

Creating Learning Environments for Disengaged Boys: Bridging the Gender Gap with

Universal Design for Learning

by

Theresa Glass

A Thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

in partial fulfilment of the requirements of the degree of

MASTER OF EDUCATION

Department of Educational Administration, Foundations and Psychology

University of Manitoba

Winnipeg

Copyright © 2013 by Theresa Glass

**Abstract**

Outcomes related to academic and social engagement for boys identified by their teachers as being disengaged and requiring tier two instructional supports were investigated when the Three Block Model of Universal Design for Learning (Katz, 2012a) was implemented. The mixed-methods study involved twelve grade 3 boys and their teachers in a rural school division in Manitoba, who were divided into treatment and control groups. Students were assessed pre and post intervention for the development of general self-esteem, academic self-esteem, liking of school, enjoyment of school, and engaged behaviour. Ecobehavioral measures of task assigned, groupings, and interactions were also taken. Data were collected and analyzed using both thematic analysis for qualitative data and a MANCOVA for quantitative analysis. The intervention significantly increased students' engaged behaviour, particularly active engagement and promoted social engagement through increased peer interactions, student autonomy, and inclusivity.

## Table of Contents

Abstract.....	02
Table of Contents.....	03
List of Tables.....	05
Acknowledgments.....	06
Dedication.....	07
Chapter 1 Introduction and Literature Review .....	08
Biology.....	09
The Senses.....	09
The Ear .....	10
The Eye.....	10
The Skin.....	11
Taste and Smell.....	11
Activity Levels.....	12
Gross Motor and Fine Motor Development.....	13
Language and Reading Skills.....	15
Spatial Abilities.....	18
Learning Modalities.....	19
Changes in Society.....	20
Changes in Family.....	21
Curricular Reasons.....	22
School Management.....	24
Classroom Management.....	25
The Intervention: Universal Design for Learning (UDL) .....	28
Multiple Intelligences.....	30
The Three Block Model of Universal Design for Learning .....	33
Respecting Diversity Program .....	36
Professional Development .....	37
Purpose of the Study.....	38
Research Questions.....	39
CHAPTER 2 Methods.....	40
Role of the Researcher.....	40
Setting.....	41
Participants.....	41
Intervention.....	43
Independent Variable.....	45
Dependent Variable.....	45
Procedure .....	45

Measurement.....	47
Quantitative.....	47
Qualitative.....	50
CHAPTER 3 Results and Discussion .....	52
Qualitative Student Data.....	52
Feeling Valued.....	53
School Practices and Values Not Always Consistent With UDL.....	54
Students More Reflective of Learning Styles.....	54
Quantitative Student Data .....	56
Scale Reliability .....	57
Qualitative Teacher Data .....	64
Challenged Teachers to Reflect on Existing Practices/ Pedagogy and Perceptions of Student Learning.....	65
Teacher Beliefs/Characteristics Support or Challenge UDL Implementation.....	67
UDL Model is Difficult.....	67
Administrator Support is Required.....	68
Conclusion.....	69
Strengths and Limitations .....	72
Implications.....	75
References.....	76
Appendix A RD Program.....	84
Appendix B Data Collection Sheet.....	92
Appendix C Student Questionnaire General Self-Esteem/Academic Self-Esteem..	93
Appendix D Student Questionnaire Liking of School/Enjoyment of School.....	94
Appendix E Interview Guide for Teachers.....	95
Appendix F Interview Guide for Boys.....	96
Appendix G Letter to Superintendent.....	97
Appendix H Letter to Teacher.....	100
Appendix I Letter to Parent.....	103
Appendix J Participant Assent Letter .....	106
Appendix K Letter to Principal .....	108

**List of Tables**

Table 1	Common Themes for Students.....	53
Table 2	Teacher Demographics.....	56
Table 3	Developmental Studies Centre Scales from Student Questionnaire, Child Development Project For Elementary School Students Grades 3 – 6.....	57
Table 4	Estimated Marginal Means for Social Emotional Learning.....	59
Table 5	Means for Student Engagement and Pedagogy in 28 Minute Intervals.....	60
Table 6	Tests of Between Subject Effects.....	64
Table 7	Common Themes for Teachers.....	65

### **Acknowledgements**

I would like to thank Dr. Jennifer Katz for her ongoing support both professionally and personally. I am touched by the caring and gentle nudges she has given me to complete this research project. I am also amazed at her relentless energy for doing what she is driven to do for all of her many students.

I would also like to thank my committee, Dr. Zana Lutfiyya, Dr. Rick Freeze and Dr. Karen Smith, for their time and dedication in helping me complete this project. The suggestions and support given were appreciated to help make my study the best I was able to do. In addition, thank you to Dr. Robert Renaud, who assisted in the statistical procedures and equations.

Many thanks to my colleagues who allowed me into their classrooms and freely shared their wonderful students with me.

To my family and friends, who supported me and believed in me while I worked through this process. To Arlene Beresford, my partner at work, who lifted my spirit when I was feeling lost. To my mother, who has shown me that hard work pays off. To Bob, my husband, who's patience and support I will be forever grateful for while I have followed my quest for education. Finally and most especially, thank you to my children, Kyle and Troy. They have both taught me the many lessons I have needed to learn and continue to teach me everyday. I love you all.

**Dedication**

To my father, Oakley Southern, who introduced me to the world of special education and encouraged me to see the very best in people. Thank you for showing so much interest in my work and believing in me right up to your final moments. I miss you, and I love you.

## Chapter 1

### Introduction and Literature Review

In recent years, many researchers have become interested in the growing statistics of underachievement in boys (Noble, Brown, & Murphy, 2001), and in fact, Bausch (2007) reports most recent findings suggest many boys do not view education highly. Coles and Hall (2001) state that, “a growing percentage of boys are ‘failing’ at school,” (Bausch, 2007, p. 200). One might ask why in most recent years, boys, who seemingly are otherwise well adjusted and typical, are falling behind their female counterparts (Bausch, 2007). Current research is suggesting there are many biological factors that may be influential (Bull, Davidson, & Nordmann, 2010). Although boys may supercede girls in tasks such as replication of spatiotemporal patterns and number sense, their performance in the area of language, which influences all school subject areas, may eventually hinder boys’ progress, self-esteem, and school engagement (Bull, et al., 2010).

Bausch (2007) clearly states,

“We should worry; we should worry about how the educational gender gap maintains its ever-widening gulf, . . . and we should worry that, six years into the new millennium, statistics examining the literacy practices of elementary aged boys from more than 30 years ago have remained static,” (p. 200).

We know from this research that boys are falling behind; therefore, changing the way we teach may be necessary to facilitate success for our male learners. Francis (2010) suggests boys and girls have preferences in curricular areas and although “girls have largely caught up with boys in terms of achievement at maths and science. . . conversely there is a profound gender gap favouring girls for literacy” (p. 325-326). Francis’ findings are concerning because literacy is critical in all subject areas, and thus may affect boys’ success in all subject areas. Noble, Brown and Murphy (2001) theorize that there are six possible factors that contribute to gender differences in learning and



literacy, and may help to explain boys lagging behind girls. These factors include biology, changes in society, changes in family, curricular reasons, school management and classroom management. Researchers have studied many of these factors in efforts to learn how to best address the needs of girls so that they will not fall behind in academic areas such as math and science (Annett, 1992; Louse, 2004; Mangahas, 2010); however, the gender differences in literacy learning may begin with biology.

### **Biology**

Williams, Barnett & Meck (1990) report that sexual hormones influence cognitive development. In addition, Annett (1992) states that girls have an early left hemisphere advantage, which suggests that they will have an advantage in language and verbal skills. Bull, Davidson & Nordmann (2010) suggest:

biological factors may . . . be influential; specifically, prenatal androgen exposure may influence brain lateralization and subsequent development of skills . . . [and therefore], males experiencing greater prenatal testosterone exposure are more likely than females to be right hemisphere dominant (p. 246).

This dominance suggests a male advantage in visual-spatial cognition and numerical ability, but conversely a less dominant left hemisphere may indicate weaker language/verbal skills (Bull, et al., 2010). Gurian and Stevens (2010) suggest that boys may consider themselves defective learners because classrooms tend not to use 'boy-friendly' strategies. In many classrooms, strategies used tend to be primarily verbal/linguistic, which are not considered effective strategies for right hemisphere dominant learners. Thus boys are struggling.

**The Senses.** James (2007) states that boys differ from girls in many ways in respect to the senses. For example, she states that "there are sex differences in sensory experience, and this makes a difference in the way that educational information is best presented to boys and to girls" (James,

2007, p. 18). Eliot (2010) supports James and suggests that boys and girls differ in many ways. Not only do they see, feel, hear, taste and smell things differently, but they may also have different interests. Looking at each aspect of the senses helps to illustrate why these differences should be noted in assisting boys with academic successes. In the next section the human senses of the ear, the eyes, the skin, taste and smell will be discussed.

***The Ear.*** The cochlea is the innermost part of the ear. The cochlea is where sounds become nerve signals sent to the brain (James, 2007; James, Boyd, Zimmerman, 2011). However, in boys, the cochlea is longer, which will result in a delayed cochlear response time (James, 2007; James et al., 2011). In addition, James (2007; James et al., 2011) suggests that girls' ears are more sensitive than boys to receive sound and boys have a greater tolerance for noise. As a result, these differences may appear in the classroom as the boy not paying attention because of delayed reaction times. As well, boys may not be bothered by classroom "buzz" in the same way that girls may be bothered by it. Eliot (2010) supports these findings and states, on average, girls show a better ability to sit still and pay attention in classroom environments (p. 32). The differences found in the way boys and girls process sound might address some of the findings these researchers are suggesting.

***The Eye.*** James (2007) states that the most noticeable structural difference between girls and boys' eyes is that the retina in boys is generally thicker than the retina in girls, which allows boys to have a higher visual acuity. More simply, the majority of males are able to see moving and stationary objects better than females. This strength clearly gives boys an advantage in physical activities. Therefore, areas such as physical education and electives such as technical education will be opportunities for boys to show excellence. However, even though their acuity may be superior, they have a higher incidence of colour blindness. Colour blindness is a genetic characteristic found on the X chromosome. Because males only have one X chromosome, they are more apt to have colour blindness (James, 2007; James et al., 2011). Although colour blindness may not seem overly

problematic, until a case of colour blindness is diagnosed, teaching a young boy his colours can be difficult and could be misunderstood as evidence of potential learning challenges rather than colour blindness.

***The Skin.*** When looking at the differences between boys and girls regarding skin sensitivity, there are subtle nuances that could create issues in the school setting. The effects of sensitivity differences may not be obvious in that skin sensitivity does not directly impact learning; but because a lower level of skin sensitivity can result in a higher pain threshold (James, 2007), some boys may appear to be more aggressive during physical play due to their lack of skin sensitivity. By seeming to be more aggressive, these boys may find themselves in jeopardy of getting into trouble for aggressive behaviour. In Western culture we put a great value on masculinity and the “ways in which Western culture constructs masculinity make the link between men and caring, contentious and difficult” (Hansen & Mulholland, 2005, p.120). Boys, who sometimes confuse masculinity with aggression, may believe they are playing when by school norms, their behaviour is defined as aggressive, given their lowered threshold for pain.

Eliot (2010) suggests culture is also a factor in the gender gap and that different cultural “norms” could affect behaviour within the classroom. In western culture, the intent is not to give boys permission to hurt anyone, but rather to be cognizant that this is an area where boys must be taught how to be less aggressive. This is, therefore, not only a biological issue, but a cultural issue that may be perpetuated by biology.

