An Investigation of the Sustainability and Practicality of a Neurologically Based Behaviour Model of Support

By

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ABSTRACT

This thesis describes an investigation of a model of support for students with emotional/behavioural disorder (EBD) that involves neurologically based behaviour (NBB). Students with EBD that may involve NBB do not consistently respond to the behavioural interventions typically offered in schools. Organic neurological differences and executive functioning deficits may be implicated in neurologically based behaviour. Students who present with neurologically based behaviour characteristics often are said to have a developmentally delayed or undeveloped recognition of cause and effect. Thus, logical consequences and school wide behaviour support systems tend to be ineffective.

Some direct service providers now advocate "working from the bottom up" (Nunley, 2005; Deak, 2005; Solomon & Heide, 2005) to address students with violent or aggressive behaviour. In this study, such a bottom up approach involved the use of environmental modification, body awareness, somatic understanding, and various calming techniques and meditative strategies to quiet the physiological responses, triggered from the bottom and mid areas of the brain (Nunley, 2005; Deak, 2005; Solomon & Heide, 2005). Once the midbrain is calmed, higher order interventions, such as cognitive behavioural therapy, conflict resolution, mediation, and others were used to help students process information, put appropriate language to behavioural events, and reframe and redefine their needs in more acceptable terms (Garbarino, 2001, Nunley, 2005; Charles, 2008a).

The education system has a legal obligation to educate students with neurologically based behaviour despite the extreme behavioural issues they raise. Educators need to develop additional strategies and techniques to address students with severe behaviour. This thesis highlights a theoretical framework for a model of support for students with emotional/behavioural disorder that involves neurologically based behaviour.

Table of Contents

List of Figures

“Everyone thinks of changing the world,

no one thinks of changing themselves."

-Leo Tolstoy

Chapter 1

Introduction

Philosophy of inclusion

The Manitoba government has embraced a philosophy of inclusion...

> "as a way of thinking and acting that allows every individual to feel accepted, valued and safe. An inclusive community consciously evolves to meet the changing needs of its members. Through recognition and support, an inclusive community provides meaningful involvement and equal access to the benefits of citizenship" (Manitoba, p.1, 2006).

With the *Appropriate Educational Programming Amendment to the Public Schools Act* (2006), the government mandated provisions for appropriate educational programs to support all students, both academically and socially, in the regular classrooms of their neighbourhood schools (Manitoba, 2001).

However, there are pragmatic challenges to the province's inclusive philosophy. Students who exhibit behaviours, often interpreted as unsafe, threatening, and socially inappropriate, present unique challenges to educational service providers implementing inclusionary provisions. A fundamental contradiction exists when inclusive policies are intended to promote personal value, acceptance, and safety, yet require that inclusive educational services be provided to the small number of students who exhibit unsafe, inappropriate, and threatening behaviours.

While language-based approaches to behaviour management (Wicks-Nelson & Israel, 2006), empathy training (Borba, 2001), and conflict resolution

strategies (Johnson & Johnson, 1995) are prudent instruments to support and promote appropriate behaviour in schools, they may not be appropriate for some students. How can educators balance the needs of students with extreme and often loud behaviour in a school setting, while providing a safe, controlled, learning environment for all? Using the critical method of the immanent critique (Skrtic, 1995), I intend to show how Manitoba's policy of inclusive schools for all is contradicted and undermined by ill-conceived behaviour management practices directed at students with severe behaviour problems. I offer an alternate perspective of extreme behaviour and propose a model of support to possibly address the needs of the students with extreme behaviour, their peers, and educators, to nurture an inclusive climate for all.

Dissertation framework. The dissertation is organized in the following manner. Chapter 1 is a historical overview of children with problematic behaviour, highlighting the challenges to society that children with problematic behaviour pose. The clash of the philosophical ideal of inclusion with the intolerance of students with problematic behaviour, coupled with the inability of the education system to address problematic behaviour also will be discussed in order to highlight certain contradictions in the ways we think about and provide for these students.

Chapter 2 includes a discussion of EBD, a descriptor not in the Diagnostic and Statistical Manual of Mental Disorders 4th edition (DSM-IV), yet used as if it were a valid diagnostic construct to justify the marginalization and segregation students in the school system. In the literature reviewed, EBD typically is seen

from sociological (Valencia, 1997; Prinstein, 2003; Jasinski, 2005) and environmental perspectives (Garbarino, 2001; Evans, et al, 2004). Although helpful, these perspectives do not provide a complete understanding of the misbehaviours of all students with EBD. However, recent developments in the neurosciences (Charles, 2008; Kolb, 2008) have begun to suggest new ways of interpreting and responding to students with EBD. As a result, the term neurologically based behaviour, or NBB, (Charles, 2008; Kolb, 2008) is introduced to describe, understand, and support a sub-group of students with EDB who exhibit problematic, atypical behaviours resistant to traditional behavioural and cognitive interventions. Consequently, Chapter 2 begins with a comparison of EBD and NBB, and concludes with an introduction to the NBB Model of Support in the overall context of a review of the relevant literature. A chart comparing and contrasting EBD and NBB closes Chapter 2.

Chapter 3 describes the methodology of this study. The characteristics of the action research methodology methods and how they mesh into the study's milieu. The study, participants, setting, and data collection methods are described. Finally, the findings are reported, analyzed, and discussed in Chapter 4. The NBB Model of Support is summarized; some potential policy implications limitations and implications for further research are identified.

An immanent critique

An immanent critique is a method of critical social analysis. In this paper, two specific elements of the immanent critique will be used: (1) exposing "the contradictions between our claims and our conditions" (Skrtic, 1995, p. 47), and

(2) emancipation or finding freedom through confrontation. These elements will be used to focus critically on how the mandate of inclusive schools (Manitoba, 2005) for all students may have been contradicted through educational policies and practices. In addition, I hope that by confronting contradictions between educators' claims and practices, new and potentially emancipatory insights may be gained.

I will begin by defining the terms emotionally/behaviourally disorder (EBD) and neurologically based behaviour (NBB). Using recent developments in the neurosciences, I will focus on non-traditional ways of perceiving, interpreting, and providing support for students with NBB. Then, true to the emancipatory demands of an immanent critique, I will attempt to reconcile the disparity between theory (ideal) and practice (reality) by offering a model of support designed to provide an alternative for dealing effectively with students with NBB.

Students with severe behaviour

Students with severe behaviour typically are categorized as Emotionally Behaviourally Disordered (EBD) (Gallagher, 1999; Garbarino, 2001; Benner, Nelson & Epstein, 2002; Prinstein, 2003; Brendtro & Longhurst, 2005; Bath, 2005; Evans, Harden & Thomas, 2004; Foltz, 2006). There are some students classified as EBD for whom typical EBD strategies and behaviour support tactics do not work (Hannaford, 1995; Papolos & Papolos, 2002; Malbin, 2002; Greene, 2002; Hall & Hall, 2003; Voeller, 2004; Bath, 2006; Charles, 2008a). Their displays of misbehaviour are more exaggerated and more complicated than are those of other students with EBD. Compounding their behavioural challenges is

the apparent ineffectiveness of typical behavioural interventions (Hannaford, 1995; Papolos & Papolos, 2002; Greene, 2001; Hall & Hall, 2003; Voeller, 2004; Bath, 2006; Charles, 2008). In this paper, these students will be described as having Neurologically Based Behaviour (NBB). Students with NBB tend to display more severe behaviours than do students with EBD. In addition, typical behaviour support measures have not been successful with students with NBB. Their ability to link cause and effect may be compromised and behaviours that would typically embarrass their peers often evoke feelings of delight in them. Finally, their interpretations of situations often are confused and convoluted. Thus, the total inclusion of some students with NBB can be difficult, and may not always be in their best interests (Bowe, 2005).

A history severe behaviour

From Plato (427 BC - 347 BC) to Glasser (2001), societies have grappled with children with behaviour difficulties. The dilemma of how to manage children with problematic behaviour while protecting individuals and communities from them is centuries old.

Over the past three thousand years, children with problematic behaviour have been referred to in a number of different ways. These descriptors tended to be indicative of the time, culture, and perceptions of others in their societies. Morally corrupt, demonically processed, evil, out-of-control, incorrigible, delinquent, deviant, wayward, damaged, ill, and disturbed have been some of the descriptors used over the centuries (Shorter, 1997; Costello & Angold, 2000).

One of the earliest considerations of the effect of one's harmful actions on others is credited to Plato in the fifth century BC. Plato declared that individuals, including children, were responsible for any harm they did and, as a result, were responsible to make amends for their behaviour; a striking similarity to modern classroom behaviour specialists, such as Glasser (2001) and Gossen (2004). Plato hypothesized three causes of problematic behaviour were ignorance, confusion, and disease. He suggested problematic behaviour could be eradicated through education and guidance (Costello & Angold, 2000), a theme reminiscent of many modern day classroom behaviour specialists, such as Morrish (2001), Borba (2001), and Gossen (2004).

Centuries old themes. Although recognized and described in history, there have been few simple answers to the problems associated with the management of problematic behaviour in children. However, a few themes have emerged, including the recognition of: (a) the significant power families have over children, (b) the responsibly families have to society to raise children in a socially appropriate manner, and (c) the expectation of state intervention if familial efforts are unsuccessful (Costello & Angold, 2000). These themes ring true today.

Three thousand years of history has yielded a diverse range of responses designed to address children with problematic or unusual behaviour. Throughout much of history, children typically were treated in the same ways as adults with similar behaviours and were subject to the same consequences regardless of their age. Familial and state responses to problematic and unusual behaviour, such as stoning, shunning, banishment, burning at the stake, abandonment, or

death, were typical responses throughout the earliest centuries (Shorter, 1997; Costello & Angold, 2000). It was not until the 10th Century British King Aethelstan (AD 895-939) differentiated the state's responses to children and adults with problematic and unusual behaviour. King Aethelstan decreed that children 12 years of age and under be held to a different legal standard than those who were older (Gretsch, 1999).

Centuries of problematic behaviour. Throughout the next few centuries, societies grappled with the problem of children with problematic or unusual behaviour. Historical documentation and classic literature are sprinkled with references to problematic behaviour. By the middle of the nineteenth century, the courts in many countries had designed juvenile systems to address the problems of children with problematic behaviour. Typically, they ordered unpleasant, painful, and isolating punishments as strong deterrents to problematic behaviour (Costello & Angold, 2000). Twentieth century researchers later determined that punishment only temporarily suppresses problematic behaviour and ultimately tends to cause an increase in the undesired behaviour (Skinner, 1938; Holz & Azrin, 1962; Appel & Peterson, 1965; Griffore, 1981).

Vagrant children. Not all children with problematic behaviour commit crimes, but sometimes they may need state involvement. Many nineteenth-century scholars referred to them as vagrant children. Charles Dickens (1812-1870) wrote of the societal implications of vagrant children in many of his works, such as Oliver Twist (Davis, 1998). By the nineteenth century, children with problematic behaviour began to be categorized as delinquent, defective, or

deficient; that is criminal, disabled, or parentless. As a result, the state designed various institutions to house them. Reformatories, asylums, and orphanages spread across society's social landscape. Thus began the development of new sources of income for many tax-paying citizens, handling society's delinquent, defective, or deficient children. As the twentieth century began, institutions such as reformatories and orphanages managed children with problematic behaviour (Shorter, 1997; Costello & Angold, 2000).

The morbid defect of moral control. In 1902, *the Lancet*, a British medical journal, published an article by Edward Still, an English pediatrician. Still identified a medical condition he called "the morbid defect of moral control" (Nefray, 2004). It was a cluster of inappropriate social interactions, behaviour and attention difficulties in children with good parenting from strong families. Eight years later, Tredgold published Mental Deficiency (1910), a book describing children with excessive hyperactivity, impulsivity, lack of attention, and explosive temper outbursts. They were called feebleminded children and often had problems with self-management, resulting in a predisposition to criminal behaviour (Nefray, 2004).

In 1922, the connection between problematic behaviour and illness was recognized when an increase in post-encephalitic behavior disorder occurred after a group of children recovered from an encephalitis epidemic after World War I. Post-encephalitic behaviour disorder was characterized by hyperactivity, impulsiveness, and problematic behaviour, reminiscent of Stills's notion of moral defect (Rosenhek, 2007). Researchers in the mid twentieth century began to

attribute children's problematic behaviour to subtle brain damage, although little physical evidence of brain damage existed (Reynolds & Fletcher, 2000). Thus, the morbid defect of moral control, evolved into minimal brain damage. In the early 1960's, minimal brain damage became minimal brain dysfunction due to the lack of blatant evidence of brain damage (Reynolds & Fletcher, 2000).

Later in the decade, the words hyperactive and hyperkinetic were used to describe children who exhibited excess movement, impulsiveness, blatant disregard to rules, and short attention spans. In 1968, Minimal Brain Dysfunction became Hyperkinetic Reaction of Childhood and was included in the second edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) with a behavioural definition of the disorder (Nefsky, 2004).

Connors Rating Scale. Research continued and in the early 1970's a Harvard University researcher, Keith Connor, standardized behaviour-rating scales to assist in diagnoses of pediatric mental health disorders (Nefsky, 2004). These rating scales provided a tool for practitioners to classify childhood disorders and to standardize diagnostic criteria. The Connors rating scales were designed to be used to diagnose attention deficit hyperactivity disorder, oppositional defiant disorder, conduct problems, cognitive problems, family problems, emotional difficulties, anger control and anxiety problems and are still used today (Reynolds & Fletcher, 2000).

In 1980, the American Psychiatric Association (APA) used the terms attention deficit disorder (ADD) and attention deficit disorder with hyperactivity (ADHD) to describe clusters of behaviour difficulties in children. Criteria for these

diagnoses were published in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM III) (Nefsky, 2004). In 1987, the APA renamed the disorder Attention Deficit Hyperactivity Disorder, noting it was a medical diagnosis that described behavioral problems that were different from those caused by emotional turmoil, such as divorce or other trauma.

Behaviour modification. During the last twenty-five years of the century, behaviour modification provided viable interventions to address problematic behaviour (Barkley, 1999). Token economy systems, point systems, graphic supports, and other reward systems were common in many schools. However, behaviour modification techniques were not always effective, and could exacerbate problematic behaviour in some children (Packer, 2002). With respect to some students with behaviour problems, behaviour modification techniques may be based upon on a number of incorrect assumptions. Many behaviour modification interventions assume the student, (a) desires to be like his or her peers, (b) has the ability to interact and comprehend as his or her peers, (c) has similar values to his or her peers, and (d) learns in a globally generic manner like his or her peers. School based behaviour modification programs often fail to consider the implications of possible neurological differences that may affect academic ability and comprehension (Packer, 2002).

Human rights and education. Inclusive education developed from the belief that education is a basic human right and provides the foundation for a more just society (Priestly, 2006). Manitoba's strong commitment to inclusive education became evident with an amendment to the Public Schools Act entitled

Appropriate Educational Programming in Manitoba. Aligned with the Canadian Charter of Rights and Freedoms, The Human Rights Code of Manitoba, and legislation in other provinces, the amendment provides a framework for supporting students with special needs in Manitoba classrooms (Manitoba, 2006). However, appropriate educational programming is not clearly defined, resulting in ambiguity. For example, including students with the propensity to violent, unacceptable behaviour into inclusive schools poses real dilemmas for educators. Do inclusive classrooms provide the most appropriate educational programming for every student? Bowe (2005) argues that inclusion may not offer appropriate educational services or be in the best interests of some children. This leads to the question, is inclusion in the best interests of every student? Is Manitoba's policy of inclusive schools for all contradicted and undermined by ill-conceived behaviour management practices directed at students with problematic behaviour problems and a lack of systemic infrastructure in which to respectfully address the challenging situations?

A special group of students

In order to respect the privacy of those I have worked with, pseudonyms are used throughout this thesis. The students' pseudonyms are alphabetized, with the name of the first student mentioned beginning with the letter A. The pseudonyms for the subsequent students were assigned in ascending alphabetical order. The educators' pseudonyms were alphabetized in reverse order beginning with the letter Z.

For over a decade, I was privileged to be the teacher, of a group of 8-13 year old students with problematic behaviour in a self-contained classroom. Although I was their teacher, I was also a student as they taught me about their lives, their issues, and how best to reach and teach them. I learned that their tenacious resilience needed to be recognized and acknowledged.

Complex issues typically influence students with problematic behaviour. As a result, other systems, such as family services, mental health, and justice often were involved with these students. While the services from other systems were helpful, the silver bullet we in the school system were looking for often was not there. Circumstances, families, and situations often could not be "fixed" as the professionals involved thought they should be. The silver bullet did not exist, and so we fell back on gentle hope and quiet recognition of the resilience of the students. These students, their families, and their communities were surviving; we needed to celebrate that.

Wired differently. I did not develop a true understanding of brain differences until the day a student, who from birth, had had the best psychiatric, medical, and family services care, screamed obscenities at a fellow student, punched a hole in the classroom wall, stormed into the Quiet Room, rolled himself in a little ball, and sobbed until he was wet with his own tears. After he regained a degree of composure, I asked him why he was crying. He replied, "Oh, I'm just so happy because it's just about Halloween." When I asked his pediatric psychiatrist about this, his reply was the child's brain was wired differently, and that was his "normal" at that particular time. No medication

change, no amount of therapy, no magic bullet would change how this boy interpreted and reacted to his environment. He was wired that way. Consequently, the environment and I would have to adapt. The environment needed to be modified to support the student in the safest, most nurturing milieu available. As his teacher, I needed to redefine my expectations realistically, and celebrate his small successes while balancing the needs of the classroom and rest of the school.

A most teachable moment. One of the most profound teachable moments occurred one day when Abraham, a 10 year-old student with problematic behaviour issues, was brought back from gym class. An educational assistant had Abraham by his wrist, escorting him to a private area in the back of the classroom as he loudly spewed a tirade of profanities and death threats.

To ensure everyone's safety, we used the separate and supervise strategy to isolate Abraham from his peers. He was put in a back room off the side of the classroom where he continued to scream profanities and threats. As the other staff members helped the other students carry on the daily classroom routine, I walked towards the back area of the room where a staff member stood in front of the closed door. Abraham had a history of running away. I opened the door, just a fraction of the way and saw Abraham standing with a chair over his head in a threatening position.

I quietly called in, "You sound angry at me Abraham." I was deliberately trying to deflect and divert his attention to me in an attempt to engage another part of his brain.

Abraham shrieked, "I'm not f---ing angry at you, I'm angry at Billy!"

"Excellent Abraham! You put other words to this, way to go!" I said in an encouraging, sincere, but soft tone. "Why are you angry at Billy?" I asked. Abraham was still shouting and still had the chair over his head.

"Because Conrad is my friend!" he screamed.

"Oh, I'm glad Conrad is your friend, but what does Billy have to do with this?" I said while gently putting my index finger to my lips in a shhhing motion.

"Billy told Conrad to f--- off, and that's not nice," replied Abraham indigently, at a lower volume but still with the chair over his head.

"Great Abraham, you put words to this! Hey Abraham, let's put other words to this so you can respectfully tell Billy why you're upset. Billy doesn't even know you are mad at him, and he and Conrad are already eating lunch together. Put the chair down so I can come in."

"NOOOOO! You'll try to put me in the Quiet Room if I put the chair down," Abraham screamed.

"Abraham, as long as you are safe, I'm safe, and the class is safe, you don't need to go to the Quiet Room. Put the chair down so we can plan to get out of here," I said calmly.

Abraham quickly put the chair down, but removed the detachable plastic seat, holding it ready to strike anyone who came close.

"Great Abraham, you put down the chair, good for you!" I continued, more quietly, "But let me help you fix the chair, the seat has come off." I slowly approached from his left walked up on an angle and off center from him.

Abraham needed to see me coming and not be startled by any sudden movements I made. I positioned myself between the chair and Abraham, with him on the inside of the room, and myself on the side of the room by the door. Although the screaming had momentarily subsided, I still needed to be acutely aware of personal safety. Together, we snapped the seat back on the chair and Abraham quickly sat down. "Thanks, Abraham," I said. "I always have trouble getting those blasted seats back on those chairs."

Abraham was calm. He was able to articulate why he was upset. He was able to put words, other than profanity, to the situation, and he was able to figure out other ways to let Billy know he was upset, and tell Conrad that he was his friend. Within four minutes, Abraham had "fixed things up," made amends, and was with his peers having lunch. Success! This had been a fantastic teachable moment!

Understanding strange behaviour. Not all teachable moments came as easily or quickly as that. A few years ago another student, who was in care of the local child welfare agency, was having an extremely difficult time at school. He had garbled and bizarre conversations with his hand and could not seem to put a coherent thought together. It was assumed that this child was just reacting to a lifetime of abuse. For months, this student came to school every day, talking to imaginary people and his own body parts in his own language, as the various human services systems strained to work together, struggling to define the various roles and tasks of all the agencies, professionals, and direct service providers. Finally, it was discovered that a prescription medication was being

improperly administered. Once a simple change was made in how his medication was given to him his bizarre behaviours disappeared. He soon became a valued and contributing member of the class.

In retrospect, I wondered whether the reactions of these professionals to the years of abuse this child had endured hindered their ability to assess his needs clearly. Were too many people using his abuse history as an excuse for failing to provide adequate health care and appropriate educational programming? Had the educators at the child's previous school placements that had used token economy systems, time-outs, and exclusionary practices, considered other options when they saw that these approaches were not working? Token economies, time-outs and exclusionary practices are based on the premise that the child wants to be included as part of the class (Charles, 2008a; James & Freeze, 2006; Evans, Harden & Thomas, 2004; Packer, 2002). Had anyone warmly welcomed, included, and nurtured this boy in class? Did most educators assume that he had control over his behaviour and was able to understand and meet the standards of the classroom? Were the behaviour management practices of the school and home further victimizing this child? Did the professionals in both the school and child welfare systems look for other options or perspectives for him? Had these professionals ever been educated in other aspects of behaviour support? Why had no one been able to look past his social history and see a resilient, eager child, who had been ill-served by the professionals in his life?

Atypical behaviour. The special group of students I taught often displayed atypical behaviours during stimulating classroom activities and exciting school-wide events. Many educational theorists have claimed that dynamic classroom environments promote student engagement and learning (Charles, 2000; Jones, 2001). However, these students' behaviour often deteriorated in energetic or animated environments. I then found out about sensory overload. Sensory overload can occur when excitement and anticipation overwhelm the central nervous system, causing inappropriately regulation, and can result in unusual behaviours (Kranowitz, 1998; Seger, 1998; Malbin, 2002; Kranowitz, Szkut, Balzer-Martin, Haber, & Sava, 2003; Murray-Slutsky & Paris, 2005; Charles, 2008a; Charles, 2008b). Events and activities intended to be motivating and to promote learning may inadvertently trigger extreme and unpredictable behaviour. I was not aware of the possible affects that subtle sensory influences could have on some students' behaviours. As I further investigated sensory influences, I began to see that much of the inappropriate behaviour displayed by some of my students could be understood differently. In addition, I discovered that novel interventions and different language could be used in an attempt to provide an educationally enabling environment for a group of students whose behaviour had collapsed. Thus, the redesign of classroom routines became of uppermost importance to me as I tried to meet the needs of these students who reacted strongly in active environments.

Crisis of conscious. After over twenty years spent working with students with special needs, I experienced a professional crisis of conscience. Was

inclusion really in the best interests of all students? Did educators have the appropriate training and did the education system have an adequate systemic framework to best support all students? Was the inclusive philosophy just a politically correct theory, or a subtle way to save money? How can the precarious balance between inclusion of all students and maintaining safe, violent-free schools be achieved?

Self-contained classrooms are very expensive to maintain. With the demise of therapeutic treatment programs for students who exhibited extreme behaviour, the clash between what was required to meet the needs of these students and the inclusive policies of the provincial government is dramatic. Students who exhibited extreme behaviours often have mental health and social issues that far exceeded the scope of what the education system was designed to cope with. In order to meet the legal requirements and address the inclusive policy of the provincial government, clusters of marginalized students were housed together in a few small classrooms, with few systemic or school supports. Restrictive policies designed to protect the school system from legal problems often characterized these classrooms.

Schools often house classes of chronologically homogenous students at heterogeneous academic levels. Although academic diversity is accepted, extreme behaviour is not, resulting in the marginalization of students exhibiting, or with histories of, extreme behaviour. How can educators expand their repertoire of skills and strategies to better deal with students with problematic behaviour? Extreme behaviour is self-protective. Many of the behaviour

management strategies used in schools tend to be based on the premise that inappropriate behaviour is willful and planned. However, what if inappropriate behaviour is not always willful or planned?

Another Perspective on Behaviour. Learning is a reciprocal process in which educators, students, parents, and caregivers learn from one other. Frank, a student prenatally exposed to alcohol and solvents, taught me more about auditory processing difficulties than any book, professor, or therapist. In turn, I taught him the value of Canadian coins. His mother taught me the value of laughter. I now understand the value of humor and comic relief in the day-to-day challenges of nurturing a high needs, multi-diagnosed child. Given their experiences, circumstances and resources, parents and primary caregivers do the best they can for their children.

Sometimes behaviour is self-protective and a form of communication. Regardless of who is communicating, communication is open to perception and these perceptions do not always match intentions. Neurological differences, personal experiences, and cultural influences flavour our perceptions and understandings of others in our environment. As a teacher, I am acutely aware of this and see the inappropriate and objectionable behaviours of students as their responses to how they are interpreting their environment. Their behaviour communicates their needs based on the internal and external influences that are shaping their beings at points in time. Students' behaviour is the vocabulary they use to express themselves. We, the adults and educators in their lives, need to be the interpreters and translators of their behaviour. We need to recognize the

possible underlying meanings and subtle factors influencing each student's behaviour at any given time, acknowledge it, put emotional identification and language to it, then facilitate the development of some socially appropriate skills and strategies so that the students can better cope within educational environments.

Research Question. Can the NBB Model of Support provide increased understanding and perspectives into the ways educators address students with problematic behaviour in the classroom? Are the various strategies and tactics of the NBB Model of Support, able to be implemented in the classroom by the teacher? Can the Model offer the support some students with NBB need, without detracting from the educational experiences provided to the rest of the student population? Can the NBB Model of Support be used to increase the success of students with NBB in integrated school settings?

Chapter 2

Literature Review

In this chapter, I will define the terms emotional and behaviour disorder (EBD) and neurological based behaviour disorders (NBB). Characteristics associated with students with severe emotional and behaviour disorders (EBD) will be identified, and compared to the characteristics of students with neurological based behaviour disorders (NBB). I will suggest that the current models of behaviour management may not be addressing the needs of students with NBB, and that a NBB Model of Support may be worthy of consideration. I will begin by looking at brain functions and investigating some of the contributions from the field of neuroscience that support NBB as a theoretical construct. I will then describe the NBB Model of Support, a framework to support students with NBB. The description of the Model of Support will include contributions from other fields, such as occupational therapy, rehabilitative services, and neuroscience, make to serving students with NBB. Finally, the literature related to the four main areas of the NBB Model of Support (i.e. sensory integration, environment, language, and attitude) will be reviewed.

Students with NBB. Students with NBB have had limited success with the strategies traditionally used in academic settings. While students with EBD and NBB share many characteristics; cognitive fluctuations and learning disabilities, neurological differences exacerbate the challenge of EBD for students. They are identified as students with neurologically based behaviour issues, or NBB. This perspective is supported by the international consensus statement published in

Clinical Child and Family Psychology Review Journal (January, 2002) and in subsequent publications (Barkley et al, 2002; Voeller, 2004; Charles, 2008a).

What are Emotional and Behaviour Disorders?

Students exhibiting difficult behaviour cause significant disruption to the academic and social goals of schools. They present many unique challenges to the educational system and the prevailing philosophy of inclusion. Typically, students with behavioural difficulties are referred to as having emotional and behavioural disorder, or EBD. EBD is a condition in which the behavioural or emotional responses of an individual in school are significantly different from generally accepted age-appropriate, cultural norms and result in significant impairments in self-care, social relationships, school progress, classroom demeanor, work adjustment, or related functioning (Winnipeg School Division, 2004). Students with EBD characteristically present both severe behavioural problems and moderate-to-severe academic skill deficits (Benner, Nelson & Epstein, 2002).

The term EBD is a behavioural descriptor used by educational institutions to describe a wide range of behavioural difficulties and other sustained disturbances of conduct or adjustment. However, EBD is not included in the Diagnostic and Statistical Manual of Mental Disorders-4 (DSM-4), of the American Psychiatric Association (1994), which lists different categories of mental health disorders and the criteria for diagnosis. Nevertheless, the term is used extensively in the educational literature where the EBD descriptor often is treated as if it were a DSM-4 diagnosis. Much of the EBD literature views EBD

from either an environmental or a deficit model perspective (Valencia, 1997). In other words, the student, or the home and community where he or she lives are defective or substandard. This thinking often has led to interventions being done "to" the students with EBD. Students with difficulties often were left out of the process of planning and implementing interventions that were supposed to support them. In turn, this compounded the residual feelings of failure and inadequacy felt by the students (Valencia, 1997). One implication of this model is that the school system and the professionals within it, often escape critique (Skrtic, 1995; Brendtro, Brokenleg, Van Bockern, 1998; Foltz, 2006).

An incorrect assumption. Typically, discipline and classroom management models rely on the assumption that students are cognitively, neurologically, and socially capable, equal, and motivated to do well. However, this is not always an accurate assumption. Underlying learning difficulties, which have an impact on academic development and social skills, may be compounded by differing values and life experiences, which can affect the psychological integrity of some students (Cook, et al, 2000; Greene, 2001, Garbarino, 2001; Payne, 2003). In addition, recent research into neurological functioning has begun to offer a broader perspective on behaviour (Riley, Mattson, Li, Jacobson, Coles, Kodituwakku, et al, 2003; Bath, 2006; Brendtro & Longhurst, 2005).

What is neurologically based behaviour (NBB)?

Behaviour difficulties are frequently the first indication that something unusual is occurring, especially when the behaviour is atypical, inconsistent, compulsive, and immune to normal behaviour management. Such behaviour may

stem from neurological events that are promoting student confusion, uncertainty, fear, or frustration. It is thought that underlying neural responses, in specific areas of the brain, activate the autonomic nervous system's fight and flight responses that are designed to ensure the person's survival (Damasio, 1999; Hall & Hall, 2003; Kranowitz, 1998). These misconstrued responses often manifest themselves as inappropriate, aggressive and violent-looking behaviours (Nunley, 2005; Deak, 2005; Charles, 2008a). Other subtle idiosyncrasies such as the misinterpretation of circumstances and emotionally labiality can be evident. Students with these characteristics have been classified as having EBD, but upon careful observation and assessment, it becomes evident that more than just EBD is in play (Greene, 2001; Charles, 2008a). Information processing in the brain appears to be affected, and neurological functioning seems to be compromised by possible chemical imbalances, congenital brain differences, brain injuries, brain diseases, or subtle, undiagnosed brain differences. High degrees of inattention, hyperactivity, impulsivity, excess emotionality, anxiety, inconsistent emotional responses, unpredictable intense mood swings, withdrawal, and episodes of rage become evident (Kranowitz, 1998; Greene, 2001; Papolos and Papolos, 2002; Hall and Hall, 2003). Inconsistency and unpredictability are major characteristics of NBB (Kranowitz, 1998; Charles, 2008a).

NBB is behaviour associated with atypical neurological functioning. It is characterized as being difficult, unusual, inconsistent, and unresponsive to usual disciplinary interventions (Barkley et al, 2002; Charles, 2008a). This is thought to

be because of physical, structural, and chemical differences of the brain. Research suggests that the frontal lobes, corpus callosum, neurochemicals, midbrain, and the actual structure of the brain cells may be compromised (Silver, 1998; Barkley et al, 2002; Spencer, Biederman, & Wilens, 2002; Riley et al, 2003). Behaviour issues are thought to be provoked by subconscious fear-based responses to a person's interpretations of his or her environment. Behaviour difficulties arise before the language processing areas of the brain are engaged. As a result, typical language-based behavioural and other interventions tend to be ineffective; probably because the neurological differences skew the reactions of students with NBB (Riley et al. 2003; Allder & Moore, 2005; Solomon & Heide, 2005; Bath, 2006; Brendtro & Longhurst, 2006).

The Brain

A basic knowledge of the brain is necessary for understanding NBB. MacLean (1990), theorized that the human brain was composed of three inter-relational functioning brains, each with its own primary tasks, which work together to provide a functioning whole. He coined the term "triune brain" to describe this. The three brains have been identified as the survival brain, the emotional brain and logical brain (Bath, 2005).

The survival brain. The survival brain is also known as the reptilian brain (MacLean, 1990). This area is at the bottom of the brain includes the brain stem and connects the spinal cord to the cerebellum. The role of the reptilian brain is to ensure physical survival. It controls the autonomic bodily functions, such as heart rate, blood pressure, digestive, reproductive, and other bodily functions

(MacLean, 1990; Damasio, 1999; Bath, 2005). This part of our brain is designed to keep us alive. It is the centre of our flight and fight reactions, instinctive responses designed to maintain survival automatically and instantly. All mammals have a reptilian brain (MacLean, 1990; Damasio, 1999; Bath, 2005).

The emotional brain. The emotional brain (LeDoux, 1996) is wrapped around the survival brain. It is sometimes referred to as the limbic system (MacLean, 1990) because it is believed to be the area of emotional arousal. Some researchers believe that that emotions are processed only in very specific structures of the brain (LeDoux, 1996), while others believe that neuro-emotional responses are situated in a number of areas in the midbrain region (Jensen, 1998). For the sake of clarity in this document, the second layer of the triune brain will be referred to as the midbrain area. The midbrain area has a number of structures such as the hippocampus, which stores emotionally charged memories, and the amygdala, which senses danger and threats to survival (Damasio, 1999; Bath, 2005).

It is particularly important to understand the function and role of the amygdala in NBB. These two almond-shaped structures, one on each side of the brain, are in the midbrain. The amygdala is the trigger of our emotional being. Its function is to read the environment, then act in a protective manner by prompting us to fight or flee a situation. The purpose of the amygdala is to interpret the subtle expressions of others, of the environment, and when necessary protect us from them. Amygdala responses occur within one sixth of a millisecond, long before areas in the logical brain have had time to assess and respond, and

before the cognition and language areas of the brain are able to be engaged (LeDoux, 1996; Damasio, 1999). The amygdala is designed to react in a protective manner before cognitively interpreting the circumstance. The large numbers of non-verbal facial expressions that occur in the muscles of a person's face and which are designed to signal the emotional state of a person are read by the amygdala. It also interprets intonation and tone of voice of the auditory input coming into the midbrain area (Brentro & Longhurst, 2005).

The logical brain. The logical brain is also referred to as the neocortex. It is the last to develop, and is not fully developed until the late teens or early twenties (Wolfe, 2004; Bath, 2005). Simply put, this is the area of cognition, reasoning, language, decision-making, executive functioning, and other cognitive processes. Many classroom management systems, such as cognitive behavioral strategies, token economy systems, restitution, and empathy programs, begin at the top of the brain, in the neocortex or logical brain and often do not consider the influence of the midbrain and reptilian brain on behaviour (Hannaford, 1995; Greene, 2001; Deak, 2005; Nunley, 2005).

Three brains as one. Neural pathways convey impulses between the various areas of the brain. As stated previously, the amygdala is the structure in the midbrain designed to interpret the subtle non-verbal expressions of others in the environment and react in the most expedient manner. The amygdala is designed to protect one by activating the fight or flight reactions. The experiences which activate the amygdala and its ensuing responses are laid down along pathways of brain cells that fire together and thus becomes wired together

(LeDoux, 1996).This wiring together of the neural pathways ensures that the response to the event will be available if needed in the future. These events are stored either as explicit memories, which are conscious memories, or implicit memories, which are unconscious memories involving the sensory sensations associated with the event (Bath, 2006). Research indicates that the neural pathways from the emotional brain develop much faster than do neural pathways from the logical brain. This suggests that there is a stronger ingrained automaticity of emotionally-based behaviours originating from the midbrain than for rational thoughts originating in the logical brain (LeDoux, 1996). Thus, the mediating influence of the logical brain is often overrun by the automatic influences of the midbrain. Many believe that the lack of synchronization and communication between the midbrain and logical brain is fundamental to understanding behaviour (Hannaford, 1995; LeDoux, 1996; Ratey, 2002; Bath, 2006).

Emotions. The definitions of EBD and NBB both include references to emotional and behavioural differences. Although most practitioners have numerous examples of what EBD can look like, the biological etiology of EBD may not be considered. EBD are disorders in the manifestation of a student's emotional and/or behavioural actions. But what are emotions and where do they come from?

Emotions are chemical and neural responses which come together to form a pattern. The role of emotions is to assist in the maintenance of life and homeostasis. Homeostasis refers to the coordinated and largely automated

physiological reactions required to maintain steady internal states in all living organisms (Damasio, 1999). Emotions play a regulatory role, leading to the creation of circumstances advantageous to the person. Learning and culture then influence the neural-chemical responses to give them meaning and expression. The body expresses all emotions in one way or another. Our body then interacts with the neural-chemical reactions exhibiting some form through our behaviour. Emotions affect the physical, behavioural, and social well-being of people and can affect the operation of numerous brain circuits, shaping the neural patterns of the brain, ultimately ingraining specific responses to particular circumstances (Damasio, 1999; Solomon et al, 2005; Allder & Moore, 2005; McBurnett, Raine, Stouthamer-Loeber, Loeber, Kumar, Kumar & Lahey, 2005; Noble, Tottenham & Casey, 2005).

The biological effects of emotions can disrupt the body's homeostasis (Garbarino, 2001; Solomon & Heide, 2005; Allder & Moore, 2005; McBurnett et al 2005; Arehart-Treichel, 2005a; Noble et al, 2005) and can trigger stress. Stress is thought to disrupt the balance of neurotransmitters in the brain, possibly resulting in compromising the structural development of the neural nets that express the emotions as a system in the brain (Arnsten, 2008; McEwen, 2008). Stress is implicated in changes in the prefrontal cortex of the brain, the area of the brain that controls executive functioning such as complex planning and self-regulation (Garbarino, 2001; Solomon et al, 2005; Allder & Moore, 2005; McBurnett et al, 2005; Noble et al, 2005). Consequently, biological factors may be strongly implicated in inappropriate behaviour. These biological

underpinnings are not an excuse for, nor justification of, inappropriate behaviour, but rather can be used to offer a broader perspective on behaviour in order that more comprehensive interventions can be developed.

From the bottom of the brain. The neural-chemical responses that provide the impetus for emotions begin at the brain stem and work upward. As the neural-chemical response travels up the brain stem, through the midbrain and to the neo-cortex, language and behaviour are attached and expressed (LeDoux, 1996; Damasio, 1999). Most behavioural control strategies and systems, such as conflict resolution, mediation, empathy training, shaming systems, and others, begin at the top of the brain. Language is used and terminology is taught that matches the vocabulary of the particular behavioural management system being employed. However, there is often an erroneous assumption that all inappropriate behaviour is intentional and planned. A second erroneous assumption is that the student displaying the inappropriate behaviour is always aware that his or her behaviour is inappropriate, is motivated to change it, and is knowledgeable about how to change it. In addition, the fundamental purpose of the behaviour may be misconstrued, misidentified or misinterpreted; which may further add to the stigmatization and marginalization of students with behaviour disorders. I hypothesize that inappropriate behaviour, in some individuals, on some occasions, is a self-protective response to internal and external environmental influences. The features of EBD with NBB are contrasted in Figure 1. EBD is grounded in a deficit-model of behaviour in which misbehaviours are largely seen to be willful, planned, insolent acts. Exclusionary practices, shaming,

and punishing are often employed as remedies for the misbehaviour. Even when more positive and humane interventions, such as conflict resolution or problem solving are employed, the assumption underlying them are grounded in a deficit model in which the child is conscious of his or her misbehaviour and needs a rationale solution rather than one that acknowledges the non-rationale roots of misbehaviour. The NBB model, acknowledges EBD, extending it to seek a broader, more holistic understanding of the student and his or her behaviour. It is a strength-seeking model, designed to provide a nurturing foundation for students who do not consistently respond to typical behaviour tactics, but still have the right to an education.

How to Support Students with NBB

Students with NBB can present unique challenges to the school system. Some students with NBB behave in an erratic or inconsistent manner for no apparent reason. Their behaviour does not respond reliably to normal discipline tactics (Brendtro & Longhurst, 2005; Malbin, 2002; Charles, 2008a). I propose that a behaviour support model that considers the influences of the triune brain, may better address the needs of some students with NBB in the school system. This will be called a neurologically based behaviour model of support, or NBB Model of Support.

How the NBB Model originated. As my career progressed, many traditional behaviour management methods seemed to be less effective for particular students. I was not the educator I strived to be. Much of the problematic

Figure 1

Comparison of EBD and NBB

EBD	NBB
Medical Model. Problematic behaviour is seen as an outcome of disease, dysfunction, or disorder.	Holistic Model. Behaviour is viewed from environmental, language, and attitudinal, perspectives, in addition to medical model perspectives.
Deficit based and focused on the past.	Strengths-based, present, and future focused.
Brain dysfunctions.	Brain differences.
Behaviour is often seen as problems to schools caused by students or families.	Behaviour is seen as a reciprocal process between the student(s) and adult(s).
Behaviour is sometimes seen as mental illness.	Behaviour is seen as mental health issues.
Behaviour is seen as violent and aggressive.	Behaviour is seen as self protective (fight or flight).
Behaviour is seen as inappropriate attempts to control or seek power.	Anxiety and confusion are recognized as possible causes of control or/and power issues.
Students may be seen as unmotivated or lazy.	Possible unmet primary needs, academic incompetence, or uneven academic development.
Behaviour seen as antisocial.	Behaviour seen as not understanding or knowing what to do and/or how to do it.
Midbrain influences are not recognized.	Strong awareness/considerations of midbrain influences.
Assumes similar values and understanding.	Recognizes diversity of values.
Uses force to control.	Uses force as a last resort and in as quiet and non-invasive manner as possible.
Attention is focused on misbehaviour.	Misbehaviour seen as an opportunity to learn and teach appropriate behaviour.
Possible EBD Tactics	Possible NBB Tactics
Behaviour is seen as willful and planned, requiring adult intervention and re-establishment of disciplinary authority.	Recognizes that when misbehaviour occurs, it is most likely the most appropriate for the student considering their understanding, interpretation, skill level and previous experiences.
Addresses misbehaviour to exert control by adults over the students.	Addresses misbehaviour as quietly and non-intrusively as possible.
The student exhibiting the misbehaviour is typically seen as the cause of the problem.	Consideration and modifications given to the physical and/or social environment.

Figure 1 continued

Does not consider the physiological responses of the student in crisis.	Looks for physiological responses such as facial flushing, body language and gestures.
May inadvertently assault the student auditory system by increasing the volume and cadence of their voice.	Uses quiet, non-emotional language with direct wording, physical gestures and pictures to support the student in crisis.
May inadvertently assault the student sensory system by crowding him or her and by using confrontational body language.	Uses proximity control to ensure the safety of all. Ensures the student in crisis has the physical space needed to get through it.
May increase the students' subconscious feeling of fear by reacting loudly or in an angry-looking manner.	Speaks quietly, stands non-confrontationally, reassures the student in crisis they are okay.
Rules, policies, and worst-case scenarios are reiterated.	Acknowledges that auditory processing issues and potential neurochemical reactions often complicate listening and understanding
Uses excessive language and jargon.	Uses as few words as possible, augmenting language with gestures and pictures.
Does not use calming techniques.	Waits until the student calms.
Teaches rules, jargon, and other language related to a "rational intervention."	Uses somatic understanding and calming techniques, such as deep breathing or silence, to calm the midbrain area.
Adult verbalizes how the misbehaviour has affected peers and others.	Adult labels the possible feelings of the student, to assist emotional recognition and identification.
Adult uses shaming or scolding.	Student is assisted to find words to articulate his or her need or annoyance.
Often adults feel angry with, or sorry for, the student, emotions which may prevent positive, proactive actions.	Adult mediates the use of language by empathizing with the student in a non-judgmental manner.
Consequences and plans are arbitrarily devised for the student.	Adult helps the student plan, adopt a strategy or accept the situation.
The connection between the behaviour and consequence is not made for the student; or the student is aware of the potential consequence, purposefully triggers it, to avoid something else.	Restitution and 'fixing the mistake' are done with the student.
Uses time-out rooms.	Uses quiet rooms and sensory friendly areas.
Exclusionary.	Inclusionary.

Figure 1 continued

Staff Characteristics (EBD)	Staff Characteristics (NBB)
Confrontational.	Quietly supportive.
Loud voice.	Quiet voice.
Uses adversarial body language.	Uses open, but self-protective body language.
Uses emotionally laden language.	Uses non-emotional language.
Tells students what not to do.	Tells and shows students what to do.
Blames the student for their own behaviour towards the student in emotionally charged situations.	Take responsibility for their own behaviour towards the students in emotionally charged situations.
Uses student's misbehaviour to teach them a lesson.	Always attempts to help student find a way to save face during misbehaviour.
Views misbehaviour as willful and planned.	Views misbehaviour as evidence of brain differences.
Views misbehaviour as delinquent or dysfunctional.	Recognizes the possibility that misbehaviour may be serving some sort of conscious or unconscious purpose.
Uses the misbehaviour as an example to others.	Attempts to recognize and understand functions of misbehaviour.
Attempts to exclude the student with misbehaviour.	Attempts to coach the student through the misbehaviour by teaching appropriate behaviour.
	Understand the need for balance.

Adapted from Hingsburger, 1996; Greene, 2002; Brentro & Longhurst, 2005;Bath, 2005; Charles, 2008b

behaviour seen in my classroom reoccurred, despite my best intentions to eradicate or curb it. Students often knew they had misbehaved, after the fact. Typically, they appeared sincerely remorseful, and were aware of the post-misbehaviour policies and procedures, but their misbehaviours continued. Over time, some students began to appear dejected and resigned to their own limited school success.

Students in my class often struggled with academic, social, and behavioural issues. They often arrived with a litany of diagnoses. One of the diagnoses included sensory integration dysfunction, a condition I had not heard of. As I began investigating sensory integration dysfunction, I began to see some misbehaviour with a new perspective. Using the research of Ayres (1972), Kranowitz, Szkut, Balzer-Martin, Haber, & Sava (2003), Murray-Slutsky and Paris (2005), Williams & Shellenberger (1996), and others I began to develop a new understanding and new skills to address the misbehaviour of some students. My basic understanding of sensory integration provided me with a newfound energy to think of misbehaviour in a broader sense. Applying many strategies and ideas from various occupational therapists afforded me new techniques to use in the classroom. However, this did not seen to be enough.

