraft & Kirk, 2001).

### *Mathematics Avoidance*

As mentioned previously, highly math-anxious individuals are characterized by a strong tendency to avoid math - they take fewer elective math courses, both in high school and in college, than people with low math anxiety (Ashcraft, 2002). According to Cooper & Robinson (1991), the pursuit of mathematics courses in high school and beliefs about mathematics self-efficacy appear to be reciprocal in their influence, that is, low self-confidence in this area leads to the choice of other nontechnical electives, and having less mathematics background contributes to lowered expectations of mathematics self-efficacy. Therefore, avoiding mathematics courses ultimately undercuts their math competence and foreclosed important career paths (Ashcraft, 2002, p. 181). Furthermore, according to Ma and Xu (2004), students with mathematics anxiety that drop out of mathematics courses prematurely, develop negative attitudes toward activities involving mathematics (including working with computers), and

avoid majors and careers in need of quantitative skills. This obviously limits individuals, as many careers require knowledge of numeracy.

### **Causes of Math Anxiety**

Ma and Xu (2004) maintain that the causes of mathematics anxiety can be classified as personal, intellectual, and environmental. Personal causes include self-esteem, attitude toward mathematics, confidence in mathematics, learning style in mathematics, and influence of previous mathematics experiences (Ma & Xu). Intellectual causes include innate characteristics of mathematics (e.g. being highly abstract and being highly logical) (Tobias, 1990), mismatched learning styles, and perceived usefulness of mathematics (Trujillo & Hadfield, 1999). Environmental causes include experiences in mathematics classes and characteristics of mathematics teachers (e.g. being insensitive to students and being anxious about mathematics) (Tobias, 1990).

### *Negative Experiences in the Classroom*

Although the causes of math anxiety are undetermined, some teaching styles are implicated as risk factors (Ashcraft, 2002). In particular, teachers who use more traditional teaching methods, such as lecture, and concentrate on teaching basic skills rather than concepts; may be math anxious themselves, and therefore, avoiding problem solving through cooperative learning and projects (Trujillo & Hadfield, 1999). Students in these classrooms are likely to dislike mathematics, simply because of boredom and misunderstanding resulting from the style of teaching. Ashcraft (2002) suggests that modern society is increasingly data and technology oriented, but the formal educational system seems increasingly unsuccessful at educating students to an adequate level of “numeracy,” the mathematical equivalent of literacy (p. 181). Without this level of learning, students are not likely to build confidence in the mathematical subject, thus, increasing anxiety towards it.

Additionally, individuals who are high in math anxiety also tend to score high on other anxiety tests. The strongest interrelationship is with test anxiety, a .52 correlation (Ashcraft, 2002, p. 182). If a student has an anxiety towards test taking, it is plausible that the student has had bad experiences in the past in relations to tests. The whole premise behind mathematics tests, are to find the correct answer, and there is usually a correct way to achieve this. Stodolsky (1985) reasons that the most striking difference about mathematics is in the assumption about knowledge: its source, how one obtains access to it, and the nature of its transmission in the teaching-learning relationship. Therefore, unlike other subjects, in which many answers are possible, knowledge of mathematics involves knowing how to find the correct answer. This is apt to create even more anxiety for the already test-anxious individual.

#### *Prior Low Mathematics Achievement*

Prior low mathematics achievement appears to cause later high mathematics anxiety (Ma & Xu, 2004). This statement can be best understood by looking at Bandura's model of self-efficacy. "Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura, 1994, p. 71). Bandura stated that people engaging in new tasks make appraisals of their performance capabilities on the basis of their knowledge of how they have done in similar situations in the past (Bandura, 1986). Therefore, if an individual has performed poorly in the past, he or she is likely to anticipate performing poorly in the present on similar tasks. Referring back to Jacob, it may be possible that he has not succeeded in mathematics in the past, and has developed a low self-efficacy towards it – believing that he will perform poorly mathematically speaking in the present and future. Social comparison theory posits links with anxiety such that if students' previous perceptions of experiences in math-related

courses have not been positive, if students' comparisons of their ability have not been favorable, or both, then higher anxiety may result (Bandalos et. al., 1995).

According to Ashcraft (2002), it is not uncommon for highly math-anxious people to espouse negative attitudes toward math, and hold negative self-perceptions about their math abilities. Attitudes such as these could have an important influence on the development of mathematical skills and on the emotional reactions children associate with mathematics (Gierl & Bisanz, 1995). In particular, those who form perceptions of themselves as inefficacious tend to give up easily; dwell on their perceived deficiencies, thus detracting their attention from the task at hand; suffer from anxiety and stress; and attribute their successes to external factors (Bandura, 1977, 1982, 1986). This may explain Jacob's incomplete homework assignments and talking to friends when he is supposed to be completing math work.

### *Social Support*

According to Cooper and Robinson (1991), perceived support from parents and teachers also had a relationship with the mathematics self-efficacy measures. In a study by Trujillo and Hadfield (1999), participants with high levels of math anxiety reported that they did not have very much positive support at home. It is possible that without this support, students do not get the necessary feedback to value their effort and achievements. Ma (2003) has attested that the values that students hold about any educational pursuit can be important to its success.

Many social factors, such as peer modeling of cognitive skills, social comparison with the performances of other students, motivational enhancement through goals and positive incentives, and teachers' interpretations of children's successes and failures also affect children's judgments of their intellectual efficacy (Bandura, 1994). Turner et al. (2002) suggest that the teacher's role in classroom discourse may signal to students whether teachers think that they are capable of learning and whether

they are succeeding in meeting the teacher's expectations (p. 90). In the beginning paragraph, it is clear that Jacob's teacher is frustrated with him not doing his work. If Jacob perceives this as lack of support and confidence, then this will contribute to his self-efficacy and level of math-related anxiety.

### *Learned Behaviour*

Related to support from teachers and parents are the messages that these individuals, as well as peers consciously or unconsciously send to an individual about mathematics. For instance, according to Williams (1988), since people generally are not math anxious before going to school, math anxiety is related to the learning of mathematics. In other words, we are taught that math is something to be dreaded – it is difficult and an innate concept (you either get it, or you do not). According to Ashcraft (2002), culture abounds with attitudes that foster math anxiety: Math is thought to be inherently difficult, aptitude is considered far more important than effort, and being good at math is considered relatively unimportant, or even optional. Ma (2003) attests that students construct attitudes and anxieties about subject matters in the same ways that they form identities or come to understand other aspects of their world. This process is subject to many individual and environmental influences, such as student, family, and school characteristics.

Furthermore, teachers and parents who are afraid of math can pass on their anxiety to the next generation by consciously or unconsciously modeling behaviours of their own discomfort with the subject (Kutner, 1992). This theory shows the link to general forms of anxiety – in essence, anxiety is a learned behaviour. Therefore, the symptoms that students experience in relation to math, may be from observing others reacting this way to mathematics. Bandura's Social Learning Theory (1977) posits that people learn through observing others' behaviour, attitudes, and outcomes of those behaviours. "Most human behaviour is learned observationally through modeling: from observing others, one forms an

idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action.” (Bandura, 1977).

### **Math Anxiety in the Classroom**

Many messages about the purposes for achievement behaviours are communicated by teachers and perceived by students. Turner et al. (2002) suggest that these messages may either be communicating that demonstrating ability and outperforming others are the reasons for engaging in academic behaviour; or they may be communicating that understanding, intellectual development, and improvement are the reasons for engaging in academic behaviour. Therefore, the focus of learning may either be on performance, or on mastery.

As has been stated previously, students with math anxiety tend to deflect attention from their ability by utilizing avoidance strategies. For instance, in the beginning paragraph, it is clear that Jacob experiences a lot of pressure when Ms. Nelson stands over his desk and demands that he complete a problem for her. To ward off embarrassment from looking incapable, he tells her that he thinks it is stupid. If the mathematics classroom places an emphasis on competition by using performance goals, students with math anxiety are likely to increase their avoidance behaviours and not succeed. On the other hand, when the emphasis is on learning, understanding, and intellectual development, students are less likely to feel threatened and may not perceive a need to use these avoidance strategies (Turner et al., 2002, p. 89). Perhaps if Ms. Nelson had worked through a question together with Jacob to ensure his understanding, rather than querying him about finding the correct answer, he would have reacted in a more civil manner.

Furthermore, it has been suggested by Turner et al. (2002) that if students perceive teachers as supporting their learning through what they say, the students may be less likely to adopt these defensive measures. Conversely, if students perceive teacher discourse as non-supportive—as

suggesting that they cannot or will not meet such expectations—they may then adopt avoidance strategies. Ms. Nelson did not say that Jacob could not answer the question, but by lurking next to his desk and peeking over his shoulder, Jacob may sense a lack of trust about his abilities, and this may increase his anxieties. Therefore, it seems obvious that the way the teacher instructs and the values that the teacher places on learning, will affect a child's level of math anxiety.

## **Incivility**

### **What is Incivility?**

Observing basic rules of interpersonal demeanor and acting with social intelligence enable us to live and work together, whether colleagues or strangers (Pearson et. al., 2000, p. 123). Individuals who do not pay attention to these basic rules of demeanor may be lacking civility towards others. Civility has less to do with formal rules of etiquette than with demonstrating sensibility of concern and regard, treating others with respect (Pearson, et. al., 2000, p. 124). Therefore, incivility can be thought of as a lack of courtesy for others, or simply put, rudeness. Taken into the workplace, examples of rude behaviour can include sending a nasty and demeaning note, making accusations about a lack of knowledge, undermining credibility in front of others, and being shouted at (Johnson & Indvik, 2001). Incivility is not limited to verbal abuse, however, as it can also include nonverbal disrespectful behaviours such as glaring at, ignoring, or excluding colleagues (Lim, Cortina, & Magley, 2008).

Workplace incivility has been defined as “low intensity deviant behaviour with ambiguous intent to harm the target, in violation of workplace norms for mutual respect. Uncivil behaviours are characteristically rude and discourteous, displaying a lack of regard for others” (Andersson & Pearson, 1999, p. 452). Specifically, workplace incivility manifests itself in the form of disrespect, condescension, degradation, and so forth (Milam et. al., 2009).

According to Cortina (2008), incivility and harassment share certain features, all entailing behaving in an antisocial way; degrading, offending, or intimidating targets; and violating standards of interpersonal respect. Workplace incivility is thus embedded within the larger construct of workplace deviant behaviour, though distinct from behaviours that could be termed aggression (Blau & Andersson, 2005). It may be conceptualized as a specific form of employee deviance, which in turn represents a subset of antisocial employee behaviour (Cortina et. al., 2001). However, it is important to remember the three key characteristics that separate incivility from the other forms of antisocial behaviour, as stated by Andersson and Pearson (1999) - low intensity, ambiguous intent, and norm violation. Each will be discussed in turn.