***Taste and Smell.*** Taste and smell are interactive in that smell helps to determine what one tastes (James, 2007; James et al., 2011). According to (James 2007; James et al., 2011), girls are more sensitive to taste and smell. For instance, boys do not necessarily react to the odour of their sneakers or their hockey bags in the same way girls might. James (2007) reports girls are more accurate in identifying certain tastes and smells. Although the differences in taste and smell may not

directly affect academics, they help to show that boys and girls do differ, and may affect social acceptance, especially when relating to female teachers or classmates. For example, boys may not be as quick to detect their own odour if they have been playing hard and perspiring and may offend some of their female counterparts.

### **Activity Levels**

Looking at the senses lays a foundation for determining biological differences between boys and girls; however, the varying levels of activity between boys and girls may be more critical, and should also be examined. Eliot (2010) claims “boys and girls differ in many ways, in physical activity levels and self-control” (p. 32). James (2007) suggests that the differences in activity levels can be concerning for teachers and parents.

Boys and girls have different activity levels, different muscular abilities, and different growth patterns. These differences have a tremendous impact on the classroom, especially since a child has no control over whether he is the biggest, the clumsiest, the smallest, the fastest, or even the most accurate (James, 2007, p. 49).

Starting around age 2 to 4 and lasting to at least age 10, Goran (1998) and Maccoby (1998) report that boys’ higher activity levels may be a direct result of their higher metabolism. James (2007) states that what is seen as activity may be confused and mislabelled as aggressive behaviour, which is also supported by Goran (1998) and Maccoby (1998). The activity levels, aggressive behaviour and competitive nature of boys, create problems for them in the classroom (James, 2007). Boys require opportunities to move simply because of their higher activity levels. Allowing opportunities for movement can help the brain focus and thereby improve learning (King, Gurian, Stevens, 2010). “A key for teachers of boys is learning to redirect the boundless enthusiasm that boys have for some parts of school and keep them on task for parts they like less” (James, 2007, p. 49). James (2007) goes on to say that as a teacher herself, she encouraged sport metaphors for teaching such as

“vocabulary relay races and math Olympics.” She also makes mention of using “gory” topics to help keep her less interested boys engaged in curricular topics. Although higher activity levels are more prevalent in boys, James (2007) cautions that we must be cognizant of the boys who do not display typical boy type characteristics and, therefore, we must be careful not to paint all boys, or girls, for that matter, with the same brush.

**Gross Motor and Fine Motor Development.** There also appear to be gender differences in the development of gross and fine motor skills. James (2007) reveals that boys are much more content to be running, throwing a ball or shovelling snow (gross motor skills), but they may struggle more with tying their shoelaces or perfecting writing skills, a result of immature fine motor skills. If boys are more reluctant or struggle to learn fine motor skills, classroom expectations could be challenging where all students are required to write. “If these tasks are taught too early, failure may lead to ridicule and reluctance to try again” (James, 2007, p. 52). “Handwriting becomes a major issue in elementary school because it involves several different skills. The child has to be dexterous enough to hold a pencil in an appropriate grip, and not all can do it correctly at first” (James, 2007, p. 55).

Stereotypical beliefs such as the idea that girls are better writers than boys and boys are messy and poor spellers contribute to boys and girls living up to the expectations set out for them (James, 2007). Teacher expectations can help and influence it in certain ways. Rubie-Davies (2006) states that, “students placed in the classrooms of teachers with high or low differentiating or high or low bias may become more or less vulnerable to self-fulfilling prophecy effects dependent on the classroom environment in which they find themselves” (p. 539). Gurian and Stevens (2010) suggest the “alienation of boys in our classrooms is not a one-teacher issue: it is a problem in education culture as a whole, and a problem for which there are specific solutions” (p. 2). Hawley and Reichert (2010) clearly state that boys perform better and are more motivated when lessons produce products,

are structured games, require vigorous motor activity, where boys assume a responsibility, address open and unsolved problems, incorporate teamwork and competition, focus on boys' personal realizations, and include introductions to dramatic novelties and surprises rather than those usually associated with pencil and paper activities. Traditionally, sedentary tasks are used in classrooms, but by using these types of differentiated instruction in the classroom, teachers will respect the gross motor and fine motor development of the boys in their classrooms. As well, not only will they be addressing the diversity in boys, they will be appreciating the diversity of all the students in their classrooms (Miranda, 2008). Many boys may just not be physically developmentally ready to do the pencil and paper tasks that often are seen within classrooms.

Similarly, growth patterns also may have an effect on an individual's performance in school. Eliot (2010) suggests there are global differences in physical maturation between boys and girls and these should be considered. Although boys and girls growth patterns are relatively equal as toddlers, as they get closer to puberty glaringly different growth patterns are quite evident. For example, James (2007) reports that on average girls reach their adult height at age 13 whereas, on average, boys do not reach their adult height until age 15 ½. Eliot (2010) states that the male brain, although larger, takes on average two years longer to mature than the female brain. James (2007) also suggests that puberty has tremendous impact on school success. She states that the group of students who do best in school are late-maturing girls and early-maturing boys because of their developmentally equal status, whereas early-maturing girls and late-maturing boys are miles apart in interests, abilities, and size. These variances in growth patterns can amplify the varying degree of challenge for gross motor tasks depending on the stage of maturity. In addition, self-consciousness, which may affect motivation may be apparent while body changes are occurring.

From the information presented by James (2007) and Eliot (2010), we know that boys mature physically more slowly than girls. They may be less dexterous which affects fine motor skills and

their lack of hearing response time may make them look as though they have attentional difficulties or a lack of focus.

According to Noble, et al. (2001) the development of brain research and how it has helped to understand the differences between boys and girls is noteworthy. “The finding that women tend to make greater use of both hemispheres, and the suggestion that the cortex connecting them is more robust and more frequently used in the female head is fascinating and possibly valuable information” (Noble, et al., 2001, p. 21). These differences need to be considered so that teachers are cognizant that gender differences play a role in the diverse make-up of their classrooms.

**Language and Reading Skills.** Annett (1992), James (2007), James, et al. (2011) point out glaring language differences that result in reading discrepancies between boys and girls. In fact, they consider girls to have “the female advantage” in verbal fluency.

Girls now outperform boys on almost every educational outcome. Especially in language areas, the gender differences are large and pervasive, and they are considered to be a major facet in the origin of gender differences in national exams, the widening of the gender gap in college attendance, and degree attainment rates (Van de gaer, Pustjens, Van Damme, De Munter 2009, p. 374).

Because girls verbal fluency tends to develop before boys’, they are able to play with language sooner than boys, (James, 2007), which could lead to their successes in language based subject areas. James (2007) suggests that

girls begin to move to the head of the class because of their ability to remember what the teacher says (a strength in receptive language), what they read (interest in teacher book selection), and events in class (social awareness and receptive language), [whereas] boys may be able to recall the facts of a story, but find it harder to describe the theme of a novel or the

social implications of the [story] (an indicator of their analytical thought process) (James, 2007, p. 64).

“Boys are better at remembering geography facts, facts in science, and facts in general knowledge, [and] this superiority is evident in both verbal and written tests of information” (James, 2007, p. 63). James (2007) states that she has interviewed boys who have told her they prefer math and science because they are fact based, and don’t understand what the teacher wants when it comes to English and social studies even when they describe themselves as students who like to read.

As stated earlier, girls tend to speak before boys and more clearly, but they also tend to speak more often, which results in more practise. More importantly, Kimura (2000) suggests the superior language skills will help girls become better readers, an edge they keep through high school. In addition to practised speaking skills, which assists with demonstration of understanding in classrooms and reading skills, Kimura (2000) suggests girls will, therefore, have a greater advantage in the areas of spelling and grammar and this advantage will follow them into adulthood.

The foundation for a lifelong habit of reading is laid in elementary school and the boys seem to be getting the idea that reading is primarily for girls (James, 2007, p. 66). Part of the problem in creating an environment for boys to see reading as a unisex activity may be that in the younger grades, many of the teachers are women and they naturally gravitate toward books that are more likely to appeal to girls rather than boys. Attempts to hire primary men teachers have been less than successful and we continue to have a lower population of men who teach elementary school to date (Szwed, 2010).

Another underlying factor in reading development may be phonological. “Boys do show [and experience] a lot of reading problems, which may stem from problems in phonological processing, [but] remember that boys do not hear as well as girls, and phonology deals with how sounds go together to make words” (James, 2007, p.71). Logan and Johnston (2010) state there are



two key skills necessary for reading comprehension; decoding (i.e. phonological) skills and linguistic comprehension. . . In order to have good reading comprehension, a child needs to have good word reading and decoding skills in order to read text, but also good linguistic comprehension in order to understand what they have read” (p. 181).

Keeping this in mind is crucial when providing appropriate programming for boys’ diverse needs. Even boys who love reading will quickly look for an alternative pastime if reading becomes too tedious and a chore. More importantly, boys may give up on reading, and ultimately school, if they cannot find ways to be successful; therefore, it becomes imperative that as educators, we consider their diverse needs in order for them to become successful readers. To examine the importance of recognizing these viewpoints, we only need to go so far as to look at the data collected by researchers regarding boys’ underachievement in curricular areas such as literacy and their lack of engagement in the school environment.

Although Smith and Wilhelm (2002) agree that boys are consistently falling behind their female cohorts in reading, they also suggest that boys are falling behind in the area of languages. This deficiency in the area of language is particularly disturbing when “language makes us specifically human” (Smith & Wilhelm, 2002, p. 3). In addition, Smith and Wilhelm (2002) state that there is a direct link between language skills and reading. The Department of Education in Manitoba (2004), the province where this study was conducted, tells us what the test scores indicate at the provincial, national and international levels. Manitoba Standards Tests show that in the Senior 4 English Language Arts Test in January 2004 and June 2004, girls out performed boys in reading and writing. In addition the Progress in International Reading Literacy Study (PIRLS), 2001, revealed that girls performed better than boys in all the thirty-four countries where it was administered. Canada was a participant in these tests, specifically Ontario and Quebec. The Programme for International Student Assessment (PISA), conducted in 2000, indicated girls

performed better than boys in the reading test in all countries including all Canadian provinces and the School Achievement Indicators Program (SAIP), 2002, showed in the writing assessment that teenage girls across Canada scored higher than teenage boys. The evidence of weaker reading and writing skills among boys is evident as results of these assessments indicate, which is concerning because poor literacy skills can have a profound effect in other subject areas (Department of Education, 2004). Clearly, these statistics are noteworthy and support the concerns regarding the importance of determining why boys are struggling with education today.

Manitoba Education (2004) goes on to suggest that although boys come to school with interest and excitement for learning, by the time they reach secondary school, nearly 50% refer to themselves as non-readers. Smith and Wilhelm (2002) identify “certain gender differences for these findings” (p. 10). Their findings would suggest that in terms of achievement, boys take longer to learn to read than do girls and they read less than girls. Girls tend to comprehend narrative texts and most expository texts significantly better than boys do. Boys tend to be better at information retrieval and work-related literacy tasks than girls are. In terms of attitude, boys declare themselves as “non-readers” much more frequently than girls and “spend much less time reading and express less enthusiasm for reading than girls” (p.10). Boys are much less interested in leisure reading and far more likely to read for utilitarian purposes than girls do.

In Smith and Wilhelm’s (2002) studies, they found that

“boys who are considered to be problem or highly reluctant readers in the classroom had very rich literate lives outside of school, and used various forms of literacy to pursue their interests and goals. . . . In essence, none of the boys in the study rejected literacy. What they did almost universally reject was ‘school literacy’” (p. 12).

***Spatial Abilities.*** Generally speaking, boys are better at performing tasks that require an aptitude for spatial abilities (Williams et al. 1990; Annett, 1992). There are many conflicting

theories as to whether these abilities are beneficial when dealing with math skills (James, 2007); however, what needs to be stated is that these superior spatial skills should be celebrated with growth opportunities in the classroom. Although a boy may do very well when working in a unit learning about levers and pulleys, he may want to continue to learn about the mechanics of the devices, when the teacher is ready to move on. Boys and other students with these types of interests may need more time to explore their interests, which curricular time constraints may not allow (James, 2007).