From sensory integration to environment. As I was investigating sensory integration issues, the theme of environmental influences kept resurfacing. Environmental influences began to separate into two broad categories, the classroom environment, in which the works of the sensory integration researchers fit, and the macro environment of the community. Initially, I felt quite

helpless when I began looking at some the communities the students lived in. However, I was then introduced to Brofenbenner's work (2004) and went on to study Roditti (2005), Valencia (1997), Payne (2003), Garbarino (2001), Gladdin (2002), Henderson and Milstein (1996), Jasinski (2005), Ferguson, Bovaird, & Mueller (2007) and others. Although I was not be able to immediately impact the macro environment, I began to understand and actively work to help my students develop a broader understanding of community and a resiliency to thrive.

From environment to attitude. I then heard Dave Hingburger (2000), a Canadian psychologist speak. His practical and respectful message struck a cord, and I realized how important my attitude was. His small book entitled *Power Tools,* (2000) became a mandatory read for any adult working in the classroom. As I poured over Hingsburger's research, I was introduced to other researchers such as Ruth Ryan (2001), Sobsey (2001), Brendtro, Brokenleg & Van Bockern (1998), Brendtro and Longhurst (2005), Cook, et al. (2000), Forbes and Post (2006), Greene (2001), Hall and Hall (2003), and others. I came to understand that behaviour, a reciprocal process, often makes perfect sense to the person at the time it is exhibited, considering the person's skill level, cognitive abilities, and prior experiences. My reaction to a student's misbehaviour and my attitude had a significant impact on all situations of misbehaviour and was the foundation for my own well-being.

From attitude to language. As I was reading Payne's work (2003), I came to recognize how limited the vocabulary of many of my students were. A paucity number of words were used as adjectives, adverbs, expressions of anger, delight

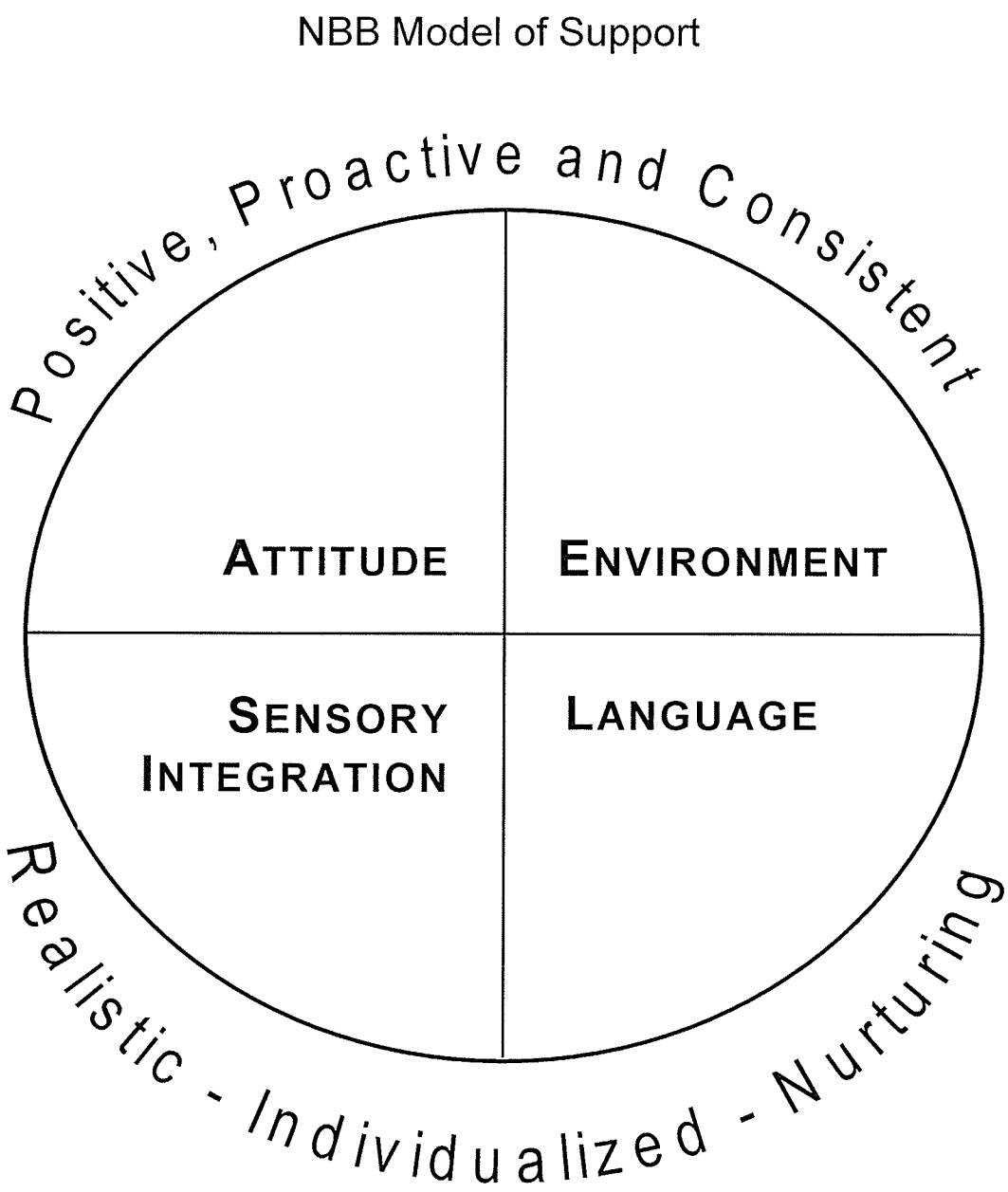
and surprise. These words were often misinterpreted or labeled by others as inappropriate, profane and unacceptable. I began recognized how language played a significant role in the interactions of these students. Rather that scolding the student for their language, it became apparent that they often did not have other vocabulary to use. Using the research of Burke (1999), Benner, Nelson & Epstein (2002), Carroll, Maughan, Goodman & Meltzer (2005), Fujiki, Brinton, Morgan and Hart (1999), Nelson, Benner, Neill & Scott (2006), Wicks-Nelson & Israel (2006), Gallagher (1999), Pennebaker (2008), and others, I came to understand the importance to teaching socially appropriate language, emotional identification, and verbal expression.

Bonded by neuroscience. Later, with research from neuroscientists such as MacLean (1990), LeDoux (1996), Damasio (1999), Hannaford (1995), Solomon and Heide (2005), Frisk (2004), Kolb (2008), McEwen (2008), Nobel, Tottenham and Casey (2005), and others, I came to an understanding the four threads of sensory integration, environment, attitude and language could all be traced back to the biological functions within the brain. I began to see behaviour as a self-protective response to how someone perceives his or her internal and external environment. Working from the bottom of the brain up became the starting point for behaviour support in my classroom.

Others began to notice the difference in some of the students and I needed to articulate what was happening within my classroom. I designed a graphic organizer to show how the four threads of sensory integration,

Figure 2

A Simplified Diagram *NBB Model of Support*



environment, attitude and language intertwined to provide a model of support and used to augment traditional classroom management tactics.

The NBB Model of Support. The NBB Model of Support is graphically represented as a circle divided into four quadrants, as seen in Figure 2. The circular representation is to encourage educators to self-reflect continually and to broaden their perspectives. Understanding the students' behaviours from their viewpoint does not mean accepting, condoning or encouraging behaviours or lifestyles considered offensive or distasteful. It means only that educators are making the effort to hear students' stories and perhaps provide some structure and support from which more socially appropriate and healthy decisions can be made. Outside the circle of the *NBB Model of Support* are brief reminders to be proactive and positive, to individualize and keep the support realistic. Research indicates that even identical twins with prenatal exposures to teratogens and diagnosed with the same birth anomaly will have different manifestations of the anomaly (Streissguth, 1992; Riley et al, 2003). Everyone is an individual and, as such, needs unique supports. The purpose of the circle is to represent the fluidity of each segment. The influences and attributes of each quadrant are varied and circuitous. They are not stagnant, but rather are always interacting and evolving.

The stress of NBB. As the saying goes, "just when you've seen it all, something new comes up." Many students with NBB behave in outrageous ways, say outrageous things and, at times, react in very atypical or unexpected ways. The practitioner's empathy, expertise, and patience often are pushed to the limit. Students with NBB frequently cause those who work with them to rethink their

commitment to universal inclusion. Many have commented that maybe school is not for everyone, and that maybe some students with NBB should not be there. The behaviour and language exhibited by students with NBB can look and sound violent, aggressive, and dangerous, but often is not. This can cause stress to others in the school.

Balancing the needs of all. An insight from brain research suggests that the biological effects of stress affect learning because the logical brain or cognitive areas of the brain disengage when a threat is perceived by the emotional brain (Arnsten, 2008; McEwen, 2008). Students in mainstream classrooms witnessing inappropriate language and behaviour displayed by many students with NBB may experience stress and have their learning disrupted (Jensen, 1998). This can lead to self-protective responses of institutions and individuals. Students with NBB often are excluded for the benefit of the majority. The fact remains, however, that students with NBB are entitled to a public school education and have every right to be educated in school. At the same time, the rest of the school population has every right to be educated and work in a safe environment, free from the fear of violence and aggressive actions of others. Balancing the basic safety needs of all members in a school community can be an intricate, complicated process. The various members of the school community and the stakeholders in the education system have different perspectives. What may look violent to one group may be perceived as harmless by others. The consequences for misbehaviour may seem logical and well thought-out to one group, but may not make sense to another. Responses to misbehaviour based

on school policies may not make sense to students with NBB. As a result, the desired outcomes may not always successfully address the underlying issues that may have caused the misbehaviour. When root causes are misunderstood, school personnel frequently hone in on the external community and broader environment without looking closer to home, including in their own classroom and school environment.

The NBB Model of Support attempts to set up a framework for an in-depth consideration of the student's behaviour, at that particular time. Practitioners using the NBB Model of Support do not accept, condone or tolerate inappropriate, violent, or rude behaviour; rather they attempt to look within the behaviour in order to identify the emotional context of the situation, identify behavioural triggers, put language to the issue, and develop strategies to address it. This model presents a strengths-based approach to better meet the needs of this marginalized group of students. In a strengths-based model, individuals are seen through their capabilities. This allows for the fostering of hope. Pessimism is seldom useful and often causes feelings of powerlessness, frustration, and depression. In contrast, optimism and hope feed a sense of efficacy, and motivate coping and adaptive behaviour development for students with NBB (Henderson & Milstein, 1996; Koltec, psychiatrist, Manitoba Adolescent Treatment Center, personal communication, June 9, 2006; Charles, 2008b). In the NBB Model of Support, success is defined differently than in traditional approaches designed to address misbehaviour. For example, success may be a student punching the cupboard instead of another student as she storms to the

Quiet Room. By recognizing the success of the moment and not becoming lost in the frustration of the past and the anxiety for the future, this approach can foster a positive and healthy attitude (Charles, 2008a; Charles, 2008b).

Inclusion of students with NBB. The NBB Model is designed to promote the inclusion of a group of students for whom inclusion has not been successful. It is based on the understanding that behaviour is reciprocal and that social connection and interaction are vital for all humans. Social bonds are crucial for survival and the need for social interaction, acceptance and support are universal (Ratey, 2002; Brendtro & Longhurst, 2005; Bath, 2006).

The model also acknowledges that our brains are highly sensitive to any signs of dislike or rejection and are automatically wired to respond to subtle indications or thoughts of being excluded, threatened or shunned. These automatic, unconscious responses often cause behavioural crises (Bath, 2005). The human brain is programmed to detect signs of rejection or inclusion and has an automatic warning system that is activated by subtle indications or thoughts that one might be excluded. This is the impetus for a human being to take the most expedient form of action to correct the situation (Brendtro & Longhurst, 2005). How students respond to this stress is dependent upon their coping abilities, experiences, and the state of their emotional and logical brains. Stress triggers neural responses that motivate behaviour and activate changes in thinking, bodily function, and behaviour. In turn, specific patterns of coping behaviour develop (McEwen, 2008).

NBB tenets. One copes with stress better when supported by others. The NBB Model attempts to facilitate an increase in coping skills so that students with NBB can be included, not excluded. The NBB Model of Support has some underlying tenets, some of which contravene familiar ways of thinking about and implementing behaviour support.

The fundamental principle. The NBB Model of Support begins with the fundamental principle that the behaviour a student is displaying, at a particular time, makes perfect sense to that student, at that time, and to him or her, seems to be the most appropriate behaviour within his or her skill level, and given his or her previous experiences and emotional state. As adults working with that student, it is our job to ensure safety, attempt to translate the inappropriate behaviour, put emotional identification and language to it, and then help the student develop strategies and vocabulary to cope with that behaviour. The student with NBB is the expert on his or her behaviour (Brendtro & Longhurst, 2005). The adults' job becomes to translate and validate the underlying emotion, then help the student to substitute socially appropriate behaviours and vocabulary.

Warmly welcomed. Students with NBB are warmly welcomed into the classroom. For many students who have experienced shaming discipline tactics and suspensions from school, a warm welcome can be unusual. The student is then "set up for success". A proactive approach of preventing any possible misbehaviour is critical for students with NBB. Thus, the physical environment is used to support success. Seating plans are established, taking careful account of

the characteristics of each student. Every student has a work spot and an assigned seat at the classroom's community table. A highly structured classroom, set up for success provides the framework for students with NBB to thrive in school.

Separate and supervise. When students become agitated, angry, or verbally abusive, a strategy, called "separate and supervise" is often used. Students are directed into a "quiet space" or to their desk. When they have calmed, the staff congratulate them for using the quiet space or desk, identify and label the emotional feeling, behaviour or language, then strategize to find alternate ways to cope with the feeling and/or behaviour, as well as other vocabulary to be used in similar situations. Since impulsivity and hyperactive behaviour are typical of students with NBB, this "alternate strategy planning session" usually takes ten to ninety seconds. Students with NBB typically just need to know what to do and how to do it, so that solid socially appropriate habits can be developed. Having students with NBB think about their behaviour and come up with plans on their own was not successful. Students with NBB learned the words and jargon to appease those who were upset at their misbehaviour, but did not appear to connect their behaviour to the corresponding consequences. It may be that too much time between the offending behaviour and the ensuing results clouded the connections between the cause and effect. As a result, students with NBB learned to parrot the correct phrases and vocabulary, but did not learn how to manage the behaviour which precipitated the event.

With the NBB Model of Support, inappropriate behaviour is not punished. Rather, inappropriate behaviour is stopped, usually with the "separate and supervise" strategy, socially appropriate behaviour and language are substituted, and the student returns to the school day routines. Students with NBB tend to know what not to do and what not to say, but often unintentionally use socially inappropriate behaviours and language because it is more automatic. Developing automaticity and fluidity in socially appropriate language and habits are goals of the NBB Model of Support.

Developing habits. The behaviour of students with NBB can be difficult to change. Their behaviour is functional for students with NBB; these students are still alive and surviving in some tumultuous environments, both externally - in the community, school and at home - and internally with seeming highly reactive fight/flight/freeze responses and differing environmental interpretations. The NBB Model of Support seeks to facilitate the development of habits and socially appropriate behaviour and language so that students with NBB can be more successful in the school community.

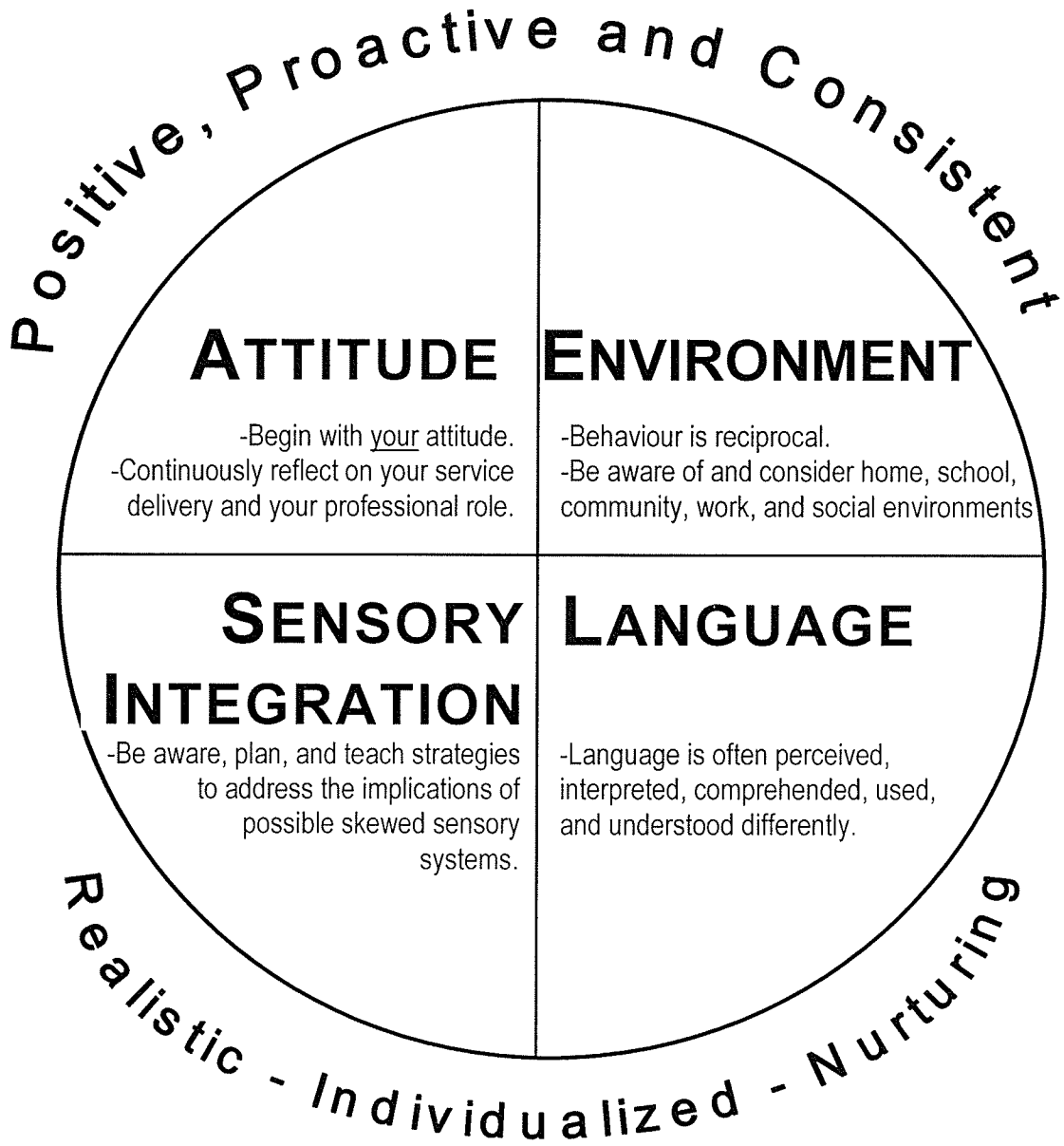
Bottom up. The NBB Model of Support considers the midbrain and reptilian responses while providing a safe framework from which to provide emotional recognition and language to better meet the needs of those students for whom typical behavioural interventions are ineffective. It was designed to address inappropriate behaviour from the bottom of the brain up. Rather than starting at the top of the brain, using language, coercion, contracts, point systems, shaming, exclusion, and other common discipline methods, the NBB

Model starts from the bottom of the brain, specifically targeting the midbrain area, while gently teaching emotional identification, language, social skill development, and coping strategies. These are taught as the misbehaviour occurs, with the adult gently coaching the student on what to do. Rather than disciplining misbehaviour, the adult provides directions for socially appropriate behaviour and language, using non-emotional gestures and language. When student misbehaviour occurs, it is quickly and quietly labeled as inappropriate, illegal, unhealthy, or unsafe, and directions for how to accomplish the desired behaviour are provided. These directions are systematically provided, beginning with the most preliminary step. The adult does not use emotional language, does not attempt to negotiate with the student, and does not explain the direction. The adult waits for the student to comply, does not clutter the environment with verbal "noise", assists the student to follow the direction and may even begin the task to show what to do and how to do it. Power and emotion are removed from the interaction and emotional recognition, language and skill development are facilitated. During the interaction, the adults are extremely aware of their emotional states and remove themselves, if they feel emotional vulnerable.

Vgotsky's social constructivism. The NBB Model of support can be aligned with Leo Vgotsky, an early twentieth century psychologist, credited with developing a social constructivism view of learning. Vgotsky believed that learning occurred when other people interacted with the student, supported the students' current level of ability and challenged them to move to the next level. The support of more competent person improved the student's experience

Figure 3.

NBB Model of Support



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and facilitated learning. Eventually, the student learns and understands a concept without the assistance of others (Vygotsky, 1978).

The four quadrants. The four quadrants of the NBB Model of Support each represent a necessary focal point. The four areas are sensory integration, language, environment, and attitude.

Sensory Integration

The NBB Model of Support began with an investigation into Sensory Integration Theory (Ayres, 1972). The theory was developed using a compilation of research from the fields of occupational therapy, neuropsychology, neurology, physiology, child development, and psychology. Ayres (1972) identified several sensory modalities from which individuals consciously or unconsciously receive information. Each sensory modality operates interdependently, functioning together in a process called sensory integration. Sensory integration is the neural process whereby information from one or more sensory sources is sorted, organized, and altered in such a way that an adaptive response is produced for motor, cognitive, and emotional growth. This process is designed to elicit the most expeditious and effective interactions between one's body and the environment (Ayres, 1972; Williams & Shellenberger, 1996; Wilbarger & Murnan-Stackhouse, 1998; Kranowitz, 1998). It occurs automatically and is thought to be designed to keeps a person informed, ready to act, and better able to protect himself or herself. For most children, sensory integration develops in the course of ordinary childhood activities (Williams & Shellenberger, 1996; Kranowitz, 1998). Motor planning ability is a natural outcome of the process, as is the ability

to adapt to incoming sensations (Williams & Shellenberger, 1996; Kranowitz, 1998). However, for some children, the sensory integration system does not develop as efficiently as it should, possibly resulting in misinformation and misinterpretation of sensory information. As a result, social ineptness, and other idiosyncratic behaviours that can impede learning may be exhibited. This is referred to as sensory integration dysfunction or SID (Kranowitz, 1998; Seger, 1998; Wilbarger & Murnan-Stackhouse, 1998; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003; Murray-Slutsky & Paris, 2005; Charles, 2008b).

Sensory integration dysfunction. The sensory integration process is thought to begin in the lower and midbrain regions of the brain. When the brain does not process or organize the flow of sensory impulses in a manner that gives the individual accurate and precise information regarding his or her world, sensory integration dysfunction can occur (Ayers & Tickle, 1980; Williams & Shellenberger, 1996; Wilbarger & Murnan-Stackhouse, 1998; Kranowitz, 1998; Murray-Slutsky & Paris, 2005). This can manifest itself with behaviour disorders, because of the brain's misinterpretation of the sensory information and misdirection of the body's responses. Thus, learning can be difficult, social interactions often are compromised, and the individual may not be able to cope with ordinary demands of life (Williams & Shellenberger, 1996; Kranowitz, 1998; Murray-Slutsky & Paris, 2005).

The question of credibility. A number of sources including physicians, psychologists, and educators (Cermac & Henderson, 1990) has critiqued the credibility of the influence of the sensory integration processes. Because many of

the strategies designed to address possible sensory integration dysfunction can look like play, attention seeking or task avoidance, many educators dismiss sensory integration (Ottenbacher, 1988; Parham, 1990; Seger, 1998). However, using the NBB Model of Support in conjunction with other classroom management strategies may be beneficial, not only to address the student's misbehaviour, but to calm and provide a framework for the educator to interact proactively and positively with the student. The NBB Model of Support could broaden the classroom management repertoires of many educators who may use it to augment their current management styles.

In addition to the above-mentioned criticisms, concerns have been voiced regarding the paucity of research into sensory integration. However, over time, research into sensory integration has increased. Articles in various journals, including the American Journal of Occupational Therapy, the Journal of Learning Disabilities, and the American Journal of Mental Deficiency have discussed the efficacy of this theory. In addition to the burgeoning research, strong anecdotal and clinical evidence emerged regarding the efficacy of sensory integration. Pockets of professional skepticism remain, however (Seger, 1998).

Sensory integration research. Using a meta-analysis of eight early studies, Ottenbacher (1988) compared over three hundred participant outcomes. Participants ranged in age from 4 to 62 years of age. Outcomes of control group and experimental groups from each study were compared using both standardized and non-standardized measurement tools. Ottenbacher found that participants receiving sensory integration therapy demonstrated a 69.8% to

88.5% improved outcome as compared to those in the control groups (Ottenbacher, 1988).

Parham (1990) concluded that children with learning disabilities did not catch-up to their non-disabled peers, on their own, thus challenging the notion that some children simply matured more slowly than others. Other longitudinal studies have found a direct correlation between the use of sensory integration therapy and improvements in school performance, movement, and perceptual abilities (Cantell, Smyth & Ahonen, 1994).

Vargas & Camilli's (1999) meta-analysis of sensory integration research conducted between 1972 and 1999 concluded that although earlier studies reported overall positive effects from sensory integration interventions, these effects did not occur in the more recent studies. Heilbroner (2005) suggested the supposed benefits of sensory integration therapies were just calming strategies for nervous children. Parham, Cohn, Spitzer, Koomar, Miller, Burke, et al (2007) argued that the validity of sensory integration outcomes studies are compromised by potential conflicts between the interventions and the underlying theoretical and clinical underpinnings. Parham contends that sensory integration effectiveness cannot be drawn with confidence. However, a meta-analysis of research by the Centre for Reviews and Dissemination (2007) on sensory integration treatment between 1972 and1994 concluded sensory integration interventions to be as effective as various alternative treatment methods.

Sensory integration in education. Kranowitz, (2002) found that using sensory integration strategies, alternative methods, alternative environments, or

differentiated learning methods improved academic achievement for some students. Thus, an awareness and knowledge of sensory integration and the effects of its dysfunction may be valuable assets for educators (Williams & Shellenberger, 1996; Yack, Sutton, & Aquilla, 1998; Kranowitz, 1998, 2002).

Sensory integration dysfunction is found frequently in specific populations, such as youth diagnosed with neurological disorders, learning disabilities, autism, fetal alcohol spectrum disorder, mental retardation, and attachment disorders (Kranowitz, 1998). Kranowitz (1998) goes as far to claim that 12 to 30% of children and youth without significant or diagnosable problems are so affected by sensory integration dysfunction that intervention is warranted. While this statistic may appear high, sensory integration intervention strategies could appreciably improve the behaviour and or academic performance of some students with unrecognized sensory integration dysfunction.

Those who acknowledge the validity of sensory integration dysfunction tend to believe it commonly occurs but often is misunderstood by educators. Some believe hyperactivity, inattentiveness, disorganization, learning difficulties, co-ordination problems, behaviour difficulties, language difficulties, and impulse control issues are frequently rooted in sensory integration dysfunction (Williams & Shellenberger, 1996; Wilbarger & Murnan-Stackhouse, 1998; Kranowitz, 1998; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003; Murray-Slutsky & Paris, 2005; Charles, 2008b). These characteristics are also commonly seen in students with NBB (Williams & Shellenberger, 1996; Charles, 2008a; Charles, 2008b).

Environment

The environment is a multifaceted aspect of the NBB Model of Support. Borrowing from Bronfenbrenner's bioecological systems theory (Bronfenbrenner, 2004), the model acknowledges the influences of family, home, school, community and society. The various interactions between the student and others within their various environments are considered dynamic and are not regarded as static.

Overlap of sensory integration and environment. Educational settings must be comfortable. Students with NBB often are very sensitive to their environments and school can be painful for them at times. Indeed, this may be an indicator of sensory integration dysfunction. Consequently, sensory integration and environmental factors form two related quadrants of the NBB Model of Support. Many in the education system have been taught that students need a stimulating environment in which to learn. For some students with NBB, however, stimulating environments can be toxic (Streissguth, 1992; Riley et al, 2003). Environmental modifications can be the simplest, easiest, and most cost-effective strategy to support students with NBB. The take down, cover-up, de-clutter method, creating a less stimulating environment, can produce the quickest results in promoting successful behaviour (Streissguth, 1992; Manitoba, 2001; Malbin, 2002; Kranowitz, et el, 2003). In the NBB Model of Support, the physical classroom environment is always the first consideration when working with students with NBB.

Society and community. Coupled with modifications to the educational environment are the sociological and community aspects of a student's environment. Brendtro and Longhurst (2005) have suggested rather than labeling youth disordered or disturbed, perhaps their environments should be labeled disordered and disturbed. Many behaviour disorders in youth can be the result of a poor fit between the youth and his or her environment (Brendtro & Longhurst, 2005). Many children live in communities where inappropriate behaviours and their ensuing consequences are commonplace (Morh, 1999; Canada, 2005). Aggression and inappropriate behaviour can be used as means to establish self-image, to obtain social status, to entertain, and to maintain roles in society (Buchwald et al, 2005; Messner, 2005; Benedict, 2005; Payne, 2003). Many aggressive acts such as pushing, shoving, and grabbing appear to be so familiar in many North American families that this behaviour is not seen as inappropriate, but rather as normal (Payne, 2003; Canada, 2005; Marcus, 2005).

Differing interpretations. Compounding the issue of community and environment is the fact that aggression and inappropriate behaviour often are experienced and interpreted differently by the people directly involved (Canada, 2005; Jasinski, 2005). Misinterpretation and distortion of the language used to relate or describe aggression and behaviour can further add to the ambiguity surrounding violent events (Canada, 2005: Canadian Centre for Justice Statistics, 2004; Jasinski, 2005; Benedict, 2005). Students with NBB tend to have language issues, which play into this fact and may exaggerate the significance of their circumstances in the minds of others.

Community violence. Often, students with NBB experience various forms of violence and aggression, directly or indirectly, in the community. Exposure to community violence is positively associated with increased rates of distress, anxiety, violent behaviour, and aggression in children (O'Donnell et al, 2002; Farver, Xi, Eppe, Fernandez & Schwartz, 2005; Noble et al, 2005). Poverty, alcohol and substance abuse, low educational attainment, an absent or inconsistent father or father figure, a large number of siblings, mental illness, blended or step-families, and families with children under 15 can exaggerate detrimental environmental effects (Garbarino, 2001; O'Donnell et al, 2002; Canadian Centre for Justice Statistics, 2004). Some theorists believe that living with these accumulated risks can cultivate autonomic neurobiological responses, which can be manifested as aggressive behaviour, and lead to lower I.Q. scores and neurodevelopmental changes (Garbarino, 2001, Solomon & Heide, 2005; Allder & Moore, 2005; Nunley, 2005; Deak, 2005, Knight, 2008). For many children and youth, these challenges can be exacerbated by NBB.

Other facets. Environment plays an integral part in both the stimulation and reduction of aggression. In research into communities where aggression and violence permeate the social fabric of daily life, some urban metropolitan neighbourhoods have been compared to war zones (Garbarino, 2001; O'Donnell et al, 2002; Marcus, 2005). Television, news reports, movies, video games, and other media also influence the community and family environment. Garbarino (2001) concluded that the more television a person watches, the more paranoid that individual's view of the community becomes. This heightened state of anxiety

can lead to aggression. For example, when aggression is expected, the actions of others may be interpreted as aggressive, which in turn may provoke aggressive responses (Garbarino, 2001; Arehart-Treichel, 2005b).

The biological implications. Having developed a broader understanding of the biological components of behaviour, some direct service providers now advocate "working from the bottom up" (Nunley, 2005; Deak, 2005; Solomon & Heide, 2005) when addressing violent or aggressive behaviour. The bottom up approach involved the use of environmental modification, body awareness, somatic understanding, and various calming techniques and meditative strategies to quiet the physiological responses, triggered from the bottom and mid areas of the brain (Nunley, 2005; Deak, 2005; Solomon & Heide, 2005). Once the midbrain is calmed, higher order interventions, such as cognitive behavioural therapy, conflict resolution, mediation, and others, can be used to process the information, put appropriate language to the event, and reframe and redefine the information in more acceptable terms (Garbarino, 2001, Nunley, 2005; Charles, 2008a, Pennebaker, 2008).

Language

Classroom management and discipline are language-based and operate from the assumption that language is equally understood among students and teachers (Wicks-Nelson& Israel, 2006). However, language difficulties are common for students with NBB. Thus, when there are breakdowns in language processing, there can be breakdowns in behaviour. Understanding the implications of language difficulties can

make a significant difference for both students with NBB and their educators.

Research indicates that a majority of students with serious behaviour issues have significant language deficits (Nelson, Benner, Neill & Stage, 2006). On average, approximately 90% of elementary-aged students, who met the criteria for EBD, were found to have had expressive, receptive, and/or pragmatic language deficits (Nelson et al, 2006). Since successful language acquisition is a prerequisite for successful academic learning in all areas, the language deficits of students with emotional disturbances are likely to have a negative influence on their academic achievement (Nelson et al, 2006). Research also indicates that children with language deficits tend to go undiagnosed and are at increased risk for antisocial behaviour and increased incidence of health problems (Pennebaker, 2008). These language deficits and behaviours intensify as the child matures and have devastating effects on interpersonal relationships (Benner, Nelson & Epstein, 2002). Children who display increased aggression use physical means to solve their interpersonal dilemmas due to what is thought to be limited language skills (Gallagher, 1999). Children prone to noncompliance may have language deficits that limit their ability to comprehend and comply with repeated warnings or verbal cues, resulting in the misinterpretation of communication (Fujiki, Brinton, Morgan, & Hart, 1999). Compounding language difficulties are the subtle influences of socio-economic status. Research indicates that socioeconomic status accounted for a good portion of the variance in

performance in different aspects of cognitive control, including learning and language (Nobel, Tottenham & Casey, 2005; Knight, 2008; McEwen, 2008).

Language difficulties. Language difficulties include problems in understanding, processing, and expressing information verbally. Class interactions operate on the assumption that is there is a similar level of language comprehension among students and teachers. However, this is not always true for students with NBB, who often do not interpret, understand, process, respond to, or use language properly (Greene, 2001; Hall & Hall, 2003). Language difficulties can be further exaggerated by external and internal environmental influences.

The language process. Language processing involves a number of precise steps. Language information must be understood, categorized, interpreted, connected with previous experiences, responded to, and expressed. A flaw or miscalculation in any one of these steps can affect behaviour (Greene, 2001; Hall & Hall, 2003). The processing of language begins when sound enters the ear through the outer ear. The sound travels through the outer ear canal to the middle ear, where it stimulates the vibration of the eardrum located in the middle ear that amplifies the sound. The vibration of the eardrum stimulates fluid in the inner ear that changes the sound vibrations into neuro-electrical impulses, which then travel along the auditory nerve pathways up to the brain. When the electrical impulses reach the brain, they travel through it and meaning is attached to the sound heard. Prior knowledge from the person's unconscious, sub-conscious, and conscious mind gives meaning to the sound. As this

happens, a function called central auditory processing occurs. This allows individuals to filter and separate important auditory information, such as conversations, from irrelevant information such as sounds from ventilation systems and other white noise. The received auditory input is kept in the short-term working memory long enough to permit the brain to analyze, compare, manipulate, and respond to it, in other words, to process it. The person then puts behaviour and/or "language" to the response. Sometimes malfunctions occur. Malfunctions occurring in the outer and middle ears can cause hearing problems or deafness. Malfunctions occurring in the inner ear and brain, after the auditory input has changed into electrical impulses can cause processing problems. When auditory information is not processed correctly, this is referred to as Central Auditory Processing Disorder (CAPD). For many students with NBB, language-processing difficulties can vary from day to day, from minute to minute, and are dependent on many factors, such as the degree of stimulation in the environment, fatigue, medication, hunger, and stress, among others.

Other language difficulties. Language difficulties common to students with NBB include a tendency toward literal language interpretation. That is, interpreting language and directions exactly, without nuances. For example, when a 10 year-old student was told to get the ball in gym class, he grabbed a ball from another student's hands because that was the first ball he saw. He did not get the ball that had bounced out of play during the game because he did not see it first. He did exactly what he was told to do, though it was not what the teacher had intended. Students with NBB also may have difficulties with idioms,

abstract concepts, and figures of speech. Another student was reading a classroom book on the body's senses when he came to the section on the nose. It read, "Your nose tells you many things." His response was to exclaim, "This book is wrong! My nose can't talk."

Expressive and receptive language. Language difficulties also can surface when a large gap exists between expressive language and comprehension. Students with NBB can sound very articulate, which masks their poor comprehension. Some refer to this as "cocktail" language (Burke, 1999). People with NBB can chat a lot, say little, and comprehend even less. Poor expressive language skills can be problematic. Students with poor receptive language skills may not have developed language associated with their feelings. Often, they have not developed an adequate vocabulary to express themselves, and as a result, may use profanity or other inappropriate words and actions for expression.

Parroting the speech of others can be problematic for some students with NBB. For example, some can regurgitate the rules and the possible consequences of breaking the rules, but without understanding their purpose, how to apply them, or the relationship between the infraction and its consequences. Because students with NBB are able to parrot the rules, many think they understand and assimilate them. The anomalies in the physical structure of the corpus callosum in the brain have been implicated in this phenomenon (Riley, 2003).

Vernacular. Vernacular can be closely related to socio-economic status (Noble et al, 2005; Payne, 2003) and can be implicated in language difficulties. Payne (2003) notes that people from varying socio-economic states use different vernacular The middle and upper classes tend to use a “formal register” conversational style consisting of 1400-1800 words, complete sentences and few non-verbal assists (Payne, 2003). This is also the conversation style in schools and business. The conversational style used by poorer or working-class people tends to be a more "casual register" (Payne, 2003). This casual register is characterized by a vocabulary of some 400 to 600 words, broken sentences, and many non-verbal assists. Colloquial speech patterns in casual register often consist of violent sounding phrases accompanied by aggressive gestures. These violent verbal assists may include feigned slapping, punching, or other physical assaults as well as gestures and other non-verbal behaviours. People unfamiliar with them often misinterpret these colloquial speech patterns and non-verbal assists as violent (Payne, 2003). Compounding the issue of language are the social nuances common to the various socio-economic classes. The vocabulary is limited in the casual language register and negotiation and conflict resolution skills are often lacking. Conflict may often be resolved through physical fighting, and respect is accorded to those who can defend themselves physically (Payne, 2003).

The amygdala and language. Neuro-scientific research has made its own contribution to the issue of language and behaviour. The amygdala also reads the tone of voice (Brendtro & Longhurst, 2005). Emotionally charged language

can be interpreted as threatening by some students with NBB just because of the tone of voice used (Brendtro & Longhurst, 2005). Thus, when educators use an authoritarian tone of voice with firm language, as many classroom management strategies encourage, a student with NBB may subconsciously interpret the directions as a threat and lash out with physical or verbally inappropriate behaviour. The student with NBB becomes labeled as aggressive when, in fact, the autonomic survival system in their amygdala is just doing what is it designed to do.

With an increased awareness of these language difficulties, and the development of appropriate strategies and interventions, such challenges may become manageable rather than handicapping. The language quadrant of the NBB Model of Support, encourages educators to consider the wide ranging implications of language, and to teach students with NBB to use language in a constructive manner. Language provides the landmarks of life, and generates context and understanding (Pennebaker, 2008) which students with NBB need to develop for academic and social success.

Attitude

Attitude may be the most important aspect in behaviour intervention plans (Richardson & Shupe, 2003). As educators, our attitudes directly affect how well we are able to support and teach students with NBB. Attitude is as much about caring for ourselves as it is about promoting appropriate behaviour. Serving students with NBB begins with each educator being aware of and understanding his or her own emotional self. Educator attitude has long been recognized as a

significant factor in the quality of education. Redl (1951) first stated that educator self-awareness and attitude were crucial for the success of students with emotional disturbances. Later theorists such as Glasser (1998a), Albert (2003), Gossin (2004), Kohn (2001), Nelson, Lott and Glenn (2000) reiterated this. For students with NBB, or with other disabilities, the effects of educator attitude on educational service delivery may be more pronounced. The emotional context in which educators teach students with NBB is a critical factor in the effectiveness of the educational process for these students (Richardson & Shupe, 2003; Greene, 2001).

Psychiatric or psychological diagnoses. Attitude is crucial in the NBB Model of Support. Students with EBD and NBB often are labeled violent, aggressive, mentally ill, or predatory. However, by labeling youth with such disparaging terms it may appear that society is abdicating its responsibility to provide nurturing, supportive environments and blaming the youth for exhibiting behaviours and attitudes that have categorized them as having EBD or NBB. EBD terminology tends to be pathologically based and rooted in the medical model of disease or genetic defect (Fotlz, 2006). Students with EBD and NBB often have a number of psychiatric or psychological diagnoses such as attention deficit hyperactivity disorder, oppositional defiant disorder, learning disabilities, bipolar disorder, autistic spectrum disorders and others (Davidson, 2008; Koltec, 2006). Some diagnoses have a physiological foundation, such as fetal alcohol spectrum disorder in which some of the actual neurons are physically changed, and autism spectrum disorder, where the neural connections function differently

from the norm (Koltec, 2006). Other diagnoses have descriptors, based primarily on the display of unusual behaviour and/or inconsistent cognition. Some speculate that these descriptors may be more indicative of a mismatch between accepted social behaviour and the conduct of the person in question (Brentro & Longhurst, 2006).

In order to understand the behaviours of some students, it may be beneficial to look at the viewpoint of the person assigning the behavioural descriptor. Psychiatric descriptors are medical diagnoses from medical physicians. Psychiatric diagnoses are compiled in the Diagnostic and Statistical Manual (DSM) for disorders that have primarily mental or behavioural symptoms. Physicians are the only diagnosticians who can legitimately assign psychiatric descriptors. They may also prescribe pharmaceutical interventions to address problematic conditions. Physicians also are expected to consider and treat, if necessary, underlying physical causes of their patient's condition.

Psychological descriptors identify behavioural phenotypes. Only qualified diagnosticians, such as trained mental health personnel, or psychologists registered with a reputable association, can legitimately assign psychological descriptors. Psychologists use other forms of treatment, such as various non-pharmaceutical therapies and suggest environmental changes and differentiated instructional methods in school. They can however, recommend a person to be assessed by physician with a view to having medication prescribed. Often the diagnostician qualifies many of the psychiatric or psychological diagnoses assigned to the students with the word "like" behind the descriptor, as autistic-like

or bi-polar-like behaviours. This is done when the history of the problem may be incomplete but there is strong evidence of the diagnoses (Feldman, 2004). On average, it takes 10 years from the first indication of an anomaly to the clinical diagnosis of a mental health issue (Papolos & Papolos, 2002; Faraone, 2003). None-the-less, behind every psychiatric, psychological or behavioural descriptor there is a valuable human being.

Not accepting. Problematic behaviours exhibited by students with EBD and NBB often are viewed as character flaws, moral defects, or as evidence of degenerate, delinquent, or dysfunctional temperaments. Personal attitudes towards mental health and mental health issues are important to consider. Must people with mental health issues be described in pejorative terms? Are mental health issues considered permanent impairments with no hope of amelioration? Are people with mental health issues viewed with skepticism, sympathy, fear, or distrust? If so, one must challenge these attitudes and confront many of the disparaging beliefs that may surface when working with students with NBB. Mental health diagnoses should be used only as indicators of how to design possible interventions and supports to better meet the needs of all in school, not as labels to marginalize a group of students with neurological differences.

Sympathy. The use of sympathy in the classroom also is of concern. Often those who seek employment with marginalized groups do so because they "feel sorry" for them. Sympathy is "feeling for" someone who is injured, ill, or incomplete in some way, and should never be used in the classroom (Hingsburger, 2000). When a person displays sympathy for someone, that

person feels stronger and somehow more complete than the person for whom they are expressing sympathy. This immediately sets up a power imbalance and can result in the use, by one group or the other, of inappropriate means to gain power (Hingsburger, 2000). Empathy, or "feeling with" the other, can be very productive and facilitate a better rapport between the individuals. With empathy, the student and educator can share a feeling about a particular situation, without one being stronger than the other. For example, if a student's pet dies, the teacher can relate to the student, by talking about when her childhood pet died. A commonality can be established, rapport built, and empathy fostered. However, if the educator uses coddling language and behaviour to "protect" the student or allows the student to react emotionally, a sympathetic response may result in which the educator becomes stronger because the student is encouraged to be weak.

Power. Students with NBB and EBD often create power struggles within the classroom. For students with behavioural difficulties, power struggles are counterproductive and emotionally draining (Richardson & Shupe, 2003). However, power struggles may inadvertently occur when educators feel their authority is being challenged (Richardson & Shupe, 2003). Many adults who work in schools operate within a hierarchical and autocratic version of a professional bureaucratic power structure and may feel threatened when they perceive a challenge to their power (Skrtic,1995). Educators need to acknowledge their authority as the adults and keepers of the system, but not do so in an autocratic or power-seeking manner. The balance between maintaining ones' authority

without abusing one's power is crucial in understanding ourselves and nurturing a healthy, non-judgmental attitude (Hingsburger, 2000; Richardson & Shupe, 2003).

The term NBB is rooted within a strength-based perspective (Henderson & Milstein, 1996). Students with NBB have many qualities and strengths that can be nurtured as they develop life competencies. The strengths' perspective is instrumental in providing well-rounded educational programming for students with NBB. It is rooted in the here and now, is solution orientated and devoted to practical outcomes. All small improvements by students are to be celebrated as important steps to a better quality life, now and in the future.

Balance. As part of a balanced approach, educators must adopt a degree of suppleness and flexibility in order to confront the challenges of stereotyping and marginalization often associated with students with NBB (Brokenleg, 2002). Educating students with NBB can be challenging. Educators must nurture a hopeful, balanced perspective and must be able to care for their emotional selves by developing among other strategies, coping mechanisms, means of self-care, and ensuring there is laughter in their lives. Strategies to address these aspects of healthy attitude development include the use of "humour that heals," a philosophy where sensitive humour can be used to diffuse difficult situations and to bring people closer together (Richardson & Shupe, 2003). With the goal of establishing common ground, strategies to develop humor in the classroom, such as finding the "joke of the day," drawing silly cartoons, or reading funny books should be promoted for both the adults and students. An

appropriate sense of humor is one of the most effective means of de-escalating potential power struggles and crisis situations (Richardson & Shupe, 2003) while maintaining the health and stability of the direct service providers (Dr. M. Koltec, psychiatrist, Manitoba Adolescent Treatment Center, personal communication, June 9, 2006). Self-care strategies for the students and educators, such as deep breathing activities, positive self-talk, yoga, and encouraging the consumption of drinking water and healthy eating can be facilitated in the classroom.

Educators need to model a healthy, balanced attitude for students with NBB. Educators must revisit their personal belief system continually with the purpose of remaining as non-judgmental, professional, and nurturing as possible. Students with NBB need to be able to receive the most beneficial education possible and the staff must be well-grounded, non-judgmental, and healthy to provide them with the most educationally enabling experience. It all begins with attitude.

How is the NBB Model different from typical behaviour interventions?