#### *Low Intensity*

Rudeness is at the low end of the continuum of workplace abuse. Workplace rudeness isn't violence or harassment or even open conflict, although it can build up to any of those things (Johnson & Indvik, 2001). In fact, criminologists and psychologists have found that interpersonal violence often begins with rude comments and minor mistreatments (Lim et. al., 2008)

Incivility takes the form of these 'milder' mistreatments, such as condescending remarks or impolite gestures (Caza & Cortina, 2007), and is considered a less intense form of bullying or social undermining (Milam et. al., 2009). Behaviours of low-intensity involve those subtle things that may go unnoticed by members of an organization - for example, failing to say please or thank you. Many uncivil work behaviours fall into the category of daily hassles—that is, routine nuisances of everyday life (Cortina, 2008).

### *Ambiguous Intent*

The characteristic ambiguity of intent to harm differentiates incivility from other mistreatment in organizations, such as harassment and petty tyranny (Pearson et. al., 2000). Although all of these phenomena comprise behaviours that convey a lack of consideration toward others, the aim of the uncivil behaviour is not necessarily to be rude or discourteous. Because of this ambiguity, some uncivil behaviours can be attributed to instigator ignorance or oversight, or they can be attributed to target misinterpretation or hypersensitivity (Cortina et. al., 2001).

Andersson and Pearson allow that some uncivil behaviours are within the realm of aggression (those with intent to harm, but in which the intent is ambiguous to the target and/or observers), and that some uncivil behaviours lie outside the realm of aggression (those without intent to harm, but in which the intent is ambiguous) (Blau & Andersson, 2005). Furthermore, uncivil behaviours may be perceived differently by the instigator, the target, and/or observers (Andersson & Pearson, 1999). Incivility is in the 'eye of the beholder'. Uncivil behaviour overlaps with more subtle or psychological forms of aggression when it is motivated by a desire to harm the target or organization or to benefit oneself (Lim et al., 2008, p. 96).

### *Violation of Norms*

The third characteristic of incivility is the violation of workplace norms. Workplace civility is described as behaviour that helps to preserve the norms for mutual respect at work; it comprises behaviours that are fundamental to positively connecting with another, building relationships and empathizing (Pearson et. al., 2000). These norms involve awareness between members of an organization as to what behaviours are both expected and acceptable. Norms are developed from moral standards and the tradition and culture of the workplace (Pearson et. al., 2000). Although workplace norms are different for every organization, there do seem to be 'general' workplace norms

that employees in all organizations understand and recognize to be acceptable workplace behaviours. For example, most employees realize the importance of treating their co-workers and managers/bosses with respect and common courtesy. Moreover, the workplace climate, specifically whether it is formal or informal, determines many norms within the company and how employees will treat one another (Pearson et al, 2000). According to Lim et al. (2008) workplace incivility can trigger what is called disempowerment, a process in which an employee experiences a work event as an affront to his or her dignity and as a violation of basic norms of respect and consideration. This in turn triggers a negative affective response, which then disrupts the individual's occupational wellbeing.

### **Incidence of Incivility**

Thirty-six percent of employees report being a victim of incivility in a one year period (Forni, Buccino, Greene, Freedman, Stevens, & Stack , 2003) and 71 percent report being a victim over a five year time span (Cortina et. al., 2001). More specifically, 39 percent of employees had encountered uncivil behaviour an average of "once or twice," 25 percent experienced incivility "sometimes," and 6 percent endured the behaviour "often" or "many times" (Cortina et. al., 2001, p. 70). Furthermore, a survey of university students revealed that over 75 percent had experienced uncivil behaviour from other members of their institution in the prior year (Caza & Cortina, 2007). This suggests that incivility is at play in school settings as well.

These rates are extremely high and research has suggested that they will continue to grow. In fact, in a study by Pearson et al. (2000), 90 percent of respondents indicated that they think incivility is a problem, with three out of four people believing it is getting worse.

With high rates of reported incivilities by victims, a mere 11 percent of employees admitted to having instigated incivility at work (Forni et al., 2003). In another study by Johnson and Indvik (2001), 99 percent of respondents said their own behaviour was civil. This suggests that despite workers' beliefs

that incivility is a problem and on the rise, individuals perceive their own behaviour to be adequate and not contributing to the problem. Again, we are faced with opposing perceptions of uncivil encounters. If workers continue to disagree on what constitutes incivility, then the problem is likely to persist.

### **Effects of Incivility**

Exposure to incivility in the workplace is a type of job stressor that can be experienced at a personal level (being a direct target) as well as a characteristic of the work environment that can manifest at the group level (e.g., for the target's workgroup or team) (Lim et. al., 2008, p. 96).

Such experienced workplace incivility is positively associated with greater perceived psychological distress and thoughts of quitting, as well as negatively related to key facets of job satisfaction, that is, work itself, supervisor, co-worker, pay and benefits and promotions (Blau & Andersson, 2005; Cortina et. al., 2001). Each of these aspects will be considered in turn, as well as some other impacts of incivility, such as work climate, work production, and potential spiralling effects (Pearson et al., 2000; Lim et al., 2008; Johnson & Indvik, 2001; Blau & Andersson, 2005; Cortina, 2008; Milam et al., 2009)

### *Job Satisfaction*

Individuals' affective reactions to specific work events are important determinants of their attitudes and behaviours in the workplace (Lim et. al., 2008). Milam et al. (2009) suggests that over time, the experience of workplace incivility may contribute to poor job attitudes and be the root of much of the dissatisfaction and job-related strain that many workers experience. Moreover, negative events tend to produce stronger reactions than positive events do because of their more pressing and potentially harmful impact on well-being (Lim et. al., 2008, p. 97).

With more frequent experiences of disrespectful, insensitive, uncivil behaviour on the job, respondents become less satisfied with all aspects of their employment—their jobs, supervisors, coworkers, pay and benefits, and promotional opportunities (Cortina et. al., 2001). Awareness of in-group members' mistreatment could also arouse feelings of injustice, fear, or frustration, making employees feel less satisfied about their job conditions (Lim et al, 2008). Basically, affective experiences at work have a strong influence on overall job satisfaction. Job satisfaction in turn drives judgment-driven behaviours, such as turnover (Lim et. al, 2008).

### *Job Withdrawal*

Perhaps the impact of incivility is reflected most vividly regarding turnover. In nearly one-half of the cases, the uncivil treatment caused the target to contemplate changing jobs. In 12 percent of the cases, the target actually quit (Pearson et. al., 2000). Johnson and Indvik (2001) found similar results, with targets reporting the following actions: 46 percent contemplated changing jobs to avoid the instigator and 12 percent actually changed jobs to avoid the instigator.

Lim et al. (2008) explain this judgement-driven behaviour suggesting that negative feelings and perceptions about one's job and colleagues (i.e., job dissatisfaction) can reduce motivation to stay on the job and increase thoughts of leaving the organization (i.e., turnover intentions). Supporting these arguments, Pearson and colleagues (Pearson et. al., 2000; Pearson, Andersson, & Wegner, 2001) found that targets of incivility often experienced negative affective and cognitive reactions at work and many eventually quit their jobs. Furthermore, they explained how strong job markets and the diminishing loyalties of workers can increase the fallout costs of incivility, when targets or others who are offended by the encounter pursue abundant opportunities to move on to a more civil setting rather than tolerate the abuse (Pearson et al., 2000, p. 123). According to Cortina (2008), incivility disrupts employee

relationships and derails cooperation. Personnel targeted with pervasive incivility ultimately lose commitment to their organizations and exit at higher rates.

### *Psychological Distress*

While stress research typically focuses on individual predisposition as the primary cause of the malady, “much stress results from perfectly normal people reacting in a perfectly normal way to perfectly dismal work conditions” (Johnson & Indvik, 2001, p. 459). Many instances of workplace incivility would qualify as chronic stressors or hassles. These uncivil events would create “socially noxious environments” for employees, which could trigger mental and physical health problems (Lim et al., 2008).

When norms for mutual respect in the workplace are not honoured, perceptions of unfairness, or feelings of interactional injustice, occur in the target, generating a state of negative affect (Pearson et al., 2000). Furthermore, when individuals perceive their institution to be treating them unfairly, their social identity as a group member may be threatened and they may feel social exclusion. This threatens individuals’ fundamental needs for belonging, self-esteem, control and meaningful existence, which has detrimental impact on individuals’ well-being; triggering psychological distress (Milam et. al., 2009). These can culminate in depression, helplessness, low self-efficacy, and anxiety for the individual (Milam et. al., 2009).

According to Pearson et al. (2000), targets report that the impact of uncivil incidents may linger for a decade or longer after the event has occurred. This could be because these hassles can have an additive effect, accumulating over time to add to the total “wear-and-tear” experienced, as Lim et al. (2008) suggest. Another explanation is that the subtleties of incivility--the ambiguity of intent and the suspense about what may happen next--can create additional associated cognitive and affective reactions in targets, such as confusion, fear, or even a sense of panic (Pearson et. al., 2000). Mental

health symptoms (e.g., depressed mood and anxiety) may be more immediate reactions to incivility, and these psychological reactions can produce a strain on the body over time, causing significant adverse physiological effects (Lim et. al., 2008).

### *Work Climate*

Individual, group and organizational costs of incivility can be substantial. Seemingly minor instances of disrespect can have an adverse impact on the workforce (Lim et. al., 2008). The way employees treat one another impacts not only their ability to work together, but also subsequent interactions with other colleagues and bystanders (Pearson et. al., 2000). Therefore, incivility has the potential to harm targets, their fellow employees, and their entire organization, as well as their friends and family members (Pearson et. al., 2000).

According to Lim et al. (2008), negative attitudes and behaviours that an individual experiences following workplace disrespect can spread vicariously to other inhabitants of that workplace, through the collective phenomenon of “vicarious disempowerment”. Rather than retaliating directly against the original instigator, the target may redirect incivility toward a new target (Pearson et al, 2000). Furthermore, in more than nine out of ten cases, targets described their experiences to others inside or outside the organization (Pearson et al., 2000, p. 130). In these cases, the target is spreading the effects of incivility to others outside the direct reach of the uncivil behaviours. Within the workplace, two out of three targets described the incidents to peers; half of the targets detailed the incivilities to their workplace superiors; and, about 20% passed the details down to their subordinates (Pearson et. al., 2000, p. 131). Certainly, spreading such news can impact the work climate and reputation of the organization.

Additionally, if employees perceive that they have been treated unfairly, that is, a lack of justice, they can become upset and motivated to somehow reciprocate by exhibiting different types of work

deviant behaviour including: rule breaking, theft, 'cyberloafing' or 'misuse of the internet' (Blau & Andersson, 2005). Five percent of participants in a study conducted by Pearson et al. (2000) admitted that their experiences as targets of incivility led them to steal property from the organization as retaliation for the unfair treatment to which they had been subjected. In essence, incivility breeds contempt, undermines authority and angers staff. Uncivil actions disrupt work patterns and they are never to be forgotten (Pearson et. al., 2000, p. 131).