*Learning Modalities.* “Cognitive skills are the basis for many learning modalities. We know that some of the cognitive differences between boys and girls are based on biological/brain differences, but it is likely that experience polarizes these differences” (James, 2007, p. 79), and environmental factors solidify them (Eliot, 2010). James (2007) suggests that boys aspire to be like their older male counterparts. As the previously stated research would suggest, girls tend to be stronger linguistically, however, boys tend to be stronger in iconic learning (James, 2007). Therefore, using graphic organizers, pictures, tables etc. is more conducive to teaching boys. Being able to transfer information into a graphic is helpful for picturing the information at a later date (James, 2007). Guiran and Stevens (2010) agree stating “when teachers use pictures and graphics more often. . . boys write with more detail, retain more information and get better grades on written work across the curriculum” (p. 1).

James (2007) also states that boys are analytical thinkers whereas girls are more concerned with global learning. Boys have a tendency to look at the smaller details watching for more immediate results, whereas girls look at the whole picture keeping the end result in mind. This may be problematic for boys in that they can “get stuck” on the parts of the whole. They may find it more difficult to see the larger picture. This may be why boys tend to do better with quantitative type courses such as science and math and be challenged by qualitative courses such as English and social studies. Ali McClure (2008) helps to explain this phenomenon with the effects of testosterone on the

brain. She states, “as early as seven weeks of gestation the surge of testosterone begins to prepare the foetus to become a man and in order to do that, it invests its energy on the aspects of the brain most suited to helping this child grow into a well-equipped man. It (testosterone) gradually changes [the boy’s] brain, shrinking the communication centre, reducing the hearing cortex and growing more cells in the sex and aggression centres (Brizendine), [similar to] that of our ancestors of fifty thousand and more years ago” (McClure, 2008, p. 68).

### **Changes in Society**

“Currently, we are living through a time of rapid global socio-economic and cultural changes in a period of late capitalism” (Martino & Meyenn, 2001, p. 25). Noble, et al. (2001) would suggest that “the social upheavals of the last 25 years - feminist challenges, unemployment, the collapse of the male bread winner and the traditional father as head of the household, . . . have unsettled the traditional models of dominant. . . heterosexual masculinities” (p. 21). In addition, they state that employment is the most important change thus far. In the past, when boys were considered below average academic ability, there were many jobs that were still available to them, where they were able to make enough money to support and raise a family. These boys would find themselves employed in semi-skilled jobs such as factory workers, labourers, shipyards, steel mills, railways, etc. and they would be trained by the workers who were skilled and experienced. All these jobs were considered valuable employment (Noble, et al., 2001). Through the 70s and 80s came the surge of commercialism and the importance of social image. Many of these jobs have disappeared and been replaced by positions in the “knowledge economy”. These knew jobs require intellectual and social skills rather than physical prowess.

They are often seen as ‘women’s jobs’, . . . [which] demand the sort of skills women have, these same skills are ones which men tend to lack. The old certainties and expectations have

disappeared with the jobs, and this has had a dramatic effect upon boys and young men (Noble, et al., 2001, p. 22).

In some cases, women have naturally become the breadwinners of the family and long time unemployment has become the norm for men (Noble, et al., 2001). If our children are living within these mentioned situations, boys may not see their roles as being as significant in the family network or they may be forced to deal with stressful social and economic situations in the home. These can be contributing factors to some children's academic and school success.

In addition to the changes in society, the portrayal of men on television, in the movies and story books may play a role. Many of the men in television programs are represented as unintelligent, but cheerful losers, such as "*The Simpsons*" and "*Family Guy*" as well as story books such as "*The Bearenstein Bears*". Many do not work, whereas women are often described as the more intelligent with a successful career (Noble, et al., 2001). With so many of our children watching countless hours of television, they must receive conflicting messages about what acceptable expectations are for men.

### **Changes in Family**

Noble, et al. (2001) express concern about the amount of time men are actively involved with their families, and would suggest families are 'cash-rich' and 'time-poor'.

Boys need a father figure between 5 and 12 years old, after which an older male mentor becomes very important. If a child does not have any form of meaningful relationship with a male adult before the age of eleven, . . . what does that child think about men? (Noble, et al., 2001, p.23)

Family dynamics have changed and more children are growing up in single parent homes. Often the only parent is a mother, and fathers are left to build relationships with their children on weekends. Weaver-Hightower (2003) states that vital social issues including familial, economic, and divorce

and custody disputes may not model adult male involvement in education for a boy when the only representation he may have is from a father who engages in “play time” on the weekends. In addition, people in general are working longer work days; consequently, when parents come home from work fatigue sets the tone of the household harmony (Noble, et al. 2001).

“Surveys reveal that men are much less involved with the supervision of homework than women, tend to attend fewer parents’ evenings and hear their children read less than mothers” (Noble, et al., 2001, p.24). The researchers have also found that fathers tend to have higher expectations of their daughters than they do of their sons (Noble, et al., 2001). Bryce and Blown (2007) consider the expectations placed on children as extremely important because these expectations help to determine what they perceive as important, and therefore who they will become as adults. For example, girls are expected to be neater, cleaner, organized, good readers and well-behaved whereas boys are allowed to be sloppy, dirty, rebellious, immature, less focussed and more irresponsible (Bryce and Blown, 2007). These types of expectations help to shape and mould who they will be as adults. Noble, et al. (2001) also state that parents tend not to worry so much about their boys lack of academic skills until they reach high school. Unfortunately, by then, many boys are already feeling so poorly about their academic success; the damage may already be done (Brock, Nishida, Chiong, Grimm & Rimm-Kafamn, 2008).

### **Curricular Reasons**

Curricula have been changed by Manitoba Education, but in doing so, teachers have been stretched to learn new teaching strategies, assessment tools, and course objectives. Noble, et al. (2001) report that only 60-70 percent of students attending school have the ability range to perform well and yet all students are expected to follow the same curricula. Unfortunately, “when boys are bored, alienated or confused, [they] are less ready than girls to accept their lot, to knuckle down and work steadily towards their D, E, or F grade” (Noble, et al., 2001, p. 25). These types of

environments make it very difficult for the students to remain engaged in their studies. Teaching to children's interests and learning modality helps to keep them learning and engaged. Schlechty (2002) identifies five different types of engagement to watch for in the classroom. For any task a teacher gives a student, one of these will be observed:

1. authentic engagement is where the task, activity, or work the student is assigned or encouraged to undertake is associated with a result or outcome that has clear meaning and relatively immediate value to the student – for example, reading a book on a topic of personal interest to the student or to get access to information that the student needs to solve a problem of real interest to him or her,
2. ritual engagement is the immediate end of the assigned work has little or no inherent meaning or direct value to the student, but the student associates it with extrinsic outcomes and results that are of value – for example, reading a book in order to pass a test or to earn grades needed to be accepted at college,
3. passive compliance means the student is willing to expend whatever effort is needed to avoid negative consequences, although he or she sees little meaning in the tasks assigned or the consequences of doing those tasks,
4. retreatism is when the student is disengaged from the tasks, expends no energy in attempting to comply with the demands of the tasks, but does not act in ways that disrupts others and does not try to substitute other activities for the assigned task,
5. rebellion is when the student summarily refuses to do the task assigned, acts in ways that disrupt others, or attempts to substitute tasks and activities to which he or she is committed in lieu of those assigned or supported by the school and by the teacher (Schlechty, 2002, p. 1-2).

Engagement is one piece of achieving curricular outcomes. Without authentic engagement, optimal learning is not being achieved; however, students may look engaged even when they are completing

a task for an extrinsic outcome (Schlechty, 2002). “To be fair to both boys and girls, it is likely that a variety of assessment modes should be used so that all pupils have opportunities to produce their best performance” (Noble, et al., 2001, p. 26). These assessment modes come from exciting and engaging opportunities for ALL students to learn. We have learned from the researchers that retreatism and rebellion forms of engagement are much more commonly observed in the actions and activities of boys in particular (James, 2007; Noble, et al., 2001; Schlechty, 2002).

### **School Management**

School administrators have the daunting task of running schools, evaluating teachers, addressing behavioural concerns, dealing with budgets and budget constraints, and addressing parental concerns to mention a few of their many duties. In addition, new “trends” need constant assessment to determine if they fall in line with the school’s mission statement while staying within the guidelines of divisional and provincial mandates. These are incredible tasks, but the success of the school and the success of the students falls greatly upon the shoulders of administrative teams (Noble, et al., 2001). School initiatives need to be embraced by the entire school to ensure clarity for students and teachers. If a school wants to promote authentic engagement, the administration needs to assist in providing the professional development required to successfully complete this goal (Schlechty, 2002). Moreover, data collection is imperative to determine success in school goals (Scott 2001). With administrators being so stretched, the full implementation of school initiatives sometimes falls short and status quo ends up becoming the norm.

It is with a sense of guilt that we write that school managers have also a large measure of responsibility for boys’ under-achievement [because] teaching staff are already only too well aware that boys are an issue. [Those who are most often referred for resource support are the] boys who tend to be disruptive in lessons, boys who are more often excluded from school and boys who over-populate the least able sets (Noble, et al., 2001, p. 26, 33).



Therefore, Noble, et al. (2001) suggest the following reasons why schools should address boys' under-achievement:

1. the school will find it very difficult to achieve its long-term academic targets without effectively addressing boys' achievement, the girls alone cannot do it,
2. the under-achievement of boys significantly contributes to the under-achievement of some girls – through classroom disruption, anti-academic atmosphere and teacher-time diverted to the need to manage boys' behaviour,
3. under-achievement of any pupil is, in itself, a minor tragedy and worthy of action; under-achievement of a cohort of boys stores up problems for the future as they become frustrated and misanthropic members of society and the local community,
4. getting the school experience right for boys largely gets it right for all (and in so doing, identify the boys' diverse needs without sacrificing the diverse needs of the girls'), and
5. the experience of whole-school ownership, (i.e. having the whole school embrace making the necessary changes to accommodate boys), and management of change encourages reflective practice and increases confidence (p. 30).

To implement the most effective long-term, school-wide classroom changes, full support from administration teams must be apparent so teachers feel safe to apply new teaching practises. If administration support is not present, isolated teachers can make the changes, but when they leave the school, their methods of teaching also leaves the school. “The alienation of boys in our classrooms is not a one-teacher issue; it is a problem in education culture as a whole, and a problem for which there are specific solutions” (Gurian and Stevens, 2010, p. 2).

### **Classroom Management**

“Since Rosenthal and Jacobson (1968) published their . . . study, *Pygmalion in the Classroom*, educational scientists and social psychologists have been interested in the topic of

interpersonal expectations and just how expectancy effects can enlarge social inequalities” (van den Bergh, Denessen, Hornstra, Voeten, Holland 2010, p. 500).

“Researchers have examined two types of teacher expectation effects; the self-fulfilling prophecy effect in which an originally erroneous expectation leads to behaviour that causes the expectation to become true, and the sustaining expectation effect . . . [where] teachers expect students to sustain previously developed behaviour patterns, to the point that teachers take these behaviour patterns for granted and fail to see and capitalize on changes in student potential” (Good, 1987, p. 32).