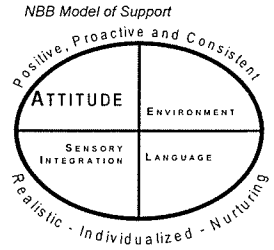
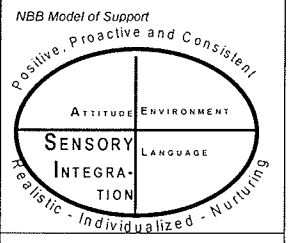
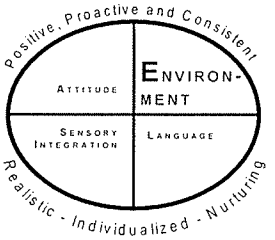
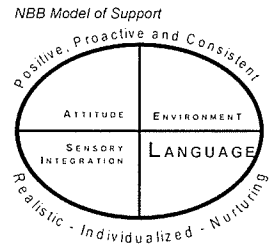
Figures 4, 5, and 7, contrast some of the differences between typical interventions with extreme behaviour and interventions based on the NBB Model of Support. The behaviours described in Figure 4 can cause significant distraction in a classroom and disturb the learning of others. The educator's reaction to this type of situation could worsen the classroom climate and alienate students from each other. In classroom situations, educators usually are aware of the other students' reactions to misbehaviours. Educators challenged by such misbehaviour, may feel that it may cause increased misbehaviour in the

classroom, comprise safety, weaken the learning environment, or raise doubts as to the educator's competence. With the NBB Model of Support, educators are encouraged to model calm, sensible, and prudent behaviour for the student with NBB who is in crisis, and his or her peers who are witnessing the event.

Compare and Contrast - Figure 4. Many of the strategies and suggestion in Figure 4 can be misinterpreted. Many of the deep pressure exercises mentioned in the chart can be thought of as "letting the student away with something," or rewarding the misbehaviour, with tangible rewards, such as gum, and crackers or increased attention. However, when the misbehaviour is viewed as possible implications of the midbrain, alternate interventions could possibly be generated to address an unmet, unrecognized need. For example in Figure 4, the first section under the NBB Behaviour Support and Response addresses possible language and auditory processing difficulties by using pictorial, gestural, and non-emotional verbal language (Hall & Hall, 2003). The student is told what to do and a staff member does it with the student, rather that waiting for the student to comply. This provides support and opportunity for the student. The adult is able to provide encouragement at each minute step in the process. In the second section, the sensory integration system is considered with sensory integration strategies that address sensory seeking behaviours and excess energy issues (Williams & Shellenberger, 1996; Kranowitz, 1998; Murray-Slutsky & Paris, 2005). The staff does the wall pushes, or goes for a walk with the student. This provides opportunity to model sensory friendly strategies to the student, put language to the event, and observe the student's reaction to them. Section three

Figure 4

Contrasting the NBB Model with Traditional Behaviour Methods: Classroom Example

Problematic Behaviour: -Out-of-seat, excess movement, making noise, non-compliance, defiance, kicking at others, swinging arms, not taking direction from the teacher.	
Typical Behaviour Support Response: -verbal direction telling the student what not to do; warnings of consequences -anger, shaming, detentions, withdrawal of privileges, phone calls home, or -isolation, separation from others, suspension, exclusion.	
NBB Behaviour Support Response:	
1. Verbal and gestured direction to show and tell the student what to do. • Tell the student they "look as if they need help." • Address academic insecurity by providing academic adaptations, and assistance. • Address possible language processing issues by asking the student to show you what they need to do. Tell them, in as few words as possible, if they do not know. • Show the student by what to do with short concise directions, and how to start it. • Use pictures and other graphics to show the expectation. • Avoid emotional blame-sounding language, such as, "weren't you listening;" "what do you think you have to do"; and others phrases such as these.	
2. Provide opportunity for deep pressure exercises to address possible SI issues. •A 10-15 second arm wrestle. •Allow the student to stretch their arms and legs with an exercise stretch cord. •Allow the student do wall pushes. These provide deep pressure to the shoulders, elbows, wrist and hand joints, may settle the swinging limbs. •Take the student for a walk to a quieter or different environment.	
3. Provide an alternate sensory friendly area for student to work. • Provide headphones, earplugs, or other apparatuses to either mask, diffuse or distract from classroom noise. • A piece of sugarless gum, crunchy mini carrot, or soda cracker may help him/her to be more focused and lower their volume of noise. • Have another working area in the classroom free from visual clutter and congratulate him or her when they move there. • Look for any environmental influences.	
4. Put language to the event. •Succinctly, name the one possible emotion you feel may be influencing the behaviour. Once an emotion has been identified, label, normalize and validate it. •Transfer the emotion into language, can generate context and understanding of the event. This teaches emotional identification. •Suggest one or two actions or strategies the student can do cope with the emotion, misunderstanding, or confusion of the situation. •Make a plan of what to do the next time they are faced with a similar situation.	

of the chart considers environmental influences of the situation. Alternate work areas are used, areas de-cluttered and distractions are kept to a minimum (Williams & Shellenberger, 1996; Kranowtz, 1998). Students are congratulated for moving to alternate work areas thus recognizing the influence the environment is having on the student's academic process.

Gum and mini carrots are used as "tools to help your mouth be successful." If the noise continues, the student misuses the tools, or spits the gum or carrots at someone, the student is thanked for "letting the adult know that wasn't what was needed."

The student then cleans up his or her sputum. Later, when peers are getting mouth tools, the student is gently reminded that the mouth tools were unsuccessful the last time, so are not available to them. This blends and balances the NBB Model of Support with more common behaviour support of reasonable, simple, valuable, and practical consequences (Coloroso, 2002).

Finally, in Figure 4, the fourth section consciously works at putting language to the event and the strategies used to address it (Greene, 2001; Hall & Hall, 2003). Non-emotional language is used to identify the event and the how the handle it. Many other behaviour support methods use emotionally laden language, and tactics designed to promote awareness, for the student with NBB, on the impact of their behaviour on others. Many students with NBB cannot fathom the impact of their behaviour on others because they are in a crisis themselves. Recognizing the behaviour as a need for support can help build

foundations for more appropriate behaviour that includes developing empathy for others.

Compare and Contrast – Figure 5. Figure 5 is another example contrasting the NBB Model with traditional models. It highlights some of strategies used to address profane language. The NBB Model seeks to go past the idea that profanity is unacceptable, to find the underlying reason for it. This is done by observing, then making a professional judgment as to what you think the reason for the profanity is. Possible functions of profanity include reacting to an unexpectedly event or being startled, is called expressive profanity. Profanity used when one hurts him or herself, is referred to as reactive profanity. Contextual profanity is the use of profanity when the tasks or situations are academically, socially, or emotionally challenging. Finally, there is self-protective profanity that used to isolate oneself, or to distract another person from an emotionally charged issue. This is often a precursor to physical violence.

Profanity as an opportunity. Profanity, is not acceptable, but when occurs, provides a natural opportunity to, increase vocabulary, increase emotional awareness, and teach acceptable language and behaviour. Regardless of the function of the profanity, an educator's role is to provide the learning opportunity. Students may need to learn how to recognize and shift between the language heard in the home or community, and language used in school (Payne, 2003). A student's use of profanity provides this opportunity. A student is not chided or chastised for using profanity with the NBB Model. Rather, the adult provides emotional identification and then substitutes socially appropriate language.

Figure 5

Contrasting the NBB Model with Traditional Behaviour Methods: Profanity

Problematic Behaviour: Profane language.
Typical Behaviour Support Response: • verbal direction, • reiteration of consequences, • isolation or separation from others, or • suspension, and exclusion.
NBB Behaviour Support Response:
Look at all the perspectives of the situation. Then use your professional judgment, determine the possible function of the profanity. Possible functions of profanity include: 1. Reactive profanity, which is used when unexpectedly injured or surprised, such as accidentally hitting your thumb with a hammer. 2. Expressive profanity is profanity used as adjectives, adverbs and other forms of speech, in conversation. 3. Contextual profanity is the use of profanity when the tasks or situations are academically, socially, or emotionally challenging. 4. Self-protective profanity, which is the profanity used to isolate oneself, or to distract another person from an emotionally charged issue. This may be a precursor to physical violence.
If the profane language is reactive profanity, address the injury, insult, or circumstance that possibly elicited the language. After the initial event has been taken care of, teach alternate strategies and language.
If the profane language is expressive profanity, substitute alternate wording, and talk about the concept of "home language" and "school language," identifying what words are acceptable in specific environments. Build vocabulary and teach other ways of self-expression. Art, music and other multi-dimensional may facilitate self-expression. Since expressive swearing is often heard in the students' home environments, the profanity is simply labeled as inappropriate and acceptable wording is substituted.
If the profane language is contextual profanity, address the academic, social, emotional, or other challenges. After addressing the issue, label the profanity as inappropriate then substitute and teach other language, actions, and/or strategies to deal with the challenges.

Figure 5 continued

Contrasting the NBB Model with Traditional Behaviour Methods: Profanity

NBB Behaviour Support Response continued:
If the profane language is self-protective, it could be indicative of an eminent physical reaction, or violent-looking acts. Support the student, as needed. Ensure the safety of all, and clear the area, if needed. Calmly, in a low and slow tone of voice tell the student what to do, in as few words, as possible, and then wait for compliance. Use proximity control and ensure your body language is supporting, non-confrontational and non-threatening. Congratulate the student as he/she begins to follow your directions. Go to a pre-determined neutral area, such as a Quiet Room, and let the student calm. After the student is calm, identify the precipitating event, put emotional identification, and language to it, and make a plan for what to do the next time it happens. Congratulate the student making the plan, then label the profanity as inappropriate then substitute and teach other language to use.

Phrases such as “you sound frustrated,” “you sound excited,” “that looked as if it hurt,” and so on are used. Once the student’s feelings are acknowledged, the student is told other words and actions they can use for the next time.

Socially appropriate language. Developing socially appropriate language takes time. An analogy of a mountain is typically used to explain to others what is occurring. The triangle, or mountain in Figure 6, explains the progression from profanity to socially acceptable language.

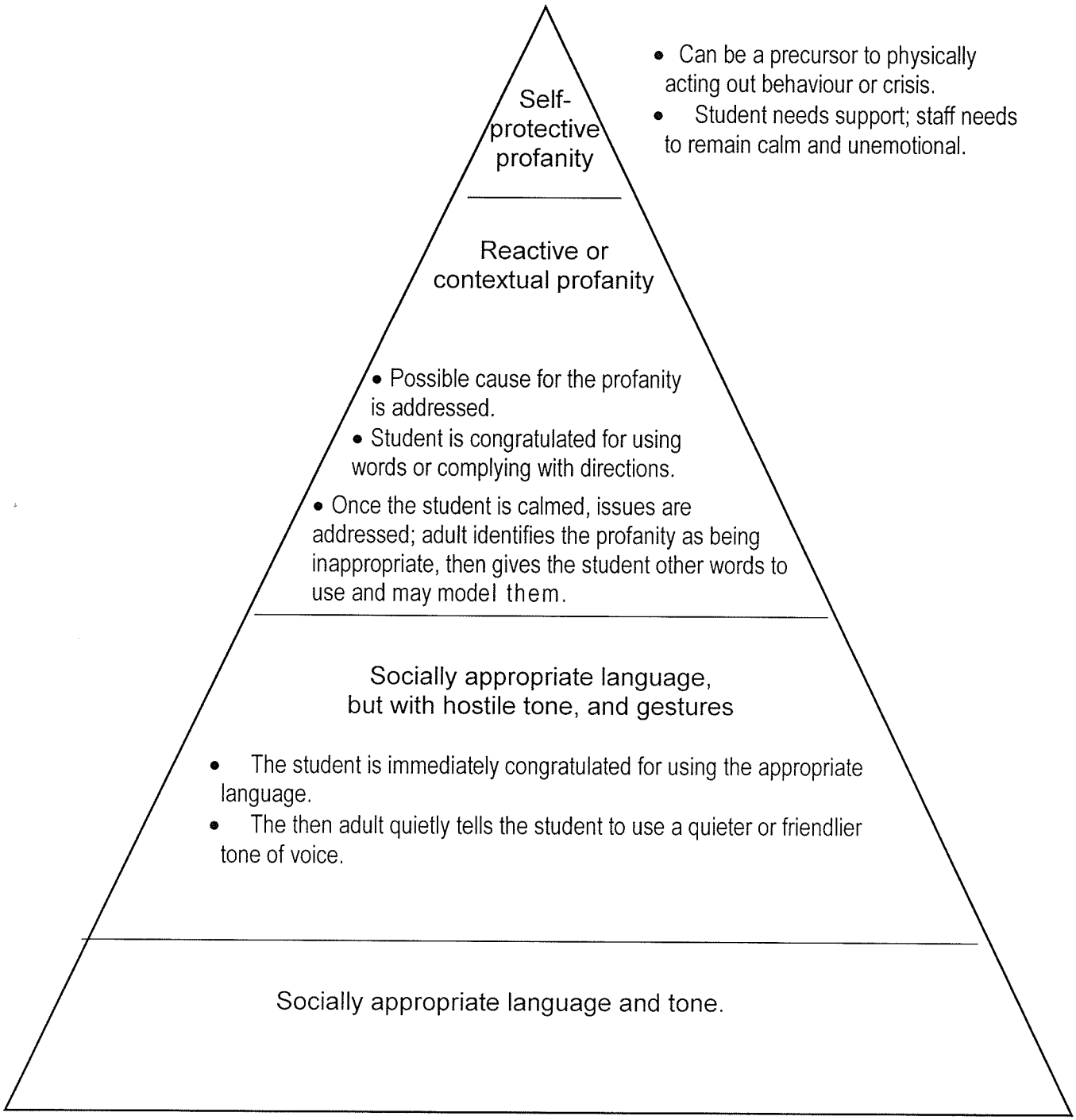
The tip. The top tip of the mountain is the self-protective profanity that immediately proceeds physically acting-out behaviour. At this stage, the student with NBB needs support. The environment needs to be as safe as possible, other students may need to be removed from the classroom, or directed not to engage the student or person supporting him or her. The physical safety of all people is the priority.

The peak. The second stage on the mountain can be thought of as the snow-peaks at the top of the mountain. The event could easily escalate to an explosive crisis. However, the event is not a crisis at that moment. Profanity tends to be contextual or reactive in nature. Addressing the cause of the profanity, such as the academic frustration, physical injury, and such, needs to occur before the inappropriate language is addressed. Once the student is calm, the adult identifies the profanity as inappropriate, and gives the students other wording to use.

The mid-area. The mid-area of the mountain occurs when students use the appropriate wording, but with hostile tones or gestures. With the NBB Model

Figure 6

The Development of Socially Appropriate Language



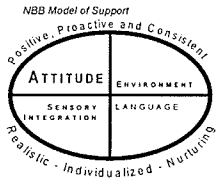
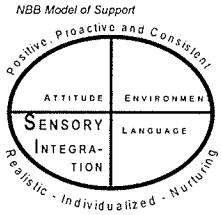
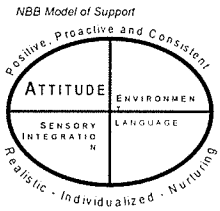
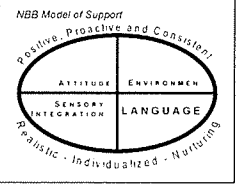
of Support, the student is immediately congratulated for using the appropriate language. The issue is dealt with, and then the adult quietly tells the student to use a quieter or friendlier tone of voice.

The base. The base of the mountain is socially appropriate tone and language. When socially appropriate tone and language are used the NBB Model of Support is not needed.

Compare and contrast – Figure 7. The behaviours described in Figure 7 can be common in some students with NBB. For students with NBB, behaviours can be understood as either "sensory avoiding", where students flee noisy, cluttered environment, or "sensory seeking", where unsafe behaviours are evident (Murray-Slutsky & Paris, 2005). In Figure 7, sensory seeking behaviours are described. Traditional interventions such as time-out, excluding the student from gym classes, talking to the student, involving other professionals, and school suspensions may not curbed these behaviours. However, safe, sensory seeking alternatives included in the student's academic day may result in a decrease in the student's unsafe behaviours. An exercise stretch cord may be used as a tool to address the possible deep, sensory needs of students with NBB exhibiting unsafe behaviours. A quick pull on the cord, or having the student sit on the middle of the cord, and then hold the ends of the cord and pull it up by extending the arms, may provide the sensations needed to maintain the student safely in the classroom.

Figure 7

Contrasting the NBB Model with Traditional Behaviour Methods: Sensory Seeking Behaviours

Problematic Behaviour	
Unsafe, thrill-seeking behaviour, as seen with the student scaling the outside walls of the school, climbing up the gymnastic ropes in the gym, perching on the top of the basketball hoop in the gym, hanging from the coat hooks, sitting on top of the wall partition in between the stalls in the bathroom. Typical behaviour interventions had not curbed this behaviour.	
Typical Behaviour Support Response:	
-verbal direction, with warnings of consequences for climbing and possibly falling, -anger, shaming, detentions, withdrawal of privileges, phone calls home, or -isolation, separation from others, suspension, exclusion.	
NBB Behaviour Support Response:	
1. Keep yourself calm and ensure your responses do not inadvertently perpetuate the unsafe behaviour. •When the event is over, document it, using non-emotional language. Describe the actions and behaviours, not your emotional reaction to it. •Remove as many temptations for thrill seeking behaviour from the environment. Prevent as much misbehaviour as possible, by preplanning and removing temptations from the environment.	
2. Provide opportunity to safely climb, swing, and stretch to address possible sensory integration issues. •Allow the student to do "pull-ups" in a safe area. A pull-up is an exercise where the student puts on a pair of oven mitts, the grabs the top of a door, and pulls him/herself up. Wall pushes can also be used. •Allow student to stretch their arms/legs with an exercise stretch cord. •Provide time for play on recreational equipment and other safe alternatives.	
3. Look for any environmental influences. Note circumstances, frequency, duration, time of day, presence of peers, and other environmental considerations. •Allow for movement and deep muscle pressure activities, such as lifting and moving books, pushing the walls, moving heavy furniture. •Allow for a 10-15 second arm wrestle.	
4. Put language to the event and strategies to teach emotional identification, communication skills, coping strategies, and language. •Teach the student to recognize when he/she seems to need this sensation, then how to ask for it.	

More than one. Often more than one student is involved in a behaviour problem. The NBB Model of Support can be beneficial in such situations. The following hypothetical example demonstrated this.

Two students, Eddie and Donny arrive at school. Eddie looks at Donny. Donny says, "What are you looking at?" and punches Eddie with a closed fist.

Eddie retaliates by lunging toward Donny, screaming profanities and swinging his fists. Wanda, a staff member steps toward Eddie, puts her hand on his shoulder and calmly says, "Let it go, Eddie. Let the adults deal with it." Eddie turns around and takes a swing at her. Wanda blocks the punch, using non-violent crisis intervention techniques, also known as NVCI (Crisis Prevention Institute, 2006), wraps his arms around him and leads him to the back room. He is held, using NVCI, until he calms enough to be in control of his body.

Zoey, an educational assistant, directs Donny into the Quiet Room. He refuses; calling her an "ol' crack head", then tries to push her out of his way. Using non-violent crisis intervention techniques, Donny is put into the Quiet Room. Zoey holds the door shut, and Donny begins to kick and punch the walls.

Yolanda, a second educational assistant, immediately ensures peers are out of the way and able to carry on with their day. She congratulates them for "keeping themselves out of the problem," and makes sure they have enough work to keep busy, undistracted, and on schedule. In Figure 8, 9 and 10, three different staff members, implement the NBB Model of Support in three different areas of the classroom, as it pertains to this one incident.

Figure 8

Applying the NBB Model of Support Universally in the Classroom

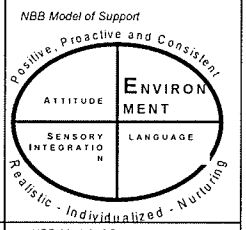
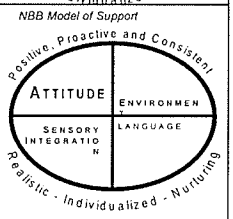
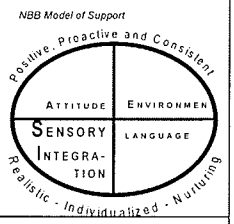
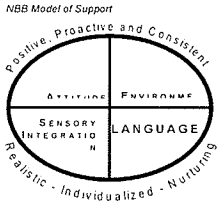
Problematic Behaviour:	
Donny punched a peer, attempted to punch a staff member (physical assault), swore (verbal assault), and refused to comply with directions.	
NBB Behaviour Support Response:	
-Since Donny threw the first punch, looked Zoey in the eye, swore and pushed her, Zoey used NVCI and put him in the Quiet Room. -She changed his environment and ensured no students could interact with Donny since he was in such an inflamed state.	
-Zoey ignored, but documented the verbal threats and profanity. -When he stopped kicking the wall, Zoey congratulated him, and ignored the rude gesture and profane comment he made to her. -Zoey did not engage in any verbal exchange with Donny, and avoided any power struggles.	
-To ensure the staff did not contribute to the noise level in the classroom, Zoey ignored Donny's verbal threats and profanity. -The picture showing Donny what he needed to do was hung in the Quiet Room window.	
-As Donny settled, Zoey congratulated him then gave him one or two word directions of what he needed to do next. -When Donny was ready, Zoey asked him why he was in the QR. If he does not remember, Zoey tells him in non-emotional language. -Zoey labeled the behaviour as inappropriate, asked Donny for his side of the incident. Emotional identification, language, and alternate strategies were identified.	

Figure 9

Applying the NBB Model of Support Universally in the Classroom

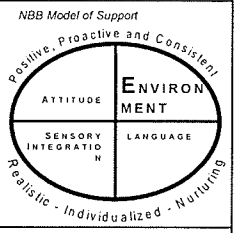
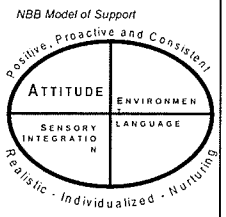
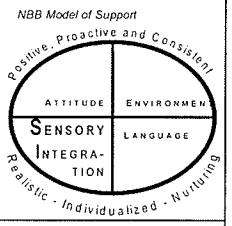
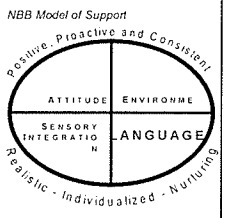
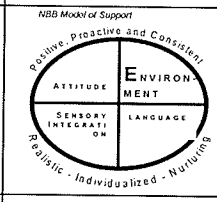
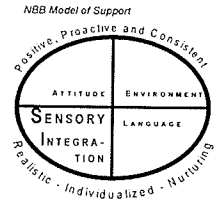
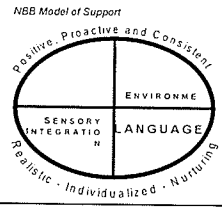
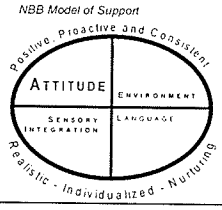
Eddie and Wanda: NBB Model of Support	
Problematic Behaviour: Eddie was provoked into physically assault a peer, screaming profanity (verbal assault), and flailing his limbs.	
NBB Behaviour Support Response:	
-Wanda identified the behaviour as inappropriate and told Eddie we were going to the backroom -She changed the environment and ensured no students could interact with Eddie because he was in such an inflamed state.	
-The difficult behaviour is recognized as a "behaviour crisis," not a willful act. The automaticity of Eddies response to being punched and sworn at are recognized as the activation of the "fight" response of the midbrain	
-Since Eddie was still in an inflamed state, Wanda encouraged Eddie to breath slowly in through his mouth and out through his nose. -As Eddie calmed, he and Wanda made plans so Wanda could let go of his arms. Wanda releases Eddie as soon as he had control of his body.	
-Wanda spoke very softly to Eddie reassuring him that he was safe. -When Eddie shouted that he could "get" Donny, Wanda quietly stated that "he sounded angry," and that she would be angry if she were in a similar situation. This was an attempt validate and normalize Eddie's feelings. -Wanda continued to quietly encourage Eddie to breathe deeply, reassuring him that he was safe. -When Eddie was ready, Wanda asked for his side incident. -Emotional identification, language, and strategies "make it (the incident) smaller;" to "keep you (Eddie) safe and out of trouble;" were discussed and planned.	

Figure 10

Applying the NBB Model of Support Universally in the Classroom

Remainder of class and Yolanda: NBB Model of Support	
Problematic Behaviour: The students witnessed two students physically and verbally assaulting each other. In addition, their morning routines were being disrupted, and the classroom was noisy.	
NBB Behaviour Support Response:	
-The environment was made safe since Donny, who was physically acting out was contained in the Quiet Room and Eddie, who was making a disturbance was in the backroom.	
- The other students were given ear coverings and other sensory tools to help them ignore the noise of the incident. -"Tools for the mouth," (i.e. sugarless gum, mini carrots, and soda crackers) designed to keep mouths busy and distracted were available for the students doing "their jobs." *Regardless whether the "tools" helped to keep their mouths busy and prevented the students from muttering rude language, or rewarded the appropriate behaviour, the students ignored the noise and misbehaviour.	
-Yolanda in a soft tone of voice to congratulate the students doing their 'jobs,' and coached the one who were not doing their 'jobs' -When asked, Yolanda, in a non-emotional voice, labeled the incident as inappropriate, identified the possible emotion, identified language, and strategies to help one "ignore and out of trouble."	
-Students were quietly (and individually) congratulated for respecting Donny and Eddie by ignoring their difficult time. -Behaviour difficulties were identified as something that happens and we, ourselves, can make them bigger or smaller.	

What to do? In such situations, the staff used calm, non-emotional voices, tell the students what to do, where they need to be, and how to do what they need to do. When calm and ready, the two students are invited to mediate the situation. When one student has to wait for the other student to be ready to mediate, the student who is ready carries on with his academic tasks until mediating can take place. When one student refuses to mediate with the other, he is left in the Quiet Room, given a specific time by which the mediation needs to happen, and is given one page of one of his academic tasks. As he finishes the first page, the staff member supervising the Quiet Room collects the completed page and hand him the next page.

Mediating. The students are reminded of the rules for mediating. The rules are, one person talks at a time, no interrupting, when one student speaks the other must be quiet, school language has to be used, each student will have opportunity to talk after the other has spoken, and a plan for a successful "rest of the day" needs to be made. When both students are ready, they go into the Quiet Room. Donny is asked to stand against the far south wall of the room and the Eddie is asked to stand by the north door. The teacher stands between them. Donny is situated further inside the Quiet Room because it appeared he instigated the original incident. One at a time, each student asked to retell his or her version of events. If one student interrupts and begins to dispute the event, the process is stopped. The teacher identifies why it has been stopped and the student standing by the door and she and the student standing closest to the doorway of the Quiet Room leave the room. The process begins again when all

are ready. Mediation allows students to articulate their perceptions of the incident, use language to identify and share their feelings and responses to the incident, and "to fix" the incident, and "to get beck to their jobs" in the classroom. Donny and Eddie are held accountable for their behaviours. The students are not sent home or expelled. Donny, who had instigated the incident, because he had a "fight" with his brother before the bus picked him up, will be given a one-day in-school suspension for physical assault. Donny will have to work alone in the Quiet Room. He is responsible completing his academic tasks, he will probably need alternate tasks instead of the group activities the rest of the class might do. At the end of the day, he will be congratulated for completing his in-school suspension. Donny also will be given "words to use" and strategies to use the next time he comes to school mad.

Eddie and Wanda debrief his retaliatory response to being punched by identifying and practicing the "words to use" and the accompanying strategies to employ to cope with such occurrences. Eddie continues his day in the main classroom with his peers. At morning meeting time, the rest of the class is congratulated for respecting the students who were having difficulty by "staying out of their business," and for getting their jobs done.

Incident reports. Written incident reports for both Eddie and Donny are filed. Since Zoey and Wanda had physically intervened and used a NVCI physical restraint, with these students, written incident reports are necessary. NVCI physical restraints are always used as a last resort, and to maintain safety

of everyone in the environment. The administrator will sign the incident reports and copies will be forwarded to the students' legal guardians.

NCVI physical restraint did spark some controversy (Ryan & Peterson, 2003; McAfee, Schwilk & Mitruski, 2006). Over the years, there were those who thought it should never be used (Fox, 2004). They have argued that talking to the students was typically enough to maintain order and safety. However, just as a competent parent would immediately grab his or her child to prevent him or her from running in front of a moving vehicle, a competent educator may have to physically intervene to ensure the safety of some students with NBB. Some researchers have identified the need for some students with NBB to have someone be their "external brain" (Doctor, 2000). At times this external brain needs to physically guide students with NBB. Neuroscience researchers also have identified neuro-chemical responses in the brain that stimulate automatic responses before cognition happens causing reactions to occur before they can be thought out (LeDoux, 1996; Kolb, 2008).

Once the student and staff were in a NVCI hold, it was very important to move the student to an area where he or she will be safe and the adult can release him or her. We do not want to inadvertently teach the student that as long as one is physically bigger that another, has more power over another, or out-numbers anothers, physical intervention is acceptable. After the student settled, it is crucial to establish how he or she interpreted the situation and to establish why it was necessary to use NVCI. Debriefing with all involved, including those who

have witnessed the incident is imperative in order to turn a situation from being a stressful, negative experience to one a learning experience for all involved.

An added benefit to having to write incident reports is that they generate documentation that can be useful to other human services systems, as long as written permission to share information is obtained from the legal guardians of the students involved.

NBB Model. The NBB Model represents an attempt to develop a new perspective of student misbehaviour, with an understanding that children unconsciously work to create a world that mirrors their own internal world (Shearman, 2003). Consequently, educators using the NBB Model of Support actively seek to glean some insight by trying to understand how students are interpreting the behavioural situations in which they find themselves. From an awareness of the students' perspectives of the situations, educators may be able to provide a more useful framework to support and educate students who have historically have been disconnected and marginalized in school. Changing the perspectives and using other tactics to address problematic behaviour may begin to lay the foundation for long-term behaviour change. Using misbehaviour as opportunities to teach alternate language and behaviour can be very enabling for all involved.

Perspectives. Various individuals interpret situations differently (DeLoux, 1996). For some students with NBB certain school situations are threatening, especially when prior experience, language development, neurodevelopmental influences, and emotional maturity and self-control are considered. The stress of

a school experience perceived to be personally threatening may motivate emotional responses that trigger maladjusted ways of coping. Students may use maladjusted behaviour when the feel academic insecurity, fatigue, hunger, shame, insecurity, or other intimidating emotions. As a result, some school experiences may start an instant and automatic response by the many brain systems designed to keep the biological being protected (LeDoux, 1996). Using the NBB Model of Support, educators may be able to manage these situations differently, while teaching many important skills to all. People cope better and are able to develop new behaviours when supported by others (LeDoux, 1996; Brendtro & Longhurst, 2005). Perhaps as educators begin to see some misbehaviour as "behavioural crises" and learn to respond as physicians responds to medical crises, students with NBB will begin to be more successful in school.

Chapter 3

Research Methods

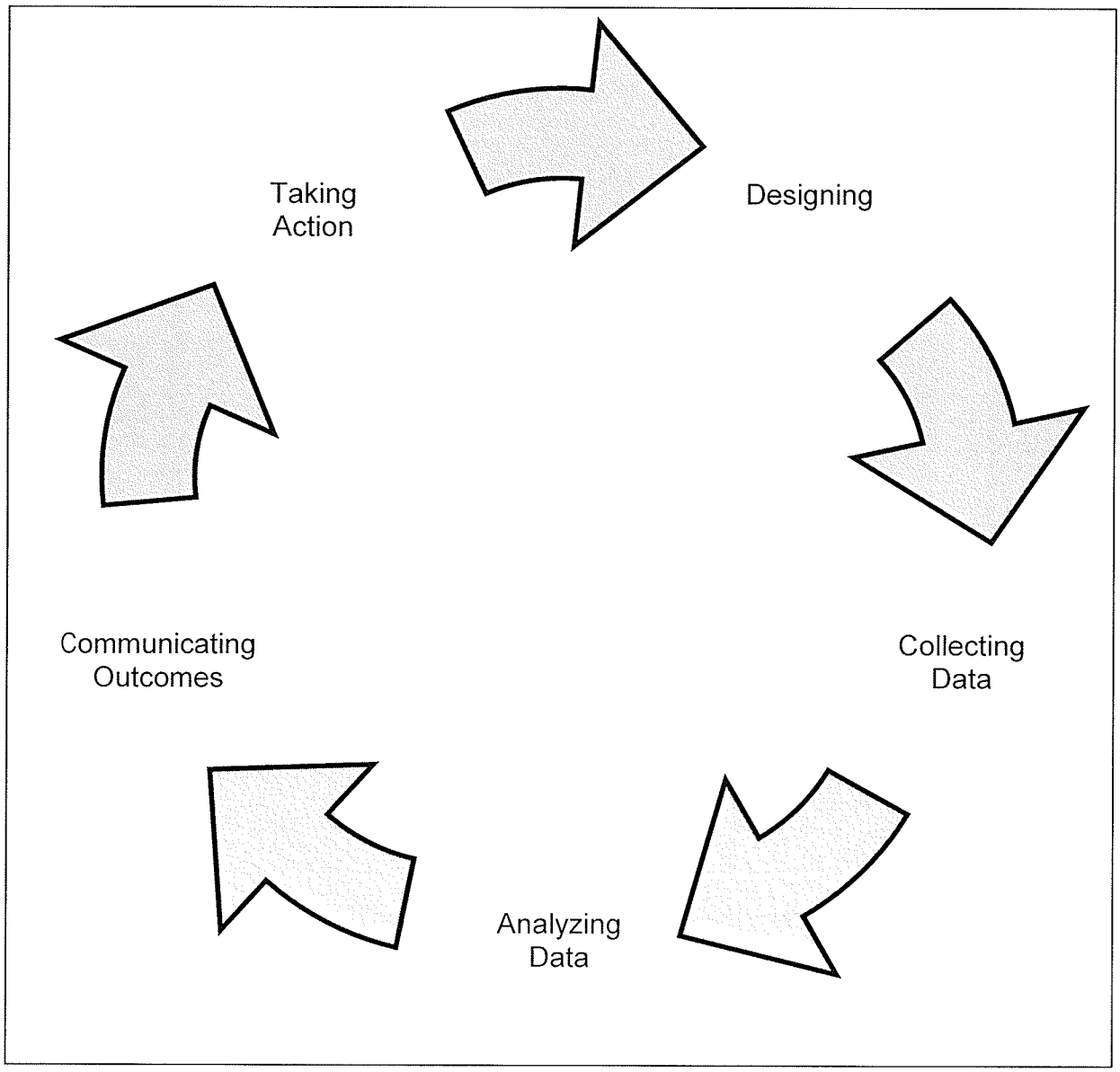
Qualitative Action Research. For the purposes of this study, I used qualitative methods in an action research context. It offers a holistic approach to problem-solving, rather than simply collecting and analyzing data (O'Brien, 2001). Action research is the process of studying an actual school or classroom in order to understand and improve the quality of instruction (Stringer, 2004). It is a systematic and orderly means for teachers to observe their practice, explore problems, and plan possible actions or solutions. Action research is grounded in the assumption that educators become more effective when they analyze and assess their own practice, consider alternative strategies, and collaborate with others (Ferrance, 2000).

Action research is a preplanned, methodical, and organized process conducive to collegial collaboration (Tomlinson, 1995, Stringer, 2004). Its intent is to learn from and with those involved, rather than merely studying them (Stringer, 2004). It has the potential to generate genuine, sustained improvements in classrooms and can bridge the gap between educational theories and practice and can lead to change (Ferrance, 2000; O'Brien, 2001; Johnson, 2008). Figure 11 illustrates the action research process.

Tenets of action research. There are four tenets of action research: relationship, communication, inclusion, and participation (Stringer, 2004). Relationships are important because the interdependence of the participants propel the research process. Communication facilitates relationships among all

Figure 11

The action research process



Stringer, 2004. p. 11.

participants, and provides a form of data. The inclusion of all participants allows for the possibility of gathering many diverse insights and possibly of seeing contradictions between viewpoints. Finally, participation allows for the sharing of experience allowing each participant to demonstrate a diverse range of competencies. With the action research process, everyone's ideas are equally significant could be a potential resource for creating change (O'Brien, 2001; Stringer, 2004; Johnson, 2008).

The practicality of the NBB Model of Support. In this study, I planned to test the practicality of the NBB Model of Support. There were four research questions driving this study. They were, 1) could the NBB Model of Support provide increased understanding and perspectives into the ways educators address students with problematic behaviour in the classroom, 2) are the various strategies and tactics of the NBB Model of Support, able to be implemented in the classroom by the teacher, 3) could the Model offer the needed support for some students with NBB need, without detracting from the educational experiences of other students, and 4) could the NBB Model of Support be used to increase the success of students with NBB in integrated school settings?

The Purpose. This study sought to describe and understand people's experiences, behaviours, and interactions within the classroom setting (Bogdan & Knopp Biklen, 2003; Fielding, 2004; Stringer, 2004; Brantlinger, Klingner, & Richardson, 2005; Johnson, 2008). In this study, the experiences and interactions of a small group of students with NBB and three staff educators in a self-contained classroom are investigated. By increasing school attending skills

and appropriate school behaviour in a self-contained setting, students with NBB will possibly develop the skills and habits for increased school success. From increasing school success, increased integration may become possible. Students with NBB often respond to their interpretations of their environments in the most expeditious manner available to them, which often seems extreme, violent, and socially inappropriate (Hingsburger, 1996; Greene, 2001). Students with NBB, their peers, and educators needed to better understand this so that integration attempts can be more successful.

The purpose of this research was to increase understanding of existing educational practices, as they pertain to students with NBB, improve the context in which these practices were used, and augment them with the NBB Model of Support, as needed. The foundation, scope, and utility of the NBB Model of Support as an educational service delivery model for a group of highly marginalized students was investigated with the hope of empowering educators with new strategies and tactics to address misbehaviour, empowering students with NBB with language and strategies to articulate their needs, and empower their peers with a broadened perspective and increased empathy for students who struggle with their behaviour.

Reflection. The reflective nature of action research informed this study. Reflection included consideration of the impacts of behaviours and their influence on how the students' viewed their world; understanding that truth in a social setting is relative to the teller (O'Brien, 2001). Biases, assumptions, and the reasons for judgments needed to be challenged. New considerations and a

broadening of perspectives on some of issues confounding students with NBB occurred.

This research project, on the efficacy of the NBB Model of Support, was in response to the seemingly ineffectiveness of typical interventions for students with problematic behaviour issues. I employed a variety of techniques to explore the dynamics of my classroom and the role of the adults, myself included, in intervention with students with NBB. The intention was to gain further insight and increased understanding of the challenges of students with NBB, and educators.

The Study

The setting. To ensure the authenticity of the research, this study was conducted in one self-contained behaviour support classroom in a mid-sized school in a Canadian prairie city. The holistic foundation of action research provided a vehicle to focus on the broader dimensions of the human conduct and interaction in the classroom (Stringer, 2004), facilitating the development of skills and solutions to better meet the needs of students with NBB and educators. The classroom will be referred to as the Program.

The naturalist settings in which action research data was collected (O'Brien, 2001; Bogdan & Knopp Biklen, 2003; Stringer, 2004; Brantlinger et al, 2005; Johnson, 2008) was well suited for this investigation. The proposed model had been designed by educators, for educators. Therefore, the model needed to be studied in an educational environment.

The theoretical constructs of the NBB Model of Support were built upon by the reflective practices of a group of educators. Because data was analyzed as it

was collected, the inductive inquiry aspect of the qualitative research process supported on-going reflection of the practices, beliefs and understanding of educational practitioners (Bogdan & Knopp Biklen, 2003; Stringer, 2004; Johnson, 2008). Immediate data analyses provided a framework to further explore the efficacy of the NBB Model of Support. The application of the NBB Model of Support in an existing educational setting meant that it could be rooted in current educational service delivery practices. The global themes of the NBB Model of Support may potentially contribute to a better understanding of neurologically based behaviour so that better practices for educational service delivery could be planned. This grounded theory aspect of qualitative research meshed well with the processes and philosophies of qualitative action research (Bogdan & Knopp Biklen, 2003; Stringer, 2004; Johnson, 2008).

The school. The Program was housed in a mid sized elementary school in a working-class part of the city. The school is located on a major six-lane roadway that snaked through the city's north end from downtown to the outskirts. It had an enrollment of approximately 400 students from nursery school through grade six. No students from the school's catchment area were enrolled in the program. On occasion, the program provided an alternate work area for students from the school who were having difficulties in their classrooms. However, this did not occur during this study. Eight students attended the elementary school program.

Extenuating peripheral issues sometimes surfaced in the community. The school had been locked down due to violent incidents and illicit activities. This

had an impact on the social fabric of the neighbourhood. Poverty issues were significant for many in the community.

The Program. The Program was a specialized, self-contained cluster program for students who had been found have little ability to link cause and effect. Thus, interventions such as those based on behaviour modification, conflict resolution, restitution, etc. - interventions that require students to link cause and effect, understand others' perspectives, problem solve, or imagine alternative realities - were not feasible. The current inclusion movement had limited the resources available for some of these students. Due to the students' inconsistent behaviours and divergent responses to interventions, specialized facilities generally had refused service to these students (D. Zoochan-Wyke, Special Education Department, Winnipeg School Division, personal communication April 12, 2006). Consequently, the public education system needed to provide schooling for this group of students (Manitoba. 2005). On occasion, the Program had been required to generate documentation for mental health or diagnostic services, to meet criteria set by the justice system such as probation and restitution services, and to provide educational programming.

The Special Education Department of the school division placed students in the Program. Local school administration and personnel had little input into the students being placed there (D. Zoochan-Wyke, Special Education Department, Winnipeg School Division, personal communication April 12, 2006). Criteria for placement in this Program included the following: (a) students exhibiting severe to profound behavioural issues, which could result in students being a danger to

themselves and others, (b) a need for the students to be in a secure and highly supervised educational setting, and (c) restricted to students residing within the school division boundaries. According to psychological and psychiatric assessments on file, the cognitive abilities of the student ranged from normal to moderately intellectually deficient. Severe and profound behaviour issues typical of many of the students in this Program included the use of illegal weapons, involvement with drugs or alcohol, fire setting, gang involvement, drug running, thefts, vandalism, break and enter activities, vehicle thefts, random aggravated assaults, and other criminal activities. Common to all the students was an impaired, delayed, or compromised ability to understand cause and effect, thought to be related to compromised executive functioning deficits.

Participants

Principal researcher. I was the principal researcher. With the fourth tenet of action research being participation, being both principal researcher and classroom teacher fit well. Action research rejects the notion of an aloof observer and allows for the researcher to participate in the process being studied as he or ahe consciously tries to understand the perspectives of others. In an educational setting, this can provide the flexibility needed to mediate change within the classroom (O'Brien, 2001; Ferrance, 2000; Stringer, 2004; Johnson, 2008). However, ethical issues related to the power differential between adult and student participants inevitably surface in action research, raising questions about the validity and trustworthiness of the findings and the interpretation of them.

Vis-à-vis. The power differentials between teachers, teaching assistants, and students in this study were not blatant. In regards to the students, their parents, legal guardians and caregivers, this study did not appear to alter or escalate any power differential issues. The principle researcher was the classroom teacher, thus there may have been some power issues inherent with the role of teacher. However, due to the complexity of the many of the students' individualized educational plans, mental health plans, and community service plans, issues of related to power differentials were constrained by guidelines and procedures and dealt with at the various team meetings. In addition, most of the parents had, or had access to parental advocates to ensure any concerns were heard. Some students were wards of child welfare agencies. These agencies had their own procedures and policies to address possible concerns regarding such issues.

If parents/guardians did not want their children to participate in this study, the children remained in the classroom, their individualized education plans continued, but they did not participate in the intervention and no data was not collected on them. I did not interview, collect work samples, or complete daily observations logs for these students. The entire class participated in the daily routines and was involved in the academic curricula. Each student's IEP continued to be followed. This plan was similar to the plans for students in the general school population who did not have consent forms signed for field trips, to participate in the provincial music festival, family life classes, or in and other events/activities. Such students who did not have signed consent forms still are

educated with the Manitoba curricula, allowed to sing in the school choir, and participate in classroom-based activities. The process for students in this study, who did not have consent forms signed, was no different from the process for students throughout the school who did not have signed consent forms for other activities, such as field trips.

The potential difference in power, between the educational assistants and myself also did not appear to be an issue. We had worked together for over five years and met together daily before the students arrived at school to discuss the objectives for the students for the upcoming day. That daily meeting afforded the opportunity for all staff involved to discuss the on-going study and provided a foundation for a strong collaborative relationship. In addition, the educational assistants had different union representation than myself, and were encouraged to seek their union recommendation.

Adults of the Program. The staff in the Program were assigned in accordance with Manitoba Labour Laws, union regulations, policies of the school division, employee preference and school/program need. The program had one classroom teacher and one educational assistant who was the "program assistant." Other educational assistants were assigned to the program based on Department of Education funding and school division policies. During the time of this study, the Program had one other educational assistant. The teacher and educational assistants will be referred to as the adults in the program. All the adults in the Program were familiar with and had been trained in the use of the NBB Model of Support.

For many of the students with NBB in this study, their behaviour was a primary mode of communication. One of the roles of the educators was to interpret, articulate, and frame an understanding from which a commonality could be established and so everyone could grow in a socially acceptable and healthy way. This was a fundamental function of the adults in the Program.

Students with NBB in the Program. I believed that students with NBB have a deep and extensive understanding of their own lives that has enabled them to navigate their way through life to date. Thus, I used an analytic, inductive approach, (Bogdan & Knopp Biklen, 2003) to collect and analyze data and test the NBB Model. It was hoped that the students' understanding and their perspectives would be valuable and provide a vehicle from which to tap into their strengths and resiliency (Brendtro & Longhurst 2006). Purposeful sampling, which is selecting study participants who will "facilitate the expansion of the developing theory" (Bogdan & Knopp Biklen, 2003, p.65) was used.

I hoped to garner a better understanding of the issues that students with NBB face in the school system. It was of utmost importance to this study to accurately and authentically represent the lives of all the study participants in authentic, non-authoritative and non-exploitive ways (O'Brien, 2001; Bogdan & Knopp Bilken, 2003; Stringer, 2004; Johnson, 2008). I used the verbatim principle (Stringer, 2004), which is using the terms, language, and concepts generated by participants in order to let their voices be clearly heard. The offensive language used by the students was documented to ascertain the meaning, emotion, or

intent behind it and appeared to tied directly to the foundations of the Model of Support.

The students' families. Family composition of the students in this Program was often atypical. In a ten-year period, only 38% of the students in this elementary Program resided with at least one birth parent. Grandparents, extended family, and agents of the child welfare system were more commonly raising the students. Changing home placements were also a common experience for many students in the Program.

Student diagnoses. Like the tags on the inside of a shirt, which suggest how to care for it, diagnoses were used to suggest how to best support the students. Students in the Program usually had multiple diagnoses. Some students had been out of school for extended periods as no other placement was deemed secure enough. Justice, child welfare, and mental health systems were typically involved with the students and their families. The students had a variety of co-morbid medical, psychological, and psychiatric diagnoses such as fetal alcohol spectrum disorder, attention deficit/hyperactivity disorder, bi-polar disorder, intermittent explosive disorder, learning disabilities, autism spectrum disorder, anxiety disorder, oppositional defiant disorder, conduct disorder, attachment disorder, Prader-Willi Syndrome, and others. In the interest of simplicity, these students are referred to as students with neurologically based behaviour disorders, or NBB.