### *Work Production*

Wood and Bandura's (1989) social-cognitive theory of management posits that increased performance can only be achieved through sustained interest and positive affect. Therefore, when individuals disengage psychologically and physically from an organized context, it follows logically that their performance in that context would suffer as a result (Milam et. al., 2009). According to Pearson et al. (2000), when employees are on the receiving end of an uncivil encounter, they adjust their work effort accordingly. Furthermore, the fallout from an incident, or perceived incident, can send shockwaves throughout a company and ultimately affect performance and productivity (Johnson & Indvik, 2001).

In a study by Pearson et al. (2000), more than one-third of those who responded reported that they intentionally reduced their commitment to the organization, and nearly one-fourth admitted that they decreased work efforts as a reaction to the uncivil experience. They disengaged from tasks and activities that went beyond their job specifications and they stopped doing their best (Pearson et. al., 2000, p. 129).

Johnson and Indvik (2001) reported that 10 percent of respondents also purposefully decreased the amount of time they spent at work. In the absence of civility, with frayed relationships, the workplace had become an unpleasant environment in which they would spend less time (Pearson et al.,

2000, p. 129). Furthermore, 28 percent lost work time avoiding the instigator and 53 percent lost work time worrying about the incident or future interactions (Johnson & Indvik, 2001, p 459).

These adverse individual and collective consequences have financial implications for employers as well. They must absorb the costs of employee distraction and discontentment, job accidents, substance abuse, sick leave, work team conflict, productivity decline, and turnover (Cortina, 2008).

Johnson and Indvik (2001) suggest that rude employees and managers can cost a company millions of dollars a year, and a growing number of studies suggest that the presence or absence of rudeness at work is a key indicator of an organization's potential to shift toward the high or low end of the effectiveness bar (Johnson & Indvik, 2001, p. 457). There are even legal implications of incivility at work. Johnson and Indvik (2001) explain how hostile work environments can lead to harassment, violence and intimidation, all of which can result in court cases and further monetary costs for the organization.

### *Spiralling Effect*

According to Blau and Andersson (2005), an uncivil act instigated towards another at work can result in different dynamics: it can be nonreciprocated, reciprocated and not escalate, or escalate into a back and forth exchange which can result in more deviant behaviour. Despite its low intensity, acts of incivility can even escalate to aggression. In fact, criminologists and psychologists have found that interpersonal violence often begins with rude comments and minor mistreatments. The target then responds to these minor mistreatments with escalating rudeness, potentially spiralling into more serious forms of aggression at work (Andersson & Pearson, 1999). The accumulation of a series of low-level, aggravating encounters leads to what Andersson and Pearson (1999) define as a "tipping point," when the last minor injustice triggers intense, retaliatory aggression. In these situations of escalation, one party perceives an incivility as a threat to personal identity, an attack on self-worth, causing that

individual to behave in ways that are more overtly aggressive. At the core is each individual's desire to save face (Pearson et al., 2000, p. 130).

Pearson et al. (2000) argue that this spiralling effect is an important feature of workplace incivility because these tit-for-tat incidents of escalating intensity can have serious detrimental consequences for organizations. The organizational impact of this pattern may increase if there is a cumulative effect such that participants, witnesses or others are negatively impacted through emotional response or fatigue, or if norms are eroded by the persistence of this pattern (p. 129). Therefore, even employees who merely *observe* uncivil treatment (e.g., toward colleagues) show lower job satisfaction and commitment and greater job burnout and turnover intentions (Cortina, 2008). Lim et al. (2008) suggest that the witness of a violent event becomes a co-victim and suffers adverse effects, because the indirect exposure alone is a traumatic experience.

As mentioned previously, secondary spirals become possible when the ill effects of incivility spread throughout the organization, as the target displaces the desire to reciprocate (Pearson et al, 2000). According to Blau and Andersson (2005), secondary spirals can also occur through modelling, for example, if an uncivil exchange between workers A and B prompts worker C to uncivilly 'attack' worker D (p. 596).

### **Causes of Incivility**

In a study by Pearson et al. (2000), employees believed workplace incivility to be the result of the changing nature of work at the turn of the new millennium. Johnson and Indvik (2001) attribute incivility to the fact that many people feel overworked, stressed out, and pushed to the max. The result is unpleasant occurrences that leave us angry and willing to vent that anger on each other. Milam et al. (2009) suggest that incivility may be provoked by certain personality traits that are annoying, unusual, or bothersome. It is likely that all three of these proposed causes of incivility hold true. No one means to

be rude, yet it happens quite frequently. Therefore, it is necessary to take a closer look at the reasons behind rudeness, in order to discover how to limit its effects.

### *Work Climate*

“We are now a culture that celebrates impulse over restraint, notoriety over achievement, rule breaking over rule keeping and incendiary expression over minimal civility” (Johnson & Indvik, 2001, p. 458). In a study by Pearson et al. (2000), some participants believed that the line between appropriate and inappropriate interactions in society in general continues to blur. Individuals are unsure as to what constitutes civil behaviour. Without certain rules guiding behaviour, it is no wonder incivilities occur. Andersson and Pearson (1999) suggest that businesses are beginning to reflect the informality of society at large. This can be reflected in their casual dress, informal meetings (holding a business meeting over cocktails, for example), and such. Although these behaviours may add to employee relations by allowing for more comfort and communication, there also need to be certain boundaries that establish how to act in a workplace. In fact, Pearson et al. (2000) accredit these flatter, more casual organizational structures as the reason for incivilities, as there are fewer obvious cues as to what constitutes "proper" business behaviour (p. 127). Many researchers have suggested a clearer set of rules and/or organizational policies regarding expected levels of behaviour. With less ambiguity concerning expected behaviour, employees will likely behave more civilly towards one another. Forni et al. (2003) reported that more than one third of respondents stated that their organization either had no such policy in place, or that they were unaware if one existed. Furthermore, 50% of those respondents with a policy in place reported that it was unclear. With these large ratios of employees unsure of what is expected from them, it is no wonder that incivility is on the rise.

Technology advances also seem to be attributing to incivility. According to Pearson et al. (2000), the effects of incivility can spread more broadly and more quickly today than in the past, as technologies

facilitate rapid and asynchronous communication. Instigators of incivility can obnoxiously abuse their targets at (electronic) arm's length, for example, and then blame any foul on the terse nature of electronic messages. Additionally, participants reported the relentless demands of instantaneous electronic communication to increase office hostility (Johnson & Indvik, 2001). A majority of participants in a study by Pearson et al. (2000) cited the overwhelming number, complexity, and fragmentation of workplace relationships, facilitated by technologies such as voice mail, e-mail, and teleconferencing as the reasons for uncivil behaviours.

Another aspect of workplace climate, temporary placements, has the potential to constitute uncivil behaviours. In a study by Pearson et al. (2000), participants believed workplace rudeness and discourtesy were facilitated by weaker connections to the organization as a function of part-time, temporary, or subcontracted status. Organizations today, in times of economic crisis, have much more temporary positions than in the past. It is not uncommon for workers to view these individuals as outsiders, as all organizations operate within a larger society/culture, which certainly affects the unfolding of discrimination. The structure of society also perpetuates unequal distributions of power, and asymmetrical power combined with prejudice sets the stage for oppression (Cortina, 2008).

### *Stress*

Blau and Andersson (2005) speculated reasons for the rise in workplace incivility as follows: greater worker diversity leading to more misunderstanding; greater perceived job insecurity as companies have downsized; greater stress on employees, including being overworked; and lower general employee job satisfaction, partially as a function of worker-perceived entitlement. Johnson and Indvik (2001) suggest that the experience of distributive injustice, job dissatisfaction, and work exhaustion are factors that, over time, might cause an employee, either intentionally or unintentionally, to exhibit rude, discourteous behaviours in the workplace (Johnson & Indvik, 2001).

Not surprisingly, people don't judge things well while under stress. Their capacity for subtle discrimination is much less. People under stress lose social skills because they tend to perceive others as enemies (Johnson & Indvik, 2001). "Especially in times of conflict, when the appearance of strength may become very important, if an incivility is perceived as a threat to one's identity, it may lead to coercive behaviour" (Pearson et. al., 2000, p. 130). Downsizing, rapid growth and reorganizations all lead to stress. More and more companies are going through it, and their workers often don't handle the pressure well. Budget cuts, management changes, and other tension-producing factors can increase office hostility as well (Johnson & Indvik, 2001). Not only are individuals fearful for their jobs, but they may also be competing with one another to survive job cuts, thus increasing incivilities.

Anecdotal evidence presented by Pearson and colleagues (2000) indicates that work and information overload, leading to intensified feelings of time pressure, is a cause of increased workplace incivility. Workers are becoming exhausted by all of the competitive pressures placed upon them. Johnson and Indvik (2001) describe such pressures as: employers attempting to force more labour out of their current employees rather than creating new jobs, and technology that was supposed to free us has had the opposite effect, making one person do the job of many. In a study by Pearson et al. (2000), participants blamed these efficiency enhancers as the reason for much unchecked incivility (p. 127). "Be it time crunches, computer glitches, or harried situations, common courtesy can be simply forgotten" (Johnson & Indvik, 2001, p. 462).

Furthermore, some people have become so alienated that they feel no loyalty or attachment to their organizations. They love their work, but hate their jobs (Johnson & Indvik, 2001). If a number of individuals within a workgroup or organization are experiencing negative work attitudes, the potential for development of an incivility exchange, a secondary spiral, or escalation of exchanged incivilities to exchanged aggressive behaviours would seemingly be even greater (Johnson & Indvik, 2001, p. 609).

### **Perceptions of Incivility**

According to Davis (2001), to be successful in our relationships, we must also be able to predict and respond to the anticipated emotions of others. It is from our representational models, our beliefs about the nature of relationships and about our abilities to relate to others, that we form expectations of how others will behave. Evaluating an incident to determine whether it is uncivil involves examining the actions and perceptions of the instigator, the target, any observers of the incident, and the social setting in which the incident took place. Thus, workplace incivility can be viewed as a social interaction that unfolds among two or more parties at work, an interaction that can be interpreted differently by different parties (Pearson et. al., 2000).