Teachers are keenly aware there are two genders in their classrooms. They are cognizant that the boys in their class may be less motivated, less organized and less focused. “Although teacher expectations are often quite accurate . . . their influence may nevertheless be powerful under certain circumstances” (van den Bergh, et al., 2010, p. 500). Gurian and Stevens (2010) report that having boys in classrooms should provide value to the class, but often in schools teachers perseverate on the difficulties they are experiencing rather than understanding and teaching to the boys’ attributes, or “boy energy”. According to Noble et al. (2001) what they often fail to recognize is that they have many different types of learners within their classrooms, which is likely more accurate. “Stereotypes can be activated when a teacher perceives a student as belonging to a particular category, and these stereotypes can influence teacher judgements and behaviour” (van den Bergh, et al., 2010, p. 500).

“In five separate studies, Weinstein and colleagues. . . found that in comparison to low achievers, students felt that teachers interacted more positively with high-achieving students, that they had higher expectations of them, and that they offered them more leadership opportunities and more choice in their learning experiences. In contrast to the high achievers, students reported that teachers were more negative toward low achievers and directed their learning far more frequently” (Rubie-Davies, 2006, p. 538).

Unfortunately, some teachers become too concerned with boys' behaviour and less concerned with learning styles and teaching styles.

Teachers are granted a certain amount of autonomy in the classroom. There are definite benefits and consequences to this model. Autonomy allows teachers to bring all their creativity to class, but the unfortunate part is that their creativity may not be what is required to capture the interest of the class, and especially the boys. However there are ways to compensate by using teaching strategies such as inquiry based learning and differentiated instruction (Noble, et al., 2001). Also, collecting data to measure student engagement is a helpful way for teachers to determine whether they are addressing the needs of all students and not the select few who are interested in the same activities the teacher enjoys.

Miranda (2008) and Katz (2012a) suggest that true inclusion is far beyond students breathing the same air in the classroom, but rather is about all students being engaged and participating in classroom activities in interaction with each other. Manitoba Education's Appropriate Education Programming legislation (2006) states that,

inclusive schools provide a learning environment that is accessible to all students as a place to learn, grow, be accepted and enjoy all the benefits of citizenship. Inclusive schools should be aware of the concept of universal design . . . When applied to the field of education, the concept of universal design means that school communities, including teachers, develop plans for the full diversity of their student population. In education, universally designed schools, classrooms, curricula and materials provide all students with access to the resources they require, regardless of their diverse learning needs. In an inclusive school, all students are provided with the supports and opportunities they need to become participating students and members of their school communities (p. 4).

Thus, teachers need to learn how to promote inclusive classrooms and make the changes necessary to create positive classroom climates so they not only meet provincial standards, but also the needs of the students in their classrooms. Thus, a framework for broadening the instructional strategies and curricula being utilized in classrooms is needed.

### **The Intervention: Universal Design for Learning (UDL)**

The term “Universal Design” was coined by Ronald Mace (1998), an architect, who challenged traditional forms of architecture to better attend to the needs of all consumers rather than design for only the able bodied (Ostroff, Limont, & Hunter, 2002). In doing so, many people with physical disabilities benefited from the universal designs, but in addition to people with physical disabilities, many other people also benefited, but unintentionally. For example, mothers and fathers with baby strollers, skateboarders, seniors, cyclists, and so on have been able to enjoy the collapsed sides of side walks so that anything with wheels such as bikes and baby strollers are able to seamlessly move onto the sidewalk. Burgstahler (2007) states that Mace, Story and Mueller (1998) define Universal Design as, “the design of products and environments to be usable to the greatest extent possible by people of all ages and abilities” (Burgstahler, 2007, p.1).

There are seven principles for the universal design of products and environments.

They are as follows (1) equitable use, which means that the design is useful and marketable to people with diverse abilities; (2) there should be flexibility in use so the design will accommodate a wide range of individual preferences and abilities; (3) must be simple and intuitive so that the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level; (4) information must be perceptible so that the design communicates the necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities; (5) there should be tolerance for error in that the design minimizes hazards and the adverse consequences of accidental or

unintended actions; (6) must require low physical effort so that the design can be used efficiently and comfortably and with a minimum of fatigue; (7) appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility (Burgstahler, 2007, p. 1-2).

Educators have adopted these principles to “universally design curriculum for students with a wide range of abilities, disabilities, ethnic backgrounds, language skills, and learning styles [which allows for] multiple means of representation, expression, and engagement” (Burgstahler, 2008, p.2). In doing so, eight indicators have been identified by Burgstahler (2008) as important factors when preparing instruction for students. They are:

(1) within the class climate teachers should adopt practices that reflect high values with respect to both diversity and inclusiveness; (2) teachers must encourage regular and effective interactions between students and the instructor and ensure that communication methods are accessible to all participants; (3) physical environments and products must be such that facilities, activities, materials, and equipment are physically accessible to and usable by all students, and that all potential student characteristics are addressed in safety considerations; (4) multiple delivery methods [with consideration of the multiple intelligences] must be used making instructional methods accessible for all learners; (5) in the area of information resources and technology, course materials, notes, and other information resources must be engaging, flexible, and accessible for all students; (6) feedback must be provided on a regular basis; (7) assessment must be provided regularly by using multiple accessible methods and tools, while adjusting instruction accordingly; (8) plan for accommodations for students whose needs are not met by the instructional design (Burgstahler, 2008, p. 3).

Not since John Dewey urged educators in 1916 to teach “the whole child” has there been such a promising call to action [and now through universal design for learning] teachers' have the

challenge but also the tools to create classrooms that focus on students' social, ethical, and intellectual development (Silver, 2005, p. 163).

With respect to boys' diversity in learning and realizing they are not adequately competing with their female counterparts in language subjects, Silver (2005) suggests that cooperative learning opportunities, within universal design for learning (UDL) principles, may be the pedagogy to help boys become more motivated and engaged in their academic learning. They make this suggestion as it allows for teamwork, hands-on learning, and student autonomy. UDL is based in the cognitive neurosciences, and recognizes that the brain processes information in a variety of ways. It promotes teaching through "multiple means" (CAST, 2012), and therefore, when considering the principles of universal design for learning and boys challenges with language and literacy, UDL could be the bridge that provides the environment for boys to be much more successful in their academic and emotional growth. Burgstahler (2008) states that delivery methods must be accessible for all students, thus if boys are struggling with literacy, assignment options as well as diverse learning opportunities should be available to build the "ramps" necessary for boys to express their knowledge in curricular areas. Mendler (2000) suggests,

our professional responsibility requires that we teach all students and make our best effort to excite even those who seem not to care. If we give up on them, they will cause more problems and be more hurtful, dangerous, and costly (p. 4).

**Multiple Intelligences.** Within the guidelines of universal design for learning is the appreciation for diverse delivery methods. Like UDL, Gardner's (1983) theory of multiple intelligences is based on cognitive neuroscience, and directly supports the value of diversity and the need to respect each mode of intelligence. Therefore, one approach to the problem of boys underachievement may be what Gardner (1983) suggests and that is to examine the types of learners boys (and girls) are and support them by teaching to their learning styles – that is, to recognize the

biological differences between genders, and amongst individuals. Recognizing boys as diverse learners, similar to how we recognize multiple intelligences, must be promoted as the underpinning to ensure appropriate education for all learners (Gardner, 1983). In doing so, girls, too, would be well served. Gardner (1995) has identified eight different ways in which children process information. These are as follows:

1. Individuals who are visual/spatial learners learn best visually by organizing items spatially. They like to see what you are talking about in order to understand. They enjoy charts, graphs, maps, art, costumes, etc. Visual spatial intelligence is the capacity to think in images and pictures to visualize accurately and abstractly.
2. Verbal/linguistic learners learn best through language i.e. speaking, writing, reading and listening. These students have always been successful in traditional classrooms because their intelligence lends itself to traditional teaching. Verbal linguistic intelligence is the capacity to develop verbal skills and sensitivity to the sounds, meanings and rhythms of words.
3. Logical/mathematical learners learn best through numbers, reasoning and problem solving. This is the other half of the children who typically do well in traditional classrooms where teaching is logically sequenced and students are asked to conform. Logical mathematical intelligence is the ability to think conceptually and sequentially, and the ability to discern logical or numerical patterns.
4. People who are bodily/kinesthetic learners learn best through activity such as games, movement, hands-on tasks, and building. Body kinesthetic intelligence is the ability to control one's body movements and to handle objects skilfully. It involves the processing of tactile information.

5. Musical/rhythmic intelligence is when people learn best through songs, patterns, rhythms, instruments and musical expression. This intelligence is strongly linked to memory. Musical rhythmic intelligence is the ability to produce and appreciate rhythm, pitch and timber.
6. Intrapersonal intelligence describes people who have the capacity to be self-aware and be in tune with their inner feelings, values, beliefs and thinking processes. They tend to be more reserved, but are quite intuitive about what they learn and how it relates to themselves.
7. Interpersonal intelligence reflects individuals who are noticeably people oriented and outgoing. They do their best earning cooperatively in groups or with a partner. Interpersonal intelligence is the capacity to detect and respond appropriately to the moods, motivations and desires of others.
8. People who are naturalist learners prefer to learn through the outdoors, animals and field trips. More than this, these people love to pick up on subtle differences in meanings. The traditional classroom has not been accommodating to these children. Naturalist intelligence is the ability to recognize and categorize plants, animals and other objects in nature (Katz, 2008, p. 8-9).

“Recently, Gardner has pondered . . . the inclusion of a new intelligence, which he labelled existential” (McCoog, 2010, p.126). According to Gardner, these people are able to “ponder the most fundamental questions of existence. Why do we live? Why do we die? Where do we come from? What is going to happen to us” (McCoog, 2010, p. 126-127). Being familiar with the multiple intelligences helps to create an inclusive atmosphere within the guidelines of universal design for learning because a UDL framework appreciates and embraces the diversity of students,



and assignments are developed allowing for students to demonstrate their knowledge through their strengths. Keeping these factors in mind should not only benefit boys, but all learners.

### **The Three Block Model of Universal Design for Learning**

The Three Block Model of UDL proposed by Katz (2012a) is a comprehensive framework that includes Building Compassionate Learning Communities (Social and Emotional Learning and school and classroom climate), Inclusive Instructional Practice, and Systems and Structures that support inclusive learning communities. This framework meets all of the criteria set out by Burgstahler, as well as those found to be effective in inclusion literature (Katz, 2012b,c). The first block: Social and Emotional Learning, involves building compassionate learning communities, in which ALL students feel safe, valued, and have a sense of belonging. Katz has developed a program that promotes social emotional learning by respecting diversity through the appreciation of all the multiple intelligences. This program is called the Respecting Diversity Program (RD Program) (Katz, 2008). When looking at the RD program one can see how it falls within the guidelines of a UDL framework in that the RD Program not only promotes social emotional learning but also promotes respect for diversity providing opportunities for students to understand their learning profiles, and supporting multiple modes of presenting curricular outcomes (Katz & Porath, 2011). In Burgstahler's (2008) eight indicators that are imperative in building the learning "ramps" for UDL, she mentions the need to develop positive classroom climates and interactions between students and teachers. By using a program like the RD program, which focuses on developing a compassionate learning community and class climate, the celebration of diversity and inclusiveness are both promoted and encouraged. In addition to the nine lessons taught in the RD program, Katz (2008) also addresses class climate by the use of class meetings. When situations come up in the classroom and beyond, such as the playground and outside of school, where dissention is felt within the class community, a class meeting is held in order to problem solve. Students are given the opportunity to

make situations right again in a safe and non-threatening environment where everyone has a voice and is valued.

In the Inclusive Practice section of the Three Block Model (the second block), physical environments are designed so that students have accessibility to the activities presented in the classroom (Katz, 2012a). An assortment of differentiated instructional methods incorporating multiple intelligences is used to address the different learning modalities. Course materials are presented to address the needs of all students in the class. Teachers build rubrics that reflect multiple developmental levels of understanding, and can be used to assess multi-modal expressions of understandings. Regular feedback and assessment is ongoing so that teachers can assess for learning, as learning and when needed, conduct assessment/evaluation of learning. Students benefit from this feedback and information as well so they know what is expected of them resulting in everyone having the opportunity to work to their academic potential. Lastly, accommodations are embedded into the program so the learning supports are always available for students without being singled out negatively. Thus the model meets the instructional criteria laid out by Burgstahler (2008) as well.