Participant engagement. The participants in the study were five of the eight students with NBB in the classroom, two educational assistants and myself,

the teacher. Legal consent was not received for the other three students enrolled in the Program at the time of the study. Every effort was made to ensure that all participants were actively engaged in the study. I hoped that by giving voice and gathering the perspectives of others would facilitate the empowerment for those involved and might provide an impetus for social change (Bogdan & Knopp Biklen, 2003). The role of group interactions and relationships within the classroom were investigated. The findings of this study may provide educators with new skills and an increased self-awareness to help address specific problems within specific circumstances, to enhance existing pedagogical approaches, to facilitate the development of innovative improvements, and to change educational service delivery to students with NBB.

Prior to the study, I was required to obtain ethics approval from the University of Manitoba Education/Nursing Research Ethics Board (ENREB) and the Research and Technology Department of the school division. After receiving formalized consent from both, I sought consent from the administration of the school, the staff, and the legal guardians of the students.

Legal consent. The legal consent form (Appendix C) was included the information required by ENREB. A second form, simpler and less legalistic, (Appendix C) was use in conjunction with the legal consent form. For some families of students in the Program, both forms were used. The first form met the legal requirements of the ethics committees and the second form presented the required information in a less intimidating and more easily understood fashion. For students whose legal guardianship was with mandated government

agencies, such as Child and Family Services or any of the Aboriginal child welfare agencies, only the approved consent form from the ethics committee was used.

Assent. Although the students were too young to give their legal consent to participate in the study, I felt that it was very important to have their assent to participate. Assent is defined as a child formally agreeing to participate in research (Lewis & Porter, 2004). While assent must be respectful and protective of the students, I recognized and informed the students of my legal obligations to report any potential abuse or criminal issues that might have surfaced (Hingsburger, 2002, Mishna, Antle & Regehr, 2004). The assent process occurred in conjunction with parental or legal guardian consent (Lewis & Porter, 2004; Mishna, et al, 2004). A separate assent form was designed for the students. The assent needed to be "informed assent." That is, students had to know what they were getting into, the likely effects of their participation, and to have "fair access" (Mishna et al, 2004, p. 450) to the results of the study. The information on the assent form was presented in student-friendly language with short phrases, few words, and pictorial representations of the ideas on the form (Mishna et al, 2004; Lewis & Porter, 2004). It was unequivocally stated to the student participants that they could consent or withdraw their assent at any time without penalty. However, the students were clearly told that if they withdrew from the study, there would be no penalty and no changes to any of the classroom, social, or academic expectations of their program. Withdrawing assent only meant that I could not include any of their information in the study,

the data and comments they generated. I purposely involved the students in the consent/assent process of the study so that they would begin to feel empowered and see this process as a more socially acceptable way to gain some degree of control over their lives, and their long-term outcomes (Mishna et al, 2004; Striker, 2005; Johnson, 2008). See Appendix C for the assent form.

Procedures

Action research lent itself to "doing something" rather than just studying it. Its recursive nature provides an impetus for creative problem-solving and encourages risk-taking when devising possible solutions (Johnson, 2008). The study was six weeks in duration, from April 2008 to June 2008. This timeframe allowed for the student body composition and staff to be consistent throughout the study, and reduced the impact of external school influences and extraneous community or family issues that typically occurred in the lives of the students in this setting. The recursive nature of action research also addressed one of the primary characteristics of students with NBB, the fact that what works wonderfully at one time, does not work at another time (Kranowitz, 1998; Cook et al, 2000; Malbin, 2002; Papolos & Papolos, 2002; Murray-Slutsky & Paris, 2005). A second benefit of the six-week time span was that it forced the adults involved to reflect, articulate, and plan for improvement.

Trustworthiness and validity. The goal of action research is to understand and motivate effective change (Johnson, 2008). However, as a branch of qualitative research, action research tends to be subjective and narrow (Stringer, 2004). Thus, the issue of trustworthiness and validity must be addressed.

Trustworthiness involves the establishment of creditability, transferability, dependability, and conformability (Stringer, 2004). Together, these four traits compose trustworthiness. Creditability is needed to establish confidence in the data. It is achieved by spending adequate amount of time in the research setting, building relationships, understanding the culture of the setting, and experiencing authentic interactions. During this study, the principal researcher spent over 150 hours in the setting, many genuine interactions occurred, and collegial relationships matured.

The objective documentation of the interactions, observations, and artifact review was prevalent in the study. This triangulation, or use of a number of sources to clarify meaning, increased this study's creditability (Stringer, 2004; Johnson, 2008). As both the principal researcher, and classroom teacher, I was able to spend time, build relationships, and gain access to the documentation and various artifacts produced in this setting. The fundamental aspects of creditability were naturally built into this project.

Transferability and dependability augment trustworthiness and validity. Transferability was the inclusion of detailed descriptions of the participants and research context (Stringer, 2004). The use of rich, thick descriptions enabled others to understand the circumstances of the study, and identify aspects of the findings that may be useful to them. Transferability and research dependability were closely related (Stringer, 2004). Conformability was achieved by ensuring raw data as well as any data analyses, were available to the participants to

ensure their correct perspectives had been correctly captured by the data (Stringer, 2004).

Finally, since most of the student participants had complex needs and received services from other human services systems, trustworthiness and validity were further substantiated by the interactions and observations of the agents of these systems when services the students and their caregivers received service from these agencies. The use of these measures enhanced the trustworthiness and validity of the study.

Data Collection and Analysis

Summary of data collected. Data was generated from the observations, interviews, artifacts, and incidents of severe behaviour. It was organized into themes and sub-themes. Data was collected during the six week period of May 5 to June 6, 2008. There were twenty-eight school days during this time. One day during this time period, the school was closed for a school-wide professional development day and there was another day it was closed for a statutory holiday.

Twenty-eight daily observations were made. There were thirty-five informal and two formal interviews with each adult, as well as two formal interviews with the five students from who consent was received. There was twenty-eight days of Precision Reading graphs and Guided Reading documentation to consider. There were twenty-eight daily behaviour logs for each of the five students who were involved in the study. Daily, the behaviour logs were completed by one of the three adults who worked in the Program. Finally, seven incident reports, generated within the timeframe were considered.

Data collection. Data gathered to study the NBB Model of Support varied and was gathered in different ways. Although action research generated a wide variety of data, four means of data collection were employed in order to keep the research focused (Johnson, 2008). Interviews, observations, artifact reviews, and a daily observation log were used to record information. Triangulation, or the use of more than one informational source to look at something from more than one perspective was built into the study. This is common in qualitative research (Bogdan & Knopp Biklen, 2003; Johnson, 2008) and increased the trustworthiness of my findings.

Classroom observations. Observations were on-going. As principal researcher, and teacher in-charge of the Program, observations were inherently built into the study. The educational assistants and myself shared our observations. During specific incidents or times during the study, we often shared our varying perspectives of the same event. This provided a structure to a well-rounded approach to the events and happenings in the classroom. The schematic diagram in Figure 13, entitled Set-Up for Success Flow Chart is a graphic representation the Room 9 organizational structure designed to facilitate insights and observations in the Program.

Adult Interviews. Interviews were used to gather rich descriptive data about the Program and the proposed NBB Model of Support from the perspectives of the adults who worked in the Program. They occurred outside school hours, in accordance to the conditions from the school division. I conducted two sets of semi-structured interviews, one at the beginning of the

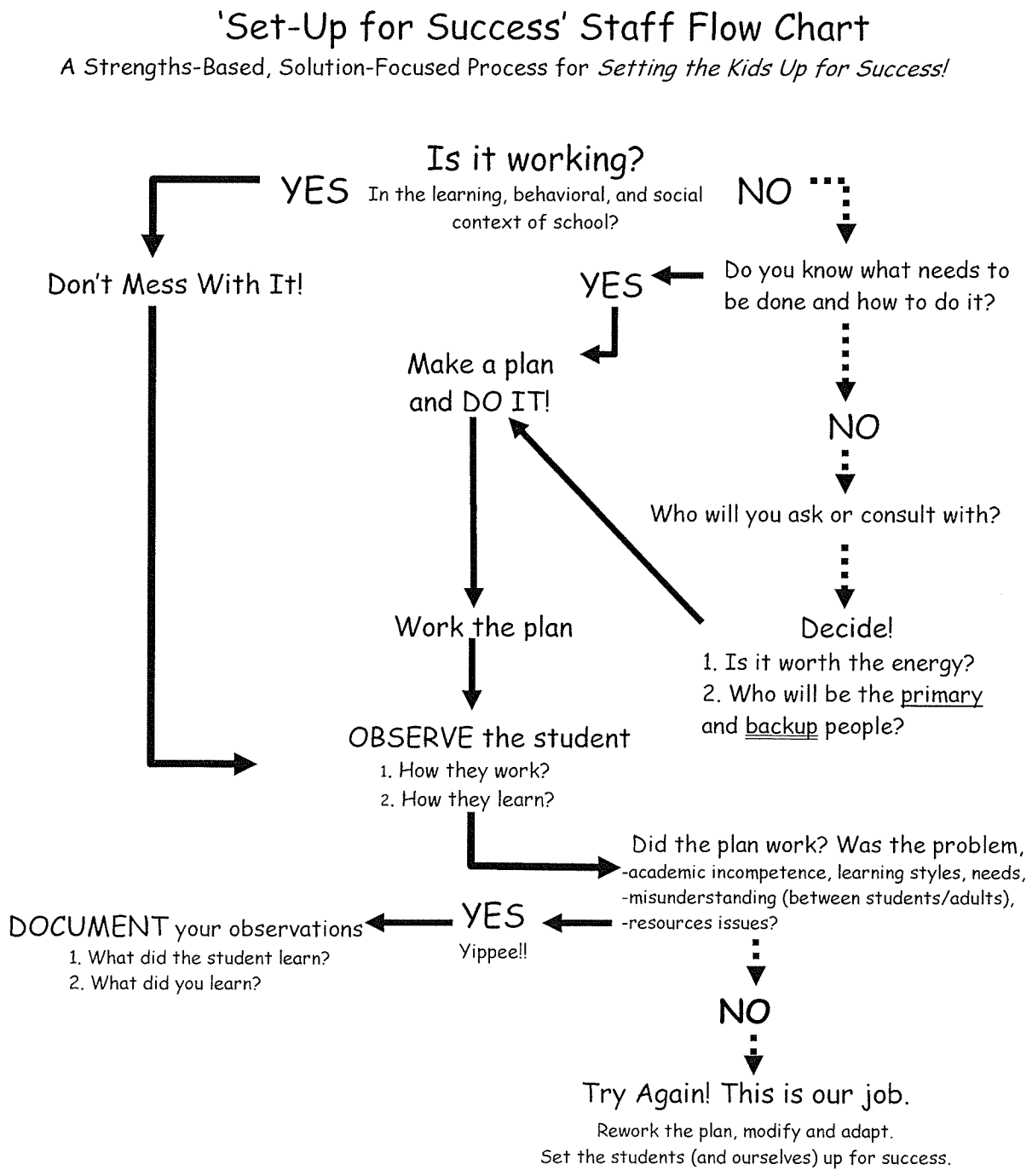
study, and the second at the end. These interviews were set up in a semi-structured fashion with a degree of flexibility that allowed for the opportunity to investigate the expected diversity among the participants and focus the direction of the interviews accordingly (Bogdan & Knopp Biklen, 2003). I used an interview guide for the semi-structured interviews, to encourage commonality and generate comparable data (Bogdan & Knopp Biklen, 2003). I wanted to ensure that the four dimensions of the NBB Model of Support were addressed with each participant and to generate some analogous data among the participants.

The interview guide began with an outline of the NBB Model of Support and an explanation neurologically based behaviour. Next, I explained the four dimensions of the NBB Model of Support and showed each participant the graphic representation (Figure 2). Each adult received a copy; I was forthright in stating my preference for the NBB Model of Support.

The questions in the semi-structured interviews were open-ended, and the responses were closely scrutinized. I reflected upon the participants' verbal and non-verbal responses. I wanted to understand what the adult participants believed about behaviour support programs in schools. It was important that the adult participants felt they could genuinely express themselves. The approach of "treat{ing} the person you are interviewing as an expert" (Bogdan & Knopp Biklen, 2003, p. 99) by providing open-ended questions, yielded an abundance of rich, thick descriptive data. Data garnered from these interviews are included in Chapter 4.

Figure12

Staff Flow Chart



Informal interviews with the adults. In addition to the two semi-structured interviews, other informal interviews occurred. As expected, many informal interviews occurred during and after displays of inappropriate student behaviour. These interviews were part of the clarification and molding of the NBB Model of Support, and helped express work related frustrations. This was tied directly into educator self-care (Richardson & Shupe, 2003).

When needed, staff exchanged insights and information, at other points during the day. These informal interviews provided valuable data and typically occurred after the E.A.'s returned from picking up the students in the morning, when students' needs or behaviours required immediate attention, or when staff had important information to share.

Informal interviews with the daily debriefings. Daily, in the morning before the educational assistants went on the school buses, we met together, and discussed the up-coming day. The staff shared many intricate insights regarding the previous day's events. In addition, they were kept apprised of the various details pertinent to the classroom and students.

The daily medications for the students, who were prescribed them, were organized for the day. Zoey was assigned to be in-charge of all the medications. Her job included ensuring the medications were under lock and key, all the pertinent pharmaceutical documentation was current, and all pills or capsules counted. She would inform me one week before the student needed prescription refills. The legal guardians were then to ask to send more medication. Students with diagnoses such as ADHD, bi-polar disorder, and other diagnoses, who were

prescribed medication, were closely monitored and any dramatic fluctuations of behaviour were documented.

Student Interviews. I also investigated student participants' perceptions of the Program. Interviews were conducted during non-instructional times then transcribed with all identifying information removed. These interviews did not reap much data. Students responded to the questions with single syllable words, or with the phrase, "I don't know." Fred used a different phrase. He said, "This is boring," then walked away. I speculate that the formality of the interview process and the possible implications of the students' various language and auditory processing issues influenced the process.

Informal Interviews with students. Periodically throughout the day, informal interviews with the students took place. Staff and students typically had a high number of exchanges during the day. As students spoke, staff frequently attached emotional identification and socially appropriate school language to the exchanges, while providing support and strategy development. Pertinent information and insights were documented.

Daily observation logs. The daily observation logs provided a daily, structured synopsis of each student. The logs provided an organized way to remember various aspects of the day. Staff members made daily anecdotal notes for each student in a logbook.

Artifact reviews – academic work. Writing samples, Precision Reading graphs (Freeze, 2002), and guided reading tasks (Fountas & Pinnell, 1996) were used for artifact review. There was a correlation between the Precision Reading

graph recording the number of words read per minute and the mood of the student. When students appeared to be disturbed or fatigued, they read slightly fewer numbers of words. If the students complained of hunger before beginning the one-minute timed reading, they were given a few crackers or a few mini carrots to eat just before their timed reading. Then, the number of words read was generally the same as or slightly more than the previous day. There was also a correlation between number of words read and staff. Usually the same staff member performed the daily Precision Reading task with the students. When that staff was not available, and another staff, whom was just as well qualified as the other, did the Precision Reading, the number of words often declined dramatically.

Artifact reviews – incident reports. Incident reports of severe behaviour were studied. They were written when students needed physical intervention to go to the Quiet Room, for destruction of property, serious physical altercations, unsafe behaviour, and other situations where staff felt a report was required. Incident reports were written with a timeline, profanity the student used was reported verbatim with staff actions and responses were recorded. There were only nine incident reports that needed to be filed during the time of the study. Incident reports were only filed if staff needed to physically move a student into the Quiet Room, for physical assaults, such as punching, hitting, kicking, scratching or spitting, student generated allegations, or destruction of property. All nine incidents were for physical assaults. Three times during the study, George spit at people. In every incident, academic frustration seemed to be the

root cause. The number of times George had threatened to spit at others was not documented on incident reports. There were three incident reports the need to be filed for Donny's behaviour. The study took place during the last school term, in the last year he would be attending this school. Historically, with many of the previous students who had been in the Program for a number of years, the last term in their final year was often very difficult. Some students reverted to milder forms of inappropriate behaviour. Although Donny did not articulate it, and none of the other previous students had articulated it, it seemed that the knowledge of the transition to another school caused anxiety. The three incident reports that were filed for Donny were for physical assault.

Two incident reports were filed for Harold. He had just transferred into the Program shortly before the study began. He became non-compliant and began to shout out rude comments in the classroom. When he refused to go to the Quiet Room, staff members took him by the wrists and escorted him there. Because the staff members touched him, an incident report needed to be filed.

The last incident report that needed to be filed during this time was for another student's behaviour. This student had a history of displaying oppositional, passive-aggressive type behaviour. One day during the study, he became angry when told to wait his turn to clean up after lunch. He went to his desk, and sat there silently, with his arms folded across his chest and his head down, refusing to interact with others for three hours. When his foster Dad from the therapeutic home he was living in, came to pick him up at the end of the school day, this student refused to leave. He did not make eye contact or

acknowledge the fact that it was time to leave. An hour and a half later, as quickly as he "shut-down" he got a library book out of his desk and began to read it. He began to chatter away, talking about the book he was reading. This student refused to admit he had been angry or frustrated, and continued with the rest of his agenda tasks, marking off them as he completed them. When foster dad returned, he again denied being angry or upset. As per his individual education plan, this student and foster Dad left the school with the instructions to bring a written explanation of his behaviour to school the next morning. When students in the Program did not talk about the events that cumulated in their inappropriate behaviour, they talked, wrote, or drew out the incident. For this student, the writing response was included in his educational plan. In addition to addressing the literacy component, it also could be valuable as a therapeutic tool since transferring experiences into written form can have a positive effect on health (Pennebaker, 2008).

Data analysis and interpretation. Data analysis and interpretation became difficult to separate (Bogdan & Knopp Bilken, 2003), as they tended to merge as the process continued. Data was interpreted and as the development of ideas began to form, they were related of those findings to broader concepts and other literature (Bogdan & Knopp Bilken, 2003). Once themes were identified, actions to support them were implemented. The resulting changes due to the actions were identified, reassessed, re-evaluated, and modified when needed. The continual evaluation and modification, as determined by the data, provided some insights into the delivery of educational services to students with NBB.

The interpretation of data determined how it fit with global issues. This process yielded valuable results. As expected, the interpretation of the themes and sub-themes became a fluid, on-going process. Once the interpretations began to surface, relating them to the global issue of providing an assessable, viable, cost effective, and credible education to a disenfranchised group of students, who can threaten the safety and security of the larger group of students, stimulated some to give it some serious thought.

Guidelines for implementation. The NBB Model of Support does not advocate accepting, condoning or encouraging socially inappropriate or inept behaviour. The adults were encouraged to translate the language of extreme behaviour into common language, and provide socially acceptable skills and strategies to cope with some of the fundamental issues students with NBB and the educators face. When existing behaviour interventions do not work, it is the job of educators in the system to find a behaviour support system that could work.

The beginning of the study. I am providing a general understanding of the classroom, by creating a mental picture of the intricacies of the day-to-day functioning of the classroom. This is accomplished through a description and map of the classroom, a brief introduction to the participants of the study, and summary of the data generated during a typical day. In addition, I will integrate a number of incidents and an abridged class schedule, incorporating the NBB Model of Support, to show how it was implemented.

After I successfully defended the proposal for this study in November 2007, I applied to the University of Manitoba Education/Nursing Research Ethics Board (ENREB) for ethics approval. I received approval from ENREB in March 2008, and then applied for ethics approval and permission to conduct the study from the Research and Technology Department of the Winnipeg School Division. I received formalized consent from the school division in April 2008. It was then that I approached the principal of the school where I wanted to conduct the study, to ask permission to respectively approach the staff, legal guardians, and students in one classroom, for permission and consent and assent to participate in the study.

At the time the study began, there were eight students enrolled in the Program. The legal guardians for five of the eight students gave consent for the study. Both full-time educational assistants also consented. In order to protect the students, they will be identified with pseudonyms and no descriptors, other than age and gender, will be provided

Pseudonyms. Pseudonyms have been used to respect the privacy of all the participants in the study. The participants in the study, including staff, current students and previous students the staffed referred to during their interviews are listed on the chart in Figure 13.

The Participants. Students in this study had school histories that included displays of severe to profound behavioural issues that caused them to be a danger to themselves or others. The students needed a secure and highly supervised educational setting. Problematic and profound behaviour issues

typical of many of the students included a range of misbehaviours and criminal activities. The students had a variety of multiple medical, psychological, and psychiatric diagnoses including fetal alcohol spectrum disorder, attention deficit/hyperactivity disorder, bi-polar disorder, intermittent explosive disorder, learning disabilities, autism spectrum disorder, anxiety disorder, oppositional defiant disorder, conduct disorder, and attachment disorder. Common to all the students were the documented incidents of impaired, delayed, or lack of ability to understand cause and effect, and compromised executive functioning deficits. The cognitive abilities of the students ranged from normal to moderately intellectually deficient.

The Program had one classroom teacher and two educational assistants. The three adults in the study each had a particular style. Zoey, an educational assistant who had been with the Program for over fifteen years, typically was able to remain non-emotional, and made very astute observations. She was very perceptive and able to pick up the subtle behaviours, gestures and innuendos, understanding them from the students' points of view. Yolanda, an educational assistant, with five years experience in the Program, was more brisk and more regimented. Her strong adherence to the routines, schedules, and rules offered a dichotomous view of many situations. Wanda provided the balance between the two, while struggling with the paradigms of inclusion, appropriate education, and meeting some needs that schools were not designed and ill-equipped to address. Regardless, the three women were a strong team.

Figure 13

The Participants

Staff Participants	Role	Years of Experience	Gender
Wanda,	teacher	12 years	female
Yolanda,	educational assistant	5 years	female
Zoey	educational assistant	18 years	female
Students Participants	Role	Age	Gender
Donny	student	12 years old	male
Eddie	student	12 years old	male
Fred	student	11 years old	male
George	student	10 years old	male
Harold	student	10 years old	male

Teaming. It was very important that the students did not see any divisiveness among the staff, so staff did not correct or question each other in front of the students. When something a staff member was doing needed correcting at the time, another staff member would step in and say, "Oh Zoey, I forgot to tell you, we need to do it this way…" The staff who corrected the other ensured there was no embarrassment or belittling of the other. The adults then thank each other in front of the students to model some social skills and to show that making mistakes were part of life.

The Classroom.

The classroom was in the southwest corner of the third floor of the school. It was in the part of the school that was constructed before World War I. The room had a high ceiling, which was common for building constructed during that era. Please refer to Figure 14 for a map of classroom. The door into the classroom lead to a small entrance area. To the right, there was two meters of shelving on the wall behind the door. To the left was an entranceway that lead to the cloakroom. Originally, the cloakroom had been a long narrow area that ran the length of the classroom. However, the cloakroom had been divided into a small cloakroom, a regulation sized Quiet Room, and a smaller utility room, called the "backroom" at the far end of the cloakroom.

The classroom was sparsely decorated, with intentional amounts of space in between the various areas. The walls were painted a soft white colour. White painted cork bulletin boards, or black slate blackboards covered three of the four walls. Blackboards on two of the walls were covered with pale blue paper to

gently brighten the room. Along the north wall was a large cabinet with solid brown doors was bolted to the wall. The cabinet stored Language Arts materials. Beside that was one student desk. A few meters away was an older computer desk positioned with its narrow side against the wall, forming a natural partition in the classroom. On the other side of this computer desk was a narrow table the adults used as a work area and one filing cabinet. A short distance in front to the working table were two filing cabinets that opened toward the north wall, and two teacher desks, side-by-side. This formed a small adult-only are for the staff in the program. A bright red piece of tape marked the area and served as a visual reminder for the students to stay away from this area. In front of the teacher desks, were two, three shelf bookcases that stored some student games, and choice time activities. A dark blue sheet covered these shelves when the items on them were not to be used. These bookcases also provided a bit of a barrier to the teacher desks.

On the west wall was an older style shelving unit that was approximately 1 meter wide, 1½ meters high, and ½ meter deep. This unit had two columns with twenty shelves in each. Each student was assigned two shelves to store their academic work and equipment. The other shelves in that unit stored additional academic work. The shelving unit was bolted to the wall to prevent it from being knocked over. Wrapped around the front and sides of this unit was a solid coloured dark blue sheet. The sheet was intended to eliminate some of the visual distraction in the classroom. Beside this shelf was an older-style study carrel that a student used as a desk. This carrel had three sides on it to block out visual

stimulation. Previously, Donny had asked for to be his desk, and it was. Beside Donny's study carrel, was a window and two more three-shelf bookcases of books.

George's desk was against the south wall of the classroom, up against a large cabinet with solid brown-coloured doors. The narrow side of the cabinet was bolted to the wall providing a natural partition in the room. Math equipment was in this cabinet. A large white refrigerator stood on the other side of it. The day of the week was spelled out and posted on the refrigerator with magnetic letters. To the left of the refrigerator was a standard sized card table used every choice time for various card and dice games. The door to the backroom was in the southeast corner. To the left on the door, on the east wall was a tall white cabinet, with solid doors at the bottom, and three open shelves on top. The microwave was on the first open shelf; the classroom toaster was on the second shelf. The third shelf was empty. This piece of furniture was also bolted to the wall.

The board on the east side of the classroom had the word wall. Approximately one hundred words, printed on small name tag-sized cards were posted in alphabetical order. Two student desks and one computer workstation were along the wall. A second row of four desks was beside the first row, with a significant amount of space in between the desks. Each student was assigned their own desk. The desks stored library books, drawing or writing journals, and the students' agendas. Academically valuable items were kept on the shelf on the west wall.

In the center of the room were three large rectangular tables grouped together to form one large common table. That was the class meeting area. Each person in the classroom had an assigned seat at the table. During group work, the tables were pulled apart to provide three larger group work areas for the students.

When the students needed to line up to leave the classroom, they lined-up in the entrance area. When a student was in the Quiet Room, his peers lined-up at the "respect line." The respect line was a line of white masking tape that spanned the area in between the first desk on the east wall and the Language Arts cabinet on the north wall. This lined prevented others from bothering the student in the Quiet Room and demonstrated "how we respect each other by staying out of (peer's name) space, when he's having a problem."

The Quiet Room was a soft blue colour room. A desk and chair could be moved in and out of it, as needed. A shatter-resistant window and steel door were on the north wall on the Quiet Room. The Quiet Room had been set-up as the "best room in the entire school." At the beginning of the school year, the class had discussed the importance of using the Quiet Room when one was tired or in a bad mood. It was explained that the Quiet Room was a safe place one could go when they were just so mad that their behaviour would embarrass them or get them in trouble. Every year the classroom had a rededication ceremony for the room, where the entire class stood around the Quiet Room door, an administrator made a short speech, then cut a piece of garland that was draped across the doorway. Everyone involved in the ceremony crowded into the Quiet Room and

used ice cream cones to "toast" the Quiet Room. Throughout the school year, the Quiet Room was used when students needed to nap, needed a quiet place to work, wanted to be alone, or for severe behaviour issues.

The seating plan and desk arrangements were deliberately planned, after careful consideration of the students' environmental, social and academic needs. Students with NBB typically needed a lot of space, and the students in this classroom were of no exception.

A school day begins

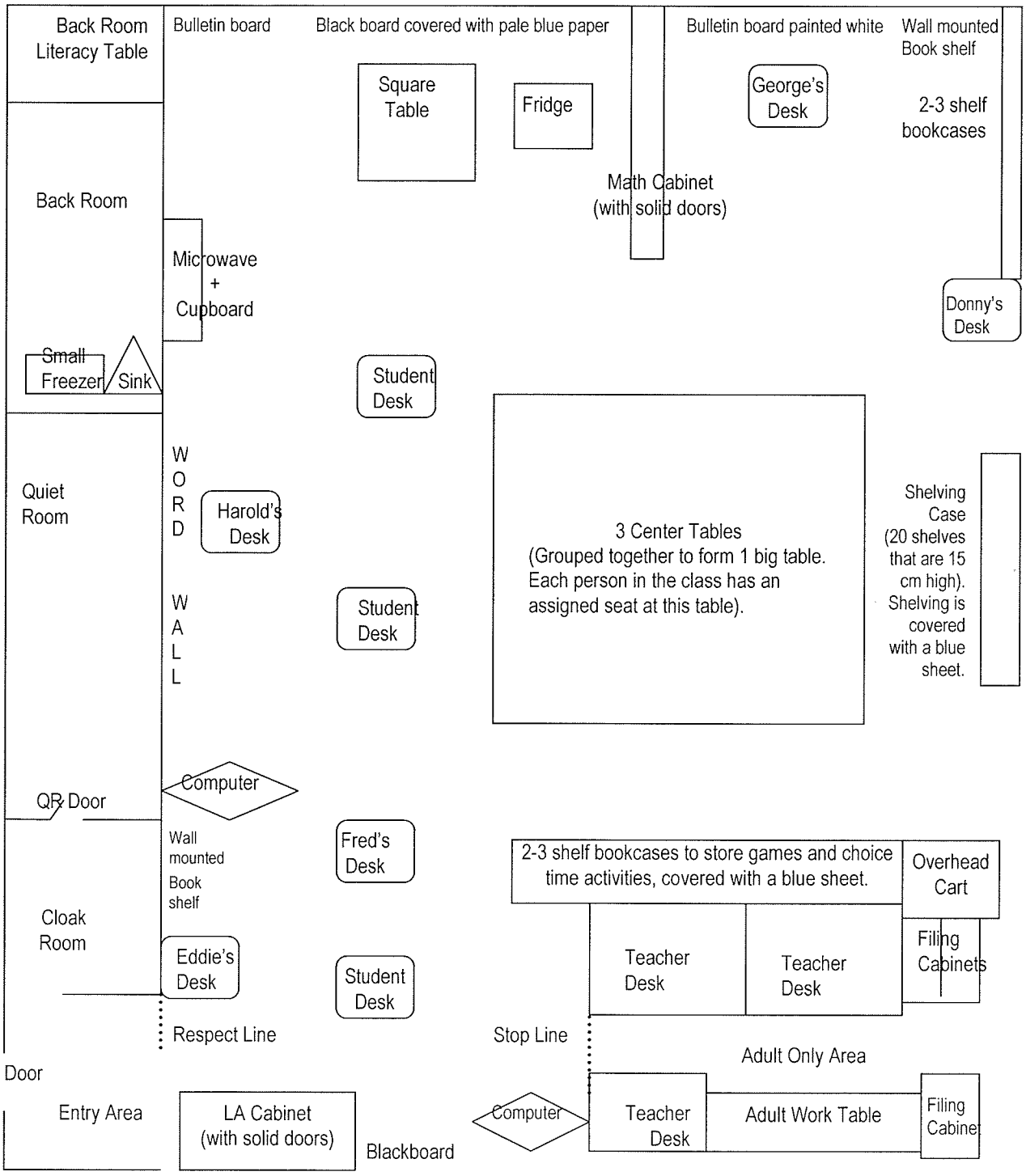
The significant incidents are organized chronologically by the time of day each occurred.

8:50 A.M. Each of the two educational assistants (EA's) boards a school bus destined to pick-up the students in the Program. The school buses had dropped off students at other schools and both buses were empty. Each educational assistant had a seating plan for the students on their particular bus. Within minutes of each other, the buses arrived back at the school, usually just before 9:30 A.M. The educational assistants escorted the students to the classroom where the teacher greeted them, telling each student that she was glad they were at school. Most warmly responded to the greeting. Students who did not respond to the greeting typically ignored it or swore quietly under their breaths. The students then went to their respective desks and began their daily routine.

The agenda. Each student had an agenda with the daily schedule on it. In addition, there was a schedule on the front board. Bus behaviour, every

Figure 14

Map of the Classroom



academic task, all free time, lunch, and the task of completing the agenda were listed, each with a box for the student to self-evaluate themselves. This also helped to keep the students organized and informed of what needed to be done. The students self evaluated themselves using the rubric on the first page of their agenda. They scored themselves in the column to the right of the task, from one to three, with three meaning their jobs were completed in a personally and academically responsible manner. A Room 9 adult initialed the students' self-evaluative score, quietly discussing the score with the students and changing the score if needed.

The agenda offered the students and staff a general framework for the day. Students who needed time in the Quiet Room, needed to nap, who were late, were working through articulating themselves, and so on, were able to rejoin the classroom and complete the academic expectations when they were ready. Students who completed their tasks quickly had the option of playing a variety of academic games. Individual tasks, small groups and whole class activities could easily fit into the day.

On this particular day, Donny came off the bus muttering profanities under his breath and attempting to provoke his peers. The staff used proximity control, stood wide and square in-between Donny, the student in crisis, and his or her peers as staff gestured him into the Quiet Room. Please refer to Figure 16.

Incident #1 Epilogue. By 10:30 A.M. Donny was settled, had fixed the damage he did, and apologized to staff for "being grumpy." He rejoined his peers

Figure 15

A Sample of the Classroom Agenda

PM/AM Bus Ride			Red Bag Reading		
Binder Work			Gym		
Precision + Guided Reading Reading			Lunch		
Joke Book			Choice		
2+3=5 Math			Language Arts		
Meeting			Activities		
Choice			Agenda		
Toast			How well did I get my jobs done?		

Figure 16

Incident #1

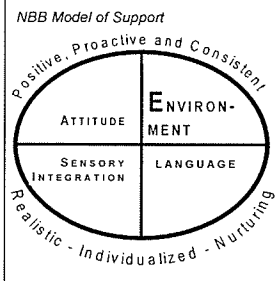
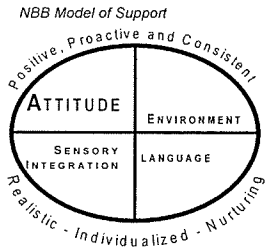
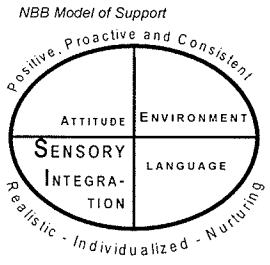
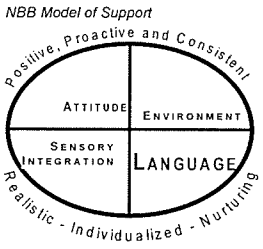
Donny arrived at school muttering and swearing under his breath. He began to provoke Eddie, calling him racially derogatory names. Staff told him to stop and stepped in between the two students. He called a staff a "f----- h---"and raised his fist at her.	
NBB Behaviour Support Response	
• Donny was verbally directed to the Quiet Room. Zoey used proximity control, to block him from entering the main area in the classroom, pointing to the QR. • Yolanda and Wanda continued to settle the rest of the students in their morning routines, quietly congratulating them for ignoring Donny's behaviour. • Headphones, ear coverings and soda crackers were offered to students distracted by the noise, and ensuring their environment and routines are not too compromised.	
•Zoey did not react when Donny raised his fist towards her. She knew she could block any punch, and physically restrain him, if needed. •Zoey ignored the profanity and name calling direct at her. •Donny was told he would stay in the Quiet Room until he settled. •Donny continued to swear at staff, and began to kick the QR walls. •Staff ignored the profanity, closed the door, and hung the "shh" picture cue in the window. Zoey supervised Donny, staying outside the Quiet Room and did not verbally engage with him.	
• The staff decided Donny would stay in the sensory friendly, calm Quiet Room and have little stimulation or interaction with others. • Donny kicked and swore for approximately 5-6 minutes, then sat down on the floor. Zoey congratulated him for quieting down. • 3-4 minutes later, Donny was asked if he had had his pills at home, was hungry, tired or ready to do his academic jobs. • He was given his academics, one page and pencil at a time, in order not to visually or academically overwhelm him.	

Figure 16 (continued)

NBB Behaviour Support Response	
• After he had settled and his primary needs met, (i.e. hunger, fatigue, etc) Conrad was congratulate for identifying his needs and emotions. Inappropriate language and behaviour were identified. Appropriate language and actions were suggested for him to use the next time. • Emotions were explained as innate factors everyone had that "makes us alive," but how your emotions "come out," "can make things bigger or smaller," and "get us into trouble." • The Quiet Room was checked for damage. Conrad was responsible for cleaning up any mess made. He was asked if there is anyone to apologize to. (At times, some students are not able to remember what they said or did). Making amends or "fixing up your mess" were discussed. • Conrad continued to work on his academics in the Quiet Room.	

in the main classroom and had a very productive day, completing all his academics. Zoey, the staff with whom the incident started, was Donny's primary support person throughout his crisis. It was vital that the staff member who was initially involved in any situation, complete the situation with the student. The other staff members were always very cognizant of the staff providing the primary support, and were ready to backup her up.

Incident #1 Discussion. In Situation #1, the first quadrant on the NBB Model of Support used was environment. The NBB Model of Support was designed to begin at the most expedient quadrant for the student, at that specific time. Staff separated Donny from his peers in order to contain his behaviour and not expose others to it. Use of the environment to separate students promoted respect and some self-awareness. Students not involved in the behaviour issue were congratulated for respecting Donny by ignoring his misbehaviour and getting "their jobs done." When Donny was guided into the Quiet Room, he was told he needed to go there so he "did not embarrass himself." Situations typically became learning experiences for all students. Students learned aspects of respect when they ignored other's misbehaviour, and became aware that their behaviour could be embarrassing for them.

No formal incident report needed to be written for Situation #1. Staff did not have to physically touch Donny to get him in the Quiet Room, Donny did not physically assault anyone, and there was no damage to school property. After this incident, Donny was able to carry on with the rest of his day and complete all assigned academic tasks. In his agenda, he completed the rest of the day with

full points. Later, during the staff debriefing, it was noted that Donny had made some leading comments about circumstances at his home, talking about a "strange w---- guy" that his mom had found sleeping outside on their doorstep, and "the noise the cops made at his house" the night before.

In many schools, Donny would have been sent home for his behaviour. Raising his fist, gesturing he was going to hit staff and making racially derogatory and profane comments typically warrants suspension from school. However, in a self-contained classroom with a higher than average student/staff ratio, a physically supportive classroom environment, and staff trained and willing to work with such incidents, students with problematic behaviour could be maintained until their crises subsided. Academic learning could then take place. Prior to this placement, Donny's academic opportunities had been extremely limited, due to his behaviour. Staff commented:

> With most of these kids, they have rough patches during the day. But they may only be acting out for 20% of the day, and then they settle and learn to read. If we kept sending them home all the time, they wouldn't learn how to read. So many kids with problematic behaviour are so academically behind. Isn't it time the school learn new ways to get these kids connected and thriving in school?

The Day continued….

Academic tasks. The academic tasks were designed in accordance to the students' individualized education plans. Lessons and activities were planned for

individualized or small group instruction. All tasks and activities were coloured coded, with language arts activities in pink, red, or violet coloured folders, and mathematics in yellow, gold and tan coloured folders. Social studies had green coloured folders, and science was in blue coloured folders. Each student had clear polyvinyl top loading large envelopes for each subject to keep their equipment and resources together. Tactile letters, short clear rulers, glue sticks, erasers, specific word lists and other equipment were kept in these envelopes. Having all equipment readily available for the students seemed to ease the students' transitions between activities.

The meeting. Because the students did not arrive at the same time and tended to need time to settle, the class did not come together until meeting time. That was typically about an hour after arrival. At meeting time, whole group instruction and community building occurred. The whole group instruction typically augmented the math and language arts centers. In addition, social skills, emotional language development and classroom or school issues were discussed. At the end of the meeting, each student said what they where going to do to keep themselves successful. The students sometimes need staff assistance to help them articulate this. The students then took turns saying what they were planning to do for their choice time. Planning and articulating their plans helped keep choice time organized, and provided an authentic experience for the students to use their procedural memory skills. Deficits in procedural memory have been implicated behaviour irregularities seen in some students

(Payne, 2003). During choice time, students and staff played cards, dice, building blocks, board games, and other activities together.

Students who were not completed all their agenda tasks listed before meeting, were required to have them finished before they began choice time. Students who had had difficulties in the morning worked during choice time to complete their tasks.

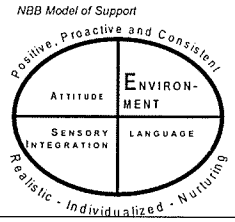
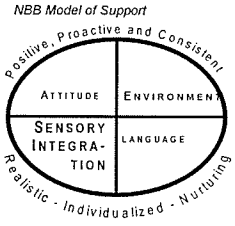
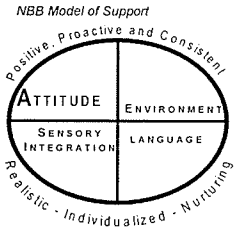
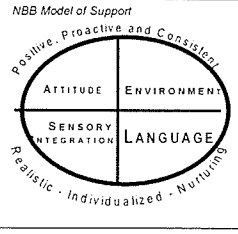
After choice time. Red bag reading was scheduled after choice time. It was either silent reading or buddy reading with an assigned peer. Each student then generated a written response. This was deliberately scheduled before gym time, as gym was highly motivating for most of the students. Behaviour issues often surfaced during this time. Figure 17, labeled Incident #2, is an example a typical behavioural incident that occurred during this time during the day.

Incident #2 Epilogue. Unlike Donny, whose behaviour issues could go on for extended periods of time, Harold's behaviour issues were typically over quickly. However, Harold always tried to negotiate lower academic expectations. Academic insecurity tended to be the root of most of Harold's behaviour difficulties seen at school. Since there had been no physical contact between Wanda and Harold, no significantly damaged school property, and no assaults, no formal incident reported needed to be filed.

Situation #2 Discussion. Since Harold fled from the main classroom, he automatically activated the environment quadrant the NBB Model of Support. Academic insecurity seemed to be at the root of Harold's behaviour. Once Harold finished his reading activity, he moved the freezer back to its place, came out of

Figure 17

Incident #2

At the beginning of the red bag reading activity, Harold refused to participate. He became very belligerent, swore at staff and then swept his book off his desk. He pushed his desk over, kicked the trashcan and ran into the backroom. In the backroom, he attempted to hide behind the small freezer, crowding himself into the corner.	
NBB Behaviour Support Response	
•Wanda grabbed two reading books and followed Harold into the backroom, closing the door, so the learning of others would not be disturbed. •Wanda moved the freezer and sat down on the floor beside Harold.	
•Wanda folded the book in half, covering the page they were not reading •Wanda used a small piece of contrasting paper to guide the reading process. She put the paper underneath to highlight the words we were reading. •Harold squeezed himself tight into the corner of the wall; Wanda shifted a little closer to him. This reminded her of some exercises the occupational therapist had shown her to address a proprioceptive dysfunction in another student.	
•Wanda ignored Harold's language and began the reading activity. •Wanda ignored when Harold tried to negotiation for an easier task. •Wanda found a familiar word for him, pointed to it. •Harold recognized the word and said it. •Wanda quietly congratulated him, then echo read the next word, he followed. Harold completed the reading activity. •When Harold realized he was reading, he became excited, threw his arms around Wanda, gave her a big hug, thanked her for helping him read, and asked to read more.	
•After the reading activity was finished, Wanda identified that he seemed scared to read. He said he was not scared but mad because to book looked too hard. •Wanda and Harold came up with words he could use and actions he could do the next time he was mad. •Next, they then came up with a plan to rejoin the classroom.	

the backroom, picked up his desk and book, and marked his agenda. He gave himself a two out of three for the activity. Wanda reminded him he had used some very inappropriate language and toppled his desk. He tried to negotiate with her, promising that this would not happen again, if he could keep the score. Wanda turned and walked away from his desk. He then began to erase the number and put his hand up for an adult to sign off the activity. At that moment, Yolanda was closer to Harold than Wanda. Harold asked her to sign him off. Yolanda refused, telling him that the person he had done his reading with needed to sign him off. Wanda went over and saw that Harold had changed his self-evaluation to a one. He was quietly congratulated and reminded that he could get threes for the rest of the day. He smiled and asked if he could line up for gym.

The day continued…

Gym time. The students looked forward to gym. The classroom had access to the gym and its equipment on most school days at 11:30 AM. Gym was a great community-building event and was something most students eagerly anticipated. Student who had difficulties during the morning typically worked hard to catch up and "get to gym." The students and staff played group games such as dodge ball and soccer. During the study, George did not go to gym. In September of that year, he had experienced two weeks of problematic behaviour difficulties that had always occurred after gym. George became so overexcited he required physical restraint to become calm and to be safe. As a result, his educational planning team decided to schedule alternate quieter activities for him during this time. It was hypothesized that possible sensory overloaded from the gym class

caused that. George stayed in the classroom with Yolanda and read, ran errands, and helped set up the classroom for lunch. Toward the end of the study, George was beginning to go down to gym, after months of working with Yolanda and occupational therapist to increase his tolerance for the gym.

Lunchtime. The students and staff had their lunch in Room 9. Each student sat at their desk, and those that needed, turned their desks toward the TV, where prerecorded cartoons were playing. George, who had gym class difficulties, pushed his desk to the far corner of the room, away from the television set, but angled so that he could periodically glance up at it, while he ate his lunch. He also looked at a few library books at his desk. Various educational planning team members suggested that the noise and colour of the television set might have been too much for him.

The students took turns getting their lunches from the classroom refrigerator, using the classroom microwave oven, if needed, and then sitting down to eat their lunch. Some students did not bring a lunch. Organizational issues, poverty, and oppositionality (i.e. refusing to bring their lunch), had been identified as factors that influenced whether and when students brought lunch to school. Many students and their families lived in extenuating circumstances that were often quite unimaginable for others unfamiliar with the struggles of some. For the students who did not have lunches, bread, cheese spread, and instant noodles were available for them to prepare. The staff did not chide students who did not have lunches. Often it was of no fault of their own that they did not have lunch. Rather, the staff just quietly offered the Room 9 staples with the gentle

reminder to clean up after they have finished preparing their lunch. The classroom bought yogurt in individual-sized containers. That yogurt was for everyone. Students needed to finish whatever they had brought from home, or had made in the classroom, before helping themselves to a yogurt. The yogurt was available to everyone in the classroom, and most students had it every day.

The educational assistants took turns taking their breaks while the students were eating lunch. At times, when behaviour crises occurred, the adults forfeited their breaks to assist with the crises and support others in the classroom.

After lunch. After lunch, the students took turns getting up from their lunch spots and cleaning up the area. This was done one at a time to avoid students from getting into each other's personal spaces. The students remained seated until they were called for their turn. When a student tried to rush ahead before they were called, they were sent back to their seats. If they refuse, the staff used proximity control and gestures to guide the students back to their seats. The staff insured the student had ample personal space from others and was aware that their turn was coming. If needed, students were given two minutes at their desks with their heads down to cool down. Students were sent to their desks with the message to "get it (the two minutes) over with, so you (the student) could get on with choice." Ensuring the students always had some hope, or something to work for, once they had made amends for their indiscretion was very important in the classroom. Once lunch had been cleaned up and all the desks had been wiped down with a disinfectant solution, the students came to the center table to choose

their choice time activity. Students could not leave the table until they had chosen something, and were not allowed to switch activities during the allotted time. This prevented students from disrupting the games or activities of the others. When a student could not decide, a staff member made a few suggestions for the student to consider. During choice time, the adults played with the students and taught small groups of students new card and math games.