How do targets of incivility determine if an action is uncivil or not? Some experts attribute rude behaviour to interpersonal conflicts. Behaviour that one person may perceive as cold, brusque or rude, another may view in a no-nonsense, competent, or efficient manner (Johnson & Indvik, 2001). Andersson and Pearson (1999) suggest that individuals who are more emotionally reactive will have more intense reactions to acts of incivility than those individuals that are more emotionally stable. This is not to say that these individuals are being too sensitive, but it suggests that these individuals may pick up on uncivil acts that others may not even notice. More specifically, Milam et al. (2009), suggest that individuals low in agreeableness and high in neuroticism may interpret uncivil actions more seriously than others. Individuals who are low in agreeableness are said to be mistrustful and sceptical (McCrae & Costa, 1987), thus, they may be more likely to see workplace incivility when it is not even present (Milam et. al., 2009). Neuroticism is marked by feelings of nervousness, worrying, and insecurity, and therefore individuals experience more negative affect towards others, causing them to perceive acts as threatening (Milam et. al., 2009).

On the contrary, according to Milam et al. (2009), individuals high in extroversion perceive a greater frequency of pleasant events and even interpret neutral events in a pleasant light. Therefore,

even if these individuals are clearly a target of incivility, they may not perceive that any type of uncivil act has occurred.

Furthermore, workers of different cultures or backgrounds may react very differently to the same behaviour. Thus, as the workplace becomes more diverse, the potential for misunderstandings or unintended offenses may multiply (Johnson & Indvik, 2001).

According to Caza and Cortina (2007), an individual's cognitive reasoning process is manifested through the attributions they make for the various outcomes or treatments they receive within the workplace. Therefore, another possible determinant of perceived incivility may be perceived intention on the part of the instigator. In other words, if the target believes that the instigator intended to do them harm or intended to irritate them, they will experience more negative affect toward the instigator. On the other hand, if the individual believes that the instigator did not mean any harm by the interaction, they are more likely to 'let it go'. If the target perceives the treatment as a mistake on the part of the instigator, the harmful consequences of incivility may be fairly limited (Caza & Cortina, 2007). In a study by Pearson et al. (2000), some targets reported giving the instigator the benefit of the doubt, and others, after quickly considering potential ramifications, became determined to carry on at work as though nothing had happened. Milam et al. (2009) suggest that individuals that are high in agreeableness have a need for harmony, and are therefore, more apt to attribute the uncivil behaviour to the situation, rather than to the individual. Instigators, too, sometimes chose to depart from the incivility spiral. They may do so by apologizing, denying intent or offering an excuse for their uncivil behaviour (Pearson et. al., 2000). However, if the target believes that the instigator purposefully treated him or her poorly, the effects of incivility will be seen.

Another important determinant of perceived incivility is whether an individual attributes negative treatment to internal characteristics, or external causes. According to Caza and Cortina (2007), this attribution will determine the ultimate reaction. In other words, if an individual believes that the

negative treatment is due to personal characteristics, she or he will often develop negative feelings about the self, which may be accompanied by self-destructive behaviour. In contrast, if the individual attributes negative treatment to external causes, that person is more likely to direct negative affective reactions to an external source, such as the institution in which the treatment was experienced (Caza & Cortina, 2007).

Some of the causes that have been noted as possible attributes to incivility may also relate to the perceptions of incivility. For example, if an individual is stressed from being overworked all week, they may be more likely to perceive an interactive event as more uncivil than they would if they were not stressed. In the opening scenario, let's assume that Ms. Nelson has had an extremely busy week. It is near the end of the school year and she has so much marking to do, she is unaware of how she will find time to do it. On top of this, Jacob refuses to do his math work. It is therefore probable that Ms. Nelson will perceive Jacob's behaviours toward her as more objectionable in a work week in which she is stressed and overworked, than she would in a regular work week. Blau and Andersson (2005) also suggest that employees who are unhappy at work for some reason may have a lower, more sensitive threshold for perceived mistreatment. If Ms. Nelson is not enjoying her job lately, then she will be more apt to react more sensitively to Jacob's behaviours. These stressors relate also to Cortina et al.'s (2001) article which describes the concept of a "tipping point". In a sense, the perpetrating actions 'build up' over time to create an immense perception of incivility. One, uncivil behaviour by Jacob is not likely to get a reaction out of Ms. Nelson, for example. But since he usually does not finish his homework and it is not uncommon for him to be disrupting other students, or is off in his own world, each additional action is likely to multiply Ms. Nelson's reaction. If subtle incivilities occur over and over again, the perception of the seriousness of the behaviour becomes much more intense.

### **Incivility in the Classroom**

The development of the student/teacher relationship is a dynamic process influenced by the beliefs, values, and skills of each member in the dyad (Davis, 2001). It has been suggested that students and teachers affect each other's behaviour in a reciprocal manner (Sutherland & Oswald, 2005). More specifically, teacher perceptions, students' classroom behaviours, and teacher responses to those behaviours interact dynamically, producing a cycle that confirms and strengthens those perceptions. Much applied research has examined the potential effects of students' problem behaviour on teacher behaviour.

If students and teachers affect each other's behaviour in a reciprocal manner, it is reasonable to hypothesize that students' levels of engagement will predict the quality of instruction that they receive in the future (Sutherland & Oswald, 2005). Therefore, students who are engaged during academic instruction are likely to be treated differently than students who are not engaged. Martin (2006) states that teachers' enjoyment, confidence, and satisfaction in their role are likely to vary as a function of their students' motivation and engagement. As has been mentioned previously, job satisfaction is critical to controlling incivility levels. Hence a student's motivation is an important aspect for teachers' capacity to cope effectively with the demands placed on them in their roles (Martin, 2006). Engaged students may have increased exposure to academic material, increased rates of opportunity to respond, superior task quality, and increased positive teacher attention (Sutherland & Oswald, 2005).

It seems possible that students who are not exhibiting desired classroom behaviour will be treated much less ideally by their teachers. A student may disrupt class, thereby escaping or avoiding academic instruction, and the teacher may subsequently provide less academic instruction to this student and make fewer academic demands in order to escape or avoid aversive interactions (Sutherland & Oswald, 2005). On the other hand, because teachers generally have a low tolerance for aggressive and socially defiant behaviour, their interactions with these children are often angry, critical,

and punishing. Behaviourally disordered children are thus more likely than their peers to experience teaching that is less responsive as well as lacking in warmth, nurturance, and encouragement (Hughes et. al., 1999). Moreover, these students are likely to receive more negative and coercive attention (Sutherland & Oswald, 2005). Lilequist and Renk (2007) explain this by stating that behaviour problems may prompt teachers to have concerns about overall disruption in the classroom and to feel an increased need to be punitive in an attempt to thwart these problematic behaviours. This provides another possible teacher reaction – instead of paying less attention to the student, the teacher provides more attention, but very negative interactions result.

Sutherland and Oswald (2005) suggest that a classroom holding students with emotional and/or behavioural problems presents an increased likelihood of bidirectional negative effects between teachers and students. Given the challenging behaviours and academic problems of many students with emotional or behavioural problems, teachers may react atypically to inappropriate (and appropriate) behaviours. Such atypical reactions may serve to exacerbate the very problems that precipitated them.

Research suggests, however, that it is not the behaviour itself that prompts such high reactions from teachers, but instead, the attribution that the teacher holds for the behaviour. For example, Poulou and Norwich (2002) found that teachers' attributions predicted their emotional and cognitive responses, which then predicted their intentional behaviour. Therefore, it is likely that teachers' perceptions of students being able to control their behavioural problems are related to how bothersome certain behavioural problems may be perceived to be and to the ratings that teachers provide regarding these behavioural problems. In a study by Liljequist and Renk (2007), teachers were more bothered by externalising than internalising behavioural problems. Further, teachers tended to attribute greater student control to externalising than internalising behavioural problems. This finding may reflect the popular conception of a biological basis to anxiety and depressive disorders, leading some to assume that such symptoms are beyond personal control. Conversely, disorders characterised

by problematic interpersonal interactions or conduct interference have not yet been subject to a similar medicalisation of etiology (Liljequist & Renk, 2007).

With this said, however, those teachers who were more distressed by students' externalising behavioural problems were also more distressed by students' internalising behavioural problems. A similar positive correlation was found for the variable of perceived control (Liljequist & Renk, 2007). These relationships suggested that some teachers are simply more prone to experiencing distress arising from their students' emotional and behavioural problems than others. Hughes et al. (1999) confirmed this by the finding that different teachers report differing levels of positivity in their relationships with the same children. According to Liljequist and Renk (2007), if teachers report being more distressed, perhaps it is related to the teachers' own level of psychological symptoms and not to the level of emotional and behavioural problems in their students. Furthermore, teachers differ in their behavioural expectations, discipline practices, teaching styles, levels of self-efficacy, ability to remain emotionally neutral in the face of child challenges, and in other ways that may account for their differing relationship experiences with the same child (Hughes et. al., 1999). Theorists have suggested that mismatches between behaviourally difficult children's interactional styles and needs and teachers' expectations, discipline approaches, and interpersonal traits negatively impact the quality of teacher-student relationships, resulting in an escalation in the child's adjustment difficulties (Hughes et. al., 1999).

According to social-ecological theories, teachers' interactions with students may shape classmates' perceptions of the child in ways that influence peer interactions that, in turn, affect the child's adjustment to school (Hughes et. al., 1999). Peer rejection, in turn, contributes to the stability of aggression and a more negative developmental course. Similarly, researchers have shown how ineffective parental responses to minor child misbehaviour can lead to reciprocal interchanges that become increasingly aversive. The child, over time, enters into similar coercive interchanges with others in his/her life, such as siblings, peers, and teachers (Sutherland & Oswald, 2005, p. 8).

Central to attachment perspectives on student–teacher relationships is the belief that students bring to the classroom relational schemas, or models, about the nature of social relationships and their social world. These models are believed to influence the quality of future relationships (e.g., with teachers) by shaping students’ interpretations of teacher initiations and responses in interactions (Davis, 2003, p. 209). It has also been suggested that transactional processes contribute to children being perceived as less competent by teachers and peers, in part through prior disturbances in parent–child relationships being internalized and carried forward by the child into subsequent interactions (Sutherland & Oswald, 2005). Moreover, applying the transactional model to teacher behaviour highlights how past experiences with students shape future responses to student behaviour. Since students with emotional and behavioural problems can be very challenging to teach, transactions with students may lead to teacher responses that amplify students’ inappropriate behaviour over time in a reciprocal/coercive fashion, thereby confirming teacher’s expectations of these students (Sutherland & Oswald, 2005, p. 9). Thus, the student may face similar responses from teachers throughout his or her school career, with clear implications for social and academic outcomes.

### **Conclusion**

With such high incidence rates of uncivil encounters and the enormous negative effects of both mathematics anxiety and incivility, it is no wonder these issues have been abundantly reviewed in the literature. The ambiguity that goes along with incivility makes it difficult to detect, let alone agree with one another on what constitutes an uncivil encounter. Therefore, incivility is likely occurring even more frequently than is reported. There is no doubt that Mathematics Anxiety exists; however, many individuals are not made aware of its effects, and teachers may not know when they are exacerbating

their students' symptoms. Unless people are made aware of these issues occurring, and the cyclical pattern of the behaviours that result, the problems will likely intensify in the future.