Throughout the Instructional Practice of the UDL framework, the principle of designing for diverse learners is dealt with in a planning continuum where the teacher begins by looking at what is required to be taught in the school year, then combines subjects into integrated units, identifies essential understandings and questions, builds developmental and multi-modal rubrics, and lastly differentiates the lesson plans in an effort to integrate curriculum, focus on the depth and big ideas of the curriculum, and create inquiry opportunities for students. This synthesizes understanding by design (Wiggins & McTighe, 1998), differentiated instruction (Tomlinson & Imbeau, 2010), and assessment pedagogies for inclusive instruction in a logical, practical way (Katz, 2012a). By organizing the school year in this way, teachers are able to group topic areas and provide integrated themes. For example, one Social Studies unit may be on cultures and a Science unit may be on

habitats and communities. Grouped together, they may complement one another and an integrated theme may be simply “communities” where the various outcomes are addressed (James, 2007; Katz, 2008). Instruction then utilizes small group stations and centres based on multiple intelligences, so that essential understandings and skills are learned through multiple modalities and students are given the opportunity to demonstrate understanding in a variety of ways (Katz, 2012a). Students work together in teams to master concepts and skills, while developing interpersonal skills necessary for success in a global world.

A gradual release approach to teaching provides a three pronged approach whereby the teacher models, gives ample time for guided practise through a variety of learning opportunities, i.e. one to one, small group and full classroom study, and then allows for individual application, which has been shown to result in student independence (Katz, 2008). James (2007) has suggested boys need these various teaching and learning opportunities to practise what they know so they are more apt to be engaged in their learning. As well, the notion of choice whether it be in the topic of study when teaching a particular skill, or choice of delivery when teaching concepts is imperative in giving students a vested interest in their learning (Katz, 2008).

Katz (2012b) conducted a large study of 641 randomly selected students from five divisions in Manitoba. Two of the divisions were rural and three were urban. She used the Three Block Model of Universal Design for Learning as an intervention to measure student engagement in addition to tasks assigned, groupings, rates of interactions and with whom interactions took place (peer or adult). Katz’s results showed that in terms of overall engagement, student engagement was significantly different between the treatment and control groups (Katz, 2012b). Students in the treatment groups implementing the Three Block Model of UDL were significantly more actively engaged than the students in the control groups, in fact they spent more than double the amount of time actively engaged in learning than did students in typical classrooms. There were no differences

in outcomes by gender – thus the model appears to increase engagement for both boys and girls. For that reason, Katz’s Three Block Model of UDL framework, in conjunction with the RD program, was used in this study in the hope that boys and their diverse learning needs would benefit.

### **Respecting Diversity Program**

The goals of the [Respecting Diversity] program include developing specific components of self and social awareness and respect such as self-efficacy, goal setting, emotional resiliency, perspective taking, empathy, and valuing diversity, as well as the creation of a positive, inclusive classroom climate (Katz, 2008, p. 94).

Katz & Porath (2011) found that the RD program significantly improved classroom climate by measuring students’ academic engagement and sense of belonging in the class as well as promoted self-respect and appreciation for others. Traditional forms of curricula and teaching techniques that are primarily written and text based leave students whose learning strengths are not in this area at a definite educational disadvantage. This narrow focus in presenting information creates an environment where one learning style is favoured over another. Katz (2012b) suggests through her research that traditional teaching practises may set some students up for failure or at the very least a disadvantage. “Contemporary educational practices remain locked in to faulty ways of doing things, and as a result they continue to lock out many young people” (Tilleczek, et al., 2010 p. 6). Therefore, boys who do not fall within the learning expectations most reflected in schools will not have the opportunity to learn in their preferred learning styles. This situation may lead boys into opting out of school as they are inclined to feel less engaged, lack self-concept and feel like an outsider in their classroom and school communities. Being immersed in these environments may set some students up to think they are less able and less intelligent, resulting in feeling devalued. “Introducing the concept of Multiple Intelligences (MI), in which all learning profiles are recognized as equally valid and valuable, can help to create a climate of self acceptance and acceptance of others” (Katz, 2008,

p. 94). In the RD program, Katz (2008) has created and developed nine lessons to help nurture diverse learning environments. Katz states, “helping students understand their strengths and challenges, and the advantages of having diverse learners in a classroom community, helps students to develop [their respect for diversity]” (Katz, 2008 p. 2). Appendix A outlines the nine lessons she has developed to help teachers teach students how to appreciate and respect diversity.

These lessons focus on teaching students about the multiple intelligences, their own learning profiles and valuing the diversity of learning profiles within the classroom community (Katz, Porath, Bendu, & Epp, 2012). Following the introduction of the RD program, teaching through the Three Block Model of universal design for learning framework provides opportunities for students to be taught in one to one, small group and full class sessions that honour diverse learning profiles.

### **Professional Development**

“A school system’s significant asset is its teaching force. The most important investment a school board, administration, and parents can make in a school system is to ensure that teachers continue to learn” (Khush, 2010, p. 213). Barth (1999) and Falk (2001) report that providing professional development for teachers will help to improve the academic results of the students. In addition Sergiovanni, (1998) maintains that, if teachers are not prepared to promote their own inquiry based learning, students will not likely develop inquiry based learning and where there is little discussion and communication among teachers, there will be little discussion and communication among students. Teachers must model what they want their students to learn in order to help them learn the skills. Carr (2011) would suggest that for teachers to become effective teachers, they require more than simply classroom management skills and knowing the curriculum. Really skilled teachers know that some strategies may work in some classrooms with some students whereas other strategies will work with different classrooms and students. Carr (2011) believes that teachers need the time to reflect and deliberate to effectively master their skills. Because of these factors and the

research in this area, professional development was offered to the teachers in the study, keeping in mind, the importance in being supported while trying to understand and use a framework they were not familiar with.

### **Purpose of Study**

The purpose of this study was to find out if teaching within the principles and framework of universal design for learning can help to encourage boys to be active participants in their own learning, and to see if this process would help to keep them authentically engaged in curricula. In addition, by helping boys to maintain a healthy self-concept and feel a sense of belonging in their classrooms and schools, the study queried whether this would also promote engagement. Curwin (2006) states that “schools are for all children, not just good ones, children need to be part of something bigger than themselves and to get better at something, kids need the opportunity to do it” (p.11-12). Teaching through a UDL framework allows boys to show what they know through strategies that work for them. This is not at the expense of girls, but rather an opportunity to also enhance their learning experiences by providing opportunities to show what they know through their strengths. Therefore, teaching the principles of universal design for learning to teachers may make education more inviting, exciting and interesting to boys and girls alike. Curwin (2006) suggests that “when we make instruction more interesting, stimulating and involving for students by enriching instruction [by means of differentiated instruction] we increase motivation, [and this] means getting our students to want to do their work” (p. 4 - 5).

Boys are wonderful learners and can learn as well as girls. Through the disruptions they cause in classrooms and the low grades they get on report cards, through their glazed eyes and tapping feet, through their aggression or confusion on the playground, they are pleading: “We need a lot of help. We need teachers to understand how to teach us effectively, so that

we succeed. We need schools to harness and challenge our powerful energy. We need everyone to remember: we're not just 'kids' or 'students' – we are boys (Gurian and Stevens, 2010, p. 2).

### **Research Questions**

1. Can using the principles of universal design for learning to structure classroom management, instruction, and assessment help to facilitate authentic engagement in boys and encourage them to be motivated participants in their own learning?

Specifically:

1. If we provide professional development for teachers on how to create classrooms that respect diversity, and implement inclusive instructional practice, will boys enjoy their school experiences more resulting in improved academic engagement?
2. If boys are taught to respect diversity and learn to value their own intelligence, will their self-concept and sense of belonging improve?

## **Chapter 2**

### **Methods**

In this research study, I have used the framework of the Three Block Model of universal design for learning and the Respecting Diversity (RD) Program designed by Jennifer Katz (2008) to measure student engagement, student self concept and sense of belonging to school. In addition, I collected student and teacher perspectives on how they liked the UDL model in terms of the boys' reflection on self-concept and sense of belonging and the degree of difficulty in administering the model for the teachers. The purpose for this research was to discover whether boys would become more actively engaged in their academic studies, develop a stronger self concept and realize a sense of belonging once teacher professional development was provided to assist teachers to identify and better address the diverse needs of their male students through the RD Program and the Three Block Model of universal design for learning.

#### **Role of the Researcher**

Ideas are generated through emotional responses, which often deflect or defer skepticism (Parker & Hackett, 2012). Without emotion to spark creativity in science, recombination of ideas, and recruit membership to groups, many new discoveries would never happen. However, when emotion and passion are present in new discoveries and developing studies, critical thinkers will need to have a certain amount of skepticism to maintain the integrity of the study. Therefore, by conducting this study, which is driven through emotion and creativity and contains student-teacher contact, Anderson, Maier & Shepard (2012) and Parker et. al (2012) would suggest there is room for bias and consequently a need for skepticism without minimizing the intellectual ambition, or creating negative emotions.

For the purpose of this study, I was the researcher, and therefore, responsible for acquiring the knowledge to prepare the literature review. I planned and developed how the study would



unfold, looking through sceptical eyes to watch for possibilities of bias. I took measures to counteract such a possibility wherever possible. It was my responsibility to prepare an ethics proposal, and have it approved prior to conducting the study. In my role, I met with all of the significant parties eventually finishing with providing professional development for the participating teachers and collecting the data provided from the boys and teachers in the study by means of observations, questionnaires and interviews.

### **Setting**

This study was conducted in two Kindergarten to Grade 6 elementary schools within a suburban school division. It spans across 1760 square kilometres that contains both urban and rural schools within its boundaries. The division has approximately 5000 students and 15 schools. They have a diverse population which includes First Nations, Scottish, French Canadians and Ukrainian students to name a few. Not dissimilar to others, the mission statement of the division identifies that they strive to be progressive regarding inclusive education.

Although the division responds to the individual needs of students, and has many alternative programs designed to address students' needs both cognitively and behaviourally, provincial data has shown that boys continue to lag behind girls in academic achievement. Therefore, the research queried if inclusive classroom pedagogy using universal design for learning would assist in keeping young male students more authentically engaged, and develop self-concept and a greater sense of belonging in classrooms and schools.

### **Participants**

Once ethics approval was granted, I approached the superintendent of the school division to go over the literature review and the research proposal. Consent was received from the school division for participation in the research. Following this, principals from schools A, B and B1 were approached to request their consent for their grade three teachers to participate, and then teachers

were invited to volunteer for the study. Ten grade three boys from these teachers classrooms were selected from a K-6 elementary school (School A, treatment group). In addition, ten grade three boys were selected from two different K-6 elementary schools within the same division (School B and B1, control groups). The letters A, B, and B1 were chosen as non-descript titles so that I could keep track of the schools and which schools the students attended. These schools have very similar demographics in that they are all located in the same community. The students who attend these schools come with diverse backgrounds such as ethnicity that is primarily Aboriginal, Metis or European and range socioeconomically from poverty levels to very wealthy. Eight boys left the study, four from the treatment group and four from the control group. They left for the following reasons: two were placed into alternative programs, two moved, one had attendance issues, one received funding, two had parents who pulled them from the study. This resulted in six boys in school A, treatment group and six boys in schools B1 and B2, control group.