The afternoon. Systemic influences shortened the school day. The school buses arrived shortly after 2:00P.M. to transport the students home. Thus, there was a little less than an hour after lunch for academics. The afternoon tasks were not as rigidly programmed as the morning tasks. Math centers, social studies, science, and art were typically scheduled. After choice time, the students returned to the center table, where they were told what to expect. The student working groups were arranged, with one adult supporting each group. Despite the tight structure and all the things that were done to "set the students up for success," approximately 20-25% of the students tended to have a difficult time.

Students who were unfamiliar with the concepts or activities used their various defense mechanisms to avoid the tasks. They swore, threatened, complained of boredom, fatigue, or sickness, made noise, threw equipment, tore paper, and used other tactics to avoid the tasks. Students were encouraged to attempt the tasks, tasks were broken down into minute steps, and adult support was always close at hand. Despite the support, the behaviour of some students deteriorated. When a student began to swear, use classroom equipment in intimidating ways, or threatened to harm peers, staff or themselves, they were

told to go to their desk. If the student continued to be disruptive at their desk, they were sent to the Quiet Room.

Refusing to engage. Only one student at a time was ever allowed in the Quiet Room. When other students needed the Quiet Room at the same time, they had to wait at their desks, or go to the backroom, with adults who used proximity control to support them. When a student was in the Quiet Room, the adult who sent the student there was just on the other side of the door. All inappropriate verbal banter of the student was ignored, but documented verbatim. The staff did not verbally engage with a student when they were in such a state. Two computer-generated pictures were hung up in the Quiet Room window. The first picture was a smiley face with his fingers up to his lips in a shhhing motion indicating to the student to be quiet. The second picture was of a student sitting on the floor against the wall waiting quietly. The staff waited for the student to calm. If the student called out they are ready in an angry sounding voice, the staff responded by saying "wrong tone of voice," and then pointed to the picture. Students often swore at the staff who has just responded to them. Staff had found that addressing the profanity at the time it was spoken often inflamed the situation, prolonging and worsening it, thus it was usually addressed later.

Once the student quieted down and was sitting, the staff identified the perceived emotion fueling the behaviour, and put language to it. Students were encouraged to recognize, name and claim their emotions. After the emotional context was identified and labeled, the staff and student problem solved together.

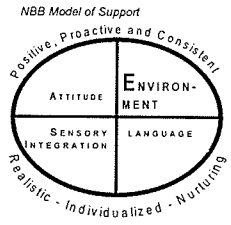
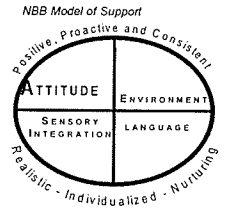
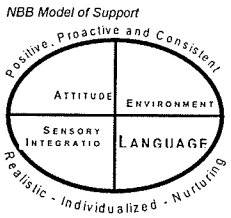
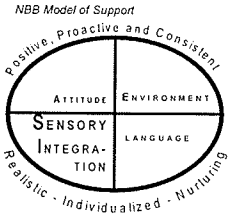
If the student had indicated he was tired, he was offered the opportunity to nap, with the reminder that he still needed to finish the academics, not yet signed off in his agenda. Academic support was offered. At times, students accepted the academic support, and rejoined their peers. Sometimes the student asked to work alone in the Quiet Room. For students who refused to work on their tasks, the tasks were listed on the top of the blackboard behind the adults' desks for the student to complete the next morning during choice time. It was at this time that inappropriate language and threats were discussed with the student. The adult identified the inappropriate language, labeled the possible underlying emotional context of the language, and then suggested another word or action the student could use in similar situations.

Language and threats. The staff documented language and threats verbatim. That provided valuable insight to the students. Often the student used language the staff had heard the parents at home use. The staff was very clear that some words heard at home or in the community were not to be used at school. That language was labeled as "home or community language." "School language," or appropriate vocabulary with acceptable cadence, was substituted. The staff intentionally tried to teach students the subtle intricacies of language while addressing their needs.

Threats and allegations were documented. The school division's incident reporting form was used. A time-line of the incident, non-emotional language describing the event, and the verbatim threat or/and allegation was recorded. Possible triggers were identified and resolution of the event, complete with the

Figure 18

Incident #3

During silent reading, which included a short written response, Fred suddenly called out. "This is f--- bull--! I'm not doing this," tore his written response notebook in half, and threw it on the floor.	
NBB Behaviour Support Response	
• Wanda immediately said, "Fred, Quiet Room," while pointing in that direction. Swearing was not allowed in the main classroom and Fred's peers needed to see it being addressed. In addition, removing Fred from his immediate environment could prevent peers from becoming involved. • Fred replied, "No! You can't make me."	
•Wanda walked closer to Fred and quietly whispered, "We need to talk, and it is nobody else's business but ours. Let's go into the Quiet Room so we can have our private conversation." •Wanda walked toward the Quiet Room, Fred followed.	
•In the Quiet Room Wanda said, "Bull... is not school language. You sounded frustrated. When you are frustrated at school, use the words "oh darn." I wasn't frustrated, I was mad, "replied Fred. "Great! You put words to your feelings. What were you mad about?" Wanda asked. My pencil wouldn't work right, it kept breaking," Fred said. •Together words were put to the problem and specific words were identified to use when Fred needed help or did not understand. •Fred would also would keep a small pencil sharpener in his desk.	
•When looking more closely at Fred's pencil and notebook, Wanda noticed that it appeared he had been pressing very hard on the pencil. After Fred had taped his notebook and used the pencil sharpener, Wanda slid a solid coloured rubber placemat sheet underneath the page he was writing on. It seemed to help Fred's writing process. •Other considerations could have been: allowing Fred to use an fine tipped erasable marker to write with, providing paper with raised lines to help support his writing process, allowing more time for him to complete the assignment, moving him to another work are in the classroom, and allowing him to audio-record his response	

restitution, strategies, and plans were recorded. The administrator signed the incident report and the student's legal guardian received a copy. Individual students' incident reports were filed in their respective classroom files so possible patterns could be investigated. For students with histories of making allegations against staff, incident reports provided the documentation that identified the behaviour, and a protection for the staff working with the students. Copies of the incident report went to the legal guardians, administrator, and were kept in the student's file. That generated the documentation needed to access additional school, home or community supports.

Subtle insights could be gleaned from the language the students used when upset. One student screamed from the Quiet Room "send me back to (another school's name) so I can be sent home!" For this particular student, it took five months of consistent, non-emotional interactions to break him of that habit. Over the years, many students intentionally used disruptive behaviour or rude language so they could be sent home from school. It appeared for many students, with histories of disruptive school experiences, had learned that certain behaviours and language could quickly get them ejected from school. Many students used that behavior when faced with academic, social or emotional challenges. Once, a few years ago, a student responded in exasperation, "what the f--- do you have to do to get sent home from here!" He was quietly told that it was not going to happen until the bus home came at the end of the day.

Incident 3 in Figure 18 is an example of how the NBB Model of Support was used with a typical, after lunch behaviour incident.

Incident #3 Epilogue. Fred returned to the main classroom, picked up and repaired his notebook, then apologized to the students who were in close proximity to him. Later that day, he was overhead telling one of his peers in the class that he had learned a new word to use when he was mad, "oh darn."

Incident #3 Discussion. This exchange occurred shortly after Fred started the Program. He had been placed in the Program the week before. This exchange demonstrated one of the key principles of the NBB Model of Support. That is, inappropriate behaviour is not punished, rather it is corrected. It seemed as if Fred expected to be punished. Initially, he refused to go the Quiet Room, possibly because he thought he was in trouble. That seemed to indicate that Fred did realized his language and behaviour were incorrect, possibly because he had been scolded many times before for the language he used at school.

Rather than scolding Fred for inappropriate language, appropriate language, labeled "school language," was taught. Scolding students for using the language they may hear at home or in their communities can be misinterpreted. When inappropriate language is labeled with emotionally charged descriptors such as "bad," "appalling," or "disgusting," students may interpret it to mean their families or communities are bad, appalling or disgusting. For younger students, an idea such as this could foster a sense of embarrassment or hopelessness. However, as students get older their embarrassment may turn into resentment fueling a disconnect between home and school. By labeling the language as "home or community language" and "school language" students began to learn some of the intricacies of societal language registers (Payne, 2003). Attempts to

eradicate such language from the working vocabulary of some students neglects to consider the utility of the language. The language used in some homes and communities functions in those venues. Attempting to eradicate the language based on an emotionally charged descriptor may further alienate the students. Teaching students how to slip between home or community language and school language can prevent that.

Secondly, power was removed from the exchange. Refusal to go to the Quiet Room could have resulted in a power struggle between Fred and a Room 9 adult. By informing him of his need to go to the Quiet Room, which was "We need to talk, and it is nobody else's business but ours," changed the dynamic of going to the Quiet Room, from something the adult, needed to happen, to something Fred needed to happen. Removing the power shifted the interaction from an arbitrary expression of an adult's authority to one of providing the student with a reason and opportunity to make a good decision to go into the Quiet Room. That may help to develop self-discipline (Levin, Nolan, Kerr & Elliot, 2005).

The possibility of the role of sensory influences was addressed at the end of the incident. The indentations on Fred's paper indicated that he used excess pressure on his pencil as he wrote. After he had repaired his notebook and was ready to continue his academic task, Wanda quietly slipped a solid coloured form-rubber placemat under the page he was to write on. The possible extra buoyancy the mat may have provided better supported Fred's pencil tasks. That worked for him, at that time, thus the other sensory solutions listed on Figure18 were not utilized.

Ultimately, whether the form-rubber placemat met a sensory need or adult attention addressed academic insecurity or social need, did not matter. Fred completed his academic task, with very little lost time. He became aware of the "home/community language" and "school language" issue. He was able to identify the emotion he felt, learned some new "school language" vocabulary and strategies to use when frustrated or "mad."

The day continued…

Ignoring what could be ignored. Ignoring inappropriate student behaviour was one way to diffuse it. Ignoring inappropriate behaviour did not mean that it was overlooked or excused. It meant that the adult: (a) may have decided not to "feed" the behaviour by drawing more attention to it, (b) was contemplating other possible ways to address the issue, or (c) was preventing his or her emotions from overriding the situation. Ignoring some behaviour occurred particularly when students muttered inappropriate comments or profanities under their breath. George's under the breath sexualized comments were an example of this. Some days he frequently muttered quiet comments. If he was not disturbing the learning of others and could be ignored, he was. If the mutterings became annoying, he was sent to the Quiet Room to work. The adults addressed the inappropriate behaviour when they signed off the agendas after the students had self-evaluated themselves. Since the agendas needed to be so signed by an adult frequently, inappropriate behaviour was never ignored for long.

Canada. During the study, afternoon work refusals tended to occur when the activity was new. The class worked on a Canadian social studies unit during

the study. Every second afternoon the students worked on a province or territory, researching pertinent facts, collecting the information for their project folders. The class worked together on the same province or territory. After the researching and writing, the students each had a wall-sized map they had traced from an overhead projected image of the Canadian map projected on to a large paper on the wall. The students painted the province or territory the class had just completed. During the first three provinces the class did, three different students ended up at their desks or in the Quiet Room. The activity was different and slightly unpredictable for the students. Regardless, the rest of the class carried on with the project, and by the fourth province, every student was participating in the afternoon activity.

Debriefing. At the end of the school day, the students' completed their agendas. On the days when it was noisier in the classroom, usually because a student was having a difficult time, the students who had done their jobs were quietly congratulated and reminded to be proud of themselves for ignoring their peer's difficulties. Teaching students what to do when someone else was having a difficult time, or was trying to bate them into misbehaviour, was an important skill for the students to learn.

After the educational assistants returned from delivering the students home, Yolanda's workday ended, but Zoey returned to complete her documentation responsibilities. She and Wanda discussed the day and shared insights and ideas. They looked for patterns of behaviour, behavioural triggers and fresh ideas to differentiating the instruction.

Integration. During this study, none of the students were integrated into other classrooms. However, successful student integration had occurred in the past. Typically, integration began once students had developed some school attending skills, appropriate school language, literacy skills, and plans were in place for them to return to Room 9 if they felt the need. Integrating students for specific subjects such as gym or music was disruptive, due to the variability of scheduling and increased sensory demands of these subjects. Thus, integrated students were placed in age-appropriate classes for academic integration. Staff supported the students in integration by providing academic and social assistance. Most teachers differentiated their instruction, so the students were able to fit in academically. If students clashed with their peers in the integrated setting, or if other teachers strongly responded to some of the students' misbehaviour or idiosyncrasies, integration was not successful.

Students were not typically ready to integrate at the beginning of the school year, and many integrating teachers were able to offer little flexibility in accommodating some of the extreme behaviour and language the students sometimes used. When students reverted to inappropriate language in the integrated setting, they typically returned to Room 9 for the remainder of the school day. Attempts were always made to return the students to the integrated setting as soon as possible. Once a student had the language to express himself or herself and had calmed, the integrating teacher was approached by one of the Room 9 staff members. The integrating teacher often tried to use the incident to reinforce a zero tolerance for inappropriate behaviour to the other students in

their classroom. That was not always in the best interests of many students with NBB, because it marginalized the student and did not support the Program or the student. Students with NBB did not benefit by being used as examples of the consequences for inappropriate behaviours. In addition, it reinforced bad habits some students had, of reverting to inappropriate language or behaviour to avoid socially or academically confusing situations; a habit that the Program tried to break.

While a primary need of the integrating teacher was to maintain classroom management for a larger number of students, a need for the Room 9 adults was to use the student's inappropriate behaviour or language as a learning opportunity for them. That clash of needs often limited the amount of integration some students experienced. However, integrated or not, the Manitoba curricular outcomes were still taught. For many students in the Program, they were taught solely in the self-contained setting.

Chapter 4

How the themes emerged and what they looked like.

The purpose of this study was to provide descriptions of the NBB Model of Support practices that emerged when three staff members in one classroom used the NBB Model with a group of students with histories of limited success in school.

In this chapter, I present the results of my study in three parts. In Part One, I present the themes that emerged and support each theme with details from the data collected during the six-week study. In Part Two, I will provide an interpretation of the data, with an analysis that incorporates the findings, ideas, and information from the literature review in Chapter 2. Finally, I summarize my study by looking at the significance of my findings in relation to the larger field of education and briefly explore considerations for future research.

In Part One, each of the four themes that emerged from the data is described. Following each description, I provide examples that include exact quotes and details from the data. Themes that emerged from this study were (1) recognizing and broadening the perspectives of the primary needs of the students, (2) environmental influences including sensory integration and physical space issues, (3) developing rapport, emotional validation, and developing habits and, (4) educator self-care.

Theme One: Primary Needs

Addressing the primary needs of the students was a theme that emerged early in the study. Food had a significant influence on the students in the study.

Initially, I thought that that socio-economic factors and compromised home issues drove this theme. Although those influences did play a role, other factors soon came to the forefront.

Food. Students often arrived at school hungry. To address this, a section labeled toast was included on the agenda. That was a built-in opportunity for students to prepare, toast with cheese spread. For some students, their hunger suddenly appeared, and often manifested itself with disruptive, off-task behaviour. Soda crackers remedied that problem. The students could always have a couple of crackers to ward off their hunger, while problem-solving a situation. Mini baby carrots were also available. The mini carrots offered a different texture for the students, and were used for other reasons in the classroom (next theme).

Some students appeared to use food to control their environments. Fred, an eleven-year old student often hoarded food. He was living in a triple dollar-a-day residential group home where poverty and lack of access to food at home was not an issue. Nevertheless, he did have a well-documented history of hoarding for which he had a mental health treatment plan. Regardless of the fact that he did not lack food, Fred always gave up his free time in the mid-morning to make himself some toast, and always asked for a yogurt everyday after lunch. As Zoey said:

> We know that food is not an issue at Fred's house. He does not come to school hungry or takes any medication that affects his appetite. We know that Conrad usually comes

> hungry and Eddie's medication mixes up his appetite. The classroom food just has to be available to all the students. If we just let the students who came from homes where there was not enough food have the classroom food, it would be advertizing that fact to everyone. That would not be respectful to the students. In fact, by taking the power and control out of the food by having the basic food available to all, without question or hassle, a great sense of community develops. The students all know the food is there. They all know how much they can have, and that they have to clean up after themselves. It is all good.

Eddie, a twelve-year old student in the study, used food in an opposite way. He refused to eat and was significantly underweight for his age. Eddie hid the food his grandma sent him for lunch, became very quiet and unassuming at lunchtime, and quickly cleaned up his lunch area. Often at the end of the day, the staff found Eddie's food hidden in the classroom. To address this issue, Yolanda sat with Eddie while he drank a high-calorie meal supplement beverage. She commented:

> It is so important that Eddie keep his weight up. He is all skin and bones. If he loses any weight, his doctor will decrease his meds. Before he was stabilized on his meds, his behaviour was so unsafe. He would climb out of his second floor bedroom window in the middle of the night

> and be found playing on the street. Grandma would get phone calls from her neighbours telling her that Eddie was doing pirouettes and back flips (handsprings) in the middle of the road. Eddie was always climbing, flipping, running and moving before he got on the right amounts of medication. In fact, a day after the new superhero movie opened, Wanda had to take Eddie to the hospital for stitches because during gym class he ran into the wall, tried to climb it like the superhero, and tore his index finger tip open and needed seven stitches because the gash was so deep. Just as some students need glasses to be successful in school, some students need medication. And for some kids on medication, we have to make sure they eat at school.

Billy was an eleven-year old student in the study. Due to poverty and an extremely compromised home life, Billy never brought his lunch to school, nor had breakfast before arriving at school. When discussed with his father, who was trying to support his family of four sons with his minimum wage job, Dad simply asked when the school was going to get a breakfast program. Billy always ravenously devoured any food he was given in the classroom, always remembering his “pleases” and “thank yous.” Contacting family service agencies, child welfare and community agencies regarding the dearth of primary resources in Billy’s home was to no avail. Each agency cited a policy or a lack of resources

to explain why they could not be involved. Staff always ensured Billy had a piece of cheese when he came off the bus in morning, for which he was always very appreciative. During the study interview, Billy readily admitted to coming to school to eat and said one of the best things in the Program was the yogurt. He claimed yogurt was a "rich person food" and he got to have it everyday when he came to school.

Medication. Prescription medication also influenced the food in-take of the students. Forty-three percent (43%) of the students were on medication for various psychiatric, medical and behavioural issues. Some were on prescription drugs that suppressed appetites, while others were on drugs that intensified appetites. Medication also caused early morning issues at home. One grandma called the classroom one morning in an exasperated state. Her grandson had refused to eat but she knew he would be "starving" when he arrived at school. She was worried that the school might think she was unfit to care for her grandson. She sent boxes of crackers and single-serving sized instant soup mix for her grandson to eat as soon as he arrived at school. This seemed to make this Grandma sound less anxious on the phone. Interestingly, while her grandson frequently dumped his soup, but always ate his crackers.

Staff soon learned that when some students on certain types of medication came to school with ravenous hunger or incessantly chattering, they had forgotten to take it before they came to school. Students who had missed their morning medication typically needed one-on-one adult support in the classroom. Zoey rode the school bus that picked up Donny.

> When Donny got on the bus with that look in his eyes, I could tell he had not taken his meds. He would not talk and if someone spoke to him, he would mutter some profane comment. As soon as we got to school, Donny would complain he was hungry. As Wanda called his home to confirm he had not taken his medication, Donny would be making toast, swearing at anyone who talked or came close to him. I (Zoey) would be supporting him, supervising the toast preparation and using proximity control and quiet, non-emotional directions to keep other students away from him. Within twenty minutes of getting his medication, Donny was the most pleasant, well-mannered young man, whom, by the way, had usually had four pieces of toast with cheese spread. Then, he would not eat at school for the rest of the day. Even when his mom sent him pizza pops, wieners, or other child friendly food, Donny would not eat. We even tried giving his 11:30 A.M. meds at 12:15 P.M. to see if he was hungry at lunchtime, but he wasn't.

Clothing. Other primary needs that surfaced pertained to clothing. Many students had significant clothing preferences. Some students claimed they were too cold, too hot, or their clothing "bugged" them and did not feel "right." When students arrived at school wearing inappropriate clothing, a staff member quietly asked the student if they were too cold, or too hot. Usually the student responded

with an immediate comment from which the staff member could gleam information. Billy, the student where significant poverty was an issue, immediately responded that he did not get cold and did not need a winter coat in minus 35 degree temperatures. Staff obtained a used winter coat for him that was gladly received, worn home, but rarely worn again. He claimed it felt too "puffy" for him. Billy continued to wear an assortment of hooded sweatshirts and T-shirts to school, and his father and staff in the Program just quietly celebrated the fact that he came to school.

Conrad had significant clothing issues, as well. Despite auntie's best attempts, he rarely wore weather appropriate clothing to school. Auntie often phoned in the morning, distraught over the latest early morning clothing fight, and lamented about how worried she was that the school might think she did was a "bad auntie." Staff calmly reassured her that we knew how much she loved Conrad and that it did not matter what he was wearing to school, but that he came. The classroom had a small assortment of clothing for the students to use, if needed, once they got to school. That reassurance put many at rest, and helped the early morning chaos that often erupted in their homes before school.

Sensory, social or educational? Prior to the study, a ten year-old student went for days wearing the same clothes. A child welfare agency was involved with the family and Dad, a single parent always seemed attentive. One day, during a meeting, Dad began to express how frustrated he was with some of this student's idiosyncrasies, especially the fact that he refused to put on the clean clothes and change into pajamas. After a short discussion with the multi-systems

team, Dad agreed to experiment with different laundry products. After a period of trial and error with a variety of laundry products, the student began to wear cleaner clothes to school. Whether it was the tactile sensations the laundry products on his skin, a sensory issue; or the fact that this was discussed at the multi-systems meeting, making his grooming became a priority for he and his Dad, a social issue; or that Dad became more aware of the proper amount and uses of laundry products, an educational issue, the student began to wear cleaner clothes.

Hats. Hats were important for many of the students in the study. Despite the fact, there was a no hat policy in the school, the students in the classroom were allowed to wear their hats in class as long as they were appropriately worn, did not have inappropriate symbolism, and were no street gang markings. Out of respect for the school, the students had to take their hats off when they went outside the classroom. For some of these students, wearing hats or head coverings appeared to be linked to sensory issues; specifically, the classroom lighting seemed to be too bright. The brims of many baseball styled caps might have offered some relief from the visual clutter in their lines of sight. Students who wore hats or pulled the hoods of their hooded sweatshirts over their heads often did so when there was increased noise in the room, during transitions, or during more demanding academic tasks. These behaviours are indicative of sensory integration dysfunction (Williams & Shellenberger, 1996; Wilbarger & Murnan-Stackhouse, 1998; Kranowitz, 1998; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003), a clinical diagnosis of 25% of the students. Although only

25% of the students were diagnosed with sensory integration dysfunction, sensory sensitivities and preferences could be seen with every student. Since only licensed occupational therapists (OT) could formally diagnosed sensory integration dysfunction in Level II or III funded students, sensory integration dysfunction may have been under-diagnosed among other students in the Program who had not had an occupational therapy assessment.

Students quickly learned what appropriate headgear for the classroom was. During the study, Donny, a twelve-year-old student inadvertently wore a black baseball cap with a nude woman embroidered on the front. As he came on to the bus, the staff subtly gestured to his hat. He took it off, looked at it, and then punched himself in the head. The staff suggested that he run back into the house to exchange hats. Donny did, returning with a more appropriate hat. When the staff on the bus related the incident, she informed me that the legal guardian was still standing at Donny's front door, Donny had not yet stepped on the bus and she did not get off the bus. Both very relevant to the legal responsibilities of all involved. More importantly, Donny remedied his problem. He was congratulated for changing his hat, told that was an excellent way to problem-solve and next time he could say something like "oh shoot," rather than punching himself in the head. The staff thanked the other students on the bus for giving Donny the space and quietness he needed to fix his problem.

Sleep. Lack of sleep also appeared to influence student behaviour. Chaotic home issues, significant community issues, students refusing to go to bed when told, poor temperature control in the bedrooms of some homes, and

possible medication side effects may have influenced students' sleep habits. In addition, disruptive sleep patterns can be a trait of some neurologically based behaviour diagnoses (Goll, & Shapiro, 2006; Guishard-Pine, McCall, Hamilton, &Wiener, 2007). To counter this, students were allowed to nap at school, when needed. Students who napped at school were expected to complete all their academic tasks, often completing them during their choice time, gym or lunch. That policy addressed the problem of students who attempted to use fatigue to avoid academic tasks. Staff monitored the amount of time students' napped, then tried to wake then after a short period, offering academic assistance. Naps were documented and their primary caregivers told when they napped. The Quiet Room was the napping area, and only one student at a time could use it.

When a student's behaviour deteriorated, fatigue was an immediate consideration. Twice during this study, after a behaviour outburst, Fred went in to the Quiet Room, screamed for a short period, and then fell asleep on the floor. When debriefed, Fred was encouraged to "use your words" to tell the adults he was tired, then ask to nap.

Allowing students to nap during school time can be controversial. However, staff in to Program offered another perspective on napping in school. Zoey commented:

> Often students come from homes where it is hard to sleep. Some students live in houses where it is hotter inside the home in than it is outside in the summer, and so cold in the winter that ice forms on the inside of the windows and

> bedroom walls. Some students live in areas with high crime rates, which mean many emergency vehicles are racing up and down their streets. Still other students live close to major streets with heavy traffic flow. Then, there are the routine sleep problems that children may be prone to experience. Often their internal clocks seem to be off. It may be a compliment that students nap at school. They feel safe and comfortable and are able to sleep. We meet a need.

Primary needs. Having food and some clothing available and encouraging naps when needed were easy ways to address some of the students' primary needs.

Addressing primary needs began with building an awareness of them. Staff was extremely cognizant of the students' affect. Once a staff member recognized a student's discomfort or confusion, it was labeled. The student either agreed or disagreed with it. Once emotional identification was made, the staff attempted to tie in the emotional word with possible somatic effects, connecting the emotional and physical states. Language was put to the need. Labeling the need and feeling was the initial cornerstone for empathizing with the student, normalizing the feelings, and problem-solving or accepting the situation. Lastly, the development of strategies or plans to address these needs, were identified.

Understanding primary needs of the students and the possible extraneous influences that circumstances was helpful for adults in the classroom. One educational assistant commented:

> When I stopped thinking about the bad parents, bad homes and bad neighbourhoods these kids came from, and stopped thinking I was so good I was for working with kids from such bad environments I became a better EA. I began to accept the kids, and their families "as is," that is, not perfect, and becoming aware that many not have had the opportunities or abilities to take advantage of the opportunities so many others take for granted. Their lives are just different, and if I want to make a difference in their lives, I have to look forward, with them, showing them where to go and how to do what they need to do, rather than telling them what not to do.

Needs of the adults. There were a number of adults in a multitude of roles in the lives of the students in this study. Various agencies, direct service providers, parents and/or legal guardians had professionally and culturally defined roles. These roles defined responsibilities and requirements that needed to be met in order for each to be accountable to the others. Written documentation, using non-emotional language and describing what was seen - not a reaction to it, was an important role requirement. The adults in the lives of the students in the study generated and filed vast amounts of written documentation regarding the children, often to provide systems' accountability and legal protection. Additionally, the need for everyone's' physical and legal safety appeared to be one of the important underpinnings of these roles. As Yolanda said:

> Everyone is trying to do their best, but sometimes it is hard to tell who is more scared, the adults who are trying to do what the systems they work for are telling them to do, or the student whose needs are not being addressed. When everyone just relaxes and just stop blaming each other, maybe more can get done. Understanding that we all have roles and that when kids don't fit into the type of mold you expect, it is not bad or defective, it is just different. And different can be good. These kids can help all adults to be better professionals.

Collaboration. The staff in the Program worked within a strong collaborative framework. When a student asked a second staff member the same question because he did not like the answer the first staff member gave him, the second staff always referred him back to the first one. The staff working in the Program, all said, "whatever she said, I say…we all say the same thing to you guys." The three staff working in the Program supported each other by helping one another to complete various task with the students especially when problems were encountered. When Yolanda could not complete the Guided Reading tasks with some students, Zoey stepped in to ensure the tasks were completed.

> Even though I could do the Guided Reading tasks with the students, they did not like it when Yolanda could not do it. The students were use to their routine and that included the same staff doing the same tasks with the same student. The

> students did the tasks with the other staff member, but they really did not liked it when the original staff was not there.

The Program adults. The Program adults were very satisfied with the classroom work environment, the students and with the roles they played in the lives of the students and their families. Since the classroom did not frequently send the students home and worked hard at developing and nurturing professional relationships with the students and families, the staff felt appreciated, valued, and competent.

However, the relationships between the Program staff and other professionals in the school building felt disconnected. One educational assistant stated she felt "unappreciated and not valued" by others in the school. Due to the systemic issues of timetabling, school bus schedules, and other restraints, there was very little opportunity for the staff to engage with others in the school. That is common for people in self-contained settings housed within larger institutions. That may be one motivating factor driving the inclusion movement. When other staff members in the same hallway complained to the administrator about the noise coming from the classroom, some staff were left feeling incompetent and devalued. As one staff said:

> There was a fantastic wonderful learning experience for Abraham when he was brought up from gym class screaming profanities and threatening staff with a chair (page 22). It was a real teachable moment, and it seemed to make a difference in Abraham's behaviour. He has not

> threatened anyone since that incident seven months ago. In here we were all quietly celebrating Abraham's success and here the teacher across the hall, is still complaining about us. They just do not understand, and they missed one of the greatest teachable moments in our classroom this year, so far.

The "fantastic wonderful learning experience for Abraham" highlighted one of the challenges the Program and school had. That was, the effects of the episodic disturbances and noise from the Program. Sometimes, when some students in the Program became upset, they shouted obscenities and other rude comments, banged the walls of the Quiet Room, or caused disruptions that other classes heard. The students, all of whom were identified as having emotional and behavioural difficulties, were in behaviour crises, and the school's physical infrastructure did not adequately enough support the students. Students with NBB need space (Kranowitz, 1998; Hall & Hall, 2003) and in some instances, an area modified to muffle sound so not to disturb others, or embarrass themselves. The Quiet Room in the Program provided the area and privacy, but could not be insulated to prevent or reduce the noise other classrooms were exposed to. Zoey commented:

> The noise these kids make is annoying, but not lethal. It sounds bad and to an untrained ear can sound dangerous, but it's not. At times, their rude language is an improvement. At least when they are being verbally violent, they are not

> being physically violent. The swearing is our cue that the kids need help… help with peers, with academics, with identifying how they are feeling and putting other words to it. High schools I have worked at have had little soundproof rooms that band students went into to practice playing their instruments. You would think if they can come up with a few little soundproof rooms in a high school to support a music program, they could fix up our Quiet Room to muffle sound. These kids have the same rights to an education as the ones taking band in high school.

Primary caregivers. The primary caregivers of many of the students seemed to need to feel valued and competent. Often, the primary caregivers were not the biological mothers. Rather, they were single fathers, grandparents, other extended family members, group home staff, or professional foster parents. Frequently, the caregivers voiced concerns about being "bad" caregivers, especially when there were issues related to food, clothing and sleep. Periodically, they appeared to need validation and reassurance. Wanda related some of the phone calls from the caregivers:

> Single dads always seemed to be trying so hard. Often they had not parented their children from birth, and in one case, only had begun parenting a few months before their child began the Program. Grandparents typically seemed so tired. One grandmother related that years earlier she

> had been a school board trustee in another province. When she was a trustee, she fought to keep students with the type of behaviour her grandson exhibited, out of school. She lamented how judgmental, narrow-minded, and prejudicial she had been. As a trustee, she blamed the parents and caregivers for not disciplining their children and making them listen. Now, years later, she understood how "traditional" discipline and "making the kids behave" did not always work, especially when organic brain differences complicated things. She was so thankful the school had persisted with her twelve-year-old grandson with FASD. She believed that it was the self-contained setting that helped her grandson achieve school success.

Primary caregivers often appeared tired. That was particularly evident for grandparents raising grandchildren. In addition to coping with daily life, grandparents often seemed to struggle with feelings of guilt or disappointment regarding their grandchildren's parents, weariness with the excess energy of their grandchildren, and personal health struggles. Poverty, lack of resources, and pressures from parenting a child with neurological differences compounded these problems. For example, when a staff member phoned Eddie's grandmother to inform her that he had been taken to the hospital for stitches (he sliced the tip of

his index finger), his grandmother reminded the staff to make sure he got a tetanus shot, then asked if he would be on the school bus at the end of the day.

As this story illustrates, primary caregiver fatigue could be mistaken for apathy or indifference. Perhaps, there were times that it was, but as long as they were a student's primary caregiver(s), they needed and deserved to be treated with openness and respect. As staff came to know some of the primary caregivers, they often discovered that hostile or apathetic appearances often masked an unspoken fear of the school or of the future, or simple physical fatigue.

Other students. Other classrooms in the school also had the need for an educationally enabling and safe learning environment. That was compromised during some behavioural crises when profanity, threats and inappropriate language were heard throughout the top floor of the school. To address this issue, Wanda visited the classrooms who heard the brunt of any noise at the beginning of each school year to tell them they may hear loud, rude or scary sounding language coming from the classroom. They were assured that they were safe and that there were adults in the room were taking care of the situation. They were told the language heard or questionable behaviour seen was not acceptable, and that the students involved were accountable for their behaviour. Out of respect for the student having the difficulty, they likely would not know the circumstances of the incident. These seemed to appease the need of some teachers to cope with extraneous disruptions to their classroom environments.

Primary needs first. Putting the primary needs of the students first while helping the educators remain calm and non-emotional became a starting point for everyone in the study. One educational assistant commented about how she was able to keep her own reactions to inappropriate behaviour in check once she began to understand the brain. By recognizing and labeling the behaviour as "brain differences" not personal attacks against her, she said she was better able to manage the students' extreme behaviour. She began to understand the extreme behaviour as a deep-rooted biological function of the brain that instinctively triggers to keep the student alive, but not necessarily socially appropriate or reasonable. She related a prior incident:

> A few years ago, a student brought a knife to his school meeting to discuss some allegations that he given a peer some sort of substance to ingest. During the meeting, he brought the knife out of his pocket and began to play with it, shredding his jacket and poking the underside of the table he was sitting at. He refused to hand it over. The student's mom was crying, the social worker was loud, the student was swearing. As he began to shred his jacket, he accidentally cut himself. When an unexpected noise startled him, he threw the knife against the wall. Wanda quietly approached the student and asked if his hand hurt. She asked for his permission to see it. Wanda then suggested they go together and put his hand under running cold water. She did not

> mention the safety, legal, or appropriateness of his behaviour. She did not even mention the knife. Quietly and gently, Wanda helped him clean his cut hand. She also "helped" him clean up his blood on the floor – he wiped it up as Wanda quietly told him he was doing a great job. After everyone had calmed, the issue of bringing a knife to school was addressed, in accordance to the school division's policies. The student was suspended, but congratulated by Wanda for being able to dress his cut, clean up the blood on the floor and being able to walk out of the school quietly after the incident was over. It was then I came to realize the importance of first addressing students' primary needs, then finding something positive they had done and labeling it as a strength, good decision or other situationally-specific positive attribute pertinent to the student at that moment in time.

Implications of theme 1. Research has long recognized the relationship between students' primary needs and their educational outcomes (Weinreb, Wehler Perloff, Scott, Hosmer, Sagor & Gundersen, 2002; Ferguson, Bovaird, & Mueller, 2007). However, as this theme emerged in this study, it broadened, past the initial implications of poverty-related issues and parental neglect, to include other significant issues that affected students' with NBB and their primary needs. Some students did not feel hunger, a trait often associated with some diagnoses such as fetal alcohol syndrome (Kranowitz, 1998; Malbin, 2002). Others felt

constant ravenous hunger, a characteristic of those with Prader-Willi Syndrome (Reynolds & Fletcher, 2000). Some sleep and clothing issues also could be related to some diagnoses (Kranowitz, 1998; Doctor, 2000; Malbin, 2002). Some students experienced sensory sensitivities that may have influenced their behaviour (Williams, M. & Shellenberger, 1996; Kranowitz, 1998; Murray-Slutsky & Paris, 2005). In addition, many common side effects of some medications prescribed for students with NBB affected students' appetites (Faraone, 2003; Koltec, 2006).

Psycho-social implications, such as students hoarding food, refusing to bring their prepared lunches, hiding their lunches, and other tactics were evident. In these situations, the primary caregivers typically were diligently trying to provide for their child, but the child seemed to channel his or her energy to undermine his or her caregiver. The more important the perceived issues seemed to be for the primary caregivers, the more some students were likely to use such tactics. As power and control were removed and alternate plans made such situations often subsided.

Caregiver issues related to primary needs also became evident during the study. Many students had caregivers that often appeared as distant or neglectful. The complex needs of some students appeared to overwhelm some caregivers, while others appeared to not to be aware their complex issues (Cook, et al, 2000; Roditti, 2005).

Strategies to address primary needs. During the study a number of strategies to address primary needs issues surfaced. They included: (a) ensuring

there were crackers, whole-wheat bread, cheese spread, yogurt, mini-carrots and milk to provide nourishment, (b) ensuring the classroom had access to extra clothing, such as T-shirts, gloves, hats, socks, shoes, and other items to provide warmth and comfort, (c) providing transportation to primary care givers so they could attend school meetings and functions, (d) allowing educators to attend multi-systems meetings and appointments, when invited by the legal guardians, to provide support and encourage home-school solidarity, (e) providing support, documentation, and behaviourial information to the legal guardians to share at meetings and appointments with other professionals, and (f) allowing students to nap for short periods, to address sleep disorders.

Future research. Future research into the issues pertaining to students' primary needs would be useful. An investigation into the feasibility of alternate schedules and timetables that might better address the extraneous factors that can influence primary needs might be of value. It could be useful to investigate the efficacy of different pharmaceutical combinations to see if certain combinations have less affect on appetite and/or sleep. However, all pharmaceutical studies would need close scrutiny to ensure adverse reactions do not occur. Additional research into the efficacy of nutritionally sound, school-based breakfast and lunch programs also might be helpful. Furthermore, it would be interesting to see if the availability of neighbourhood resource centers or the integration of social services within school sites, to provide support, education and practical services to families and communities would improve the academic success of students with NBB.

Theme Two: Environmental Influences

The data indicted that the classroom environment had a significant impact on behaviour. Twenty-five percent of the students in the study were diagnosed with sensory integration dysfunction, and a large percentage of the remaining students appeared to react strongly to various sensory influences in the environment. It was easy to make simple modifications to the classroom environment, to ascertain whether they had positive effects on the students' school functioning.

Sensory integration dysfunction. When the typical behaviour support interventions did not work for a few students, the field of occupational therapy offered some new insights into how better to support them (Kranowitz, 1998; Kranowitz, et al, 2003; Murray-Slutsky, & Paris, 2005; Williams & Shellenberger, 1996). Implementing an assortment of strategies derived from occupational therapy appeared to help some students who had not responded well to traditional behaviour support interventions. As the staff in the Program developed a better understanding of these strategies, a broader perspective of behaviour was cultivated.

Some of the strategies used to address sensory integration dysfunction often looked like rewarding undisciplined students for their misbehaviour. The staple strategies used from this field included giving sugarless gum or crunchy mini carrots to students when they were talking out of turn or needed to focus; allowing students to play with fidget items, such as small malleable balls, during academic periods, in the hope of stimulating their attending skills; and being sent

on fabricated errands within the school to provide the movement breaks some students appeared to need.

In the beginning of the study, sensory integration strategies were already in place and being used. When asked for their opinions during the pre-study interviews, the educational assistants were quite forthcoming. One initially thought many of the SID strategies were just an excuse for the students to play or avoid academics. She thought that perhaps I, the teacher, was looking "too hard" to find a reason, strategy or understanding for some of the "weird" behaviours the students displayed. She remembered all the deep pressure SID exercises designed by the occupational and physiotherapists that were suppose to address proprioceptive nervous system dysfunction and help calm George, the ten-year-old student, so he could be successful in gym class. Although they worked the plan on a daily basis, George still was not attending gym class at the time of the first interview in May. Prior to the study, the educational assistant had seen the NBB Model of Support. She admitted she had not really thought of language, sensory integration, environment and attitude as "deeply as that before", but would be giving this more thought during the study.

The other educational assistant spoke highly of the NBB Model of Support and liked the sensory integration strategies. She said:

> We work with complicated kids, and the typical behaviour support strategies do not usually work. We cannot control their behaviour, all we can do is control the environment

> and that helps me to think that I am at least doing something.

She had also seen the NBB Model of Support prior to the start of the study and claimed the Model had helped her to broaden her perspectives of behaviour for the students in the Program. She spoke of how she was beginning to recognize how much sensory issues influenced behaviour. Understanding them helped her to find more strategies. She commented:

> Knowing about sensory integration dysfunction helped me to focus on what is happening in the environment and not react or pay as much attention to my feelings of frustration with a student. It makes me stop to look at the student and see if I can figure out what is going on for them. I have stopped blaming the student - I was not very effective when I was in the blaming mode. I am now recognizing that much of the problematic behaviour we see in the classroom is not willful, intentional or planned so punishing these kids as if it was is not right.

The other educational assistant said:

> Looking first at the environment is so helpful to understand behaviour. I sometimes think aloud so the students can hear me. I'll say things like "that noise in the hallway is distracting me;" or "maybe there are too many words on that page. Maybe a window box would help." (a window box is made

> from a piece of contrasting coloured paper that has a box cut out on the center of it. The paper covers all the print on the page, except for what is shown through the box) That way I'm putting words to the situation and hopefully helping the student to recognize his feelings and help him to put appropriate words to it. I try to provide an alternate way for the student to identify and cope with their frustration.

A flawed belief. The belief that a visually stimulating classroom is a better learning environment was not true for the students in this study. For many students with SID or sensory sensitivities in this study, visually stimulating, animated, and exciting environments appeared to trigger unpredictable, explosive behavioural outbursts.

SID and Canada. At the beginning of this study, the class had just finished a three-month social studies project on Canada. Each student had produced a wall sized Canadian map, national and provincial flags, and a large chart that matched the provinces and territories with their capital cities. These products were hung in the classroom for a few days, while the class celebrated the end of the project. Three of seven students, needed extra supports in the classroom to stay on task and behave in socially appropriate ways. The students were excited and proud of their projects, however when these projects were displayed the students seemed more distracted and it seemed all students were louder and noisier. Three of the students, who had been in the classroom a year or more, spontaneously used various sensory de-stimulation strategies. These included

the use of headphones to block noise and help with concentration, moving to a sensory friendlier part of the classroom, such as under the back table, or in the Quiet Room, and asking to go on school errands or to the bathroom. Students who did not initially use such strategies tended to need much more adult support to remain on task, and gave themselves lower self-evaluation marks in their agendas. Although the students were proud of their projects, they seemed to have difficulty settling in the classroom when they were displayed.

At the conclusion of the Canada project, the students planned a lunch of Canadian foods representative of each province and territory. Six of the eight of the students became very engaged in the event. However, the other two students in the class had very strong reactions to the disruption of their normal routine and excessive décor in the classroom. George's sexualized talk, profanity, verbal threats and physical aggressiveness significantly increased to the point where he had to stay in the Quiet Room. He was in and out of the Quiet Room for the four days the class took to plan, prepare and celebrate with the lunch. George wanted to be sent home. The adults did not want to reinforce George's misbehaviour by sending him home. It had taken five months for him to stop screaming to be sent back to his former school so he could be sent home. Therefore, the adults maintained him at school, keeping him isolated from his peers, to prevent others from verbal or physical assaulted or from joining in with his misbehaviour. Staff methodically documented his behaviour. In the Quiet Room, the intermittent verbal tirade of sexualized comments and threats continued while George laid on

his back on the floor, spun in circles, then spit into the air, and laughed as his sputum fell on his face. The staff commented:

> When George's foster mother told us that he had "ruined" Christmas for their family, I thought she was exaggerating. However, after seeing George's behaviour during the four days we planned and celebrated the conclusion of our social studies project, I do not think she was exaggerating. No wonder some of the primary caregivers the students live with have such low-key celebrations, when they have them. I guess it comes down to the fact of how we, the adults, handle ourselves. We need to remain the in-the-moment, forward focused supportive people these students need. These students learn from how we do things, not what we tell them.

When this incident was discussed at his psychiatric outpatient team meeting, it was concluded it was most likely indicated sensory overload, or sensory dysfunction. George was probably so excited about the classroom lunch and end of unit celebration, he had a difficult time appropriately regulating and maintaining his behaviour.

Billy. Students were interviewed twice during this study. Most of the students, answered the questions with single syllable words and grunts. However, Billy had a definite response to a question about classroom clutter and

student artwork on the walls. He did not like it when the students' maps of Canada were hung. Billy commented:

> I couldn't find the words on the wall 'cause the stuff covered them so I couldn't write good.

When the Canadian artwork and maps were put on the walls at the end of the Canada unit, he remembered he could not find the word wall and had problems writing because he could not see the highlighted vowels on the alphabet chart. Interestingly enough, when the Canadian artwork and maps were hung on the walls, neither the word wall nor the alphabet chart was covered.

Do SID strategies work? Indicators of SID include, inattention, organizational problems, impulsivity, disruptive behaviour, learning problems, withdrawn behaviour, co-ordination difficulties and others problems (Kranowitz,2002), although these can also be indicators of other problems not related to SID. Nevertheless, using SID strategies was a quick, simple way to provide another form of support to students who were struggling (Vargas & Camilli, 1999), while trying to discern the most educationally enabling methods for them, or determining to whom they needed to be referred for further assessment. Sensory strategies offered another perspective of difficult behaviour, provided emotional identification and language development. The strategies served to either eradicate counterproductive responses or develop coping skills for the many and variable sensory challenges some of the students in the study faced.

Monday, May 12th. During this day, all the students were working individually or in small math groups. Conrad was working by himself. He walked up to George, who was working with a group of three students and one adult. Conrad punched George in the arm. It looked unprovoked.

Conrad was sent to the Quiet Room. When debriefed, Conrad said George was "bugging" him. George, who was an incessant talker, did not seem to retain information unless his was talking, regardless if anyone was listening or responding to him. Noise "bugs" Conrad. He could not seem to concentrate unless it was quiet. The two students were debriefed separately. The staff told Conrad that hitting others was unacceptable and against school rules. The inappropriate behaviour was identified and labeled. Conrad told the staff that George was "bugging" him. Conrad was congratulated for recognizing how he felt. Conrad was then asked what George was doing to "bug" him. Conrad replied that George was talking too much. Again, Conrad was congratulated for "putting words" to what had been bugging him. The staff then told Conrad that she sometimes got 'bugged' when people talked too much. This was normalizing the feelings of annoyance and empathizing with Conrad. The staff and Conrad put words to the event, then "made a plan" for what to do when George's talking annoys Conrad. Polite words and actions to "keep you out of trouble" were devised, and then quickly practiced in the Quiet Room.