The current study focuses on bringing these issues to the surface and educating individuals on the effects of Mathematics Anxiety and incivility, and on the differing perceptions that can result from both.

## **Methodology**

The two main objectives of the current research study were to: (1) investigate teacher observers' judgments of incivility, and (2) determine if teacher observers' judgments of incivility change in relation to whether or not math anxiety symptoms were the explained cause of the incivility.

### **Participants**

Participants were 94 Master of Education students enrolled in programs in Nova Scotia. The students were teachers working in various school boards in the province. Of these students, 58 were Primary teachers, 29 were Secondary teachers, 5 were Resource or Learning Centre teachers, and 2 were Administrators.

### **Measures and Procedure**

Arrangements were made with professors of the courses in the Master of Education programs in order to attend their classes for the purpose of recruitment. Sessions were held by the researcher and typically involved between 10-20 participants at a time. All participants were given two informed consent forms (one for them to keep for their own records and one for the researcher to collect). This consent form described the research and the procedures that the participants were to follow, as well as the potential benefits and/or risks that may have been involved. Confidentiality was explained and participants were made aware of their voluntary participation and their right to withdraw from the study at any time. There was a section of the consent form in which participants could write down their email address if they wished to obtain the results of the study. (A copy of the consent form is attached in *Appendix A.*)

Interested students were asked to complete a short questionnaire regarding four vignettes.

Questionnaires were distributed in random order to each participant. The questionnaires were designed to have the participants read and respond to questions regarding four scenarios that involve teacher and student interactions. In each vignette, the description of the behaviour of the student was manipulated such that the respondent was either told that the student had math anxiety, or no explanation was given. Moreover, there were two student actor vignettes, and two teacher actor vignettes. The initial and responding behaviour by either party, however, was always uncivil. Participants were assigned four vignettes across which they were exposed to each possible combination of student-teacher interactions: (1) the teacher initiates the uncivil behaviours and the student responds uncivilly (with no mention of math anxiety), (2) the student initiates the uncivil behaviours and the teacher responds uncivilly (with no mention of math anxiety), (3) the teacher initiates the uncivil behaviour and the student responds uncivilly (with math anxiety explained), and (4) the student initiates the uncivil behaviour and the teacher responds uncivilly (with math anxiety explained). In addition to each participant receiving each possible combination of interactions, order effects were also controlled. As such, each questionnaire involved one of four different orders of the vignettes, which follow one another. For example, one participant received a questionnaire with the vignettes ordered as such: vignette #1, vignette #2, vignette #3, and vignette #4. The next participant's questionnaire had the vignettes ordered as such: vignette #2, vignette #3, vignette #4, vignette #1, and so on. The same series of questions followed each vignette, with six items rating the student's behaviour and the same six items rating the teacher's behaviour. The questions probed such effects as: perceived incivility on the part of the student and the teacher and the justification of behaviour, etc. This scale of questions originated from previous research conducted in the lab of Dr. Lori Francis at Saint Mary's University (These questions are attached in *Appendix C.*) (The four scenarios used in the study are also attached in *Appendix B*, with the manipulations shown in italic font for the math anxiety condition.)

Once the questionnaires had been completed, all participants were given a feedback sheet thanking them for their participation and detailing the aspects of the student-teacher relationships that the study was focusing on (a copy of this feedback sheet is available in *Appendix H.*)

### **Statistical Analysis**

The primary research question for this study was to determine whether or not teachers perceive uncivil behaviours any differently based on whether or not they know the student suffers from mathematics anxiety. This study employed a 2 (incivility rating) by 2 (math anxiety condition) mixed design ANOVA. *Incivility rating* was a within-subjects variable. Each participant rated both the student's and the teacher's behaviour on the same 6-item incivility scale for all four vignettes. *Math anxiety condition* was a between-subjects variable. For each vignette half of the participants read about an uncivil event that included an explanation of math anxiety symptoms, and the other half read about an uncivil event that had no explanation of math anxiety symptoms. Thus, the condition variable had two levels, one in which the uncivil behaviours were explained by math anxiety and another where the uncivil behaviours were not explained (See Figure 1).

The main focus of this study is on the difference between the rated incivility for the response behaviour across the conditions - more specifically, the incivility rating for the response to an uncivil action with an explanation of math anxiety symptoms, versus the incivility rating for the response to an uncivil action without an explanation of math anxiety symptoms. For each vignette, the mean incivility rating for the students' behaviour (when no math anxiety explanation was offered) is compared to the mean incivility rating for the student's behaviour (when an explanation of math anxiety was provided). The same comparison is made for the mean incivility ratings of the teachers' behaviour. I hypothesized that the same behaviour would be perceived differently (based on incivility rating), depending on whether or not the participant was told about math anxiety in the student.

With an expectation of the observer's perceived incivility rating for the student to increase (when math anxiety is not explained) and the observer's perceived incivility rating for the teacher to decrease (when math anxiety is not explained), an interaction between student and teacher incivility ratings should occur. With this said, a protocol graph of the hypothesis would have a perfect cross-over effect (see Figure 2).

Figure 1

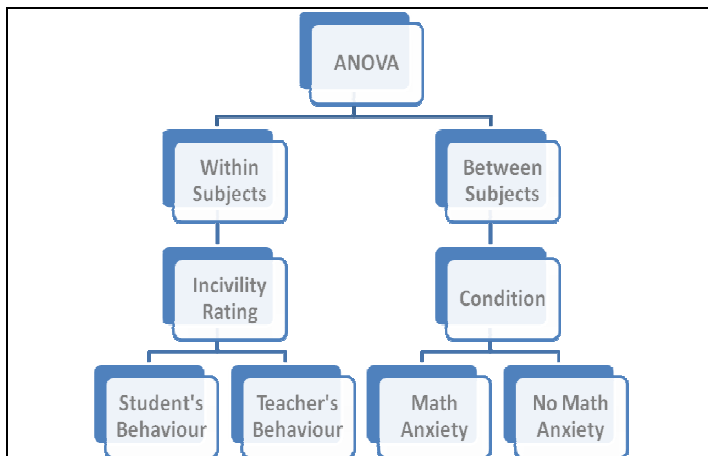
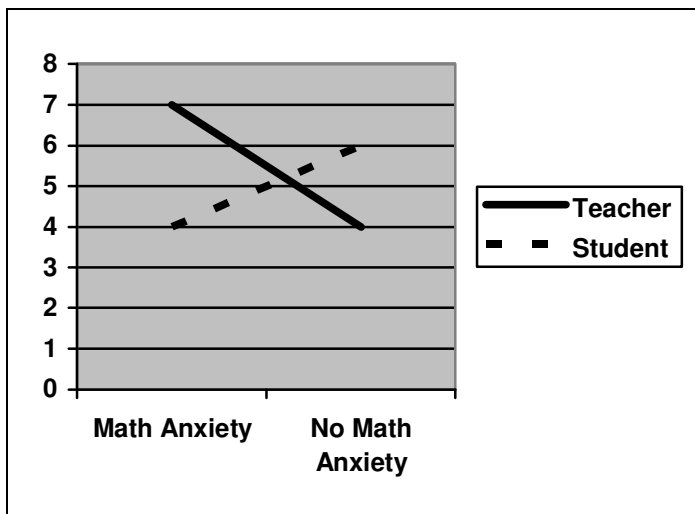


Figure 2



## Results

Before computing the scales that constituted the dependent variables, they were tested to ensure that they formed reliable measures. As reported in Table 1, all Chronback's alphas were above .80.

Table 1  
*Reliabilities for incivility measures*

Scale	$\alpha$
Vignette 1:	
Instigator	.94
Respondent	.88
Vignette 2:	
Instigator	.92
Respondent	.88
Vignette 3:	
Instigator	.94
Respondent	.91
Vignette 4:	
Instigator	.93
Respondent	.91

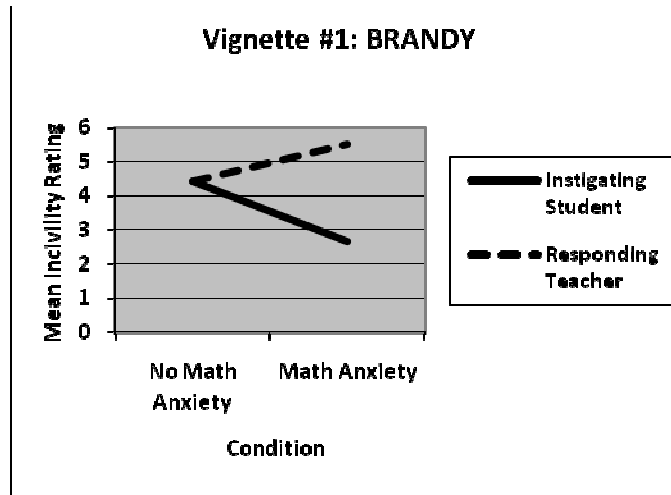
Recall that the substantive analyses across all four vignettes were 2 (incivility rating) by 2 (math anxiety condition) mixed design ANOVAs. Incivility rating is a within subject's variable. Each participant rated both the student's and the teacher's behaviour on the same six item incivility scale in all four vignettes. Two of the vignettes had the teacher instigating the uncivil encounter and two of the vignettes had the student instigating the uncivil encounter. Math anxiety condition is a between subject's variable with two levels. For each vignette, half of the participants read about a student with math anxiety symptoms identified, and the other half read about a student with no math anxiety symptoms identified. It was hypothesized that there would be a significant interaction between these two variables.

Across all four ANOVAs, two a-priori comparisons were made. The effect of math anxiety condition on participant's rating of the instigator's behaviour was examined. I hypothesized that the incivility ratings for the instigating student's behaviour would be lower when math anxiety symptoms were explained and higher when math anxiety symptoms were not explained. Although the incivility ratings for the instigating teacher's behaviour should prove to be higher when math anxiety symptoms were explained and lower when math anxiety symptoms were not explained, this was not an integral focus of the study. Instead, the incivility ratings for the student's instigating behaviour are of priority to determine whether or not participants mistake symptoms of math anxiety as incivility in students.

The second comparison provides a test of the core hypothesis in this study. In particular, the effect of condition on the participants' ratings of the respondent's behaviour was evaluated. I hypothesized that when the respondent was the teacher, participants would rate the teacher's behaviour as less appropriate (uncivil) in the math anxiety condition and more acceptable (civil) in the no math anxiety condition. The opposite result was hypothesized for the student responding to the uncivil encounter. In this instance, it was expected that participants would rate the student's behaviour as more appropriate (civil) in the math anxiety condition and less appropriate (uncivil) in the no math anxiety condition.

The first vignette depicts a student initiating an uncivil encounter by not paying attention, doodling in her notebook, and not copying down notes while her teacher is going over math problems on the board. The teacher responds to the uncivil encounter by embarrassing the student in front of the entire class. There was a significant interaction of incivility rating by condition,  $F(1, 92) = 35.37, p < .01$ . The interaction is illustrated in Figure 3.