School A, the treatment group, had 136 students with an average class size of 19 students. In school A, there were two grade three classrooms, one grade 2-3 combination and one grade 3-4 combination. Criteria for student selection included boys who were not achieving their academic potential according to teacher and school based administrator reports and classroom based assessments, had received resource support, and did not meet the criteria for provincial special needs individualized funding. In Manitoba, school divisions receive additional funding dollars to help with individualized academic and behaviour programming for students who are deemed to have low incident type exceptionalities. If students meet the criteria set out by Manitoba Education, they are eligible for levels two and three funding. These criteria are identified by low incident and significant special needs and/or significant behaviour challenges (Manitoba Education, 2012). The boys selected for this research did not meet the criteria for additional provincial special needs funding; however, they did require additional resource support to help with their academic needs. Receiving

additional resource support was a clear indicator that regular classroom programming was not addressing their specific learning needs, and resulted in less academic success. These boys had participated, at some point in their school careers, in a pull out program for remedial intervention, which included some or all of the following: reading, writing, spelling, math, social skill building, and/or speech and language and sensory programs such as “Alert” and “Writing Without Tears”. On average, these programs pulled the students out of class three times per 6 day cycle for 30-40 minute sessions. Once the students were selected, letters were sent home by their classroom teachers to their parents asking if they would be interested in having their sons participate in the study.

The six grade three boys selected from School B and B1 who formed the control group had similar profiles to the boys selected from School A. These boys were considered resource students by classroom and resource teachers in collaboration with school administration. Again, these were boys who did not meet the criteria for provincial funding. These boys required additional support from the resource department and had, at some point in their school careers, been involved in pull out intervention programs similar to the School A boys. Once again, the boys from Schools B and B1 who met the criteria to participate in the research did not have medical diagnosis or receive additional special needs funding through the provincial government. All the boys from Schools B and B1 received consent forms to be signed by parents.

### **The Intervention**

The intervention for this study was two fold. The first part was introducing and providing professional development to the teachers in the treatment group on the Respecting Diversity Program, which is the underpinnings of block one of the Three Block Model of Universal Design for learning, and the second part was the introduction of the instructional practice framework, which is block two of the Three Block Model of Universal Design for Learning (Katz, 2012a).

The Respecting Diversity Program is a series of nine lessons (Appendix A), which helps students to demystify their own learning challenges while appreciating their strengths within their classroom communities. In the first four lessons of the RD program, Katz (2012a) introduces the multiple intelligences, vocabulary that is relevant, and the social concept that we all have a learning preference. The students learned that, not only do they have learning strengths, but also other intelligences that may need developing. Possible career options were explored to demonstrate hope for students who required self-management skills in terms of motivation. By exploring the possible careers and even other “famous” people with similar learning profiles to them, students learned that regardless of one’s academic preferences or difficulties, there are opportunities for success and satisfaction.

Lessons five to nine built on the foundations of the first four lessons. Students were taught how interdependence is necessary to have a world function and in doing so, valuing diversity begins to emerge. Positive frameworks were developed to promote and manage cooperative relationships, which included communication and social engagement. Finally, students explored what it would be like to have a significant disability and role played the experience to see how it would be living in the shoes of a person with a disability. Social awareness and empathy were a focus in the hope that students would learn to respect the diversity of others.

In addition to the RD program, professional development on the instructional practice framework of the Three Block Model of UDL framework was provided to the teachers in the treatment group. Through Katz’s (2012a) planning for diversity continuum, teachers were taught “a funnel” approach, where they looked through the bigger lens, (i.e. the year planning, and funnel down toward unit planning and eventually lesson planning). Working through an integrated curriculum is thought to assist in teaching curricular outcomes. The teachers were taught that it is important to determine essential understandings and how to best present the information, provide

multiple options for response, and assess the students, while keeping in mind the multiple intelligences. The study took six months to complete beginning in November 2011 to May 2012.

**Independent Variable.** The independent variable in this study was the professional development provided to the teachers in the Three Block Model of UDL to change classroom pedagogy.

**Dependent Variables.** The dependent variables in the study were the boys' engagement in learning activities, self-concept and sense of belonging to the classroom community.

### **Procedure**

I used a mixed-method approach to assess perspectives on the Three Block Model of Universal Design for Learning and measure engagement, self-concept and sense of belonging from a group of twelve boys whose classroom teachers described them as unmotivated, disengaged and disruptive in the class. I wanted to determine whether a change in classroom pedagogy by introducing the Three Block Model of Universal Design for Learning and the Respecting Diversity program would result in changes to the boys' engagement, self-concept, and sense of belonging. Professional development was provided for the teachers in School A in these two areas as well as support from the researcher to the treatment classes in the form of co-teaching.

I initially conducted an assessment to develop a base line rating of engagement, self-concept, and sense of belonging for the boys participating in the study by using Likert-type scales created by the Developmental Study Center (2005), and time sampling observations. After the base line was established, I provided professional development for the participating teachers within the treatment school. The professional development was in the form of working through the *Respecting Diversity Program Manual* (2008) and the framework for the planning continuum developed by Katz (2012a) over the course of a one day professional development session at the school. I facilitated while the teachers developed integrated curricular themes; however, I also had units that were already

prepared, if the teachers chose to use them. Both teachers took the units and integrated materials they already had to make the units more applicable for their students and classrooms.

Once the teachers received the professional development provided by me and they taught the nine lessons on the Respecting Diversity Program, I re-measured the engagement levels, self-concept scores and sense of belonging scores of the selected students on two separate occasions. The first was right after the RD program was completed, for the treatment group only, and the final collection of data was after the instructional unit/study was completed for both the treatment group and control group. The reason the control group was excluded in the second collection of data was because they had not received the RD program as an intervention. In retrospect, I realize that both groups should have been included in this second collection.

Following quantitative data collection, qualitative data was collected by interviews conducted with the participating teachers and boys. Students were asked (Appendix F) three questions about what school is like for them, what type of advice they could give their teachers or me about learning through a UDL framework and the RD Program, and what types of activities they did while working on the unit they just completed, which was a unit taught through a UDL framework. Each interview took approximately twenty minutes. The interview with the teachers (Appendix E) had five questions, which asked about their years of teaching and level of education, what they did with their class in respect to UDL and how the unit might have had an impact on their students and them. Each interview took approximately thirty minutes. The interviews were to be recorded and transcribed for later analysis; however, the recorder battery died just prior to the interviews and I was limited to only taking notes. Not having access to my tape recorder made it very difficult to write everything down that the boys and teachers were telling me. However, I do know shorthand and used it when necessary to keep up with what they were telling me. Therefore, verbatim quotes were taken for both teachers and students as best as possible, under the circumstances. The Likert-type scale

surveys, interview notes and observation forms were kept in a locked cabinet in my office and only I have access to it. I then transported the files to my home and kept them in a locked desk. These data results were also shared with my faculty advisor and with graduate research assistants for analysis of themes.

In order to ensure reliability, multiple coders were used to conduct a thematic analysis of the transcripts. I asked the graduate students in my cohort to code the transcripts looking for emergent themes. Emergent themes were then shared, and synthesized through discussion. This was intended to provide triangulation of themes, and establish trustworthiness.

### **Measurement**

Both quantitative and qualitative data were collected through surveys, observations, and interviews from both teachers and boys participating in the study.

**Quantitative Measures.** Five levels of engagement: authentic, ritual, passive, retreatism and rebellion have been identified by Schlechty (2002); however, retreatism, passive compliance, and ritual engagement are not in themselves indicators of pathology in the classroom. Furthermore, a student who is ritually engaged or passively compliant or in a retreatist mode is not necessarily ‘misbehaving.’ In fact, it is not at all clear that anyone could tolerate – emotionally and physically- being engaged authentically all the time (Schlechty, 2002). Because it may be so difficult, and perhaps impractical, to differentiate between these three types of engagement through observation, in this study I combined the three and simply called it ‘passive engagement’. Therefore three forms of engagement were measured: authentic engagement, passive engagement, and rebellion. These were defined in the following way:

**Authentic Engagement** – The student is actively involved in the task assigned. This means the students were participating in the task assigned by the teacher.

Passive Engagement – The student was watching or listening to the teacher or peer group without demonstrating that he was participating in the activity. For example, if the task was to build a tower, the student may have been standing close by and watching, but not actually building the tower.

Rebellion – The student was not participating, or watching or listening to the teacher or his peer group, or looked for obvious ways to have himself removed from the task or classroom.

In the study, I used methods of ecobehavioral assessment, which is a method used for studying effective instructional contexts in complex classroom environments (Greenwood, Carta, Kamps, & Areaga-Mayer, 1990; Logan & Malone, 1998). Ecobehavioral assessment was designed to reveal interrelationships between environmental variables (e.g., instructional activities and groupings, teacher behaviors, etc.) and child behavior (Greenwood, Schulte, Kohler, Dinwiddie, & Carta, 1986). The rationale for this type of assessment was that student achievement and engagement (both social and academic) within an educational program is determined for the most part by the interactions students have with their classroom environments and the people in these environments (Logan et al., 1997). MS-CISSAR (Greenwood, Carta, Kamps, Terry, & Delquadri, 1994) is a software package that was developed and validated as an instrument for ecobehavioral assessment in mainstream classrooms. It uses a time sampling procedure to enter information about learning environments, and student behaviors. The items in MS-CISSAR include ecological factors such as the type of activity in which students engage, and the types of classroom instructional groupings, and student behaviors such as engagement and the interaction patterns of the student. Although these principles were used, I collected the data manually in the classroom without the use of the software package (see Appendix B).

Hair, Anderson, Tatham and Black (1998) suggest,



reliability is the degree to which the observed variable measures the true value and is error free; thus, it is the opposite of measurement error. If the same measure is asked repeatedly, for example, more reliable measures will show greater consistency than less reliable measures (p. 9).

Therefore, I set up three separate data collections times during core subjects using the same measurement tools, that is, Likert-type scales that would measure belonging and self esteem in addition to a data collection observation procedure measuring engagement.

Before any professional development was given to the treatment group, observations were conducted using a one minute time sampling procedure to collect data on the treatment and control group. Each data collection observation was divided into 28 minute intervals. I noted the students' engagement, the task they had been asked to do, the type of grouping they were in and whether they were interacting with peers or teacher. Baseline measures of engagement were determined, and additional measures were collected to assess implementation fidelity by determining if the teacher used the principles of UDL in his/her teaching methods. Watching to see if the students were continuously doing paper/pencil tasks, and whether the teacher was using a lecture style approach or collaborative learning opportunities, helped to determine if an appreciation for UDL was being considered. One month after professional development was given to the treatment group teachers on the RD Program and the Three Block Model and the teachers were able to complete the RD Program, I revisited the treatment group only to collect additional data on the students. Once again, student engagement and teaching pedagogy were measured. After a three month period, which was when the classroom UDL units were completed, I once again visited the treatment and control classrooms to collect the final data on the same collection forms. Measuring these forms of engagement helped me to determine whether a change in pedagogy helped to increase academic engagement. To ensure reliability, the baseline was taken during one of the core subjects where traditional teaching

techniques can be measured. Each measurement set thereafter was taken during the same core subject area and also at the same time of day, if possible.

In addition to me visiting the classroom to collect data through observation, each boy filled out a self-assessment/self-concept questionnaire, (see Appendix C) provided by the Developmental Studies Center (2005). These scales are student questionnaires developed for elementary students in grades 3 to 6. I read the questions to the boys to prevent measurement error due to students having difficulty with reading. Two scales were chosen. The General Self-Esteem scale measures students' general feelings about themselves and had an internal consistency reliability of .80 with 4 Likert-type items with a range of answers from 1 = Disagree a lot to 5 = Agree a lot. The second scale was the Academic Self-Esteem scale, which measured students' assessment of their own academic skills and performance with an internal consistency reliability that equalled .74 with 5 Likert-type items.