Another staff debriefed George, after quickly checking his arm for bruising. He did not know why Conrad punched him. He replied Conrad was an "f--a--." The staff replied, "oh you sound angry," labeling the perceived emotion behind

the profanity. George agreed. The staff suggested he use the school language of "really angry" rather than the profanity he had used. Conrad was ready to talk to George. George was asked if he was ready to talk to Conrad. George replied "no." He was congratulated for using his words then told to let an adult know when he was ready to talk to Conrad, and that it had to be done by Choice time. The staff gave George his math to complete. Conrad was left in the Quiet Room. Another staff gave Conrad his math. He was told to continue working on it and that George and an adult would be in shortly to talk with him.

A few minutes later, George told an adult he was ready to talk to Conrad. They went into the Quiet Room. The staff reminded everyone of the rules. They were: one-person talks at a time, each will have a chance to talk after the other finishes, and school language must be used. Conrad told George that his talking was bugging him. George replied that he was not talking to him. Staff told the two boys that talk often sounds like noise, and noise, just like a airplane coming in for a landing, can disturb people. George did not realize that talk could be noise. George made a comment about his mom screaming at him about how noisy he was when he was just playing. He appeared to be making a connection between his behaviour and other people in his environment. Conrad apologized to George for hitting him, and George apologized to Conrad for being noisy. Conrad and George each planned a tactic to use when something like this happens again. Conrad could use his words to ask George to quiet down, put on a pair of headphones to buffer the noise, or take his work to the Quiet Room or other quieter area in the classroom. George could whisper when he talks, chew a

piece of "quiet gum" to keep his mouth busy, or move to the Quiet Room so he did not "bug" anyone.

At the end of the day, after the students have gone home, the staff debriefed the incident. The staff recognized that, on Mondays, Conrad was usually a bit more "testy." They decided that to provide more support for Conrad on Mondays. In addition, when the math small groups are set up, staff would ensure George's group would be further away from those students working individually. We decided to be more aware of students' subtle behaviours that may indicate they could benefit by using headphones, gum, or moving to other areas in the classroom. A staff member asked if George's loud voice could possibly have anything to with hearing loss. The adults decided to continue to observe George's behaviour to see if there were other indicators of hearing difficulties. The incident was over. The incident report was completed, sent to the office for signing and the primary caregivers of both students were told of the incident and of their child's role in it. Conrad served a one-day in-school suspension for physical assault and his mother was encouraged to make sure he got on the school bus the next morning. When students did not come to school to serve their in-school suspensions, they were served on the first day they return to school.

Using an eclectic blend of restitution, behaviorism, conflict mediation, and sensory integration strategies to ensure the teachable moment would not be lost due to adults' overreaction to verbal and physical violence and other misbehaviours.

It was difficult to distinguish how much SID strategies, structured behaviour support, medication influences, primary needs and other factors influenced students' behaviours. Nevertheless, sensory integration strategies offered more tools for educators to use in the classroom. As Zoey commented:

> Knowing about sensory integration has allowed me to look at the environment for insights into behaviour, not just the student. It allows me to see the bad behaviour, not the bad kid.

Implications of theme 2. The effects of environmental influences on students have been recognized (Kranowitz, 1998, Garbarino; 2001; Kranowitz, et al, 2003; Frisk, 2004; Farver, et al, 2005 Murray-Slutsky, & Paris, 2005). Educators may not be able to instantly improve homes, communities or other agencies. They are limited as to what systemic change they can stimulate, how quickly they can influence change, how caregivers provide for students, or how communities respond to one another. In terms of environmental change, systems of the macro-environment (i.e. social services, neighbourhood communities, etc.) educators' influence can be limited.

However, when the environment is viewed through a micro lens, a potentially more available aspect of the students' environments can be seen. From a micro perspective, educators can adapt, modify or change areas in their classrooms to better support students with NBB. Looking for the classroom environmental cues to behavioural crises can empower educators to change as much of the classroom environment as possible, and to discover strategies to

support the student to cope within the environment. Teaching alternate, socially appropriate coping skills may be among the most beneficial skills some students with NBB learn at school.

When educators look at the environment in which students' behaviour deteriorates, they may be able to shift their interventions from one of blaming the student and their parents, to one of immediate support for the students so that educational outcomes can be accomplished (Kranowitz, 1998; Kranowitz, et al, 2003; Murray-Slutsky & Paris, 2005).

Shifting behaviour support from blaming the student to redesigning the environment does not excuse inappropriate behaviour. Students need to be held accountable for their behaviour. However, modifying the environment and considering misbehaviour from a sensory integration perspective could provide both the students and educators with more tools and strategies, and with new language and understanding to cope with misbehaviour.

Strategies to address environmental concerns. In this study, the strategies used to address environmental concerns included: (a) removing extraneous clutter from the walls and classroom environment, (b) providing gum, crunchy carrots and other items as "tools to help keep you mouth successful," (c) providing ear coverings, headphones, or music, to either curb or distract extraneous noise (d) enlarging font and spacing on worksheets, to provide clarity and simplicity (e) providing a wide range of differentiated teaching strategies, to appeal to different learning styles and levels of academic abilities, (f) providing physical interventions, such as chair sit-ups, arm wrestles, and stretch cord pulls,

to provide deep pressure and movement to address possible sensory integration needs, and (g) ensuring students have access to sensory tools to help them calm and concentrate. Examples of sensory tools include attaching course sandpaper to the top, inside of students' desks for them to stroke with their hans, fidget balls, pencil grips, and attaching occupational therapy cord around the students' chair legs for students to twirl with their feet. In addition to many of these strategies, periodic networking with licensed and registered occupational therapists and physical therapists to gain more insight and ideas was very beneficial.

Future research. Further research is needed to investigate the efficacy and practicality of environmental changes on student behaviour and outcomes. Specifically, changes to the classroom environment, such as the rearrangement of furniture, the reduction of classroom visual distractions, adaptations to students' equipment, and scrutiny of the effects of differentiated instruction on students with NBB should be studied. In addition, further research into the efficacy of sensory integration tactics used in the classroom and the willingness of educators to use such strategies would be beneficial.

Future research to how better plan and orchestrate transitions between environments such as self-contained and main-stream classrooms would be helpful. Although an inclusive, collaborative philosophy is encouraged by many educators, identifying the skills, attributes and infrastructures needed and the development of such would be valuable. Research into how to better facilitate such transitions would be useful.

Theme Three: Rapport

The third theme that surfaced in the study was rapport or relationship. The strength of the rapport between the adults in the classroom, students and some of their family members is included in the next theme. An advantage of having a self-contained classroom was having three consistent adults within close proximity at most times. Some students had their favourite adults. Conrad was particularly fond of Zoey because of all the card and number cube games they played during Choice time. There were a number of times when Conrad refused to comply with directions but when Zoey restated the request, he complied. Eddie enjoyed all the quiet little jokes Yolanda told when they completed the Guided Reading tasks together.

The classroom was highly structured. The classroom standards were set and non-negotiable. Despite many persistent attempts by some students, they were not sent home for behaviour or language difficulties. Often, before students settled into the classroom routines, some desperately tried to be sent home from school. I suspect these students had learned to use inappropriate behaviour to avoid academic tasks or address social insecurities, an often used tactic some students used (Jones & Jones, 1998). For example, in a previous school, Abraham's pattern of out-of-school suspensions, non-attendance and playing hooky significantly increased when he was in a class where all the students were trying to earn the components for ice cream sundaes based on students' individual scores on multiplication tests of increasing difficulty.

Developing habits. The classroom schedule and routines were consistent and predictable. Picture, word, and gestural cues augmented the daily routine and provided clearly defined classroom structure. When there were unexpected changes to the schedule, the students were quietly told about it. When sudden changes occurred, the staff articulated their surprise and their plan to cope with the surprise. Zoey said:

> When any of the other staff are away, I tell the students after they get on the bus, so they know that someone different is going to be in the room when they arrive. The students knew to expect something, or someone different. When something unexpected happened, I would say out loud something to effect of being very surprised, then use direct language to tell the students what to do to cope with the unexpected event, and that everything was alright.

The classroom structure was built into the daily schedule that was prominently displayed in the classroom. The same pictorial cues used in the student agendas were used on the classroom schedule. The classroom schedule helped keep the students organized and provided a foundation to build appropriate habits. It was supported by the consistent classroom routine, student agendas, and the large classroom schedule. Verbal direction, pictures, and physical gestures, such as pointing were used to augment the classroom structure. A series of computer-generated laminated pictures were made for the Quiet Room window. They were on mid-sized index cards and provided a visual

cue for students. Whenever possible, pictures and physical gestures were used to supplement language. The students saw and heard what needed to happen. From this, students began to developed habits to increase school success.

Tough but fair. Interestingly, the tougher an adult was on a student, the more the student seemed to like them. As Zoey said:

> The tougher I am on the kids, the more they like me. It's weird. I will give a direction, the student will be oppositional, defiant, or begin to negotiate, and I will not give in. I just say, "It's your job," look away from them, and wait. I really try to make sure our schedule is kept. Sometimes the students become so mad they "blow" or physically act out. They then just go into the Quiet Room. They either go on their own or are taken there by the adults. They may scream, swear, or punch and kick the walls, but they settle. I don't talk to them when they are in a state like that. Talking to them when they are like that makes things worse. I feel like a cold, heartless wretch. When they calm, I ask them if they need any help or what was wrong, and so on. I work with them, then at Choice time, they ask me to play cards, Lego, or colour with them. I get the feeling that they thrive on the tight, non-negotiable structure. It is comforting for them to know that there are limits, and we respectfully enforce them. It provides

> stability for them and sometimes alleviates their intense pressure of control or lack of control. When we defer control to the schedule, the schedule has the control, and it becomes a non-issue. When the students argue, or try to negotiate, I think sometimes it is because they have learned to do that so they can avoid something, (like academics or some sort of social situation), or they think that is what they are suppose to do.

Wanda added:

> Some students have learned to argue and negotiate their way out of so much. Some have learned language and subtle behaviours to get out of doing something. Some people might call it manipulative, but I see it as part of the student learning process; the student is not physically acting out, and is using language, rather than their fists to avoid something. By having a strong rapport with these students, the Program adults can quietly confront the issue and limit the success of such as tactic. When the tactic does not work, eventually the student begins to stop using it and hopefully begin to use the language and behaviour the classroom is trying to teach.

The adults were tough but fair with the students. The daily agendas provided the structure in the classroom, and students knew exactly what came

next. Academic tasks were individualized and organized in large poly-envelopes to enable the student to have their specific tasks with all needed equipment easily accessible. Examples of how satisfactory work samples looked were on a flip cart easel for easy reference.

Violent and abusive. Students sometimes behaved in ways that looked violent and abusive. While that behaviour was not appropriate, not accepted, and was never encouraged, but it did occur. As Yolanda so eloquently said:

> Just because its not suppose to happen does not mean it won't, in fact it probably will happen.

The staff members remained as non-emotional as possible, ensured the physical safety of everyone, including themselves, and calmly coached the student through his or her crises.

Coaching students through their behaviour crises in the most supportive manner possible was one of the most valuable learning experiences for everyone and tended to promote rapport between the staff and students. Using proximity control, quiet voice with simple directions, and physical gestures the staff helped the students through behavioural events. Yolanda commented:

> When George gets frustrated, he sweeps all the stuff off his desk and any other desks he can get close to, and begins to scream and swear at other kids. If he's having a "little blow" I can usually stand wide, with my arm extended out pointing to the Quiet Room. I say "George, Quiet Room" and he'll stomp into the Quiet Room, swearing at

me and calling me every name in the book. If George it turns into a "big blow," his arms will raise and his fists begin to fly. Then we have to physically move him into the Quiet Room and wait for him to settle…wait for those brain chemicals to equal out; wait and make sure my brain chemical aren't overflowing. After he settles down, he'll knock on the Quiet Room door and I'll go in and debrief with him. Debriefing is putting language to the event and then fixing up the mistake. Sometimes he'll apologize right away for swearing at me. Other times when I ask for an apology after we have debriefed, he can't remember swearing at me, but he'll take my word for it and apologize to me before he starts to clean up all the stuff he threw on the floor. We do it together, with him doing it and me just holding the dustpan, or whatever, while I tell him what a good job he is doing. It's like I'm coaching him through the clean-up too. I get the idea that we, at school, are "safe" enough to be angry with. Many kids come from homes where physical violence is the norm. I think many of the kids feel comfortable enough with us that they know we won't hit them, so they sometimes "let go" and deal with their emotions the way they are accustom to. However, as they are doing that, they're setting up a wonderful learning

> opportunity for us to model and demonstrate other things to do when angry or frustrated.

The staff members in the Program understood their roles and were able to look past the profanity and threats and attempt to help the students recognize emotions and put language to them. When asked how she coped with this, Zoey responded:

> This is my job. It's not the nicest part of our job, but I like the kids and do not take what they say seriously. I document it verbatim, but don't take it to heart. But, if my daughter ever talked to me like that, I'd go through the roof!

She knew her role in the Program was to use the profanity and threats in the classrooms as teaching events. The staff worked closely with each other so if one staff was beginning to react to the situation, another was right there to take over until the staff regained his or her focus.

Focus. When students were having behavioural crises, staff members acutely focused on them, other people in close proximity, and the environment. Behaviour outbursts often were triggered by how the student was interpreting his or her environment at the time. If needed, staff moved other students out of the way, telling them they were moving to be successful and congratulating them for respecting their peer by ignoring his or her difficulties of the moment.

Coaching during behavioural crises. A student in crisis, who needed to be moved, was taken to the Quiet Room. If students were able to walk on their own, they were congratulated for walking on their own, even if they were screaming or

threatening others. The threats and noise were dealt with after the student settled. If the student needed physical assistance to go the Quiet Room, the staff, who were all trained in non-violent crisis physical intervention – NVCPI, (Crisis Prevention Institute, (2006), used the most expeditious techniques to move him or her into the Quiet Room. When staff used the NVCPI techniques, they quietly told the student where they were going and why. For example, the staff moving the student typically said, "You are going to the Quiet Room, because you don't want to embarrass yourself;" which may have helped the student link his behaviour to how others perceived it. Alternatively, the staff may say, "You're going to the Quiet Room where you are safe" to possibly calm the fight or flight response which may be triggered.

The staff who initially responded was the primary support person, and other staff alternated between supporting the primary support person and ensuring the rest of the students did not become involved and were able to carry on their regular routine. These students were congratulated for ignoring and for continuing with their "jobs." The ability to ignore and not become involved in the affairs of others, and keep themselves safe, was a valuable life skill for these students.

During intense behavioural outbursts, the staff were planning and supporting the student moment by moment. Staff did not clutter their minds with thoughts of "what are the others thinking," or "how is he or she ever going to graduate from high school," or "the teacher across the hall is going to be mad." Thoughts like that were counterproductive to the situation, the student and staff.

The primary concern was always to resolve the situation with the least possible force possible, gain insight to how the student interpreted their environment that caused the reaction, and facilitate a learning experience for all. Coaching students through severe behavior crises without scolding, shaming or punishing them for their behaviour was very beneficial in establishing rapport.

Removing the power and emotion. When a student began to argue about doing their task, staff merely stated "it's your job," then pointed or gestured to the student's agenda and classroom's flip chart. The staff then turned away from the student, indicating that this was non-negotiable. Averting power struggles and remaining non-emotional were of utmost priority in such situations. The agenda tasks needed to be completed and students who tried to avoid them were sent back to their work spots to complete them. One day after Eddie had been sent back to his work spot to redo a section of his work, he turned to a staff member and said "I hate you Yolanda," to which she replied, "that's fine, now go back and get your job (his work) done." Eddie's attempt to bate Yolanda into a power struggle did not work. Removing power from interactions in a non-emotional manner was fundamental in the day-to-day functioning of the classroom.

A priority for staff was to ensure that that academic incompetence did not cause student misbehaviour. After students were in their work spots, had the equipment needed, the staff showed them what to do. They watched them begin the task to ensure they were able to do the task. The students in this study needed all explanations of academic tasks at the exact physical location where

they were expected to complete the assignment (Silver, 1998; Burke, 1999; Malbin, 2002; Charles, 2008b).

Teaching "other words." As the staff helped the students stay on task, they gently reminded the students to use their words to ask for help next time. When students used inappropriate or profane language, staff substituted "other words to use," or "school language." Using inappropriate language was not punished, it was corrected. If physical needs or sensory issues were thought to have caused the issue, staff put language to the event, addressed the issue in the most expeditious manner possible at the time.

Rapport with families. There was a significant amount of home school communication during the study. George had a daily home/school communication book his foster mother shared with his social worker at every opportunity. Ian's primary caregiver transported him to school everyday, delivering him to the classroom and facilitating daily communication. Periodically, Ian, his primary caregiver, and Wanda discussed issues such as the length of fingernails, the hoarding episodes and academic concerns. For the students living with grandmothers, there were frequently phone calls to the classroom. Approximately 40-55% of the other parents were not as available for meetings, individual educational planning, or other events. It appeared these parents had other substantial issues in their lives and could not be as involved.

Primary caregivers were welcomed when they phoned or arrived at the classroom door. When Wanda needed to talk about problematic behaviour or other distasteful issues, she made a conscious effort to begin the conversation

from a positive point. For example, she often began conversations with comments like, "Wow, Grandma, you'd be very proud of Junior today. He had a problem, but worked through it!" The student and caregivers were more receptive to what needed to be said. An open dialogue, most often followed, and a healthy, respectful rapport established.

Rapport with colleagues. No students from the school attended the Program, and systemic issues tended to further isolate the staff from others in the school. The relationship between school staff and Program staff was courteous and polite, but somewhat casual. Plans to redesign the timetables to include the Program staff in the school wide grade group meeting were pending. This would have been welcomed.

A.R.T. Attitude, relationship, and time, were three attributes that encompassed the third theme of rapport. During the interviews with the educational assistants, the importance of one's own attitude became prevalent. The staff in the Program came to understand that on a primal level, behaviour is a self-protective response to the external and internal influences happening in a person's life at that moment. The role of the staff was to interpret the behaviour exhibited by the students, understanding that the behaviours exhibited made perfect sense to the person at the time, considering their interpretation of the circumstances, their prior experiences, and their skill level.

"No significant learning occurs without a significant relationship" (Payne, 2003). During the pre and post interviews with the participants, the importance of relationship was evident. One educational assistant commented that often

students do not seem motivated to begin their academic tasks, but they will do it because they "liked" you. Staff felt that playing with the students at choice time and during gym class yielded great benefits. The relationship between staff and students became stronger. Staff was able to mentor good sportsmanship during the many doctor dodge ball games and soccer matches.

Relationship building also extended to some of the families. The grandparents who were the primary caregivers often appeared tired and isolated from their own peers. Frequent phone calls, especially when there was a successful event that happened in school, fostered these relationships. Primary caregivers needed to know that they were appreciated. Many of the students displayed extreme behaviour in their homes in addition to at school. That often significantly taxed the people in their homes. The primary caregivers needed to feel valued.

Time. Students in the Program needed time: time to process information, time to change their behaviour, and time to develop language. George, the student who did not attend gym class due to possible sensory overload, began attending gym during the fourth week of the study. After nine months of sensory integration and physiotherapy exercises, George was able to go to gym class. Change takes time (Morrish, 2001).

Historically, the students who have been in the Program for two or more years have been the most successful. Zoey spoke of Eddie's behaviour when he first arrived in the classroom three years earlier:

> Eddie came into the classroom constantly swearing, threatening and making allegations against everyone else. One day when we were walking to computer (one floor below), holding his arm over his shirt, he squirmed himself out of his shirt and run shirtless out of the school. He was missing for three hours. During that time, three bikes were stolen; there were many allegations, one physical assault, and the need for two police reports. After that, and at Grandma's suggestion, we held his arm, skin to skin, whenever he was out of the classroom. By his second year in the Program, we did not need to hold his arm, and in his third year, he took a new student under his wing and was supportive to him. Eddie kept reassuring the new student that school was OK and to "listen to the teachers; they're here so you can be successful." Eddie just needed time, and someone to not give up on him, and someone that would not keep sending him away. He got that here.

Behaviour is self-protective. On a basic level, behaviour is self-protective. The midbrain area activates responses to cope with threats (Kolb, 2008). As the responses occur, humans try to put meaning and understanding to the behaviour (Pennebaker, 2008). This was an important fundamental tenet needed to nurture a broader understanding of behaviour.

For example, when there are behaviour issues in school, every player in the situation may self-protect. A student at the center of the behaviour indiscretion may have limited language skills, lower frustration level, and be experiencing possible physical annoyances, such as fatigue, SID, or other. Therefore, when a peer annoys the student, he or she may lash out, push the peer, and become verbally or physically assaultive. The student may be self-protecting because of physical discomfort, academic anxieties, social insecurities, feelings of incompetence or confusion or for other unknown reasons.

An educator may lash out by blaming the student, their parents, the education system or the community. The teacher may be self-protecting because of feelings in incompetence, frustration, misinterpretation of the situation, or for other unknown reasons. All the teacher wants to do was to be the best teacher she or he can be. By finding a reason not solely related to him or her, he or she can cope with the situation.

The school administer, wanting to establish and maintain a safe school environment, and wanting to be the best administrator he or she can be, immediately suspends the student for physical assault. The administrator is self-protecting themselves and the school institution from potential litigation or future escalation of the assault. The players react with self-protective responses, often based on policies, guidelines and prior experience. Self-protective behaviour is neither good nor bad, it just is.

Implications of theme 3. Research has reiterated the importance of educators building rapport with students, families and communities (Brendtro,

Brokenleg, & Van Bockern, 1998; Brokenleg, 2002; Gladdin, 2002; Payne, 2003; Deak, 2005). Rapport with families and communities can be somewhat more difficult to achieve for students with NBB. Students with NBB often have been alienated from others in their communities because their behaviours. They can have poor judgment, be impulsive, be vulnerable to the influence of others, be developmentally younger than their chronological age, and may not be able to pick up the subtle social cues that mediate appropriate social behaviour (Malbin, 2002; Hall & Hall, 2003; Riley, et al, 2003). Students with NBB often need increased supervision, something that may thwart their activities with peers. Conversely, they may not have enough supervision, resulting in involvement in questionable activities, which may cause peers' parents to circumvent interactions between their children and those with NBB. Students with NBB in foster homes may frequently move and not have strong roots within their community. Positive rapport between students with NBB and their educators may be one of the few places students with NBB can experience positive relationships.

Families with students with NBB may feel disenfranchised. Some families may spend a considerable amount of time defending their child with NBB from irate neighbours, friends, law enforcement and school officials after repeated indiscretions. Some families may feel embarrassed, exhausted, and frustrated by coping with a child with NBB. Other families may act as though they are oblivious to the issues of NBB. For students with NBB in foster care, the primary caregivers may be shift workers or families housing the student at a particular

point in time, and not the legal guardian. Establishing rapport with families of students with NBB can be a challenge, but it is crucial to the effective support of students with NBB.

Establishing and building rapport with colleagues is important for staff members who work with students with NBB. Rapport among staff providing direct services to students with NBB is important, but rapport building also is needed between these staff members and others in the school building. During this study, such staff to staff rapport, outside the Program was sorely missing.

Strategies to build rapport. Strategies used to promote rapport between students with NBB and staff included: (a) the use of non-judgmental, non-emotional language to describe the students' behaviours, without emotionally laden descriptors or references to rules and policies, as per Figure #25, (b) purposefully playing games, telling jokes, having conversations, and interacting with the students, (c) having staff intentionally speak about incidents when they were angry or upset in order to normalize these emotions and provide a framework to discuss ways to cope with such emotions in a non-threatening manner, (d) having staff purposefully put language and other interpretations to events students responded to strongly, and (e) reminding students that they are safe and cared for.

Strategies used to build rapport between the primary caregivers and staff included: (a) ensuring the school staff had permission from the legal guardian to speak with the primary caregiver, (b) using non-emotional language to describe behaviour, events and circumstances, (c) beginning conversation with cargivers

with comments such as "Wow, mom, (dad, grandma, etc), you'd be so proud of the way your son (or daughter) got through his (or her) problem." when calling the caregiver to inform him or her of the student's difficulty, (d) always beginning and ending a conversation with a caregiver with a specific, positive comment about the student, (e) reassuring the primary care that they are doing a good job and that it is obvious that they care for the student, (f) providing information and support to help primary caregivers access other services, and (g) accepting the primary caregiver, "as is," and accepting their decisions even when they contradict staff recommendations.

A strategy which may have been beneficial, but not used during this study was providing educators with opportunities to switch teaching assignments, teaching each other's class for a short time, such as an hour once a cycle. This may have broadened the perspectives of the educators and lead to increased rapport between staff in the study and their colleagues.

Future research. Future research into ways to continue to build rapport, especially between colleagues, would be useful. Investigations of the value of staff mentorships to support staff members who are coaching students during severe behaviour crises, and to further develop behaviour coaching strategies, may be useful. It would be interesting if the use of such strategies would increase others' perspectives of behaviour, increase the success of students' integration and measure the effect of such strategies in the integrated setting.

In addition, research in how to effectively network and collaborate with the various agencies and other systems, such as health care, justice and family services systems would be beneficial.

Theme Four: Educator Self-Care

Educator self-care was a theme that resonated throughput the study. Day-to-day moments could be intense with students with NBB. Often they needed stringent supervision, tasks broken down into minute steps, and a significant amount of repetition. Staff needed to be healthy, balanced and able to deflect verbal and emotional barbs. Physical energy was important too. Many students with NBB exhibit hyperactive behaviour, moving often and fast.

It's not personal. The staff shared a number of things they do, either collectively or individually to take care of themselves. Remembering, "it's not personal" appeared to be a crucial basis for every adult in the Program. Wanda commented:

> Remembering that we might just be the safest people around to be upset with in some ways is a bit of an honour, a backhanded type of honour, but an honour, nevertheless. The students know we won't hit them or become physically violent.

Compartmentalizing one's life. Staff identified that one of the most important things they do for themselves was that they seldom took "the work" home with them. Zoey said:

> As soon as I get into my car at the end of the day I flip to "home mode." I'm thinking swimming lessons, supper, what shift my husband is on, who needs what when I get home, and stuff like that. I've literally "turned off" school by the time I put my keys in my car to go home. Then, I turn back on when I pull up in front of the school the next morning.

Yolanda added,

> I go home to my next 8-hour shift. Who has time to think about work at home?

Although staff was adamant they leave school at school and home at home, each one readily stayed late when students were in crises, to support each other. When students were not able to get on the school bus at the end of the day, or when the school buses did not find anyone at home to deliver the student to, or other reasons, Zoey and Yolanda were always ready to stay with Wanda until the particular situation was remedied.

The staff in the Program were busy people. They all had active, growing families, were pursuing their own personal educational or fitness goals, and none defined themselves by their employment. They were proud of the jobs they were doing, but did not hang their self-worth or self-value on that success, or on how much the students, their families, or other professionals liked them. They were people first, doing their best and always trying to help the students translate their behaviour into socially appropriate language and actions.

Realigning Expectations. Understanding that some expectations cannot always be met was identified as being very important for educator self-care. Wanda commented:

> When the primary caregivers were asked to send money for school supplies, many did not. For students who were agency involved, letters requesting "school start-up fees" often had to be drafted before agencies paid the fees. Agencies always paid the fees, as long as the paperwork was complete. But students who lived with biological family members sometimes paid and sometimes did not. That was life, as we used to say, "suck it up and move on."

Realignment of expectations also was evident in interactions with students and their families. The blanket expectations that all students changed into pajamas before going to bed, parents want to or could read with their children, the home could meet the children's basic needs, or community situations were healthy environments, were not always realistic. Once an understanding of some of the significant challenges many families, communities, and students faced was obtained, expectations could be adjusted. As one staff said:

> I began to see that most of the adults who were caring for these students (primary caregivers) were doing the best they could, with what they had, given the situations they were in and the experiences they had. Often they were struggling with income, and were often isolated because

> their own friends were out doing things they could not do because these kids needed so much from them. Providing 24/7 care for kids with NBB, who one minute tell you they are going to kill you and the next minute tell you that they love you must be exhausting. Just the fact that the kids get to school on a mostly regular basis is a fantastic accomplishment, so who cares if they didn't get their homework done, forgot their books at home, or arrived without breakfast. They're here… welcome them, give them a little something to eat, and make sure you don't send anything home that you don't have a duplicate of. Let's educated them.

Talk time. There were approximately ten-minutes at the beginning and end of the school day, when staff could talk among themselves. It was a safe place to vent, brainstorm alternate strategies, and share ideas. Yolanda had worked in many different schools and had seen the some ways others did things. Zoey had a strong social work background and did respite on the weekends with a young boy with NBB. She had many unique insights. Wanda brought the policies and guidelines of the school division to the discussions. Together they molded useable ideas to fit the Program. Everyone identified this time as crucial to themselves and the Program. Zoey said:

> We always had that time twice a day where we could say to each other, "boy, so-and-so (student) is really getting to

> me," or "hey, let's try this (a differentiate instruction technique) with so-and-so." We were able to talk to each other, ask each other for their ideas, and support each other. We were kept up to date with many of the things in the kids' lives. We exchanged ideas and each offered a different perspective. It was "safe" to express ourselves, and safe to ask questions. We always knew we weren't alone; we had each other, even when we didn't agree on everything, we were listened to and validated by each other.

Talk time was also the place for staff to identify what each needed from one another. There were times one staff told the others they was feeling ill, or had pulled a muscle the evening before, or other anything else that could affect one's job performance. The other staff supported that staff during the workday. Talk time was also a time to vent, if needed. However, after a few minutes of venting, one of the staff verbally turned the situation around with a shot of humor, and everyone laughed. Talk time often ended with a laugh.

Workouts. Physical exercise and healthy lifestyle were important to the staff. Every staff member recognized the value of regular exercise and two of the three staff work out regularly at gym. As Yolanda said:

> my gym time is my time... something I do for myself and something that makes me feel calm and helps me focus…

> and besides, I've got to stay in shape the rousing games of dodge ball we play with the kids here.

Wanda also had a gym membership and worked out in the mornings before school. Zoey did not hold a gym membership, although she was very active with home renovation projects, landscaping and other heavy activities she enjoyed.

Humor. Humor was very important in the classroom. The participants liked to laugh, and the staff typically made conscious efforts to bring humor to situations. Humor seemed to nurture a sense of buoyancy among the staff. During the study, the staff laughed together everyday. They were very adept at turning situations around to find the humor. In one instant, after a foster mother phoned into the classroom, very upset and irate because her foster son repeated a vulgar phrase he had heard at school, one staff quietly piped up, said, "Well at least he learned something in school today." On another occasion when a student called one staff member a rude name, she quietly muttered under her breath, "that's Mrs. F…B… to you."

In addition to turning situations around, humor was also used to remind staff of certain things. When one of the students sent a questionable looking picture of a female wrestler, from the classroom computer to the school's computer lab printer, forty-three times, the staff coined the term "printer-police" to cue each another when that student went to the computer. A staff member would be on "printer-police-patrol" to prevent another printer indiscretion.

Turning situations around with humor not only diffused many potentially volatile situations, but also modeled another way to handle various situations. Yolanda always liked to laugh:

> Laughing and finding things funny is great. I am very aware of turning things around and turning the "funny stuff" on to me. That so I don't offend anyone. Once when an eleven-year-old student was here she got really upset when her pants had gotten dirty at school. She barricaded herself in the girls' washroom and would not come out. We didn't have any extra clothes for her, and the dirt on her pants was not noticeable. She was the only one the saw it, but she was just so stuck on it. She had begun to swear and threaten to kill me. So I said to her, "Hey what do you want me to do? Do you want to switch pants with you? That would look strange. Jeez I don't think I could get your pants on me, but if I did everyone would see my hairy legs, 'cuz I didn't shave them. And you, you'd be swimming in my pants, we'd have to tie the waist band under your arms and they still would be too long for you." then I told her how funny I'd look with my hairy legs sticking out and I wasn't sure if I had put on matching socks that morning, so my socks might be weird looking. Then I went on to describe how funny I'd look and how my husband and kids would

> laugh when I got home, and on and on. By then, she was laughing and had forgotten about her own pants.

Joke of the day. Humor was an important aspect in the class. Daily, a student picked a joke from a book to share with the class. The humor provided a framework to explain some of the confusion surrounding language, such as idioms, figures of speech, synonyms, and homonyms. As this process occurred, many humorous moments occurred, that provided levity and often a good belly laugh.

Not only did the joke of the day teach humor, it taught how to tell a joke, provided a comedic interlude in class, and provided a way to deflect or defer attention. Zoey spoke of the time when an eleven-year-old student had a huge behaviour incident:

> The student had been sent to his desk because he had sworn at us. On the way to his desk he grabbed the big shelving cupboard that was against the wall and knocked it down, then swept all the stuff off the desks closest to him, kicked the garbage can over, and was going towards another desk when we intervened and put him in the Quiet Room. He screamed in there, calling us every name in the book. He wasn't ready to go on the bus at the end of the day; he was still swearing at us and he had not picked up the stuff he threw, so Wanda phoned his mom and made arrangements for her to come and pick him up. When mom

came, the student went ballistic again. He was mad again, this time for missing his bus and having his mother come to school. He settled a bit so his mom went to the Quiet Room to talk to him. He punched his mother, tried to push her out of the way, and come out of the Quiet Room. We put him back in the Quiet Room. By this time mom was hunched over crying, "I love him so much and he gets so mean to me." However, the student did not scream for as long and settled within about fifteen minutes. That gave mom time to settle. The student came out and cleaned up his mess then sat at his desk. The issue was debriefed and plans made for the next day at school. He had an in-school suspension for physically assaultive behaviour. He had wanted an out-of-school suspension so he could stay home and not have schoolwork to do, but that did not happen. The mood was quite somber, both mom and her son appeared sad, but both were calm and in control of themselves. We just happened to notice that the "Joke of the Day" was still on the board, and one of the adults read it aloud. Slight smiles crept across their faces, so then we told another joke, and everyone laughed. It really lifted the mood and helped move this incident to its conclusion. The goofy joke was one of the turning points in that situation.

> Everyone was able to let the situation go. After that situation, the building department came in and bolted all our big furniture to the walls and floors. We fixed our classroom environment, so incidents do not have as much of a possibility to become that big.

All the laughing. Humor also helped to keep the mood of the classroom enjoyable. When Eddie was asked what the best thing about the classroom was, he replied, "all the laughing." Many students with NBB have not had many opportunities to laugh at school. Purposely and intentionally turning around a school experience that could potentially be shaming or embarrassing with a dose of humor was important for everyone's mental health.

Every staff member reiterated how important being able to laugh was in the classroom. As Yolanda so clearly articulated:

> Laughing is so important. Laughing helps us to not take life so seriously. Laughing helps us relax.

Implications of theme 4. Educator self-care was in some ways, the most important theme and fits into the attitude quadrant of the Model. Educator self-care meant different things to different people. Some educators needed physically stimulating activities, such as exercise, extreme sports, and others. Others needed quieter activities, such as reading, meditating, and such. Still others may need other things such as massages, traveling, watching sports or attending concerts. The important aspect of educator self-care was recognizing

and participating in self-care activities that refreshed oneself (Richardson & Shupe, 2003).

Educator self-care is important for overall health and well-being, and directly related to attitude (Brokenleg, 2002; Forbes & Post, 2006). Working with students with NBB can be draining. Educators needed to develop individual strategies and self-care plans for themselves.

Strategies to address educator self-care. In this study, the strategies educators used to promote self-care included: (a) collecting and sharing silly jokes, cartoons and other humorous anecdotes, (b) drinking adequate amounts of water throughout the school day, (c) participating in their own personalized physical fitness routine, outside of school hours, and (d) being very active with their families and on various teams, clubs, churches and committees, outside of the classroom and not necessarily related to people with NBB.

Future research. Future research into ways to identify and access self-care for educators would be valuable. For example, schools could be redesigned to include larger gymnasiums and other areas for educators to take care of themselves. Research into the effects on meditation and educator self-talk, may also be interesting. In addition, educator mentorship programs between educators working with students with NBB and students with other complex challenges, with educators in mainstream classrooms might improve staff relations and smooth the inclusion of students with NBB.

Interpretation and Discussion

This qualitative study sought to:

- bridge the gap between recent the theoretical insights from neuroscientific research and educational practices with students with histories of problematic behaviour, and
- examine the practicality of the NBB Model of Support, which integrates strategies from other disciplines, such as occupational therapy, rehabilitation therapy and the neurosciences into a theoretical framework designed to support students with problematic behaviour.

In this section, I revisit the disparity between the education system and students with NBB. The education system is mandated to delivery educational services, in safe, educationally enabling environments. Students with NBB are entitled and have every right to an education, delivered by the province of Manitoba. When qualified diagnosticians have diagnosed various syndromes and conditions such as attention deficit hyperactivity disorder, fetal alcohol spectrum disorder, mental health diagnoses and other neurologically based behaviour disorders, displays of inappropriate behaviours can be manifestations of the diagnoses. Diagnoses cannot be an excuse for unsafe, unhealthy, illegal, or inappropriate behaviour, however perhaps some accommodations in our thinking and perceptions are warranted. Denying students education based on disability is contrary to the Canadian Charter of Human Rights and Freedoms (1985). Just as educators honed their skills to become educational specialists in whichever field or subject they chose, educators need to hone their skills to develop a broader

range of skills to manage a diverse range of student behaviour. When behaviour is grounded in disability the education system is obligated to provide adaptations and appropriate physical infrastructure to support students with behaviour disabilities. Many students with many other disabilities have the benefit of adaptations and physical infrastructure modifications, but the adaptations and physical infrastructure modifications have been slow to evolve for students with NBB. Students with NBB are legally entitled to attend school. However, schools may need to augment their existing infrastructure to better support these students. For example, soundproofing areas and having predetermined sensory friendly "quiet spaces" for students to go during behaviour crises could be beneficial.

Summary of the NBB Model of Support. The four themes that emerged from this study were familiar within the context of educating students with problematic behaviour. The first theme, primary needs, underscored the importance of the basic needs, such as food, clothing and rest to favourable educational outcomes. This was not a new revelation, however, the possible causes of student hunger, improper dress, or fatigued were much broader than the clear-cut assumptions of family poverty or parental apathy. With the NBB Model of Support, school staff in this study attempted to address many the primary needs, which surfaced, in a non-judgmental, supportive manner. In this study, subtle physical, psychological and psychiatric factors were also implicated in the unmet primary needs of some students.

The theme of environmental influences meant recognizing the potential effects subtle environmental influences could have on behaviour. Linking other human service disciplines with education could encourage the development of additional strategies for educators to use. Modifying the classroom environment, providing a highly structured and organized classroom, and using direct, non-emotional language to coach students seemed beneficial. Classroom environmental modifications were one thing staff could do to investigate the influences of sensory stimuli in the classroom. It was the one action that could be done non-invasively, to facilitate successful experiences for struggling students. Experimenting with various forms of environmental modifications enabled the educator to look past the student and to investigate other possible influences in their lives, at that point of time. Looking at the classroom's inanimate, physical environment helped shift the focus from the student and to a less emotionally charged entity, which was the environment. This also provided staff with a few second interlude, which they could possibly reflect before they reacted to issues. Small incremental environmental adaptations were found to be instrumental to longer-term change. With the NBB Model of Support, classroom environmental modifications were always the first consideration when planning for students with NBB.

Establishing rapport, with the students, their families and one's colleagues, was important to foster awareness and understanding. Greene (2001) believes that "children do well if they can," thus when children are struggling they most likely are doing the best they can with their and how they are

perceiving their environment. Establishing and maintaining a healthy rapport with a student with NBB, was one of the best ways to "show" the student what to do, how to do it, and more importantly, show them that they are worth someone else's time and energy. Students with NBB did not change because someone told them to, they changed when it became important to them, and most often when someone had nurtured and spent time with them.

Developing strong rapport with families and primary care givers was important. Often, especially when children were not doing well in school, a toxic circle of blame developed where the parents or primary care givers blamed the school for "not teaching right," and the school blamed the parents for not "disciplining right." The student often suffered, because of the emotionality between the home and school (Brendtro, et al 1998). Understanding and verbally acknowledging to everyone that each was doing his or her best with what they have and what they know can be the first step in developing rapport with families. Often, when children realized the home and school have a respectful relationship, the child settled. When the home was validated by the school, the foundation for understanding and change developed.

With the NBB Model of Support, establishing rapport with the students was the first priority of the school year. Staff members initiated many card games and gym activities, created many Lego creations, and read to the students with NBB. As the rapport began to develop between the students and school adults, rapport building began with the primary caregivers, with the hope of developing strong collegial relationships.

Maintaining and developing educator self-care was vital. Staff in the Program often felt under attack, not only from the students, but also from other colleagues in the school, the administration, the students' caregivers, other human service agencies and others. Having a cohesive Program team was vital for self-care. We articulated the rationale for what we did to all who questioned, and when things were done differently, it often challenged others to broaden their perspectives. However, there were also many times when circumstances dictated the outcome of a situation and the staff had to adapt to circumstances at hand. As Wanda said:

> Everyone thought that the Program staff were pushovers and we let kids get away with things. Often we got the idea that the other teachers on the floor thought we purposely planned not to send kids home when they were misbehaving. It never started out that way. We just could never get a hold of the primary caregivers to pick the kids up, so the kids had to stay. The primary caregivers were not usually in the school catchment area, many did not have vehicles, some did not have phones, and the agencies we called could not or did not come. Therefore, the kids just stayed in our Quiet Room until they settled. There were numerous times over the years when we waited for people to come and pick up kids, but they did not arrive, or arrived hours later. Once when the police we called to remove a

> student from the classroom, (the group home involved refused to pick the student up hence the police were called), two police officers sat in the classroom, on our phone, trying to figure out where to take the student. He was under the age of 12, so could not be taken to the Youth Center, his social worker could not be reached, group home refused to take him, and the youth crisis stabilization unit was full at the time. But after awhile, this student settled and was able to clean-up his mess and then asked for his work. So, the next time that happened, we just waited, and when the student settled, and words were put to the event and we all learned something. We never planned to keep the kids when they were in behavioural crises; there was often no choice, so we had to deal with it. Nevertheless, things always worked out.

Staff working within the Program who used the NBB Model of Support, strongly supported one another, shared their professional concerns and triumphs with one another. From this sharing and support, a cluster of strategies, affectionately referred to as "the Big Ds" emerged.

The Big Ds. The Big Ds became very useful for the staff working with students with NBB. The Big Ds refer to the words "deflect, distract, diffuse, and debrief." Big D strategies were most helpful. Situations could often be deflected by humor or proximity, distracted with environmental modifications or blocking a student's sight line, diffused by validating students' initial reactions then offering

another perspective and debriefed when emotional identification and language was attached to the event. The "Big Ds" were commonly used by the staff to provide non-intrusive support.

The bottom line. Physical safety of all people is the ultimate bottom line. Schools are institutions, designed to promote the cultural values and morays of society. As such, they need to be safe, assessable and inclusive. Students with NBB who periodically display unsafe, threatening, and/or violent behaviour need access to education and exposure to socially appropriate norms and behaviours. For some students, self-contained educational settings may be needed before they can be successful in inclusive or mainstream settings. Students with NBB need to develop a sense of belonging or community, which they may not get in a mainstream classroom, but have an increased opportunity of obtaining in a smaller setting. The sense of community among the participants in this study was highly evident. Unfortunately, peers from other settings often scorned the students in the Program. Some of the behaviour some students with NBB exhibited alienated them from his or her peers, thus self-contained classrooms may offer an opportunity to be a part of small community within the larger school setting.

Inclusion of students with NBB. Nevertheless, elements of the NBB Model of Support, used in regular classroom settings, may increase inclusionary opportunities for students with NBB who struggle in such settings. Considering environmental influences, and providing a range of various environments within the mainstream setting, may help to increase inclusion for students with NBB.

Reorganizing furniture placement, allowing small groups of students to sit on the floor and use clipboards to write on, and using masking tape to physically define the various areas where floor work, seat work, group work, or "on-your-own" work can be done could provide some of the needed structure to include students with NBB. Regular classroom environments could be organized to create a range of environments ranging from sensory friendly, quiet, and calm, to highly stimulating, colourful, and loud within one classroom.

Misbehaviour in inclusive settings. Some mainstream teachers may be concerned about how other students may interpret the his or her interactions when students with NBB misbehave in their classrooms. Some fear their students may feel the student with NBB is "getting away" with something other students would not have been allowed to "get away with." However, when teachers prepare the mainstream students, before the student with NBB joins the class, it can help to clarify how rules are being applied fairly and consistently. When students with NBB violate class rules, others students need to know that: (a) they are safe, (b) the behavior was unacceptable, (c) it is the teacher's job to address the behaviour, (d) it is the student's job to stay out of the incident, because it is none of their business, (e) it is their job to continue with their own schoolwork, (this also shows the student with NBB how to respond when they are in a similar situation), and (f) they will be able to talk about how they felt about the incident later, after the teacher has addressed the misbehaviour. The teacher will label the behaviour as an infraction of the rules, and will not discuss it using the students with NBB as the example of indiscretion. Depending on the student's

plan and the results of the debriefing, the student with NBB, will return to the classroom as soon as he or she is ready.

Having a self-contained setting for students with NBB to retreat to may help to support students with NBB in mainstream classrooms and as well act as a bridge between the self-contained and the inclusive setting. Such a redevelopment the roles of the self-contained setting within the school, could propel the inclusionary process. Just as many public buildings are wheelchair accessible, and have other physical accommodations, schools may need to consider having positive, self-contained settings to teach school-appropriate, non-violent behavior and address some of the academic expectations many students with NBB require. Self-contained settings could be used as retreats for students with problematic behaviour, while they prepare for inclusive classrooms. This has the potential to increase the students' affiliation to school, increase their time on academics and promote appropriate behaviour. Students with problematic behaviour need to feel as if they are the school's students. Having fluidity between the settings may facilitate their affiliation to school. Students with NBB often need to break the habits of using problematic behaviour to avoid school (Jones & Jones, 1998), or use their behaviour to address unmet sensory needs (Kranowitz, 1998). These provide the opportunities to use student misbehaviour to learn emotional identification, language and coping strategies. Finally, as student misbehaviour is viewed through a positive disability lens, schools may begin to redefine the needs of aggressive and violent students in the school setting and better address their needs and those of the school.