Figure 3

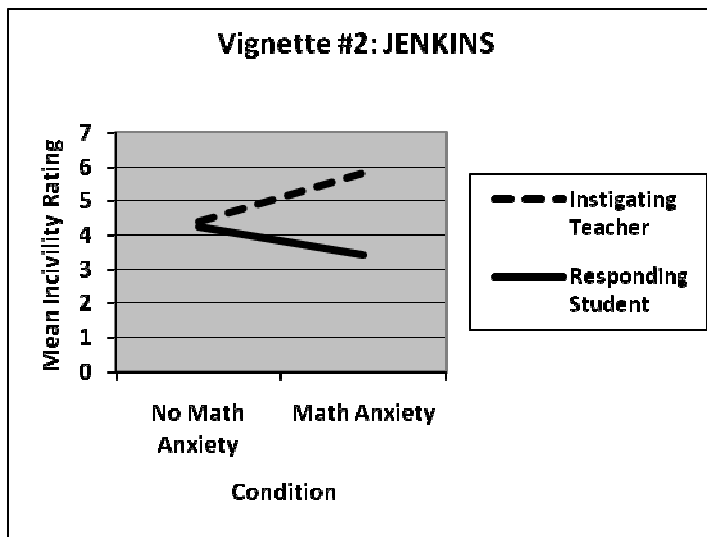


There was a simple main effect of condition on participants' rating of the instigator's behaviour,  $F(1, 93) = 45.72, p < .01$ . In this case, the participants rated the student's behaviour as less uncivil and appropriate when math anxiety symptoms were depicted ( $M = 2.67, SD = 1.20$ ) than when no math anxiety symptoms were described ( $M = 4.44, SD = 1.33$ ). Thus, it appears that the manipulation was somewhat successful as participants did rate the students' behaviour as more civil in the math anxiety condition.

There was also a simple main effect of condition on participants' rating of the respondent's behaviour,  $F(1, 93) = 14.38, p < .01$ . The teacher's response to the uncivil encounter was rated as less appropriate and more uncivil when the students' math anxiety symptoms were depicted ( $M = 5.52, SD = 1.35$ ) than when there was no depiction of math anxiety symptoms ( $M = 4.41, SD = 1.49$ ). This result provides support for the main hypothesis in this study. The same reaction was rated as more uncivil when it occurred in response to an initial uncivil action that was explained by math anxiety symptoms than when it occurred in response to an initial action that was not explained by math anxiety symptoms, and thus viewed as uncivil.

The second vignette depicts a teacher instigating an uncivil encounter by lurking over the student's desk while he is trying to work. The student responds to the uncivil encounter by refusing to do his work and yelling at the teacher to leave him alone. There was a significant interaction of incivility rating by condition,  $F(1, 92) = 20.42, p < .01$ . The interaction is illustrated in Figure 4.

Figure 4

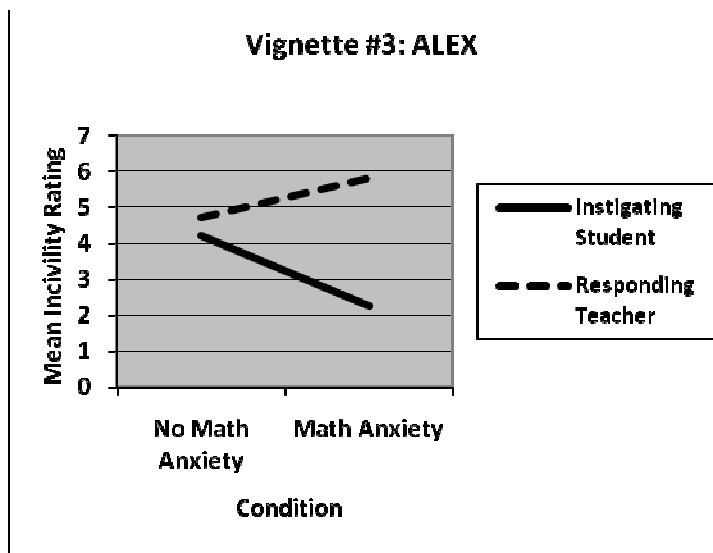


There was a simple main effect of condition on participants' rating of the instigator's behaviour,  $F(1, 93) = 23.31, p < .01$ . The participants rated the teacher's behaviour as more uncivil when the students' math anxiety symptoms were explained ( $M = 5.80, SD = 1.15$ ) than when the students' math anxiety symptoms were not explained ( $M = 4.38, SD = 1.66$ ). Therefore, it appears that the manipulation was somewhat successful as participants did rate the behaviour as less civil in the math anxiety condition. However, given that the mean rating in the no math anxiety condition was above 4.0 on a 7 point scale, the participants seemed to have perceived the teacher's lurking over the students' desk as never fully justified even when the student does not have math anxiety.

There was also a simple main effect of condition on participants' rating of the respondent's behaviour,  $F(1, 93) = 9.31, p < .01$ . The student's response was rated as less uncivil and more appropriate when math anxiety symptoms were explained ( $M = 3.42, SD = 1.33$ ) than when no math anxiety symptoms were explained ( $M = 4.24, SD = 1.29$ ). This result provides support for the hypothesis. The exact same reaction was rated as more civil when math anxiety was explained than when no math anxiety was explained.

The third vignette depicts a student initiating the uncivil encounter by consistently not completing his homework and lacking on effort. The teacher responds to the uncivil encounter by insulting his effort and giving him more homework to do. There was a significant interaction of incivility rating by condition,  $F(1, 94) = 37.77, p < .01$ . The interaction is illustrated in Figure 5.

Figure 5



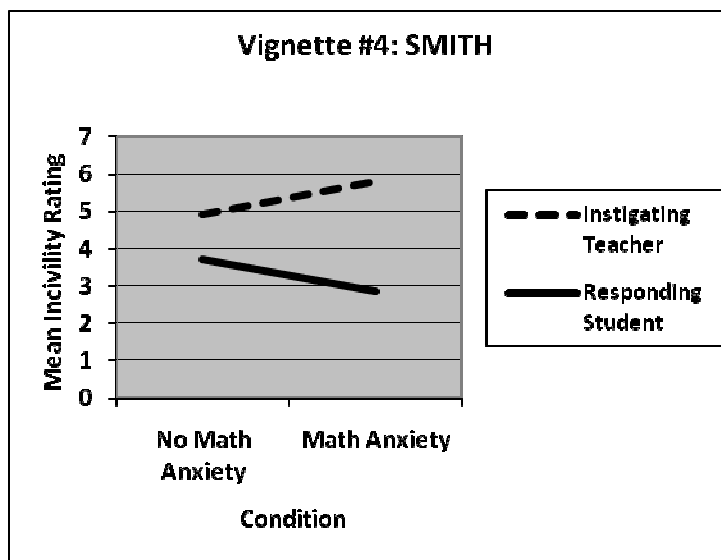
There was a simple main effect of condition on participants' rating of the instigator's behaviour,  $F(1, 93) = 56.19, p < .01$ . The participants rated the students' behaviour as more acceptable and civil when math anxiety symptoms were explained ( $M = 2.25, SD = .91$ ) than when no math anxiety

symptoms were explained ( $M = 4.22$ ,  $SD = 1.55$ ). Thus, it appears that the manipulation was successful as participants did rate the students' behaviour as more civil in the math anxiety condition.

There was also a simple main effect of condition on participants' ratings of the respondent's behaviour,  $F(1, 93) = 13.13$ ,  $p < .01$ . The teacher's response was rated as more uncivil when the students' math anxiety symptoms were explained ( $M = 5.81$ ,  $SD = 1.13$ ) than when no math anxiety symptoms were explained ( $M = 4.70$ ,  $SD = 1.76$ ). This result provides support for the hypothesis. The same reaction was rated as more uncivil when it occurred in response to an initial uncivil action that was explained by math anxiety symptoms than when it occurred in response to an initial action that was not explained by math anxiety symptoms, and thus viewed as uncivil.

The fourth vignette depicts a teacher initiating an uncivil encounter by calling the student up to the board to explain a mathematical question when the student already informed the teacher that she did not know the answer. The student responds to the uncivil interaction by raising her voice to say she does not know the answer and then running out of the room. There was a significant interaction of incivility rating by condition,  $F(1, 94) = 10.84$ ,  $p < .01$ . The interaction is illustrated in Figure 6.

Figure 6



There was a simple main effect of condition on participants' rating of the instigator's behaviour,  $F(1, 93) = 7.54, p < .01$ . In this case, the participants rated the teacher's behaviour as less appropriate and more uncivil when the student's math anxiety symptoms were explained ( $M = 5.78, SD = .91$ ) than when the student's math anxiety symptoms were not explained ( $M = 4.92, SD = 1.91$ ). Thus, it appears that the manipulation was somewhat successful as participants did rate the teacher's behaviour as less civil in the math anxiety condition. However, given that the mean rating in the no math anxiety condition was above 4.0 on a 7 point scale, the participants seemed to have perceived the teacher's request for the student to explain the answer on the board as never fully justified even when the student does not have math anxiety.

There was also a simple main effect of condition on participant's ratings of the respondent's behaviour,  $F(1, 93) = 8.43, p < .01$ . The student's response was rated as more appropriate and civil when math anxiety symptoms were explained ( $M = 2.84, SD = 1.06$ ) than when math anxiety symptoms were not explained ( $M = 3.70, SD = 1.73$ ). This result provides support for our hypothesis. The same response was rated as more civil when math anxiety symptoms were explained than when it occurred without an explanation of math anxiety symptoms. However, even though the direction of this effect supports the hypothesis, the mean incivility ratings of the student's behaviour were below 4.0 on a 7 point scale in both conditions. This may indicate that participants view the refusal to come up to the board and fleeing the classroom at least somewhat appropriate regardless of the student having math anxiety or not.

The results clearly show that all four vignettes support the hypotheses. Recall that it was expected that the observers' perceived incivility ratings of the student's behaviour should decrease (when math anxiety is explained) and the observers' perceived incivility ratings of the teacher's behaviour should increase (when math anxiety is explained), with an interaction between student and teacher incivility ratings occurring. As shown in diagram 2 in the Methodology section, a protocol graph

of the hypothesis would have a perfect cross-over effect. Although the incivility ratings did not perfectly cross-over one another, all four vignette graphs did show this expected pattern. The teacher's behaviour in the vignettes was rated as more uncivil in the math anxiety condition and the student's behaviour was rated as less uncivil in the math anxiety condition. However, in the no math anxiety condition the teacher and student's behaviour was rated as more similar to one-another based on incivility. Thus, it appears that participants did mistake math anxiety symptoms for uncivil behaviours in the students. Participants also justified acting uncivilly if in response to an initial uncivil behaviour.