Range of answers are from 1 = Disagree a lot to 5 = Agree a lot.

To measure sense of belonging, an additional two scales from the Developmental Studies Center (2005) for elementary school students grades 3 to 6 were used. Again, I read the questions to the boys to ensure understanding in case of reading difficulties. The Liking of School scale measured the students' enjoyment of and feelings of attachment to school. It had an internal consistency reliability of .81 on a 5 Likert-type item with a range of choice from 1 = Disagree a lot to 5 = Agree a lot. Also, the Enjoyment of School scale measures students' positive feeling about being in the class. Internal consistency reliability equalled .66 with 4 Likert-type items and a range of answers from 1 = Disagree a lot to 5 = Agree a lot. (See Appendix D)

**Qualitative Data.** There are two subgroups in the study: (1) the teachers and (2) the boys. The data received from the voice of these two subgroups were imperative in analyzing the results because even though we may think we understand how they feel, without their voice to confirm, we only have information based on the researcher's beliefs.

A series of interview questions (Appendix E) had been prepared for the teachers to help them describe their experiences, concerns and insight on the RD program lessons and the Three Block Model of universal design for learning. I interviewed each teacher in the treatment group to ask the questions, record responses and determine clarity.

The students were interviewed one-to-one, face-to-face by me (Appendix F) to determine whether they felt their classroom experiences had been altered after their teachers participated in the professional development provided on the RD program and UDL framework. The responses from the boys were extremely important because their voices helped to determine whether there was an increase in engagement, self-concept and sense of belonging in the classroom communities. Because they were able to articulate their experiences, educators will benefit from their voices and the study may help to shape future research and study. The boys were also questioned as to whether they felt they had benefitted from learning about their own learning styles in that they were now aware of their intelligence strengths, whether that be visual/spatial, verbal/linguistic, logical/mathematical, bodily/kinesthetic, musical/rhythmic, intrapersonal, interpersonal or naturalist. In addition, they were asked whether they felt as though they were now more active participants in their own academic learning.

All interviews were conducted by me only. Although, personal bias is inevitable, interview questions were reviewed by my thesis committee to help determine validity. All interviews were transcribed verbatim by me. As well, I collected qualitative data through interviews with the teachers and the boys in the treatment group.

### Chapter 3

#### Results and Discussion

##### Qualitative Student Data

Interviews were conducted during school hours by me in the boys' home schools and were transcribed verbatim by taking notes while interviewing. Responses to the interview questions were coded by me looking for common themes in the areas of social emotional learning where dependent variables consisted of general self esteem, academic self esteem, liking of school, and enjoyment of school. Transcribed raw data were also originally coded by two graduate assistants blind to the purposes of the study. Subsequently, their themes were compared to my findings. For the most part, findings were fairly consistent, but where there were discrepancies, discussion followed and all themes were included within the study.

During the study, I had the opportunity to visit the classroom, talk with the students and assist with implementation of the RD Program and UDL units. Consequently, the students were familiar with me and willing to discuss their perspectives on school during the time of intervention implementation.

Student interviews consisted of three questions to assess the students' experiences in diverse classrooms (See Appendix F). In response to these questions three consistent themes emerged. They were: feeling valued, school practices and values were not always consistent with social emotional learning, and students increased ability to reflect on learning styles. These themes are persistent in the quotes from the boys in the interviews.

Table 1

*Common Themes For Students*

Themes	Supporting Evidence (Quotes included with discussion)
Feeling Valued	<ul style="list-style-type: none"> <li>○ MI/RD Program reinforces value of a variety of non-traditional subject areas.</li> <li>○ Knowing self worth/intelligence in the face of bullying</li> <li>○ Recognized and proud of individual intelligence</li> </ul>
School Practice and values not always consistent with SEL	<ul style="list-style-type: none"> <li>○ Valuing grades/marks</li> <li>○ Being judged on good behaviour</li> <li>○ The need to be seen as “nice” to teachers</li> </ul>
Students more reflective of learning styles	<ul style="list-style-type: none"> <li>○ Recognizing strengths supports having confidence to work on weakness</li> <li>○ Students may learn to advocate for use of technology or tools to match their learning MI</li> <li>○ Students valued group work</li> <li>○ Students enjoyed lessons that integrate subject areas</li> <li>○ Students enjoyed unpredictability at times and found it motivating</li> <li>○ Students enjoyed using manipulatives, computers, music, etc.</li> </ul>

**Feeling Valued.** After participating in the study, students in the treatment group described their school experiences by suggesting that school was “fun” and they enjoyed diverse ways of learning. They enjoyed participating in the RD Program as well as learning that their unique intelligence strengths were valuable in a variety of subject areas. For example, one student shared that he was “really proud of what I can do in gym, music, science, social studies.” Most students enjoyed the process of learning about their learning styles. “Knowing about my MI helped me to learn. . . it makes me happy to come to school,” said one student. Another student stated, “It makes sense to learn my MI. Maybe you know, that lap tops help me learn, and my teacher always made sure they were there.” One student said it was, “cool to learn how you learn. I’m proud of my graphing (RD Program) because it told me how smart I really am. It’s good to know what type of learner you are; it makes me feel better to come to class.” Learning about their MIs appears to have helped the boys realize their individual value, which has given them the confidence to cope with

other students who are bullies. One boy described recesses as being problematic at times because of being bullied. He said, “I don’t like when someone bugs me and makes me cry.” He went on to explain that this occurs when, “games are being played and I don’t get to join in.” However, learning that he is intelligent in a logical/mathematical way has helped him to realize his worth in other areas. “Doing math is fun, and I’m a good student. I’m good at gym and music too.”

**School Practices and Values Not Always Consistent with SEL.** Although students were generally feeling valued, there were still concerns about school practices not lining up with social emotional learning. One boy stated that he considered himself a good boy; however, he said, “I don’t get good marks, but if I was nicer to teachers, I’d probably do better,” implying the importance of grades and being judged on good behaviour by the teachers. If even one student is able to articulate his need to be “nice” in order to receive good grades, then his social emotional needs were not met.

**Students More Reflective of Learning Styles.** While recognizing intelligence strengths is beneficial to these students, they also realized it was important to work through learning challenges. For example, one boy said that it “makes sense to learn your MI . . . [but] I need to work on my weaknesses.” Another suggested that, “school is hard. . . [and] now I know what I need to keep working on.” These comments suggest that the students are beginning to see and value their strengths while recognizing that there are still areas that are challenging for them that they will have to develop. Another student liked the notion of surprising his teacher with his learning style, “Feels pretty good to come to class. My teacher was surprised about me being an existential learner. He didn’t know and I felt good to be so smart.”

Many of the students had a hard time recognizing significant changes in the assignments or pedagogy offered in the classrooms and by the teachers. I prompted the students by asking what types of activities they enjoyed doing best, which led them to talk about working in groups and

having opportunities for differentiated instruction. “Sometimes we worked in groups, sometimes we didn’t, sometimes we used lap tops,” said one of the boys. He continued to say, “I liked working in groups best because people can help me if I’m having a hard time.” One boy’s comments regarding group work was, “Sometimes we change it up like we do stuff in our MI groups or pair up with people. We always think about our MIs.” Another student suggested, “I like doing math while learning about social studies. I like to mix up the subjects.” Although, the students were not able to articulate they had noticed vast changes in the way their teachers provided the materials to them, when prompted, they were able to go into detail as to what types of activities they enjoyed and how the ways the information was presented worked best for their learning styles. Hopefully, they will learn to advocate for themselves when they are beginning to understanding how they best learn.

Although this is a small number of students, the students’ comments would suggest they feel learning about their MIs have been beneficial to their social emotional learning. Katz (2012b) did a larger study assessing the same dependent variables using the Three Block Model of UDL as an intervention as a tool for inclusive education. Findings from her study suggested students felt more valued, which contributed to engaged dialogue and academic engagement. “Providing a positive classroom climate in which students value self and diverse others, have opportunities to learn with, engage in dialogue with, and interact socially with others, and feel empowered to make choices, set goals, and take risks increases student well-being, engagement and achievement” (Katz, 2012b; Willms, Friesen, & Milton, 2009, p. 13). Clearly the boys interviewed were feeling good about school, good about themselves, and empowered by feeling intelligent, which fits with results from the larger study, and perhaps corroborates these findings.

**Quantitative Student Data**

Table 2

*Teacher Demographics*

School	Teacher Gender	Teacher Years of Experience	Teacher Education	Treatment/Control
A	Female	1	B. Ed.	Control
B	Female	40	B. Ed./PBDE	Control
C	Female	16	B. Ed.	Treatment
C	Male	7	B. Ed./B.A.	Treatment

I tested for pre-group differences, which were found to be significant in teacher gender and years of experience. These findings may be explained by the small sampling of teacher participation; however, teacher years of experience and gender were then used as a covariate to control for this pretest difference in subsequent variant tests. Thus a MANCOVA was used for data analysis rather than a MANOVA.

Data were examined using a process recommended by Hair et al. (1998) and Katz (2012b). Data collected from the questionnaires for the dependent variables were aggregated to assess the changes in social emotional awareness and class climate post intervention. Internal consistency reliability for each of these scales were greater than .65.



**Scale Reliability**

Table 3

*Developmental Studies Center Scales from Student Questionnaire, Child Development Project For Elementary School Students Grades 3-6*

Scale	Reliability
General Self-Esteem	.80
Academic Self-Esteem	.74
Liking of School	.81
Enjoyment of School	.66

Data were analyzed for pre and post comparisons of control group and treatment group in the areas of general self esteem (GSE), academic self esteem (ASE), liking of school (LS), enjoyment of school (ES), engaged behaviour (EB), task assigned (Task), groupings (Group), interaction (Inter) and with whom (WW). There were no significant differences in the pre tests of the students, but there were significant differences in some of the dependent variables in the post tests (See Table 4). One student chose not to answer some questions on the questionnaire; therefore, these missing pieces of data were imputed so as not to affect the means. The Means Test shows that the treatment group did not show significant improvement to their sense of self esteem both generally and academically or in students' liking of school and enjoyment of school. In fact, the treatment group showed that their liking of school had deteriorated over the course of the study, but their enjoyment of school improved slightly. These surveys reflected classroom student perspective versus school student perspective. This might be explained in that as classroom pedagogy changed, the students in the treatment classes may have become more positive about their classrooms and less positive about their liking of the school because the school pedagogy was not changing similarly to the classroom.

In the interviews of the qualitative research, the students' own words would suggest they felt a general improvement in their view of school, enjoyment of school and self-esteem. This may be because when I initially asked the students the questionnaires (i.e. pre-intervention), the students were unfamiliar with me and perhaps they wanted to tell me what they felt they "should" answer, thereby artificially inflating their scores. By the end of the study, the students were much more familiar and comfortable with me and the qualitative research interviews could have given the students in the treatment group the opportunity to share more intimate details with me. That is, they were more honest about their struggles with school. Students in the control group did not participate in the interviews that the treatment group participated in. Therefore, they were not given the opportunity to be involved in conversations with the researcher in the same way that the treatment group boys were. The control group only participated in the quantitative research where their voice was not as clearly heard. Interview with the control group would have allowed teachers and students to give additional information similar to what the interviews allowed the treatment group to do.

In the following table (4), please note that the questions were offered to the students in such a way that they could be answered positively or negatively as there were reverse questions on the questionnaire. This was taken into account when determining the means – scores were recoded before the MANCOVA was computed. Thus in the following table, the higher the score, the more positive the student felt regarding their social and emotional learning.