Understanding the NBB Model of Support in the Current Educational Milieu

However, the total integration of students with NBB may not be feasible. There had been many great integration experiences with various students in this Program over the years, but when the class sizes were large, or conflicts between the student with NBB and others emerged, integration tended to be short-lived. Zoey commented:

> Integrating teachers need to think "big," twenty-five or thirty students at a time. I was in their classrooms to support our students and the integration teachers. But, many of the teachers didn't get it, and did not have the time to get it. They all tended to "react" to our students. When our students where in integrated classes, they sometimes used an inappropriate tone of voice, or mutter a profane word under their breath. They were often academically frustrated or overwhelmed. Even when the teachers kept their mouths shut and let me handle it, they often came up to me later and say they would not tolerate that in their classroom, and often ask us not to come back for a few days. Once our kids lost their routine of going to integration, it took forever to get it back. Our kids needed to be back in integration as soon as possible, the same day, if possible, but often that did not happen. Most integration teachers did not understand that many of our

kids could not physically handle the integration class's environment. It was not personal, it was physical.

Schools were often not fully equipped to maintain and educate student with NBB whom respond with violent-looking behaviour. Neurosciences have provided an increased understanding of what is thought to occur in a person's brain when stressed or challenged. However, that information is not exclusive to students with NBB. Educators, primary caregivers, and everyone else's brains could be reacting in similar ways. The universality of brain biology does not just occur in children and adolescents with problematic behaviour. The biology occurs in all.

Stay in the brain. Educators are the paid professionals and front-line service providers in the education system. As professionals, they need to be respectful and be positive role models. Educators of students with NBB need to use a discerning, calm non-emotional "brain style" of verbal discipline (Kronenberg, 2004). The "brain style" of verbal discipline is a solutions-focused, strengths-based method, which states fact, not opinion or emotional reaction. With this style, emotion is intentionally removed from the interaction and non-emotional language is used. For example, if a student brought contraband to school, it was labeled illegal, because it is against the law. Bring contraband to school would not be labeled shameful or bad. Those words describe someone's reaction to the contraband. When adult use emotionally charged language, they often are describing their reaction to the student's behaviour. Emotional language tends to describe how the person relating the issue has interpreted it, but does

not give any information about what exactly the person who caused the issue did or how he or she perceived the situation.

Policy Implications for the NBB Model of Support

The staff in the study believed that the NBB Model of Support lent itself to offer a broader range of strategies and approaches to manage students with NBB. The awareness of the possible neurological influences, mental health issues, and an understanding of the sensory integration system did facilitate this knowledge. However, educators did not receive much schooling in these topics, and many may inadvertently perpetuate the students' difficult behaviour. Facilitating multi-directional or multi-dimensional approaches or planning to be classroom-specific, rather than student-specific could increase the knowledge and practices to better support students with NBB. Classroom-specific approaches also mesh well with the government's philosophy of inclusion and concept of universal design (Priestley, 2006).

Pre-service educators would benefit from increased education on neurologically based behaviour issues. Augmenting university curricula to include such topics, including mental health, sensory integration, language issues, and socio-economic influences could produce more well-rounded educators. New educators are typically those who liked school when they were in school. Yet, almost 90% of the school discipline problems originated from the 10% of the student population who do not like school, which can be difficult to fathom as a new teacher (Morrish, 2005). Perhaps an introduction to the NBB Model of Support may be helpful.

Limitations

There were a number of limitations of this study. A number of factors as described below influenced data collection.

The small number of participants. Due to the small sample size, the perspectives of this group of students with NBB and educators were not representative of students with NBB or educators in general. The perspectives of this particular group and their experiences with the NBB Model of Support may be unique.

The isolation of the classroom may have influenced the perspectives of this group. The students were not attending their neighbourhood school and their families had little connection to the school community. Although they had a strong sense of community in the classroom, it did not easily generalize to the school population. The staff members also did not have a strong connection to the school community or other staff in the school. They did not have lunch with other staff members and spend little time in the staff room. The systemic framework of the school system did not easily lend itself for the co-mingling of staff.

In addition, the students in the Program arrived at the school with profound deficit model descriptors that appeared to perpetuate a reluctance for involvement. Historically, these students behaved in ways interpreted as threatening, violent, and unacceptable. Compounding that, were the atypical and uncommon reactions they display when corrected, or disciplined. That exaggerated the stress on the inclusionary processes. Because the teachable

moments occur during and immediately after many violent-looking outbursts, the balance of including, teaching, and allowing for mistakes by students with NBB with the safety and security of the rest of the school population did present a challenge to inclusion.

The influence of the researcher. Researcher bias may have flavoured the data. The researcher and the primary educational direct service providers ardently believed in the value of the students with NBB and the value of the NBB Model of Support. The staff chose to work within this setting and made conscience efforts to work within a strengths-based, solution-focused framework. Borrowing a mantra from Dr. Martin Brokennleg (2002), "define everything you see a child doing as a strength. It may be convoluted, but it is a strength." The staff actively sought out individual strengths as they looked for strategies, ideas and interventions to maximize the students' educational experience.

The students and their communities. The complexities in the lives of the students with NBB, and those of the communities in which they live may have affected the study. Unpredictable episodes of community violence, and its effect often influenced these students. Community and family violence, social challenges, justice issues, and socio-economic influences could not be controlled in this study.

Medication. Pharmaceutical decisions made by the physicians and families, or legal guardians, were a limitation. The administration of medication was at the desecration of the legal guardians. The school system had no

influence or control over these decisions. Pertinent medication information was noted, however, their influences may have been a mitigating factor.

Significance of Findings

Despite the limitations of such a small study, several important conclusions may be drawn from the data.

Importance of Educators' Attitudes. Educator attitude is important. The educators in this study were subject to the variability of the students, their caregivers, and the agencies that provide service to them. The educators in this study, as was expected, went to great lengths to understand the perspectives of others and to remove the intense emotional responses that often occurred. In time, as the educators related various behaviour incidents of students to their parents, or primary caregivers, the parents began to acknowledge seeing similar behaviours at home. Together, the home and school worked to access additional services to address the children's needs. Once emotionally laden language was removed from the interactions between home and school, and the behaviour was described by the actions or actual language used by the student, great strides in understanding was gained.

The educators in this study often felt disconnected from their colleagues in the school outside the Program. This may have been a by-product of working in a self-contained classroom. When staff mingled with others on the school staff, many would talk of students choosing to behave badly, not "letting them get away with it," and "letting them (the students) know who's boss." However, other staff members would speak of students, who needed more support and nurturing than

could be given in a mainstream classroom. The differences in colleagues' attitudes mirrors a recent Canadian study conducted by the Canadian Mental Health Association (2008) which found that 46% of Canadians think that the term mental illness is an excuse for bad behaviour.

Realigning educators' paradigms. Problematic, persistent behaviour problems that impact on daily activities and functioning is a primary indicator of mental health difficulties (Papolos & Papolos, 2002; Spencer, et al, 2002). Broadening the paradigm of "bad behaviour" to include possible factors, other than many of the deficit-based or delinquent-focused reasons, can provide a foundation for more inclusive schools. Understanding that the behaviour of a biological organism makes perfect sense to the organism given their perception of the environment, their skill, and previous experiences, is helpful, especially when understanding that we, educators and students, are biological organisms. This can perhaps help educators move from the idea that "the students are purposefully misbehaving," to one of "what is the behavior communicating and how can I help the student translate his or her needs into an understandable, and socially appropriate method of expression."

"Bottom-up Behaviour Intervention." The NBB Model of Support provides a framework for "bottom-up behaviour intervention." Using environmental modifications, non-emotional language, clear, consistent classroom structure and routines, to calm the students' sub-cortical and midbrain areas, emotional identification, language and targeted strategies may perhaps some decrease behaviour that impairs daily function. Students with NBB need to become aware

of and recognize their triggers. Then, they need to put language to their triggers, and devise strategies to cope. The Program staff explains it this way:

> We imagine the students' midbrains are like traffic lights. They arrive at school with their midbrain area on amber. This part of their brain can either go to green, which is calm and able to work and function, or shoot up to red, which can result in behaviour incidents, shut-downs, or other actions which will prevent them from functioning as a student. It is our job to help them get to green, and put language to their experience.

The use of sensory integration interventions in the classroom supports the bottom-up behaviour strategies, and demonstrates the need to include the expertise of other human service disciplines in the classroom, such as occupational therapy, physical therapy, neurosciences and others.

Behaviour as a mental health indicator. When behaviour is seen as a possible indicator of mental health, shaming and berating students with problematic behaviour can be seen as counterproductive to the student and to inclusive process. Exclusion, based on behaviour can future marginalize group of students who often want so desperately to be like their peers. Mental health issues are common. Twenty percent of all students have diagnosable mental illnesses, and an additional 40% of students experience mental health difficulties associated with normal development (Noam, 2008). Bridging and networking

education with mental health can possibly promote resilience and inclusion in schools.

Reconstructing the NBB Model of Support in light of the findings.

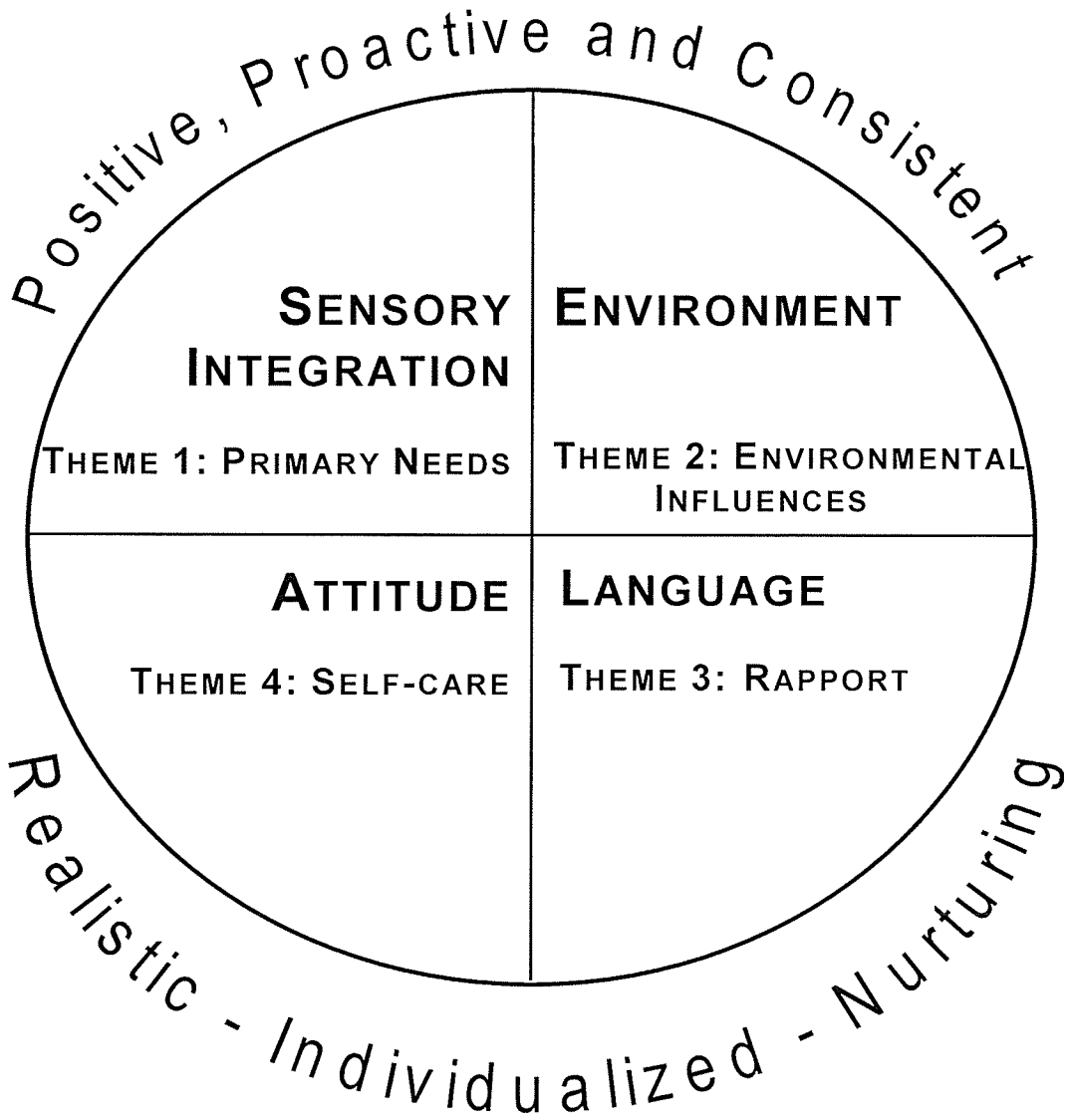
As the themes emerged from the study, I began to place them into a reconstructed model of the NBB Model of Support. (See the graphic representation of the Model of Support in Figure 19).

Sensory integration and theme 1.Theme 1, primary needs, was placed in the sensory integration quadrant of the model. When students are understood through a sensory integration lens, much of their inappropriate behaviour can be understood from a boarder perspective. A boarder perspective may provide the impetus for educators to look for and try alternative strategies and methods to support students with NBB.

It may seem unusual that the sensory integration quadrant houses primary needs. However, when one begins to understand how the intricate influences of a skewed sensory integration system can affect the behaviour and physical comfort of some students in the classroom, addressing students' primary needs may also address their sensory needs. Some students may dress inappropriately because their clothing may irritate them, may not feel hungry at meal times, inexplicably fall off their chairs, or may need to move when they are expected to sit. Some students may be unable to write legibly, or to visually track print on a page unless interventions and strategies are used to address their physical needs.

Figure 19

NBB Model of Support with themes that originated from the study



Academic interventions and adaptations are primary needs for some students. This could be a result of sensory integration dysfunction and other sensory issues. Sensory integration dysfunction tends to be misunderstood and misinterpreted. Hyperactivity, inattentiveness, disorganization, learning challenges, co-ordination problems, inappropriate behaviour, language difficulties, and impulse control issues often may be exaggerated by a person's midbrain area. The midbrain area may be responding to a misperception or misinterpretation of internal and external sensory stimuli, thus skewing typical interpretations and reactions. Sensory integration needs are primary physical needs, and can affect a person's functioning in his or her environment.

Environmental influences and theme 2. Theme 2, environment influences, fit into the environmental quadrant of the Model. Bronfenbrenner's bio-ecological systems theory (Bronfenbrenner, 2004), considers the influences of family, home, school, community and society. These various interactions are considered dynamic and not static. With the Model of Support, classroom environmental modifications are typically an educators' first consideration. Understanding that educators often have limited impact on the larger macro environments of the community and society, educators can arrange their classroom environments so that it can maximize the potential for student success. By observing, watching and planning teachers can set each student "up for success."

Educators using the Model often have a number of different environments within their classrooms, which students flow through, as needed. When needed, students are told which area in the classroom to use and how to use it. Students

lying on the floor in the corner working on academics, squeezed in between large pieces of furniture using clipboards to write on, or sitting under tables working on their tasks, were not unusual sights during the study in the Program. Many students with NBB may need small, tight looking areas to work in, while others need to work in larger areas that are not as compact.

Language and theme 3. Theme 3, rapport, fit into the language quadrant of the Model. During the study, the language quadrant expanded to not only include language pertaining to student-to-student interactions and student-to-adult interactions, but also to adult-to-adult interactions. As important as it was for students to learn emotional identification and language to articulate their feelings and needs it became very evident that staff needed language as well. Staff needed to communicate effectively among themselves, and with other adults and colleagues.

This quadrant was designed to pertain to spoken language. For students with NBB, the ability to articulate in a socially appropriate verbal manner to get their needs met is a fundamental tenet of the Model. For adults, the language quadrant refers to the ability to verbally communicate, and when necessary, communicate in writing in a respectful and non-emotional manner so that pertinent information can be shared. The purpose of information sharing among people and systems is to optimize interventions, supports and plans typically made for and with students with NBB. However, the primary purpose of this quadrant is to address some of the many different language issues common to students with NBB.

Working with students with NBB can be taxing. Consequently, language also can provide a vehicle for adults working the students with NBB, to build a common ground through which understanding, interventions and a common bond can be developed and sustained.

Attitude and theme 4. Theme 4, self-care, fit into the attitude quadrant of the Model. When educators fail to take good care of themselves, they become ineffective as teachers, models and facilitators of change. Self-care means different things to different people. Some educators need physically stimulating activities such as exercise or extreme sports. Others may need quieter activities such as reading and meditating. Still others may need other activities such as traveling, watching sports, or attending concerts. The important aspect of self-care is recognizing and participating in self-care activities that refresh oneself (Richardson & Shupe, 2003).

Self-care is important for overall health and well-being, and directly related attitude (Brokenleg, 2002; Forbes & Post, 2006). When educators take care of their physical, emotional, cognitive and social wellbeing, they are more likely to maintain a professional, caring, skilled manner within their professional role. Self-care is vital for educators as they attempt to maneuver the varied expectations of all the stakeholders in the school system.

The Model, in conclusion. It is important to move the NBB Model of Support from theory to practice. Graphic representations with bulleted information can be useful for educators. A small card with a pictorial representation the NBB Model of Support could serve as a visual cue for teachers and educational

assistants. In addition, a list of strategies and charts, such as the ones in Figure 20, 21, 22, 23, 24 and 25 may be helpful. These lists of strategies are neither finite nor stagnant. More strategies can evolve as educators begin to broaden their perspectives on behaviour and remove the power and emotionality from volatile situations with students with NBB and EBD. In the same way that a physician would not be as effective if he or she scolded a patient during an acute cardiac arrest for not exercising three times a week, educators may compromise their effectiveness when they interpret and respond to students' behaviors in an emotionally charged manner. The NBB Model of Support seeks to provide a broader perspective of behaviour, so that professional educators can take their emotions out of interactions and develop further skills to include and educate students with NBB and EDB.

Implications for Further Research

In this study, I have articulated a new perspective on student misbehaviour and the school's role in behaviour support. Broadening one's perspective of behaviour does not mean that misbehaviour is accepted, condoned or expected. Broadening one's perspective on behaviour may provide a vehicle to further understand and better support students in school.

Students with problematic behaviour are entitled to be educated in school. Further research is needed to garner a clearer understanding of how to balance the needs of students with behaviour disabilities with those of the general student population. The public school is an essential component of society and culture. Balancing the needs of students with problematic behaviour issues, that

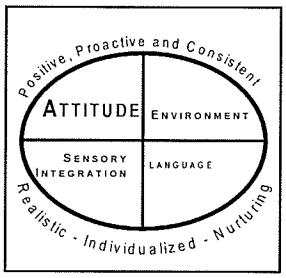
Figure 20

The NBB Model of Support Strategies - The Attitude Quadrant

This refers to **your** attitude toward:

- the students and their families,
- other involved agencies and organizations,
- the educational institution,
- your colleagues and supervisors, and
- yourself.

Our attitude is the basis for our own self-care and is related to how effective we can be as educators.



- Misadventures, misbehaviour and misinterpretations occur throughout all aspects of life. How we respond to them is often the only thing we can control. Actively seek learning experiences for all.
- Be aware of your own reactions to situations. Your actions are a bigger model of behavior and social interaction than you realize (Hingsburger, 1996; Malbin, 2002, Charles, 2008a).
- Accept circumstances and work to make things better if possible. If not, work to develop coping skills, or change.
- Take the power and emotion out of potentially volatile situations.
- Use and teach humor. (Richardson & Shupe, 2003). Laugh and model how you can laugh at yourself, especially during embarrassing moments. Purchase a joke book.
- Take care of yourself, and participate in activities that refresh you.
- Embrace hyperactivity as energy – a celebration of energy & life! (Hingsburger, 2000).
- Enjoy the students in your classroom (Richardson & Shupe, 2003).
- Build on successes and strengths of the students, highlighting as many successes as you can (Malbin, 2002, Charles, 2008a).
- Eye contact can stimulate upper cortex thinking or can provoke power struggles, depending on the situation. Use eye contact judiciously (Charles, 2008a).
- Students with NBB tend to behave, react, etc. as others do. They tend to be followers and are easily manipulated (Malbin, 2002). Use this trait to promote appropriate behaviour.
- Never give a student an option you do not want them to have, and then expect him/her to determine the option is not appropriate (Malbin, 2002, Charles, 2008a).
- Remember your role. We are educators and are not responsible for students' home lives.

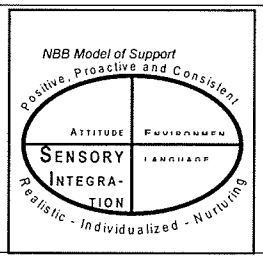
Cautions and Limitations:

- When needed, seek support or be a support for colleagues and others.
- Document, verbatim, all inappropriate comments or threats students may say. Include the date, the context of the comments, and the response to the comments. Share this documentation with your immediate supervisors and student's legal guardians.
- Document and follow your employer's policies, if you need to use physical restraint techniques.

Figure 21

The NBB Model of Support Strategies - The Sensory Integration Quadrant

Sensory integration issues can have a significant effect on people. A compromised or skewed sensory integration system can cause behaviour that may look willful, aggressive, or violent. This can be a self-protective response from the central nervous system (CNS).Sensory integration is closely related to primary needs and can be seen as a physical manifestation CNS dysfunction.



- Use 'Quiet Space' as a sensory friendly refuge for students to go when they are feeling overwhelmed, anxious, angry or other intense emotions. Train students to calm themselves, identify the emotions, put language to the event, and develop strategies. Always supervise the student using the Quiet Space (Hannaford, 1995; Williams, & Shellenberger, 1996; Yack, Sutton, & Aquilla,1998; Kranowitz, 2002; Charles, 2008b).
- Some students may be more academically productive when sitting on the floor, using a clipboard to write on, sitting in tight places, or under furniture.
- Changing the writing equipment, such as using pencil grips, mechanical pencils, markers, coloured pencils, or pens, or placing the writing paper on either a hard surface or a modified surface, such as a vinyl mat, or using paper with raised lines or no lines can be beneficial for some students (Williams & Shellenberger, 1996; Yack, Sutton, & Aquilla,1998; Murray-Slutsky & Paris, 2005).
- Use 'window boxes' to help student focus A window box is piece of contrasting coloured paper with a small square cut out, of it. Place the paper over the worksheet or text, exposing small amounts of work at one time. Since some students find the yellow coloured paper difficult to work with, use light blue or pink coloured window boxes (Hannaford, 1995; Williams, & Shellenberger, 1996; Yack, Sutton, & Aquilla,1998; Murray-Slutsky& Paris, 2005; Charles, 2008b).
- Reduce environmental distractions in the classroom (Hannaford, 1995; Williams, & Shellenberger, 1996; Yack, Sutton, & Aquilla, 1998; Murray-Slutsky& Paris, 2005; Charles, 2008a & 2008b).
- Use solid coloured sheets to cover cluttered looking shelves and ensure maps or other graphics on the walls are securely attached so they do not flutter or make noise (Kranowitz, 1998).
- Provide opportunities for deep pressure exercises to address possible sensory integration issues such as:
    - 10-15 second chair sit-ups,
    - pull on a securely attached OT stretch cord to stretch limbs, and
    - wall pushes.

  Some professionals believe learning can be facilitated by providing deep pressure to the shoulders, elbows, and wrist and hand joints, and may be enough to calm a student (Hannaford, 1995; Murray-Slutsky& Paris, 2005; Charles, 2008b).

Figure 21 (continued)

The NBB Model of Support Strategies - The Sensory Integration Quadrant

- Bumpy rubber cushions, or allowing students to sit on exercise balls, may allow subtle movement when sitting (Hannaford, 1995; Williams, & Shellenberger, 1996; Yack, Sutton, & Aquilla,1998; Kranowitz, 2002; Murray-Slutsky& Paris, 2005; Charles, 2008b).
- Securely attach a piece of occupational therapy stretch cord safely to the student's chair legs. This can give the student something to do with his or her legs while in their seat (Yack, 1998)
- Securely attach course sandpaper to the top, inside of the student's desk. This may provide an alternate texture for a student to touch and improve concentration (Yack,Sutton,& Aquilla,1998).
- Focus school assignments by:
    - breaking the assignment up into smaller pieces,
    - increasing the size of the font/print, and
    - covering print or graphics that are not needed at the time.

    (Williams, & Shellenberger, 1996; Yack, Sutton, & Aquilla, 1998; Murray-Slutsky& Paris, 2005; Charles, 2008b).
- Reduce the amount of work/print on each page (Hannaford, 1995; Williams, & Shellenberger, 1996; Yack, Sutton, & Aquilla,1998; Kranowitz, 2002).
- Provide tactile manipulatives, such as an exfoliating bath glove for students to wear so he/she can trace letters on the inside arm of his/her opposite arm, and other differentiated learning strategies for students' use (Hannaford, 1995; Williams, & Shellenberger, 1996; Yack, Sutton, & Aquilla,1998;Kranowitz, 2002).
- Integrate academics with movement with academic tasks. Print academic facts on masking tape, then attach pieces of the masking tape on beach balls or large foam dice. Toss the ball or dice back and forth, practicing the facts (Hannaford, 1995; Williams & Shellenberger, 1996; Yack, Sutton, & Aquilla, 1998; Kranowitz, 2002).
- Let the student chew gum, eat soda crackers, crunch mini carrots; research implies this may facilitate learning, increase concentration and can reduce the amount of verbal disruptions caused by some students (Williams, & Shellenberger, 1996; Yack, Sutton, & Aquilla, 1998).
- Use the "hook-up" calming position – eye closed, tongue on the roof of the mouth, arms crossed, and hooked, legs crossed at the ankles (Hannaford, 1995).
- Allow students to wear heavy backpacks, or carry heavy books. These may help the students to become more aware of their physical position, which some professional disciplines believe facilitates learning (Hannaford, 1995; Williams, & Shellenberger, 1996; Yack, Sutton, & Aquilla,1998; Kranowitz, 2002; Charles, 2008b).
- Color code subjects and/or areas (Malbin, 2002; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003; Nunley, 2005; Charles, 2008b).
- Using a box cutter, cut a small 'x" on a set of old tennis balls, then push the balls on the end of each leg of the classroom's chair. This will help to muffle the noise in the room (Kranowitz, 1998).

Figure 21 (continued)

The NBB Model of Support Strategies - The Sensory Integration Quadrant

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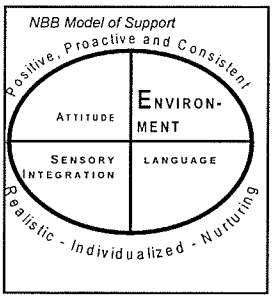
Cautions and Limitations:

- Ensure all manipultives are non-toxic. If students make their own learning tools, ensure all the components are non-toxic.
- Consult with an occupational therapist familiar with sensory integration issues.
- If using occupational therapy cord, ensure the student uses it safely and it stored in a secure location when not used.
- Some strategies require an adult to physically touch a student. Avoid these unless a reputable therapist has prescribed them (in writing) and you have been adequately trained.
- When a student is using a 'Quiet Space' supervise them at all times. Ensure they do not have access to items that could be dangerous, like shoelaces or other objects (often from their pockets).

Figure 22

The NBB Model of Support Strategies-The Environment Quadrant

- The environment quadrant includes the fluid influences of family, home, school, community and society on students and educators (Bronfenbrenner, 2004) and the environmental influences of the physical classroom (Williams, & Shellenberger, 1996).
- When a student's behaviour deteriorates, look first to the classroom environment, and begin with it.
- Classroom environmental changes can be one of the simplest and effective methods educators use.



- Create a number of different environments within the classroom.
- Plan for transitions within the classroom and school (Williams, & Shellenberger, 1996).
- Structure, Structure, Structure...and structure unstructured times and free time. Ask students what they are going to do. Get them to verbalize their 'plan.' If they do not have a plan, give them two choices (you can live with) then let them choose one (Malbin, 2002; Charles, 2008b).
- Use masking tape to mark boundaries and other important areas (Malbin, 2002; Charles, 2008b).
- Script social interactions (Malbin, 2002; Charles, 2008b). If needed, practise them.
- Encourage group activities and interactions (Malbin, 2002; Nunley, 2005; Charles, 2008b).
- Use role play to demonstrate appropriate skills and behaviors and videotape the role play for the student to see later. Be sure the student is role playing the socially appropriate role and legal consent for recording has been obtained (Hingsburger, 1996).
- Maintain a calm and predictable classroom environment (Malbin, 2002; Charles, 2008b).
- Plan for energy levels - hyperactivity is a physical manifestation of NBB (Hingsburger, 1996; Borba, 2001; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003).
- Plan to allow for movement in classroom
  - 'read around the room'
  - 'walk the line'
  - two desk method: Students have two separate work areas, so they can move back and forth,
  - go on school errands,
  - let students move and listen at the same time, and
  - let students lie on the floor to work

  (Malbin, 2002, Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003, Charles, 2008b).
- Allow for the use of fidget tools, (which are, small balls for squishing, small piece or telephone cord to fiddles with, silly putty type manipulatives, and other sensory integration tools.(Malbin, 2002, Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003, Charles, 2008b).
- Allow for the student to chew sugar free gum, eat soda crackers or crunch mini carrots, as these may increase focus and lower the volume of noise the student may make (Williams, & Shellenberger, 1996; Boekaerts & Corno 2005; Charles, 2008b).

Figure 22 (continued)

The NBB Model of Support Strategies-The Environment Quadrant

- Multi-modal approaches with a lot of kinesthetic experiences (Malbin, 2002; Charles, 2008b)
- Teach social skills (Malbin, 2002; Charles, 2008b).
- Show and tell the students what to do and how to do it when they are physically at the exact location where they are suppose to complete the task (Malbin, 2002; Charles, 2008b).
- Use pictures, diagrams, graphic organizers and point form lists to support the environmental structure (Malbin, 2002; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003; Charles, 2008b).
- Provide an alternate sensory friendly area for the student to work free from visual clutter and noise (Malbin, 2002; Charles, 2008b).
- Provide headphones, earplugs, or other apparatuses to either mask, diffuse or distract from classroom noise (Malbin, 2002; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003; Charles, 2008b).
- If a projector screen is used in the classroom, hang charts, student work samples, rubrics or other pertinent information on the wall right behind the screen. The screen can be used to cover the visual clutter when it is not needed (Malbin, 2002; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003; Charles, 2008b).
- Use solid coloured sheets to cover equipment, shelves, cupboards and other areas, when they are not being used. (Malbin, 2002; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003; Charles, 2008b).
- If lighting appears to be bothering students, unscrew every second light bulb to dim the area.
- Look for any environmental influences (Malbin, 2002; Kranowitz, Szkut, Balzer-Martin, Haber & Sava, 2003; Charles, 2008b).
- After dismissal, sit in the student's desk to see the sensory influences the student may be exposed to, then modify the environment accordingly.
- Remove any distractions and all possible things that could undermine or cause difficulties for the students (Kranowitz, 1998).
- Keep all academic equipment, such as scissors, pencils, etc. that are not in use, out of sight, but easily accessible.
- Have extra school equipment available in the classroom. Students with NBB may have organizational issues and often cannot find their pencils, erasers, etc. Having them easily available in the classroom can easy anxiety and promote learning.
- Keep specific school equipment and tasks together in clear polyvinyl envelopes.
- Always allow for enough time for students to tidy up their workspace and put their equipment away in the designated place.
- Establish an organized routine for transitions. Have set predictable routines and structures for how to change activities and/or classrooms. Transitions between activities or classrooms can be more difficult or anxiety provoking than the actual class itself (Kranowitz, 1998).

Figure 22 (continued)

The NBB Model of Support Strategies-The Environment Quadrant

Cautions and Limitations:

- Be aware of any school division policies or guidelines pertaining to the physical classroom space.
- Different classrooms environments often need specific rules. For example, when students use the sensory friendly area, or alternate workspace, the student is responsible for their assigned task and is not to disturb the learning of others.
- Only one student is allowed in certain classroom areas (e.g. Quiet Room) at a time.
- If a student is working on academic tasks while sitting or lying on the floor, ensure they have an assigned area of space to contain themselves.
- Custodial staff and building staff may be able to assist with moving or storing unneeded furniture.

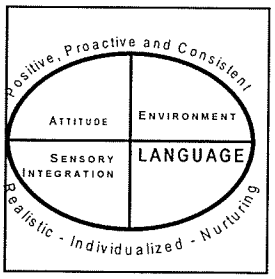
Figure 23

The NBB Model of Support Strategies - The Language Quadrant

With many students with NBB:

- behaviour difficulties arise before the language processing areas of the brain are engaged, and/or
- sound cognitively higher that they really are, and/or
- often say the words, but do not know what they mean, and/or
- may be able the repeat directions but do not know what or how to do it.

Also, culture, socio-economic status, and social roles influence language.



- Use verbal, pictorial, and gestured direction to show and tell the student what to do (Burke, 1999; Mishna et al, 2004; Lewis & Porter, 2004).
- Show the student how to start it. (Burke, 1999, Charles, 2008b)
- Use verbal/visual/gestural cues (Burke, 1999).
- Video-role modeling: video tape record student successfully meeting the expectation
  - videotape acceptable behaviors (be sure you have written legal permission).
  - student role plays the appropriate social skills/interaction
  - *ensure all legal consent form has been signed and compliance to all school division policies (Hingsburger, 1996).
- Teach language and vocabulary (Burke, 1999; Mishna et al, 2004; Lewis & Porter, 2004).
- Role-play various scenarios using appropriate language. Ensure the student is role-playing the appropriate actions and language, and an adult is playing the inappropriate role. Another adult may need to coach the student during the role-play (Hingsburger, 1996).
- Ensure you have student's attention before you speak (Burke, 1999, Charles, 2008b).
- Be aware of the number of instructions/operations/expectations in questions. Use few words/directions, and then wait (Burke, 1999; Mishna et al, 2004; Charles, 2008b).
- Provide step-by-step pictorial directions (Burke, 1999, Charles, 2008b). Pictures can be obtained from image sites from the internet.
- Quietly ask student to verbally repeat AND show you what you said (Burke, 1999, Charles, 2008b).
- When possible use the closed captioning setting on various media forms.
- Keep directions simple, short and to the point (8-10 seconds) (Burke, 1999, Charles, 2008b).
- Give directions **WITHOUT** long winded explanations (see following chart entitled Directions)
- Do not expect students with NBB to understand all metaphors and analogies (Hingsburger, 1996; Reynolds & Fletcher, 2000; Mablin, 2002).
- Use eye contact carefully. Sometimes, teachers who make eye contact with stern language/body language, may inadvertently trigger an inappropriate behaviour outburst in some students (Charles, 20008b)

Figure 23 (continued)

The NBB Model of Support Strategies-The Language Quadrant

- When students use inappropriate language, quietly substitute socially appropriate wording, and then quietly suggest they use this word next time (Payne, 2003).
- When students reacts to something using inappropriate language, identify the emotion you believe the student is experiencing, provide alternate vocabulary, and if needed, strategies to deal with the emotion. DO NOT discipline students for using inappropriate language. Teach alternate vocabulary (Payne, 2003).
- Teach students that there may be 'home' language and 'school' language. Teach them when to use and how use these different 'language registers' (Payne, 2003).
- Put language to the event and strategies to teach:
    - emotional identification,
    - communication skills,
    - coping strategies, and
    - socially appropriate language. (Payne, 2003)
- Explicitly tell student what to do and how to do it. Example, "keep you hands on your belly" can be a more clear direction, than saying, "Hands to yourself."
- Use the SAME words, not similar words, when giving a direction. Often people try to explain the direction and think they are making it clearer, but are confusing the auditory system with verbose clutter (Burke, 1999).
- Wait for the student to ask for clarification before talking again.
- When students with NBB appear to be agitated, inflamed, or confused, use as many gestural cues as possible (Kranowitz, 1998).
- The louder the volume of a student with NBB has, the lower the adult's volume should be. Augment the lower volume with gestural and pictorial cues.
- Resist the tendency to make comments under the guise of humor or emotional expression. Comments such as "Geez," "Oh boy, my mother told me there'd be days like this," etc. do not help the situation are not modeling respect.
- Tell the student what to do (Burke, 1999, Malbin, 2002; Charles, 2008b).
- Use non-emotional language; avoid blame and guilty provoking interactions (Hingsburger, 1996; Mablin, 2002; Payne, 2003).
- Be sure the words coming out of your mouth are helpful and supportive to the students, not just an emotional release for you.
- Describe events, behaviour and situations in non-emotional language. Non-emotional language describes the action, not one's emotional response to the action.

Figure 23 (continued)

The NBB Model of Support Strategies - The Language Quadrant

Cautions and Limitations:

- Collaborate with speech/language therapists, reading clinicians, and other professionals regarding speech and language issues.
- The adult's reaction to verbal threats and allegations often inflame the situation. Do not show fear, panic, shock, or anger. These reactions subconsciously fuel the threat and can make the situation bigger (Payne, 2003; Forbes & Post, 2006).
- Inappropriate language and threats are indicators of a student's emotional distress (Greene, 2002; Payne, 2003; Forbes & Post., 2006). Document the inappropriate language and threats using non-emotional language.
- Wait for the student to calm before addressing threats or inappropriate language.
- Debrief other students who heard the language, reassuring them that they are safe, the language was inappropriate and unacceptable, the adults/school are dealing with it, and it is no longer their business.
- Comply with the policies of the school division, and take care of yourself.
- Document and inform the primary caregiver, legal guardian and your supervisor of any threats or inappropriate language.

Figure 24

Directions

Directions

◈◈	Eye Contact	Number of Words	Tone of Voice	Visual Cues and Supports
Military Style Direction	No	1-3 words	Quietly firm, non-emotional and supportive	Point to and/or show what and where the direction is referring
Action Specific Direction	Yes or No Depending on the situation	Few words, chunk or break up the direction into manageable pieces	Supportive	Show, demonstrate and tell what the expected results are.
Thinking Directions	Yes	Few words, lots of wait time. Offer explanations after it is asked for or if student appears confused after an extended wait time.	Supportive	-small fidget items to help concentration. -Short word list of related words; -Sentence starters -Closer physical proximity.
Non-Verbal Directions	Yes	None	Not applicable	Exaggerated physical gestures and cues.
Print Directions 1) Words 2) Pictures 3) Combination	No	Few words. Pictures and print may be combined. Be aware of font style, size and spacing on the paper/sheet.	Not applicable	Ensure student knows **EXACTLY** where to look on the page Ensure print & pictures depict the intended idea.

Figure 25

Comparison between non-emotional and emotional language

Non-emotional language traits	Emotional language traits
Factual - Nonchalant	Strongly negative
Factually based on the event or circumstance	Emotionally based on how the event or circumstance affected the person speaking.
Use non-emotional language. Situations are labeled as: "healthy or unhealthy", "safe or unsafe," "legal or illegal," and/or "appropriate or inappropriate"	Uses highly emotional language, like: "That's (or you're) disgusting" "You should be..." "Should," "What were you thinking?"
Calm and rational	Uses putdowns and name calling like dumb, stupid and other derogatory descriptors.
The adult labels the student's language, tone, and/or cadence as inappropriate then tells him or her how to fix it.	Uses language to threaten or assign blame, like: "Do it or else," "You just wait until..." "It's not my fault"
Attempts to solve the problem	Uses guilt-provoking phrases and tries to evoke sympathy, such as "What do you think people will think?"
Tone of Voice/Cadence	Tone of Voice/Cadence
-calm	-whiny and nagging
-low	-raised volume
- softer tone of voice (could be monotone)	-cross or angry tone
-slower word speed	-speaks fast
-use supportive body language	-argumentative and lecturing

Adapted from Hingsburger, 1996; Mablin, 2002; Payne, 2003; Forbes & Post, 2006.

often appears violent, with the needs of the rest of the school population is challenging. Students with problematic behaviour need the same opportunities that students without problematic behaviour have. The overused tactics such as excluding, suspending and expelling students who display problematic behaviour does not model or teach appropriate behaviour, social skills or alternate methods to cope in the school setting.

More research is need. More research is needed to address the following questions. Could the NBB Model of Support work in other classrooms, with other age groups, or with larger numbers of students? Could the NBB Model of Support reduce the numbers of suspensions and expulsions for students with NBB? When does problematic behaviour become a disability? In addition, longitudinal research investigating the long-term outcomes for students with NBB would be useful.

Longitudinal research would contribute the knowledge base in relation to the NBB Model of Support. Is the NBB Model of Support a classroom management framework to manage disruptive students, or do students with NBB internalize and integrate various coping strategies? Anecdotally, some past students have gone on to become successful students, enjoying various extracurricular activities and graduating from high school. Some other students have been less successful, dropping out of school, or becoming involved in the youth justice system. However, a positive school experience promoted by the

NBB Model of Support may provide learning opportunities for all involved, including the educators, and begin to instill a new found mutual respect.

Future research to investigate the long-term academic and social outcomes for students with NBB would be helpful. How can the curricular expectations be supported by the Model of Support? Is there a link between student successes in school with success in the community? If so, what is it and how can it be positively strengthened? What strategies, interventions and skills sets have been effective in the past with students with NBB? Could any of these strategies, interventions and skills be universally implemented within the education system?

This study only had a small number of participants. Despite the fact that this was only a six week study, the participants had worked together for a considerable amount of time before the study began. Did that influence the study, and if so, how did it? How long does it take for strong adult collaborative frameworks to develop and how does it affect the educational service delivery? The influence of the staff beliefs and roles within the school needs to be further investigated. How much influence do other teachers and administrators have on the type of support students with NBB receive? What strategies and interventions would be useful to support others, including other students in the school? What effect does the inappropriate behaviour of students with NBB have on other students in the school?

Future Implications.

The NBB Model of Support is a new theoretical construct in the field of education. This small study provides some interesting perspectives on disengaging problematic behaviour from the student. In future, it may be advantageous to collaborate closely with professionals from other disciplines, such as occupational therapy, rehabilitation services, the neurosciences, and others to investigate the effect of many strategies used from these fields are consistently useful in the classroom. Studies involving other professional disciplines may be useful and offer further insight into educating student with NBB.

For the participants in this study, the NBB Model of Support offered a framework and structure from which to deliver academic programming to students who had histories of academic and school difficulties. The Model also offered another perspective of behaviour that shift the blame for misbehaviour from the “will not” to the “can not” perspectives; a much more palatable alternative.

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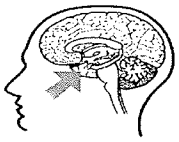
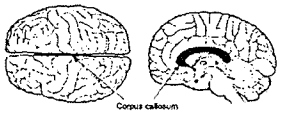
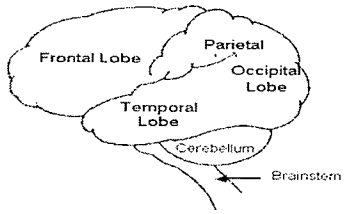
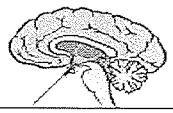
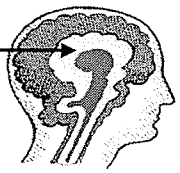
Appendix A

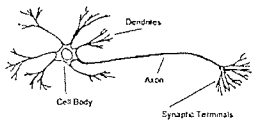
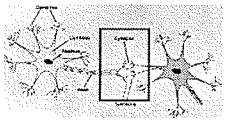
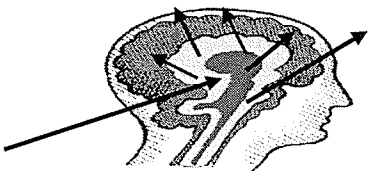
Glossary of Terms

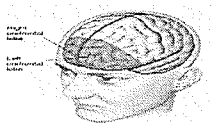
Amygdala 	Two small structures on each side if the midbrain, that are designed to interpret subtle non-verbal emotional expressions of others in the environment and protect one's self from how ever these emotional expressions and situations have been interpreted. The amygdala will initiate the fight or flee response before situational context can be ascertained (Bath, 2005).
Arousal or Alertness	The state of the nervous system that describes how alert one feels (Kranowitz, 1998).
Auditory Sense	One of the seven sensory influences identified in the Sensory Integrative Theory (1972). It is the sense of hearing (Kranowitz, 1998).
Balance	To arrange the different elements of something so that they form a harmonious and well-proportioned whole. It is a state in which various elements form a satisfying and harmonious whole and nothing is out of proportion or unduly emphasized at the expense of the rest. (www,encarta.msn.com/encnet/features/dictionary/).
Behaviour	The physical manifestations of the neuro-chemical processes that originate from the survival brain and work up through the brain. Cultural interpretations and language attach to the neurochemical processes as they work their ways up through the brain (Damasio, 1999).
Body Language	The use of the body's movements or stance, gestures, facial expressions, and/or information from other sensory sources such as visual, olfactory (smell), tactile (touch), taste, vestibular (balance) and proprioceptive (body position) systems instead of or in addition to sounds, verbal language, and other forms of communication (Charles, 2008).
Causal Register	A language register is characterized by a 400 to 800--word vocabulary. Word choice is general and non-specific, sentence organization (syntax) is often incomplete, and slang is common. Non-verbal assists, body language, and gestures are heavily depended upon (Payne, 2003).
Central Auditory Processing	Central Auditory Processing is the filtering and separating of important auditory information, such as conversation, from irrelevant information, such as white noise. The received auditory input is kept in the short-term memory long enough to analyze, compare, manipulate, process, and respond to it. The person then puts behaviour and/or "language" to the response (Child Guidance Clinic, 2006).

Central Auditory Processing Disorder	CAPD is a malfunction, at some neural point, of central auditory processing process (Wicks-Nelson. & Israel, 2006).
Central Nervous System (CNS)	The brain and spinal cord (Hannaford, 1995).
Cognitive Behavioural Theory	Emphasizes the important role of thinking in how we feel and what we do. Therefore, when unwanted feelings and behaviours occur, it is important to identify the thinking that is causing the feelings / behaviours and to learn how to replace this thinking with thoughts that lead to reactions that are more desirable (http://www.nacbt.org/whatiscbt.htm).
Corpus Callosum 	The bridge that connects the two sides, or hemispheres of the brain and processes information between right brain and left brain. 4 billion messages per second across the 200 million or more nerve fibers of CC. Strongly implicated in language processing (Hannaford, 1995).
Criminal Records Check	A Criminal Record Check is a standard requirement of many employers or volunteer organizations who hire people to work/volunteer with a vulnerable population. The law enforcement agencies check the potential employee for any criminal record or for sexual offences for which a pardon was granted or issued. The "vulnerable sector" includes persons under 18 years of age, and/or persons who, due to age, disability or other circumstances, are dependent on others or are at a greater risk of harm than the general population from a person in a position of authority or trust (Manitoba, 2006).
Differed Control	A behaviour management strategy where an inanimate object, or the framework of the system, the policies, etc. is "telling" the student what to do. For example, "the Dept. of Ed says you have to do your math, I (the teacher) don't."
Emotional Language	Vocabulary that describes our emotional reaction to the behaviour rather than the observable actions of the behaviour (Charles, 2008a).
Emotions	Biologically determined processes of chemical and neural responses originating at the bottom of the brain, which come together to form a pattern. The role of emotions is to assist in the maintenance of life and homeostasis. As the responses move up the brain, language, cultural interpretations are attached (Damasio, 1999).