### Conclusion

The purpose of this study was to determine if teacher observers detect incivilities in both student and teacher behaviours. Beyond this, I was interested in whether or not the teachers would mistake symptoms of math anxiety in their students as uncivil behaviours. As well, whether the teachers would view the same uncivil response differently depending on whether or not math anxiety symptoms were the explained cause of the incivility. I proposed that teachers would mistake symptoms of math anxiety as uncivil behaviours, and that their judgements of perceived incivility would change if they were told about math anxiety symptoms. The results clearly indicated this to be the case.

I had teacher observers rate the behaviours because I wanted to determine if incivilities are recognized in school settings. Incivility is an interactive event involving the instigator(s), the target(s), the observer(s), and the social context (Andersson & Pearson, 1999). According to Davis (2001), education is fundamentally interpersonal in nature. Therefore, the school setting is likely a place where many incivilities occur on a daily basis. Whether or not these incivilities are recognized and brought to the attention of those involved is a question that needs to be answered. Furthermore, Pearson et al. (2000) suggested that the negative effects of uncivil behaviours not only impact those individuals directly involved but witnesses or bystanders of the event as well. These observers may respond with further incivilities or they may lose respect and trust for the instigator or the organization in which the incivilities took place. All of the vignettes show mean incivility ratings of the instigating behaviour (for the 'no math anxiety' condition) of over 4 on a 7 point scale of incivility. Furthermore, all of the vignettes, except for vignette #4, show mean incivility ratings for the responding behaviour (for the 'no math anxiety' condition) of over 4 on a 7 point scale. This indicates that teachers do, in fact, perceive uncivil behaviours when they are not themselves involved in the interaction. What is even more interesting is that they not only perceive uncivil behaviours by the students, but also by the other

teachers. However, the effects of the perceived incivilities were not measured, so it cannot be determined whether or not these observers would be involved in secondary spirals.

I incorporated math anxiety symptoms as emotional and behaviour manifestations in the students because I wanted to discover if teachers would mistake these symptoms as uncivil behaviours in the students. Anxiety about mathematics has been associated with a variety of negative outcomes, including: decreased mathematics performance, lower mathematics achievement, and fewer course enrolments in mathematics (Gierl & Bisanz, 1995). It has also been related to poor attitudes towards mathematics, low self-efficacy, and math avoidance (Cates & Rhymer, 2003). If teachers mistake these negative effects of math anxiety as uncivil behaviours, then they may engage in an uncivil encounter with the student. According to Andersson and Pearson (1999), a spiral of uncivil encounters emerges from a norm being violated by the instigator, resulting in perceived injustice in the target, causing negative affect and their desire to reciprocate with further incivilities. This study illustrates how individuals perceive justification for reciprocation, per se, by using uncivil behaviours to get back at the instigator of the incivilities.

I was interested in the interaction between incivility ratings (instigator or respondent) and condition (math anxiety depicted or no math anxiety depicted). All four vignettes displayed a significant interaction. I focused on two main aspects of the interaction that I felt were important for my study: (1) the difference between the ratings for the student's behaviour across the conditions, and (2) the difference between the ratings for the response behaviour for both the student and the teacher across the conditions. For the first aspect, my expectation was that there would be a decline between the ratings for the student, with the student being rated more civilly in the math anxiety condition than the no math anxiety condition, regardless of whether or not the student initiated or responded to the interaction. This can be seen with the solid line in the four vignette graphs. Recall that in scenario 1 and 3 the student was the initiator of the uncivil encounter and in scenario 2 and 4 the student was the

responder to the uncivil encounter. My main focus; however, was on the difference between the response behaviour across the conditions – more specifically, the incivility rating for the response to the math anxiety condition versus the incivility rating for the response to the no math anxiety condition (for both student and teacher). This is illustrated with the broken line in vignette 1 and 3 and with the solid line in vignette 2 and 4. As can be seen, the line inclines when the teacher is responding to the uncivil encounter (in scenario 1 and 3) and the line declines when the student is responding to the uncivil encounter (in scenario 2 and 4). This shows a higher level of incivility for the responding teacher in the math anxiety condition and a lower level of incivility for the responding student in the math anxiety condition. All four vignettes show this pattern, and therefore, support my hypotheses.

### **Limitations**

One main limitation of this study is that the vignette format is artificial. I was interested in teacher observers' ratings of incivility; however, the teachers are merely reading about an event taking place, not experiencing it directly. Therefore, they do not have the same levels of emotionality one would expect from actually being a part of an uncivil encounter, and they also lack the other nonverbal cues that are needed to determine whether incivility is taking place or not; that is, for example, the tone of voice, the facial expressions, or the accompanying body language.

Another limitation of this study is the fact that only teachers are rating the behaviours. I did not obtain the perspectives of students in the mathematics classroom in this study. Since the study does involve student-teacher interactions, it would be more comprehensive to add to the teachers' perceptions those of the students as they observe the same situations. However, constraints beyond the control of the researcher limited the study to the teachers' perspectives; comparing these results to those of students' could be undertaken in a future study.

Another consideration is whether or not participants were being primed to the math anxiety condition. The current study attempted to minimize this as much as possible by having each participant

read two vignettes that explained math anxiety and two vignettes that did not explain math anxiety, as well as not mention the word 'math anxiety' at all. However, it is possible for someone with experience in math anxiety to have deciphered which condition they were responding to.

The final limitation is that the study only looks at uncivil behaviours and responses, and does not incorporate civil ones. More specifically, in each vignette the initial behaviour of the student or the professor is always uncivil (with the student's behaviour sometimes being the result of math anxiety); and the responding behaviour by either party is always uncivil. The study could be enhanced if civil behaviours and responses were included, thus, providing a comparison for results (a full within-subjects design). It was decided not to include civil responses because the data pool would have been too large for this thesis.

### **Future Considerations**

The current study measured the detection of incivility and the perceptions of the observers. It did not; however, get into the consequences or outcomes that may exist in a school experiencing incivility. Moreover, for a student who already experiences math anxiety, what could the effects of the uncivil encounter be? Recall that the current study only received the perceptions of teacher observers and not students. A future study could incorporate the perceptions of the student observers and add in these possible consequences that go along with incivility. For instance, does incivility affect the student's grades or confidence level? Or perhaps it limits the student's interactions with others, which could affect their future relationships with teachers and other students. If so, how? Accordingly, a future study could seek to find relationships between students' grades, drop-out rates, etc. based on their perceived generalized incivility of the school setting.

Similar to getting the student's ratings of consequences, a future study could also look at getting the teacher's opinions on how schools will likely be affected by incivility. Research has attributed job

satisfaction, job withdrawal, and psychological distress to be the effect of incivility in the workplace (Cortina et al, 2001). More drastic effects proposed by Andersson and Pearson (1999) have been violence and aggression. Would the same consequences be seen in a school setting? Could harassment and bullying behaviours be the outcome of an uncivil encounter? Possible follow-up studies could incorporate questions asking the teachers' opinions on what they would likely feel if such events happened to them, and what they would think their response would be.

A study could also be conducted to formulate possible reasons why some individuals view a situation as fair and others do not. The current study illustrated how students' math anxiety symptoms can possibly mimic uncivil behaviours, and how when the participants were made aware of these symptoms they were more forgiving of uncivil actions. Perhaps future studies could ask the participants why they rated the student the way they did. More specifically, do the participants feel that an individual with math anxiety has the right to be rude to their teacher? Or do they feel that an individual displaying signs of math anxiety is not being rude at all? Personality traits or background of the individuals may determine their susceptibility to perceived incivility. An important aspect that could be incorporated is asking the participants if they, themselves, experience math anxiety. This fact could give insight into how different individuals perceive the same action based on math anxiety symptoms.

The current study was artificial in the sense that it only involved a vignette format in which observers read about an uncivil encounter. A future study could elicit more lively observations by having real actors actually play out the uncivil interaction. This way, participants could gain valuable information from the setting, the individuals involved, and the emotions and behaviours displayed.

## **Practical Implications**

### *Incivility*

A battery of books has been created to brace leaders against the extraordinary occurrence of workplace homicide (Pearson, Andersson, & Porath, 2000). The same precautions are relevant for school settings. The fear of a student coming into the school with a gun is quite prominent, but scant attention has been paid to day-to-day incivilities in the schools. Although overtly aggressive acts of violence or harassment may be more memorable, they actually represent a small portion of disruption in applied social contexts (Cortina, Magley, Williams, & Langhout, 2001). Incivility—a low-intensity deviant behaviour—is actually more prevalent, and the associated organizational costs are real (Pearson et. al., 2000, p. 124). Furthermore, the theoretical "snow-balling effect" of incivility described by Andersson and Pearson (1999) suggests that such insidious, low level hassles have a greater impact on individual outcomes than major, exceptional stressors.

High incidence rates, in conjunction with the possibility that incivility may "spiral" into more extreme and violent behaviour (Andersson & Pearson, 1999), underscore the need for a better understanding of this phenomenon. Moreover, increasing diversity in institutions makes it likely that misunderstandings and unintentional incivilities will occur, which could trigger additional adversities (Caza & Cortina, 2007, p. 335).

It is not surprising that people treat others the way they are treated themselves. Many students are abused by faculty while they are in school. When those students become managers, they, in turn, treat their subordinates abusively. Thus, this becomes a cycle (Johnson & Indvik, 2001, p. 458). If incivilities can be detected in school settings, when students are young enough not to be affected by them, they can be stopped early, and prevent this cycle from occurring.

Furthermore, according to Milam, Spitzmueller, and Penney (2009), the self-perspective is a more private self, that refers to one's identity and consists of the cognitive processes that actually drive

behaviour, as well as one's goals and intentions. Although individuals may witness behavioural manifestations of personality, there are few visible clues of the cognitive manifestations of the private self to outside observers (p. 59). By giving some of the participants in this study explanations as to why the behaviours are occurring (i.e. math anxiety symptoms), we can see the difference of perceptions between observers who know the attributions for the behaviours, versus those who do not know. If teachers' perceptions about their students' behaviours change, based on knowledge of their student having math anxiety, then it is important to tell these teachers early if a student experiences math anxiety, to ward off any future uncivil encounters.

### *Teacher-Student Relationships*

Mental health professionals rely heavily on teachers as a source of information about children and often use their ratings in conjunction with those of other informants (Liljequist & Renk, 2007). Therefore, accurate ratings are important for future considerations regarding these individuals. Teachers, like parents, may be prone to experiencing distress related to students' emotional and behavioural problems. Given that this distress has been related to teachers' perceptions, it is likely that it also may be related to the ratings that teachers provide (Liljequist & Renk, 2007). This study incorporated math anxiety symptoms, manifested in emotional and behavioural outcomes. Therefore, it gives an indication as to the misperceptions that teachers may hold of certain students displaying emotional and behavioural problems.