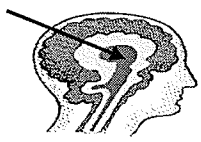
Emotionally/ Behaviourally Disordered (EBD)	A condition in which behavioural or emotional responses of an individual in school are so different from his/her generally accepted age-appropriate, ethnic, or cultural norms and results in significant impairment in his/her self-care, social relationships, school progress, classroom demeanor, work adjustment, or related functioning (Manitoba, 2006).
Empathy	The ability to identify with and understand somebody else's feelings or difficulties. Feeling *with* a person, and sharing their discomfort for a period of time (Hingsburger, 2000).
Expressive Language	A person's use of language to communicate (Wicks-Nelson. & Israel, 2006).
Explicit Memory	Conscious memory involving thought and cognition associated with an event (Bath, 2005).
Formal Register	The language standard of work and school. Formal register has a 1400-1600 word vocabulary, complete sentence organization (syntax) and word choice is specific. There are a high number of language abstractions (Payne, 2003).
Frontal Lobes 	The front part of the brain that is behind the forehead that controls: executive functions, impulse control, emotions, sequencing, concrete thinking, problem solving, judgment, regulates reactions to sensory information, and other processes. The frontal lobes are the translation center for sensations and feelings that come from the part of the brain that processes emotion (Bath, 2005).
Gustatory Sense	One of the seven sensory influences identified in the Sensory Integrative Theory (1972). It is the sense of taste (Kranowitz, 1998).
Holistic Model	A term that describes a model care that views physical, mental, and spiritual aspects of life as closely interconnected and balanced (Brendtro, Brokenleg & Van Bockern, 1990).
Homeostasis	The coordinated and largely automated physiological reactions required to maintain steady internal states in all living organisms (Kranowitz, 1998).

Hypothalamus 	A seahorse shaped structure in the midbrain that plays a vital role in the regulation certain autonomic activities and in storing events and experiences in memory (Hannaford, 1995).
Implicit Memory	Unconscious memory involving sensory sensations associated with an event (Bath, 2005).
Language	Language is a system of communication based on sounds that are combined to represent meaning ideas. Talk is the act of using language to interact with others in the environment and to express one's thoughts and experiences (Wicks-Nelson & Israel, 2006).
Language Registers	Linguistic categorization of language by how it is used in particular situations. Language registers can indicate socio-economic status, social context or culture, gender, educational status, geographical influences and age (Payne, 2003).
Linguistics	Linguistics is the scientific study that describes and explains human language, and how human beings come to know languages (Wicks-Nelson & Israel, 2006).
Logical Brain or Neocortex 	This is the last part of the brain to develop. It is not fully developed until the late teens or early twenties. It is the area of cognition, reasoning, language, decision making, executive functioning and other cognitive processes (MacLean, 1990).
Medical Model	This is an approach to illness or disabilities, which aims to find medical treatments for diagnosed symptoms and syndromes and to treat the human body as a very complex mechanism. This is a model by which illness or disability is the result of a physical condition, is intrinsic to the individual (it is part of that individual's own body), may reduce the individual's quality of life, and causes clear disadvantages to the individual (Foltz, 2006).
Midbrain or Emotional Brain 	This is wrapped around the survival brain and has a number of structures related to memory and emotional interpretations. This is also known as the limbic system, and is thought to be primarily responsible for emotions and the formation of long-term memories. It is designed to ensure one's survival at all costs. The flight/fright/freeze reactions originate here. The amygdala is one of the structures in this area (MacLean, 1990).

Neural	An adjective relating to nerve(s) or the nervous system (Damasio, 1999).
Neurons 	Neurons are electrically excitable cells in the nervous system that function to process and transmit information. They are the core components of the central and peripheral nervous systems (Damasio, 1999).
Neuro-chemicals or Neuro-transmitters 	Substances necessary for communication between brain cells. They are crucial roles in learning, updating memories. Alterations in neurotransmitters within the brain can alter behaviour and are implicated in neuropsychiatric disorders (Damasio, 1999).
Neuro Pathway	Pathway of brain cells that fire together, thus become "wired together" (LeDoux, 1996).
Neurologically Based Behaviour (NBB)	NBB is behaviour associated with neurological functioning that is somewhat different from the norm. It is characterized as being difficult, inconsistent, unusual, and unresponsive to normal discipline interventions (Charles, 2008a).
NBB Model of Support 	A model of support to assist students to develop self-regulation skills, emotional identification, appropriate language, and strategies to cope with and thrive in the environment. Unlike many other behaviour support models that are designed to target maladaptive behaviour from the top of the brain, (the Logical Brain or neocortex), the NBB Model of Support attempts to provide behaviour support from the middle of the brain, working up the brain, by adding language, social skills and socially appropriate behaviour (Cook, 2007).
Non-emotional Language	Language that describes the facts, actions, or circumstances. Situations are safe, or unsafe, legal or illegal, healthy or unhealthy, and appropriate or inappropriate (Charles, 2008a).
Olfactory Sense	One of the seven sensory influences identified in the Sensory Integrative Theory (1972). It is the sense of smell (Kranowitz, 1998).

Operant Conditioning	B.F. Skinner's theory of learning. Learning is a function of change in overt behaviour. Changes in behaviour are the result of a person's response to events (stimuli) that occur in the environment. A response produces a consequence. When a particular Stimulus-Response (S-R) pattern is reinforced (rewarded), the individual is conditioned to respond (Charles, 2008).
Peripheral Nervous System (PNS)	The part of the nervous system, and consists of the nerves and neurons that reside or extend outside the CNS (the brain and spinal cord) (Kranowitz, 1998).
Poverty	Poverty is a lack of opportunity and is measured by the extent to which an individual does without resources. Some resources are identified as being financial, emotional, cognitive, spiritual, and physical (Payne. 2003).
Pragmatics	Pragmatics is the connection between word meaning with the speaker's meaning and/or intent. The use of speech and gesture in a communicative way, considering social context (Wicks-Nelson & Israel, 2006).
Prefrontal Cortex 	A thin layer that covers approximately 1/3 of frontal lobe It is thought to be involved in planning complex cognitive behaviours and in the expression of personality and appropriate social behaviour (LeDoux, 1996).
Perspective	A range of vision. An evaluation of a situation or facts, especially from another point of view. A measured or objective assessment of a situation, giving all elements their comparative importance. (www,encarta.msn.com/encnet/features/dictionary/dictionaryhome).
Power	Energy to control or manipulate circumstances (Hingsburger, 2000).
Proprioceptive Sense	One of the seven sensory influences identified in the Sensory Integrative Theory (1972). This sense is also referred to as "The Position Sense." It is the unconscious awareness of sensations coming from joints, muscles, tendons and ligaments, providing information on the position of the body in relation to the space in the environment (Kranowitz, 1998).

Quiet Room	A coping tool; a small, safe room found in some classrooms, where students either are taken or go to on their own when their behaviour disturbs the learning environment of others. Quiet Rooms are often used with students who have sensory overload, and for teaching behaviour management, language, and self-regulation strategies (Kranowitz, 1998).
Rage	Rages are neurological events, which are physical responses to increase of tension and/or energy. Their purpose is to release, energy, tension, frustration and/or cope with sensory overload (Packer, 2004).
Receptive Language	The ability to understand how words express ideas and feelings (Wick-Nelson & Isreal, 2006).
Self-regulation	The ability to attain, maintain and change the state of CNS arousal appropriately for the task or situation (Kranowitz, 1998).
Sensory Friendly Refuge	A coping strategy, where individual students go to a predetermined safe area, alone, without fear of reproach, to be by themselves in order to calm themselves (Kranowitz, 1998).
Sensory Hypersensitivity	Oversensitivity to sensory stimuli characterized by anxiety, fearfulness, defiance, and oppositional behaviour (Kranowitz, 1998).
Sensory Hyposensitivity	Undersensitivity to sensory stimuli characterized by intense cravings for high-risk behaviours or withdrawn behaviour (Kranowitz, 1998).
Sensory Integration (SI)	Sensory integration is the brain's organization of the information received from the body's senses. The senses gather the information then transmit it to the brain. Once in the brain, the sensory information is processed and the body then responds to the information. The midbrain is strongly implicated in SI Our senses give us information about the physical condition of the body, the environment around us (Kranowitz, 1998).

Sensory Integration Dysfunction (SID)	Occurs when one or more of the senses misinterprets the sensory information, and the brain misdirects the body's reaction to the sensory information, and interferes with a person's ability to function in everyday life. (SID) is not lethal, BUT it can be uncomfortable, confusing and painful (Kranowitz, 1998).
Sensory Overload	A term used to describe inappropriate behaviour believed to be caused by a child's inability to cope with excess sensory stimuli and environmental influences (Kranowitz, 1998; Packer, 2004).
Separate and Supervise	A behaviour management strategy where student(s) is/are removed from an aggravating situation with the purpose of calming a tense or potentially tense situation. An example of this is removing a group of students from the classroom, when a peer is having a tantrum so that the difficult behaviour does not upset or emulated by others (Cook, 2007).
Strengths-based Perspective	An attitude, which views people through their abilities. Its purpose is to find practical ways to handle the presenting issues. A strengths-based perspective is rooted in the present, solution orientated, acknowledges small steps and victories as stepping stones for longer-term change. Each small step and victory is celebrated (Brendtro, Brokenleg & Van Bockern, 1990).
Survival Brain 	Also known as the reptilian brain. It is the area at the bottom of the brain and includes the brain stem. It connects the spinal cord to the cerebellum and its purpose is for physical survival (MacLean, 1990).
Sympathy	Feeling sorry *for* another because they are ill, injured, sad, or somehow incomplete or defective (Hingsburger, 2000).
Rancor	An emotionally charged communication conveying bitterness and malice (Brendtro, & Longhurst, 2005).
Restituion	A theory that states that by creating the conditions for people to fix their mistakes and they can return to the group strengthened. Together the learning of the two groups can be celebrated (Gossen, 2008).

Tactile Sense	Is one of the seven sensory influences identified in the Sensory Integrative Theory (1972). The tactile sense is the sense of touch. The tactile sense is either 1) defensive: as seen when you swat away an annoying bug, or 2) discriminatory: as seen when you take off a sweater when you feel warm (Kranowitz, 1998).
Tantrum	Tantrums are acting out behaviours that are goal-directed. Their purpose is to get something, or to get someone to do something (Packer, 2004).
Teratogens	Agents or substances that when pregnant women are exposed to or ingest, interrupt or alter the normal development of a fetus, which results in birth anomalies. Alcohol, chemicals, viruses, and ionizing radiation are examples of teratogens (Riley, Mattson, Li, Jacobson, Coles, Kodituwakku, Adnams, & Korkman, 2003).
Time–out Rooms	A discipline tool; a small room found in some classrooms, which are used to support classroom management philosophy that isolation and exclusion from the group can change the student's misbehaviour. Time out rooms are punitive, exclusionary and may exaggerate low self-esteem and emotional difficulties (.www.med.umich.edu/1libr/pa/pa_timeout1).
Triune Brain 	MacLean (1990) theory that human brain is composed of three interrelational functioning brains, each with their own primary tasks, which work together to provide a functioning whole. The three brains have been identified as the survival, brain, emotional brain and logical brain (MacLean, 1990).
Vestibular System	One of the seven sensory influences identified in the Sensory Integrative Theory (1972). It is the sense of balance and movement (Kranowitz, 1998).
Visual Sense	One of the seven sensory influences identified in the Sensory Integrative Theory (1972). It is the sense of sight (Kranowitz, 1998).

Appendix B

Interview Protocol

Pre-study Interview Guide for Semi-structured Interviews with Adult Participants:
(Expected Time: 15 to 60 minutes)

I will read the following information to each staff member before the interview.

Thank you for participating in the study of the NBB Model of Support. The following questions are designed to obtain specific information regarding the NBB Model of Support. Though I am very positive about the Model of Support and committed to it, I want you to be honest. It is especially important for me to be aware of and understand criticisms and possible difficulties with the Model of Support from your perspective. I need to know if you find it valuable and worth the time and energy. The Model of Support uses research from other disciplines, such as occupational therapy, neurosciences, medicine and others, then amalgamates it with research from more typically used disciplines such as sociology, education, and psychology. There has been little feedback on how this information from other disciplines to could better support students with severe behaviour problems and the adults providing educational service to them.

You do not have to answer any of the questions and you are free to withdraw at any time from the study. When I am transcribing our interview information, I will use a pseudonym for you and I will not identify you or any of the students. I will not use quotations or descriptions that may identify you. I promise that everything you say is accurate and will be held in confidence. I will be audio-taping this interview so that I can have an accurate record of your information, and I will take notes during our interview. These tapes and notes will be kept in a locked cabinet in my home and will be destroyed upon completion of this study. Do you have any questions or concerns?

1. Tell me about your background in working in the education system.
   - How long have you been working in the school system?
   - How long have you been working in this Program?
   - Where did you work before?
   - How long have you worked with at-risk children and youth?
   - In what capacity have you worked with at-risk children and youth?

2. With Bill 13, the Appropriate Education Act legislating the right of children in Manitoba to attend school, students with severe behaviour that can look violent or threatening to others, are mandated to be educated in the most enabling educational environment possible. Bill 13 also stipulates that schools who suspend an individual student more than twice in a school year are to be assessed as to the circumstances of the suspensions.

- Does this cause a problem in the existing school system, as you see it?
- How can this be addressed in the current system?
- Can the policy of integration work for every student?
- With regards to the current policy of integration, are teachers and other educational direct service providers adequately trained and do they have enough support to implement this policy?
    - If so, why. If not, why not?
    - How do you suggest this be addressed?

3. What do you think about the NBB Model of Support?
    - Are you familiar with some of the reasons behind the Model of Support?
    - Is the Model of Support different from what you have seen to date?

4. There are four quadrants to the Model of Support.
    - Had you thought of language, environment, sensory integration and attitude in this way before?
    - Do you think the influence of these quadrants affect the dynamics of the classroom?

5. Tell me about some of the practices you currently use in the classroom.
    - Is the Model of Support different than your usual practice?
        - If so, why. If not, why not?
    - Do you think the Model of Support will make a difference in your professional practice?

6. Much information we are getting from the neurosciences suggests that many of the usual responses to inappropriate behaviour can inflame a situation, rather than diffuse it.

    - Have you seen this?
    - Can you talk about it?
    - Do you think the Model of Support could offer alternatives?

7. Is there a place for the NBB Model of Support in the school system?
    - Does it fit?
    - If so, how. If not, why not?

8. Do you think this Model will change the way you practice? Please explain.

9. Working with at-risk students can take a toll on an educator. How do you take care of yourself?

10. Basic demographic information of Adult Participants

    - Gender: Male ( ) Female ( )

- Age:

21 - 30	( )	41 - 50	( )
31 - 40	( )	51 - 60	( )

- Years of professional experience in education:

1 – 5	( )	21 – 25	( )
6 – 10	( )	26 – 30	( )
11 – 15	( )	more than 30	( )
16 – 20	( )		

- Education:

High School (or equivalent) ( )
College Diploma (or equivalent) ( )
Bachelor Degree (B.A., B.Sc., etc.)( )
Bachelor of Education (B.Ed) ( )
Master Degree ( )
Other (please specify) ( )

- Primary professional role:

Classroom Teacher ( )
Resource Teacher ( )
Special Education Teacher ( )
Teaching Assistant ( )
Administrator ( )
Clinician ( )
Other (please specify) ( )

Pre-study Interview Guide for Semi-structured Interviews with Student Participants:
(Expected Time: 10 to 20 minutes)

I will read the following information to each student before the interview.

Thank you for participating in the study of the how the adults in Room 9 set the students up for success. In our classroom, we used what is called the NBB Model of Support. The following questions are designed to obtain specific information regarding the NBB Model of Support. Though I am very positive about the Model of Support and committed to it, I want you to be honest. It is especially important for me to be aware of and understand criticisms and possible difficulties with the Model of Support from your perspective. I need to know if you find it valuable and worth the time and energy. The Model of Support uses information from other people such as occupational therapists, scientists, doctors, clinicians, and others. I want to ask you how you feel about how we set you up for success, and ask you about how you learn.

You do not have to answer any of the questions and you can withdraw at any time from the study. When I am writing out our interview information, I will use a phony name for you and I will not identify you or anyone you talk about. I will not use quotations or descriptions that may identify you. I promise that everything you say will be held in confidence. I will be audio-taping this interview so that I can have an accurate record of your information, and I will take notes during our interview. These tapes and notes will be kept in a locked cabinet in my home and will be destroyed upon completion of this study. Do you have any questions?

1. Tell me about yourself.
   - How old are you?
   - How long have you been in this Program?
   - Where did you go to school before?

2. What do you think about the classroom and all the things, like the agenda to help keep you successful?

3. Are you learning new ways to act and new words to use when you can't or don't want to do things?

4. In our classroom, you have jobs to do everyday. These jobs are to help you learn and to help you with your schoolwork. Are there other ways you can get your jobs done?

5. Our classroom does not have a lot of stuff on the walls. Do you like that?

6. The adults in our classroom are always talking about using your words, using different words, and whispering your words when you are shouting. Have you learned to use different words and a quieter tone of voice?

7. Our classroom has a schedule so that everyone knows what to do next. The schedule has pictures and words on it (See Figure #1). Do you like the schedule?

8. Our classroom does not often suspend you or send you home. Do you like that? Does that help you learn better?

9. On days we have planned to go on fieldtrips, some of the students refuse to come to school. Have you ever refused to come to school because you did not want to go on a fieldtrip? Have you ever refused to come to school at other times? If so, why? If not, why not?

10. What would make our classroom better? What could we do to help you learn better?

Post-study Interview Guide for Semi-structured Interviews with Adult Participants:
(Expected Time: 15 to 60 minutes)

I will read the following information to each staff member before the interview.

Thank you for participating in the study of the NBB Model of Support. The following questions are designed to obtain specific information regarding the NBB Model of Support. Though I am very positive about the Model of Support and committed to it, I want you to be honest. It is especially important for me to be aware of and understand criticisms and possible difficulties with the Model of Support from your perspective. I need to know if you find it valuable and worth the time and energy. The Model of Support uses research from other disciplines, such as occupational therapy, neurosciences, medicine and others, then amalgamates it with research from more typically used disciplines such as sociology, education, and psychology. There has been little feedback on how this information from other disciplines to could better support students with severe behaviour problems and the adults providing educational service to them.

You do not have to answer any of the questions and you are free to withdraw at any time from the study. When I am transcribing our interview information, I will use a pseudonym for you and I will not identify you or any of the students. I will not use quotations or descriptions that may identify you. I promise that everything you say is accurate and will be held in confidence. I will be audio-taping this interview so that I can have an accurate record of your information, and I will take notes during our interview. These tapes and notes will be kept in a locked cabinet in my home and will be destroyed upon completion of this study. Do you have any questions or concerns?

1. What do you think about the NBB Model of Support?
   - Are you familiar with some of the reasons behind the Model of Support?
   - Is the Model of Support different from what you have seen to date?

2. The four quadrants to the Model of Support are language, environment, sensory integration and attitude. Have you have seen aspects of these quadrants in the classroom.
   - Had you thought of language, environment, sensory integration and attitude in this way before?
   - Have your perspectives on language, environment, sensory integration and attitude changed? If your perspectives have changed, how have changed?

3. Do you have any suggestions to improve how to better support students with severe behaviour in the classroom? In your opinion, is the NBB Model of Support complete?

4. Much information we are getting from the neurosciences suggests that many of the usual responses to inappropriate behaviour can inflame a situation, rather than diffuse it.
   - Have you seen this?
   - Can you talk about it?
   - Do you think the Model of Support offered alternatives?

5. Tell me about some of the practices you use in the classroom.
   - Has your practice changed since being introduced to the Model of Support?
   - If so, how. If not, why not?
   - Has the Model of Support made a difference in your professional practice?

6. Have you seen progress in the lives of the students in the classroom?
   - Can you give me some examples?

7. Have you changed as a professional?
   Explain.

8. Is there a place for the NBB Model of Support in the school system?
   - Does it fit?
   - If so, how. If not, why not?

Post-study Interview Guide for Semi-structured Interviews with Student Participants:
(Expected Time: 10 to 20 minutes)

I will read the following information to each student before the interview.

Thank you for participating in the study of the how the adults in Room 9 set the students up for success. In our classroom, we used what is called the NBB Model of Support. The following questions are designed to obtain specific information regarding the NBB Model of Support. Though I am very positive about the Model of Support and committed to it, I want you to be honest. It is especially important for me to be aware of and understand criticisms and possible difficulties with the Model of Support from your perspective. I need to know if you find it valuable and worth the time and energy. The Model of Support uses information from other people such as occupational therapists, scientists, doctors, clinicians, and others. I want to ask you how you feel about how we set you up for success, and ask you about how you learn.

You do not have to answer any of the questions and you can withdraw at any time from the study. When I am writing out our interview information, I will use a phony name for you and I will not identify you or anyone you talk about. I will not use quotations or descriptions that may identify you. I promise that everything you say will be held in confidence. I will be audio-taping this interview so that I can have an accurate record of your information, and I will take notes during our interview. These tapes and notes will be kept in a locked cabinet in my home and will be destroyed upon completion of this study. Do you have any questions?

1. In our classroom, the adults talk about "setting you up for success".
   - Do you remember being set up for success?
   - What do you think about being "set up for success"?

2. Are you learning new ways to act and new words to use when you can't or don't want to do things?

3. In our classrooms, you have jobs to do everyday. These jobs are to help you learn and to help you with your schoolwork. Are there other ways you can get your jobs done?

4. The adults in our classroom are always talking about using your words, using different words, and whispering your words when you are shouting. Have you learned to use different words and a softer tone of voice?

5. Are you learning other ways to get what you need? Are you learning new ways to be successful in school? If so, what are you learning?

6. Do you like school? Is this classroom different from other classrooms you have been in? Tell me about it.

7. What would make our classroom better? What could we do to help you learn better?

8. What is the best thing about this classroom?

9. What do you want to learn or do to in school?

Appendix C

Letters of Consent and Assent

Sample Letter of Consent for School Division and Superintendent

Date:

Dear WSD Ethics Review Administrator/WSD Superintendent,

I am an employee of the Winnipeg School Division and a graduate student in Educational Psychology at the University of Manitoba, working on my doctoral dissertation. I am researching the practically and usefulness of a model of support for students with neurologically based behaviour difficulties. Neurologically based behaviour difficulties (NBB) are a subcategory of the EBD category. NBB is behaviour associated with neurological functioning that is somewhat different from the norm. It is characterized as being difficult, unusual, inconsistent, and unresponsive to typical discipline interventions. Inconsistency and unpredictability are hallmarks of NBB. Severe behaviour is thought to be provoked by subconscious fear-based responses to the person's interpretations of their own environment. This severe behaviour is thought to arise before the language processing areas of the brain are engaged. As a result, typical language-based behavioural and other interventions tend to be ineffective because the neurological differences skew the reactions of students with NBB. I would like to investigate the NBB Model of Support.

The NBB Model of Support is a holistic and individualized behaviour support system designed to promote healthy, cognitively appropriate behaviour support, social skills, emotional recognition, and language skills. It has been designed to address the needs of a group of students for whom typical behaviour support and behavioural interventions do not work. The NBB Model has four dimensions: attitude, environment, language, and sensory integration. The NBB Model of Support is based on the following premises:

1. Behaviour is a self-protective response to how a person perceives his or her internal and external environments;
2. All behaviour makes perfect sense to the person at the time it is exhibited, considering the person's skill level, cognitive abilities, and prior experiences;
3. Displays of inappropriate behaviour can be excellent opportunities to teach socially appropriate behaviours and skills;
4. Exclusion by means of suspensions does not promote inclusive practices, fails to teach the appropriate skills, weakens the connection of the student and his or her family to school, and does not teach alternate, more socially acceptable methods of dealing with frustrations, confusion or midbrain (reptilian brain) responses to the student's environment;
5. Behaviour is reciprocal. Students and adults react and respond to how we perceive one another's behaviour;
6. As the adults in the system, it is our job to recognize triggers and situations in the environment, and use them to teach. We should not take displays of inappropriate behaviour personally.

I am writing to ask for your consent to contact the principal, and to collect data from five to nine staff members, and eight students with NBB. This study involves interviewing each staff member regarding alternate methods of behaviour support for students with NBB. I would also interview students with NBB, after obtaining the consent of their legal guardian and the student's assent, regarding how they interpret their school experiences and the behaviour support strategies employed by the Program. In addition, I want to gather data thorough classroom observations, artifact collection, and maintaining research journals. I plan to interview all participants at the beginning and end of the study. Since this study is designed within an action research format, I anticipate the duration to be three months, from November 2007 to February 2008. All interviews will be scheduled at mutually convenient times and will not interfere with the day-to-day operations of the classroom. Interviews will be transcribed verbatim after the interview. Participants interviewed will have access to the transcriptions of their interviews, so that their participation and input are as authentic as possible. Artifacts used in this study may include student work samples, incident reports, and student artwork.

As I gather the data, I may share this information with my doctoral studies committee to help me synthesize themes, but I will not divulge any identifying information. All notes, transcriptions of interviews and observations will be kept under lock and key and will be destroyed at the end of the study. All participants will receive a one to two page analysis of the study's findings. I will be happy to forward a copy of the analysis to you should you desire. I may publish all or parts of these research results in a professional journal at a later date.

Prior to any interviews or classroom observation, I will obtain the legal consent of the participants. I will obtain written consent from the legal guardian of any minor students, and in addition, signed assent from the students. I will ensure that all participants and their legal guardians understand that their involvement in this study is completely voluntary and that they are able to withdrawn from this study without penalty.

Included in this letter are a consent form and a assent form. These forms are for your reference and include the information the study participants will be receiving. Should you require more details regarding any aspect of this study, please do not hesitate to contact me at xxx-xxxx or by email at xxxxxxxx. You may also contact my faculty advisor, Dr. Rick Freeze at the University of Manitoba, at 474-6904. If you are willing to accept this invitation to participate in this study, please read and sign the enclosed consent form and return it to me in the self-addressed stamped envelope or send me the Winnipeg School Division approval form.

Thank you for your consideration,

Paula Cook

INFORMED CONSENT FORM –
School Division Ethics Administrator/Superintendent

Your signature on this form indicates that you have understood to your satisfaction, the information regarding participation of the Winnipeg School Division in my study. In no way does this waive your legal right nor release the researchers, sponsors or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. You can withdraw from the study by informing me verbally or in writing. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

Principle Researcher: Paula Cook
xxx-xxx-xxxx; email xxxxxxxxxx
Doctoral Advisor: Dr. Rick Freeze
204-474-6904

This research has been approved by the University of Manitoba Education/Nursing Research Ethics Board (ENREB). If you have any concerns or complaints regarding this project, you may contact the above named persons or the Human Ethics Secretariat at 204-474-7122, or email margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records.

School Division Name: **THE WINNIPEG SCHOOL DIVISION**

_____

WSD Ethics Administrator/ Superintendent DATE

_____

Researcher's Signature DATE

Sample Letter of Consent for School Principal

Date:

Dear Principal,

I am a graduate student in Educational Psychology at the University of Manitoba, working on my doctoral dissertation. I am researching the practically and usefulness of a model of support for students with neurologically based behaviour difficulties. Neurologically based behaviour difficulties (NBB) are a subcategory of the EBD category. NBB is behaviour associated with neurological functioning that is somewhat different from the norm. It is characterized as being difficult, unusual, inconsistent, and unresponsive to typical discipline interventions. Inconsistency and unpredictability are hallmarks of NBB. Severe behaviour is thought to be provoked by subconscious fear-based responses to the person's interpretations of their own environment. This severe behaviour is thought to arise before the language processing areas of the brain are engaged. As a result, typical language-based behavioural and other interventions tend to be ineffective because neurological differences skew the reactions of students with NBB. I would like to investigate the NBB Model of Support.

The NBB Model of Support is a holistic and individualized behaviour support system designed to promote healthy, cognitively appropriate behaviour support, social skills, emotional recognition, and language skills. It has been designed to address the needs of a group of students for whom typical behaviour support and behavioural interventions do not work. The NBB Model has four dimensions: attitude, environment, language, and sensory integration. The NBB Model of Support is based on the following premises:

1. Behaviour is a self-protective response to how a person perceives his or her internal and external environments;
2. All behaviour makes perfect sense to the person at the time it is exhibited, considering the person's skill level, cognitive abilities, and prior experiences;
3. Displays of inappropriate behaviour can be excellent opportunities to teach socially appropriate behaviours and skills;
4. Exclusion by means of suspensions does not promote inclusive practices, fails to teach the appropriate skills, weakens the connection of the student and his or her family to school, and does not teach alternate, more socially acceptable methods of dealing with frustrations, confusion or midbrain (reptilian brain) responses to the student's environment;
5. Behaviour is reciprocal. Students and adults react and respond to how we perceive one another's behaviour;

6. As the adults in the system, it is our job to recognize triggers and situations in the environment, and to use them to teach. We should not take displays of inappropriate behaviour personally.

I am writing to ask for your consent to contact and collect data from three educational assistants groups, the school clinicians, three teachers, and eight students with NBB. This study involves interviewing each staff member regarding alternate methods of behaviour support for students with NBB. I would also interview students with NBB, after obtaining the consent of their legal guardian and the student's assent, regarding how they interpret their school experiences and the behaviour support strategies employed by the Program. In addition, I want to gather data thorough classroom observations, artifact collection, and maintaining research journals. I plan to interview all participants at the beginning and end of the study. Since this study is designed within an action research format, I anticipate the duration to be three months, from November 2007 to February 2008. All interviews will be scheduled at mutually convenient times and will not interfere with the day-to-day operations of the classroom. Interviews will be transcribed verbatim after the interview. Participants interviewed will have access to the transcriptions of their interviews, so that their participation and input are as authentic as possible. Artifacts used in this study may include student work samples, incident reports, and student artwork.

As I gather the data, I may share this information with my doctoral studies committee to help me synthesize themes, but I will not divulge any identifying information. All notes, transcriptions of interviews and observations will be kept under lock and key and will be destroyed at the end of the study. All participants will receive a one to two page analysis of the study's findings. I will be happy to forward a copy of the analysis to you should you desire. I may publish all or parts of these research results in a professional journal at a later date.

Prior to any interviews or classroom observation, I will obtain the legal consent of the participants. I will obtain written consent from the legal guardian of any minor students, and in addition, signed assent from the students. I will ensure that all participants and their legal guardians understand that their involvement in this study is completely voluntary and that they are able to withdrawn from this study without penalty.

Included in this letter are a consent form and a assent form. These forms are for your reference and include the information the study participants will be receiving. Should you require more details regarding any aspect of this study, please do not hesitate to contact me at xxx-xxxx or by email at xxxxxxxx. You may also contact my faculty advisor, Dr. Rick Freeze at the University of Manitoba, at 474-6904. If you are willing to accept this invitation to participate in this study, please read and sign the enclosed consent form and return it to me in the self-addressed stamped envelope or send me the Winnipeg School Division approval form.

Thank you for your consideration,

Paula Cook

INFORMED CONSENT FORM – School Principal

Your signature on this form indicates that you have understood to your satisfaction, the information regarding participation of the Winnipeg School Division in my study. In no way does this waive your legal right nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. You can withdraw from the study by informing me verbally or in writing. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

Principle Researcher: Paula Cook
xxx-xxx-xxxx; email: xxxxxxxx

Doctoral Advisor: Dr. Rick Freeze
204-474-6904

This research has been approved by the University of Manitoba Education/Nursing Research Ethics Board (ENREB). If you have any concerns or complaints regarding this project, you may contact the above named persons or the Human Ethics Secretariat at 204-474-7122, or email margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records.

School Division Name: **THE WINNIPEG SCHOOL DIVISION**

_____

WSD Principal DATE

_____

Researcher's Signature DATE

Sample Letter of Consent for Colleagues

Date:

Dear Colleague,

I am doing a study the usefulness of the NBB Model of Support. The NBB Model of Support is a holistic and individualized behaviour support system designed to promote healthy, cognitively appropriate behaviour support, social skills, emotional recognition, and language skills. It has been designed to address the needs of a group of students for whom typical behaviour support and behavioural interventions do not work. There are four dimensions in the NBB Model: attitude, environment, language, and sensory integration. The NBB Model of Support is based on the following premises:

1. Behaviour is a self-protective response to how a person perceives his or her internal and external environments;
2. All behaviour makes perfect sense to the person at the time it is exhibited, considering the person's skill level, cognitive abilities, and prior experiences;
3. Displays of inappropriate behaviour can be excellent opportunities to teach socially appropriate behaviours and skills;
4. Exclusion by means of suspensions does not promote inclusive practices, fails to teach the appropriate skills, weakens the connection of the student and his or her family to school, and does not teach alternate, more socially acceptable methods of dealing with frustrations, confusion or midbrain (reptilian brain) responses to the student's environment;
5. Behaviour is reciprocal. Students and adults react and respond to how we perceive one another's behaviour;
6. As the adults in the system, it is our job to recognize triggers and situations in the environment and use them to teach. We should not take displays of inappropriate behaviour personally.

I am interested in researching the practically and usefulness of the NBB Model of Support. The purpose of this study is to gather data on the use of the NBB Model of Support in a variety of educational settings, and to explore the usability of the method and teachers' perceptions of the impact of the NBB Model of Support on students' self-efficacy, academic, and social development.

If you agree to participate in the study, it will involve a 15 to 45 minute interview in April 2008 and another in June 2008. The interview will be conducted in the classroom. Detailed notes about the interview and will be destroyed upon completion of the study. The notes will be kept in a secure location, under lock and key.

As well, data generated in the classroom with the NBB Model of Support process, such as incident reports of severe behaviour and the frequency of the use of physical non-violent crisis intervention (NVCI) will be analyzed, in addition to language improvements and academic competence.

Although I may share the notes with colleagues at the University of Manitoba, I assure you that I will not be using any identifying personal data or descriptors from which you could be identified. I will not be using any identifying information on any subsequent publications that may result from this study. At the conclusion of the study all notes and information will be destroyed.

This research has been approved by the Nursing/Education Research Ethics Board at the University of Manitoba. If you have any concerns or complaints about this project you may contact any of the following people from the University of Manitoba: Dr. Rick Freeze at (204) 474-6904, or the Human Ethics Secretariat, University of Manitoba, at (204) 474-7122. In addition, the Research and Development Department of the Winnipeg School Division has also approved this study. Mr. Douglas Edmonds from the Division may be reached at (204) 775-0231.

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you a basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors or involved institutions from their legal and professional responsibilities. You are free to withdraw from this study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The results of this study will be used for educational purposes only and I will gladly provide you with a summary of the findings at the completion of the study, if you so desire.

I thank you in advance for your consent to participate. Please sign the following consent form and return it to me at your earliest convenience.

Thank you,

Paula Cook

Informed Consent Form for Study Entitled "Investigating the Sustainability and Practicality of the NBB Model of Support"

Your signature on this form indicates that you have understood to your satisfaction, the information regarding participation of the Winnipeg School Division in my study. In no way does this waive your legal right nor release the researchers, sponsors or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. You can withdraw from the study by informing me verbally or in writing. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

Principle Researcher: Paula Cook
xxx-xxx-xxxx; email: xxxxxxxx
Doctoral Advisor: Dr. Rick Freeze
204-474-6904

This research has been approved by the University of Manitoba Education/Nursing Research Ethics Board (ENREB). If you have any concerns or complaints regarding this project, you may contact the above named persons or the Human Ethics Secretariat at 204-474-7122, or email margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records.

_____

WSD Staff Member DATE

_____

Researcher's Signature DATE

Sample Letter of Consent for Students' Legal Guardians

Date:_____

Dear _____ (legal guardian)

I am doing a study the usefulness of the NBB Model of Support. The NBB Model of Support is a holistic and individualized behaviour support system designed to promote healthy, cognitively appropriate behaviour support, social skills, emotional recognition, and language skills. It has been designed to address the needs of a group of students for whom typical behaviour support and behavioural interventions do not work. There are four dimensions in the NBB Model: attitude, environment, language, and sensory integration. The NBB Model of Support is based on the following premises:

1. Behaviour is a self-protective response to how a person perceives his or her internal and external environments;
2. All behaviour makes perfect sense to the person at the time it is exhibited, considering the person's skill level, cognitive abilities, and prior experiences;
3. Displays of inappropriate behaviour can be excellent opportunities to teach socially appropriate behaviours and skills;
4. Exclusion by means of suspensions does not promote inclusive practices, fails to teach the appropriate skills, weakens the connection of the student and his or her family to school and does not teach alternate, more socially acceptable methods of dealing with frustrations, confusion or midbrain (reptilian brain) responses to one's environment;
5. Behaviour is reciprocal. Students and adults react and respond to how we perceive one another's behaviour;
6. As the adults in the system, it is our job to recognize triggers and situations in the environment and use them to teach. We should not take displays of inappropriate behaviour personally.

I am also a graduate student in Educational Psychology at the University of Manitoba. I am interested in researching the practically and usefulness of the NBB Model of Support. The purpose of this study is to gather data on the use of the NBB Model of Support in a variety of educational settings, and to explore the usability of the method and teachers' perceptions of impact of the NBB Model of Support on students' self-efficacy, academic, and social development.

If you agree to allow your child/ward to participate in the study, it will involve a 15 to 45 minute interview in May 2008 and another in June 2008. The interview will be conducted in the classroom. Detailed notes about the interview will be kept in a secure location, under lock and key and will be destroyed upon completion of

the study. As well, data generated in the classroom with the NBB Model of Support process, such as incident reports of severe behaviour, and the frequency of the use of physical non-violent crisis intervention (NVCI) will be analyzed, in addition to language improvements and academic competence.

Although I may share the notes with colleagues at the University of Manitoba, I assure you that I will not be using any identifying personal data or descriptors from which you could be identified. I will not be using any identifying information on any subsequent publications that may result from this study. At the conclusion of the study all notes and information will be destroyed.

This research has been approved by the Nursing/Education Research Ethics Board at the University of Manitoba. If you have any concerns or complaints about this project you may contact any of the following people from the University of Manitoba: Dr. Rick Freeze at (204) 474-6904, or the Human Ethics Secretariat, University of Manitoba, at (204) 474-7122. In addition, the Research and Development Department of the Winnipeg School Division has also approved this study. Mr. Douglas Edmonds from the School Division may be reached at (204) 775- 0231.

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you a basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from this study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. The results of this study will be used for educational purposes only and I will gladly provide you with a summary of the findings at the completion of the study, if you so desire.

I thank you in advance for your consent to participate. Please sign the following consent form and return it to me at your earliest convenience.

Thank you,

Paula Cook

Informed Consent Form for Study Entitled "Investigating the Sustainability and Practicality of the NBB Model of Support"

Your signature on this form indicates that you have understood to your satisfaction, the information regarding participation of the Winnipeg School Division in my study. In no way does this waive your legal right nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. You can withdraw from the study by informing me verbally or in writing. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

Principle Researcher: Paula Cook
xxx-xxx-xxxx; email: xxxxxxxx

Doctoral Advisor: Dr. Rick Freeze
204-474-6904

This research has been approved by the University of Manitoba Education/Nursing Research Ethics Board (ENREB). If you have any concerns or complaints regarding this project, you may contact the above named persons or the Human Ethics Secretariat at 204-474-7122, or email margaret_bowman@umanitoba.ca A copy of this consent form has been given to you to keep for your records.

_____

Name of Legal Guardian (Please Print) Name of Participant

_____

Legal Guardian Signature DATE

_____

Researcher's Signature DATE

Do you want a copy of the final results? _____yes _____no

If yes, please include an address to which this can be sent.

_____

_____

Sample Letter of Consent (shortened version will be used in conjunction with previous form) for Students' Legal Guardians. It will be used if legal guardians have significant literacy issues.)

Date:

Dear _____ (legal guardian)

I am doing a study the usefulness of the NBB Model of Support. The NBB Model of Support is an individualized behaviour support system designed to promote appropriate behaviour for a group of students for whom typical behaviour support and behavioural interventions do not work. I want to see if the Model of Support works, and if it does, I want to share it with others educators so that others are able to see unusual behaviour in a more broad and holistic sense.

I need legal permission to use any insights or observations made from interactions with your child. If you agree to this, I will be:

1. talking to (interviewing) your child at the beginning and at the end of the study;
2. observing the interactions in the classroom; and
3. looking over and reading any documents, like schoolwork, artwork, and incident reports.

I will not use any identifying information regarding your child. When I write about students, I will give them fake names. All notes, and other papers I collect, will be destroyed after the information has been used. Your child and your family's confidentiality will be kept secure.

If you do not want your child to take part in the study, do not sign the form. It is NO Problem! If you decide after signing the form that you do not want your child to be included in the study, just let me know and he or she will be removed from the study. Don't worry if you decide not to take part in the study, your child will still get all the benefits, consistency, and nurturing from the School Program; I just won't write about them in my report.

This research project has been given approval fro the Winnipeg School Division, and the University of Manitoba. If you want any more information about this, please feel free to call anyone of the following people:

1. Doug Edmonds at the Winnipeg School Division: (204) 775-0231.
2. Dr. Rick Freeze at the University of Manitoba: (204) 474-6904
3. Ethics Department, University of Manitoba, (204) 474-7122
4. Luba Krosney, Principal at Lord Nelson School: (204) 586-9625
5. Paula Cook, Teacher and Researcher: (204) 586-1908

Signing this form indicates that you have understand the information regarding participation in the research project and agree to let your child participate.

The results of this study will be used for educational purposes only and I will gladly provide you with a summary of the findings when the study, if you so desire.

I thank you in advance for your consideration. Please check off the yes or no boxes on the following page and return it to me at your earliest convenience.

Thank you,

Paula Cook

Informed Consent Form for Study Entitled "Investigating the Sustainability and Practicality of the NBB Model of Support"

☐ I agree to let my child/ward participate in this research study. This involves:

1. two interviews,
2. looking at incident reports/work samples, and
3. observations.

I am aware that detailed notes of the interview will be made and all data will be stored under lock and key.

I understand that I am free to withdraw my child from this study at any time, and that he or she does not have to answer questions he or she does not want to.

☐ I do not agree and do not want my child/ward to be a part of this study

_____

Participant's (Student) Name – Please Print DATE of BIRTH

_____

Legal Guardian's Name – Please Print DATE

_____

Legal Guardian's Signature

Do you want a copy of the final results? _____yes _____no

If yes, please include an address to which this can be sent.

_____

_____

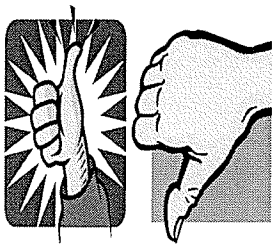
Sample Letter for Students' Assent

Assent Form for Paula's Project

I am asking you to be in a research study. Research is a way to see if something works. Research helps us learn new things.

Paula's Project is a research project. It is to see if the *NBB Model of Support* helps. I want to:

1. learn how to be a better teacher, and
2. teach other teachers how to teach better.



It is **your choice. You can say Yes or No.** And you can change your mind after answering Yes or No. Whatever you decide is OK. You will still be part of the Classroom Team!

Why are you being asked to be in this research study?

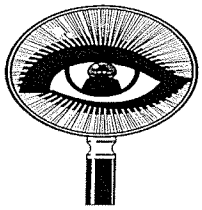
You are being asked to be in the study because you are a student in Room 9.

What is the study about?

I want to learn more about the best way to set up the classroom so that I can learn how to become a better teacher.

What will happen during this study?

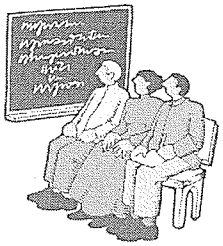
You will be asked about how things are going for you in school. We will meet twice, once in May and again in June.



I will also look at your schoolwork, art, and incident reports.

What if you don't want to be in this study?

You do not have to be in the study if you do not want to. You can say no or change your mind later and say no after you have said yes. You will still be part of the school team, but Paula won't be able to write down anything you say in her big paper. Paula and the other adults will still like you even if you are not in the study.

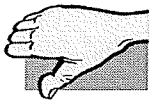


Who should you ask if you have any questions?

Ask any of the adults in the classroom.

Now that I have asked my questions and think I know about the study and what it means, here is what I decided:

_____ Yes, I'll be in the study.



_____ No, I do not want to be in the study.

_____ Maybe, I want more time to think about it.

I've been told about the research. I had a chance to ask questions. I know I can ask questions at any time. I want to be in the research.

Signing my name below means that I agree to take part in this research study.

_____

Name (Printed) Age Date

_____

Signature Date

_____

Signature of Witness Date

_____

Signature of Person Obtaining Consent Date

Appendix D

Approval Letters

UNIVERSITY OF MANITOBA | OFFICE OF RESEARCH SERVICES
Office of the Vice-President (Research)

CTC Building
208 - 194 Dafoe Road
Winnipeg, MB R3T 2N2
Fax (204) 269-7173
www.umanitoba.ca/research

APPROVAL CERTIFICATE

06 March 2008

TO: **Paula D. Cook** (Advisor R. Freeze)
Principal Investigator

FROM: **Stan Straw, Chair**
Education/Nursing Research Ethics Board (ENREB)

Re: **Protocol #E2008:008**
A Qualitative Action Research Study Investigating the Sustainability and Practicality of the Neurologically Based Behaviour Model of Support"

Please be advised that your above-referenced protocol has received human ethics approval by the **Education/Nursing Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement. This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- **if you have funds pending human ethics approval, the auditor requires that you submit a copy of this Approval Certificate to Kathryn Bartmanovich, Research Grants & Contract Services (fax 261-0325), including the Sponsor name, before your account can be opened.**

- **if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.**

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/ors/ethics/ors_ethics_human_REB_forms_guidelines.html) **in order to be in compliance with Tri-Council Guidelines.**

WINNIPEG SCHOOL DIVISION
INVESTING IN THE FUTURE

Research, Planning and Systems Management Dept.
1180 Notre Dame Avenue, Winnipeg, Manitoba R3E 0P2
Telephone: (204) 789-0474 Fax: (204) 775-1569
www.wsd1.org

Douglas R. Edmond
Director of Research, Planning and Systems Management

April 29, 2008

Paula D. Cook

Dear Ms. Cook:

Re: A Qualitative Action Research Study Investing the Sustainability and Practicality of the Neurologically Based Behaviour Model of Support

This is to inform you that the proper officers of The Winnipeg School Division have reviewed and approved in principle the above mentioned project with the following conditions:

- That prior permission would be required of all parents/guardians of the students to be involved in your study.
- That the data collection, including any interviews and/or assessments of students, would occur after school hours.

Please note that this approval in principle provides you with an opportunity to meet with the school administrator and that the school administrator may decline to participate or withdraw from the project at any time. In addition, student and staff participation is voluntary and parental / guardian permission must be obtained prior to collecting any of your data.

As a result of the Division's participation in the study a copy of your research reports should be submitted to this office at its completion. The division also reserves the right to request researchers to provide a presentation and/or workshop regarding the results of their study as required.

Please contact me if I can be of any further assistance to you in conducting your research.

Best regards,
per The Winnipeg School Division

D. R. Edmond
Chair, Research Advisory Committee

cc J. Schubert
D. Wilson
L. Krosney

DE/jf