Social science research in general tends to examine relationships in a unidirectional manner (Sutherland & Oswald, 2005). Contrary, research in classroom settings using the transactional model seek to examine how changes in a student's behaviour impacts the teacher, and how the teacher's changed expectations and behaviour, in turn, affect the behaviour of the student. Therefore, we are not limited to one-dimensional relationships.

By beginning to understand transactions between teachers and students, we can focus intervention efforts on multiple factors that strengthen educational outcomes (Sutherland & Oswald, 2005). Davis and Dupper (2004) reported that one of the most frequently cited reasons students gave for leaving school prior to graduation was poor relationships with teachers. By paying attention to the subtle actions that can disrupt relationships between students and teachers, and understanding their lasting effects, educational systems can prevent such incivilities from occurring.

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**Appendix A: Consent Form**  
**Teachers' Perceptions of Incivility in the Mathematics Classroom**  
Meaghan Hollett

I am a Master of School Psychology student in the Faculty of Education at Mount Saint Vincent University. As part of my Master Thesis, I am conducting research under the supervision of Dr. Genevieve Boulet and I am inviting you to participate. The purpose of the study is to examine your perceptions about student and teacher interactions in the mathematics classroom.

This study involves reading four separate scenarios describing student and teacher interactions and then answering a number of questions about each scenario. This will take approximately 10-15 minutes to complete.

There are no known risks involved in the study. **Your participation is completely voluntary. You may withdraw from this study at any time without penalty.** All information obtained in this study will be kept strictly **confidential**. Questionnaires will be numerically coded; with no identifying information included on your questionnaire. All of the findings from the study will be securely locked in a filing cabinet in a research lab at Mount Saint Vincent University at all times. Please do not put any identifying information on any of the forms. To protect individual identities further, this consent form will be sealed in an envelope and stored separately. Furthermore, the results of this study will be presented as a group and no individual participants will be identified.

If you have any questions, please contact the student researcher, Meaghan Hollett, at [REDACTED] or [REDACTED] or the thesis supervisor, Dr. Genevieve Boulet at (902) 457-6305 or [Genevieve.Boulet@msvu.ca](mailto:Genevieve.Boulet@msvu.ca). This research activity has met the ethical standards of the University Research Ethics Board at Mount Saint Vincent University. If you have any questions or concerns about how this study is being conducted and wish to speak with someone who is not directly involved, you may contact the Chair of the University Research Ethics Board (UREB) c/o MSVU Research and International Office, at (902) 457-6350 or via e-mail at [research@msvu.ca](mailto:research@msvu.ca).

**If you would like to receive the results from the study please indicate here by writing your email address. I will contact you with the finalized results in the fall of 2009.**

**Email Address:** \_\_\_\_\_

**By signing this consent form, you are indicating that you fully understand the above information and agree to participate in this study.**

\_\_\_\_\_  
**Participant's signature**                      **Date**                      \_\_\_\_\_

\_\_\_\_\_  
**Researcher's signature**                      **Date**                      \_\_\_\_\_

*One signed copy to be kept by the researcher, one signed copy to the participant.*

**Appendix B: Student-Teacher Interaction Scenarios**

***For all the scenarios - Math anxiety is described in italic font.***

- *Only half of the participants will have this included in the scenario.*
- *The other half of the participants will only see what's written in black font.*

**Scenario 1:**

- Student initiates uncivil behaviour by not paying attention and doodling
- Teacher reacts uncivilly by embarrassing the student in front of the class – “you should know this by now!”

Mrs. Peters is going over math problems with her grade four class on the board. She notices, while she's speaking, that Brandy is doodling in her notepad, not paying any attention, and not copying down notes.

*Brandy has informed her teachers and parents in the past that she just does not 'get' math. When she is listening to instructions, it is like she is listening to a different language, and she becomes quite overwhelmed by this. It takes her much longer than other students to learn the same concept.*

Mrs. Peters asks Brandy to come up to the board and display for the entire class her understanding of the problem.

The expression on Brandy's face looks as though the teacher has asked her to commit a crime. She walks up to the board, picks up the marker, and stares blankly at the problem. After about 30 seconds, Mrs. Peters says, “You should know this by now Brandy. We have been going over this concept all week! Stop doodling and start paying attention.”

**Scenario 2:**

- Teacher initiates incivility by lurking over the student's desk while he's trying to work.
- Student reacts uncivilly by refusing to do his work and saying, "I said NO! Leave me alone!"

Marc is in grade 6 and is producing below-average grades in his math class. During individual math activities periods, Marc usually fidgets with his supplies on his desk. He gets very little work done, and the work that is provided is usually simply the answer, with no trace of working out the problem.

*Marc has been struggling with math since grade 3. His grade 5 teacher warned Ms. Jenkins at the beginning of the school year that Marc can become quite frustrated with the longer math problems, especially when he is being put on the spot and required to finish quickly.*

His teacher, Ms. Jenkins, stands by his desk to make sure that he is doing his work and not bothering the other students. This frustrates Marc because she does not stand next to anyone else but him, and he feels like she is always picking on him.

When the teacher asks Marc why he is not doing any work he replies with, "I'm not doing this stuff – it's stupid!" The teacher replies, "Well I'm not going anywhere until you prove to me that you can answer at least one question. Now show me how to do the next problem". Marc glances at the page for a brief moment, then looks up at her with a red face, and says, "I said NO! Leave me alone!"

**Scenario 3:**

- Student initiates incivility by not completing his homework and lacking effort.
- Teacher responds uncivilly by insulting his effort and giving him more homework to do (but only him).

It is Friday, May 8<sup>th</sup>, and Mr. McLeod is picking up last night's homework assignments from his grade 5 math class. There are only 5 weeks left of classes and only 4 more homework assignments before the end of the year.

Alex has had difficulties all year long with homework. *When there are too many problems presented on the page, he gets overwhelmed because all the problems tend to blur together. If he does not know one answer, he becomes very frustrated and assumes he does not know the rest. When this happens he feels like a failure and gives up very easily.* Mr. McLeod has a record of 19 assignments from Alex; however 9 out of the 19 are incomplete. He has warned Alex that in order to pass math class this year, he will have to put forth more effort.

Mr. McLeod picks up Alex's notebook and glances through the assignment. He notices that Alex only completed about half of the questions, and the answers that were completed, do not show any work.

Mr. McLeod shakes his head and says, "Alex, this is very weak! I am assigning you another assignment tonight to be completed fully. Actually, from now on you are to complete 2 assignments a week instead of 1, if you want to pass math class."

**Scenario 4:**

- Teacher initiates incivility by calling the student up to the board when she does not know an answer.
- Student reacts uncivilly by raising her voice, "I DON'T KNOW THAT ONE!" and running out of the room.

Mr. Smith's grade 3 math class is having one of their weekly competitions. Every Friday morning, they are given basic math equations that they are required to solve as quickly as they can – up to 2 minutes. The students are to raise their hand when they have finished their problems and then they switch papers with a partner to score. For the trickier questions, students are called on to give their answers. The top 5 scores are given prizes.

Most of the class enjoys these competitions, but Kelly does not enjoy them. *She does not do well in math and has an especially hard time when she is being timed. She becomes very nervous before these competitions and forgets problems that she had learned previously. She freezes when she comes to an answer she does not know. Therefore, she very rarely finishes within the time limit, and is never rewarded with a prize.*

Mr. Smith calls on Kelly to explain one of the more difficult problems. Kelly tells the teacher that she did not get that one. Mr. Smith then asks her to come up to the board and try to work it out. Kelly turns bright red and says in quite a loud voice, "I DON'T KNOW that one!" then runs out of the room.

**Appendix C: Questionnaires for the Scenarios*****Questions following Student-Initiator and Teacher-Reactor Vignettes***

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Slightly Disagree</b>	<b>Neutral</b>	<b>Slightly Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

The student acted appropriately	1	2	3	4	5	6	7
The student's action was rude	1	2	3	4	5	6	7
The student's action was disrespectful	1	2	3	4	5	6	7
The student's action was insensitive to the teacher	1	2	3	4	5	6	7
The student's action was justified	1	2	3	4	5	6	7
The student's action was understandable	1	2	3	4	5	6	7
The teacher reacted appropriately	1	2	3	4	5	6	7
The teacher's reaction was rude	1	2	3	4	5	6	7
The teacher's reaction was disrespectful	1	2	3	4	5	6	7
The teacher's reaction was insensitive to the student	1	2	3	4	5	6	7
The teacher's reaction was justified	1	2	3	4	5	6	7
The teacher's reaction was understandable	1	2	3	4	5	6	7

***Questions Following Teacher-Initiator and Student-Reactor Vignettes***

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Slightly Disagree</b>	<b>Neutral</b>	<b>Slightly Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

The teacher acted appropriately	1	2	3	4	5	6	7
The teacher's action was rude	1	2	3	4	5	6	7
The teacher's action was disrespectful	1	2	3	4	5	6	7
The teacher's action was insensitive to the student	1	2	3	4	5	6	7
The teacher's action was justified	1	2	3	4	5	6	7
The teacher's action was understandable	1	2	3	4	5	6	7
The student reacted appropriately	1	2	3	4	5	6	7
The student's reaction was rude	1	2	3	4	5	6	7
The student's reaction was disrespectful	1	2	3	4	5	6	7
The student's reaction was insensitive to the teacher	1	2	3	4	5	6	7
The student's reaction was justified	1	2	3	4	5	6	7
The student's reaction was understandable	1	2	3	4	5	6	7

**Appendix D: Thank You Form**

**Teachers' Perceptions of Incivility in the Mathematical Classroom**

Meaghan Hollett

I want to thank you for your participation in this study. The purpose of this research project is to determine if individuals perceive incivility any differently when it is in response to uncivil behaviours in a school setting. Furthermore, if math anxiety is explained as the reason for the uncivil behaviours, will individuals be less forgiving of these tit for tat behaviours? Incivility is best defined as low levels of aggression or rudeness, when the instigator's intent to harm the target is unclear.

We hypothesize that (1) individuals will mistake math anxious symptoms as incivility in students, and (2) be quicker to justify uncivil behaviours when it is in response to an act that one perceives as uncivil rather than in response to math anxiety symptoms. We will be sharing the results of the study to those participants who indicated they would like to receive it (by email) once the study is completed.

Again, thank you for your participation in this study. If you have any questions, please contact either Dr. Genevieve Boulet at [Genevieve.Boulet@msvu.ca](mailto:Genevieve.Boulet@msvu.ca) or Meaghan Hollett at [Meaghan.Hollett@msvu.ca](mailto:Meaghan.Hollett@msvu.ca).

Sincerely,

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Master of School Psychology Student  
Faculty of Education

Genevieve Boulet, PhD  
Associate Professor,  
Faculty of Education