Table 4

*Estimated Marginal Means for Social Emotional Learning*

Dependent Variable	Group	Pre Mean	Post Mean	N
General Self Esteem (GSE)	Control	3.67 □	3.45 □	6
	Treatment	4.00 □	3.63 □	6
Academic Self Esteem (ASE)	Control	2.97 □	3.12 □	6
	Treatment	3.10 □	3.12 □	6
Liking of School (LS)	Control	3.10 □	3.30 □	6
	Treatment	2.85 □	2.59 □	6
Enjoyment of School (ES)	Control	2.92 □	3.18 □	6
	Treatment	3.75 □	3.82 □	6

a = Covariates appearing in the model are evaluated in the following values: TeacherG = 1.6667, TeacherYOE = 3.8333.

In the areas of engaged behaviour, task, group, interactions and with whom, raw data were collected in 28 minute time periods. The Means for Student Engagement and Pedagogy, Table (5), reports what the mean for each treatment and control group was before the study began. The next observation period was after the RD Program was completed for the treatment group only and finally at the completion of the study. Table 5 shows how many minutes the students were actively engaged, passively engaged and not engaged for both groups. In the other variables, the table shows how many minutes in the 28 minute observations the students were working on pencil/paper tasks vs. other media tasks vs. no task. Also time is measured as to whether the students were working within the whole group, small group and/or partners or independently. Whether the student was interacting with someone or not interacting with someone was also measured in terms of minutes.

Table 5

*Means for Student Engagement and Pedagogy in 28 Minute Intervals*

Variable	Group	Pre Mean	Pre Std. Deviation	Post Mean	Post Std. Deviation	N
Active Engagement	Treatment	10.00	3.34	20.17	2.79	6
	Control	5.83	4.07	5.17	2.04	6
Passive Engagement	Treatment	8.16	4.36	6.33	2.07	6
	Control	11.33	3.9	9.33	2.58	6
Non Engagement	Treatment	9.83	4.67	1.50	1.22	6
	Control	10.83	3.87	13.50	4.08	6
Paper Pencil Task	Treatment	9.83	10.67	5.17	8.06	6
	Control	4.33	3.39	7.00	7.67	6
Other Media Task	Treatment	14.33	11.78	21.83	8.10	6
	Control	22.50	2.74	16.17	12.25	6
No Task	Treatment	4.83	6.15	1.00	0.89	6
	Control	1.17	2.86	4.83	4.62	6
Whole Group	Treatment	9.17	7.73	15.33	4.93	6
	Control	16.67	6.60	16.67	6.59	6
Small Group/Partner	Treatment	9.17	11.70	7.83	2.64	6
	Control	6.17	7.76	0.84	1.33	6
Independent	Treatment	9.67	11.04	4.83	7.49	6
	Control	5.17	2.64	10.50	11.57	6
Interacting - Yes	Treatment	7.33	2.07	4.33	3.39	6
	Control	6.67	4.59	5.50	4.14	6
Interacting - No	Treatment	20.67	2.07	23.67	3.39	6
	Control	21.33	4.59	22.50	4.14	6
With Whom - Adult	Treatment	2.50	1.52	0.50	1.22	6
	Control	1.50	1.38	1.33	1.21	6
With Whom - Peer	Treatment	4.50	1.87	3.83	2.71	6
	Control	5.33	4.41	4.17	4.54	6

With Whom - None	Treatment	21.00	1.67	23.67	3.39	6
	Control	21.17	4.54	22.50	4.14	6

In educational research, we look for  $p \leq .05$  as this is considered significant and warrants looking at more closely. In this study, results in the dependent variables showed that there were no significant differences in the areas of GSE, ASE, LS and ES (See Table 8); however, in the qualitative research both teachers and students indicated they either felt or noticed elevated levels of general and academic self esteem. This is noteworthy because in Katz' (2012b) larger study on the Three Block Model of UDL, where she measured social and emotional learning, her findings indicated that there were significant changes in these areas. The size of this study was quite small; therefore, the results may not be indicative of the larger population as shown in Katz' research. In Katz' study, she randomly chose students to participate; therefore, the smaller subset of students I have focused on, that is disengaged boys, would have been represented in her study as well. It is difficult to know, therefore, whether this study indicates a differential effect for this particular population, or whether the small sample size affected results. As well, the sample in the larger study spanned K-12, whereas the sample in this study was young and limited to one specific grade. Further study is needed to determine whether age, or the specific characteristics of this population (ie struggling/disengaged learners) may differentially impact outcomes of the RD program and UDL.

In terms of engaged behaviour, however, this study paralleled Katz's larger study (2012b). Overall engaged behaviour was significantly different between treatment and control groups, such that students in the treatment classes were significantly more engaged than their counterparts in the control group. These findings were also evident in the tasks assigned and the types of groupings in that the students in the treatment group did more other media (differentiated) tasks whereas the control group did less other media tasks and more paper pencil tasks as the study progressed. In

addition the control group did more independent work post the study whereas the treatment group did much less independent work post the study. Baker, Clark, Maier & Viger (2008) suggest that the relationship between the type of task and grouping structures will influence students' engagement. When students are given opportunities to work in groups and with partners they are more apt to stay engaged with the task assigned. Also, when the tasks are differentiated, meaning more than simply paper and pencil type tasks, students are more inclined to stay engaged and focussed on the task at hand. This study supported their research on underlying factors of engagement because in this study, there were significant differences between the treatment group and control group in these two areas. For example, in the treatment group, students participated in differentiated activities almost 22 minutes out of 28 minutes post UDL professional development compared to 16 minutes out of 28 minutes in the control group. Differentiating instruction and appreciating diversity are important factors for keeping students engaged in their learning (Gardner, 1995, Miranda, 2000, Katz, 2012a Brighton, Hertberg, Moon, Tomlinson, & Callahan 2005). In addition, students in the treatment group worked in large group, small groups and partners 23 minutes out of 28 minutes post UDL professional development. In contrast, the control group worked in large group, small group and partners 17 minutes out of 28 minutes post the study. Also noteworthy is that the control group had just over 10 minutes out of 28 minutes of independent work assigned to them whereby the treatment group only had just under 5 minutes out of 28 minutes of independent work assigned to them post the study. These are important findings because grouping structures such as small group and partner work have been shown to improve engagement over independent work structures (Baker, Clark, Maier, & Viger, 2008). In the qualitative research, one of the teachers spoke to this area and how he thought more purposefully about grouping his students keeping in mind their multiple intelligences and the structures. He said, "When I did UDL well and created heterogeneous groups, the students were engaged and motivated." In addition, interacting during class time was also significant between

treatment group and control group. The treatment group had more opportunity for interacting, but it was the control group who interacted more often with their peer group. From the findings in this study, the students in both treatment and control groups, spent large amounts of time during the data collection times not speaking with anyone. Whole class instruction for both classes was still apparent after the study; however, in the treatment group there were co-teachers and educational assistants in the room, which helped for initial clarity on the tasks assigned. The students' clear understanding of the tasks allowed for more engagement and on-task behaviour.

It should also be noted that the Partial Eta scores for engaged behaviour, task and group were .939 and greater. These are extraordinarily high and are certainly not consistent with most studies. However, the sample size was very small, six students in the treatment group and six students in the control group. Because of these small sample numbers the results could be artificially inflated. As well, given that this population by definition were disengaged from the beginning – they had more room to grow/change in their engagement scores. Nevertheless, this study does show that the boys who participated were more engaged using the RD Program and the Three Block Model of UDL, where they had more opportunity for collaborative learning and differentiated instruction. Therefore, this study supports Katz's (2012b) research on inclusive education and would suggest that boys with learning challenges who are disengaged from school may benefit from the program and framework.

Table 6

*Tests of Between Subject Effects*

Source	Dependent Variable	F	Sig.	Partial Eta Squared
Group	Post Mean GSE	.157	.703	.019
	Post Mean ASE	.000	1.000	.000
	Post Mean LS	2.365	.163	.228
	Post Mean ES	.893	.372	.100
	Post Mean EB	123.456	.000	.939
	Post Mean Task	179.966	.000	.968
	Post Mean Group	244.591	.000	.968
	Post Mean Inter	5.554	.046	.410
	Post Mean WW	3.742	.089	.319

**Qualitative Teacher Data**

Interviews describing the implementation of the RD Program and Three Block Model of UDL and the effects of the program were conducted with the teachers in the treatment group. There were no interviews conducted with the teachers in the control group as there was no change to pedagogy. In hindsight, this is a limitation of the study as it would have been helpful to see and hear if the teachers in the control group are looking for different ways to address the needs of the boys in their classrooms. It might have been interesting to hear their perspectives on pedagogy and social emotional learning. A series of five questions were asked of each teacher in the treatment group. The first two questions asked for years of experience and each ones' level of education. Three additional questions were asked in regards to the RD Program and the UDL unit they prepared and



taught as well as their experiences working within this framework. From these questions, four common themes emerged.

Table 7

*Common Themes For Teachers*

Themes	Supporting Evidence (Quotes are included in discussion)
Challenged teachers to reflect on existing practices/pedagogy and perceptions of student learning style	<ul style="list-style-type: none"> <li>○ Student must explore ideas and concepts through learning</li> <li>○ Students are learning to take risks/ask questions</li> <li>○ Awareness of research based best practice which may led to improved teaching practices</li> <li>○ Reflective about adult (EA/teacher) role in classroom</li> <li>○ Attitude change in teacher toward student learning and ability</li> <li>○ Not sure about aligning intervention with curriculum</li> <li>○ Changed the framework and used as a guideline</li> <li>○ High schools don't teach this way</li> </ul>
Teacher beliefs/characteristics support or challenge UDL implementation	<ul style="list-style-type: none"> <li>○ One teacher felt confident blending the framework with his beliefs and existing practices</li> <li>○ One teacher saw her class as a homogenous group "my students are not very independent or abstract learners" = more resistant</li> <li>○ Multi-age classrooms = acceptance of diversity</li> <li>○ Willingness to defend belief in the framework when challenged</li> </ul>
UDL model difficult	<ul style="list-style-type: none"> <li>○ Finding multiple ways for student to represent knowledge is challenging</li> </ul>
Administrator support required	<ul style="list-style-type: none"> <li>○ School wide implementation of Three Block Model needed</li> <li>○ School initiatives identified not consistent with UDL</li> <li>○ Belief that this framework is intended to entirely replace existing practices, leader needs to guide process of implementation</li> <li>○ Teacher evaluation practices must be supportive of shift to inclusive practices (provide an environment for teachers to feel safe enough to take risks)</li> </ul>

### **Challenged Teachers to Reflect on Existing Practices/Pedagogy and Perceptions of**

**Student Learning.** The teachers were challenged to reflect on existing practices and whether they saw UDL as a means for promoting student learning. One teacher shared "that it is a necessity to

adopt UDL principles to be a part of your pedagogical philosophy.” In the past, he believed he understood the notion of the multiple intelligences, but until he began working through the RD Program and UDL, he hadn’t truly understood the value of presenting materials and allowing students to represent knowledge through a means where students could comfortably show what they know. “I think I really got it and better yet, I think the students really got it,” he shared. He stated, “When I did UDL really well, the students were engaged and motivated and this was for girls and boys.” He went on to say, “A sense of class cohesiveness was evident and it promoted respect [for others].” The other teacher agreed that her students were learning to be more respectful of others. Where she noted significant growth was in the area of self-esteem and the courage to take risks in their learning. “The biggest improvement is self-esteem. They are learning to take risks.”

One teacher also had significant concerns for when students get into the senior year. Her belief is that senior years teachers do not teach this way and she worries that we may be setting some students up for failure. She asked me, “How will it look when these kids get to high school? They don’t teach this way. I’m worried for them.”

Another area to note is that of educational assistants (EA). One of the teachers had many EA’s in her room. She found that she had to do some work to provide professional development for the EA’s. She noted that “they tended to want to tell the students the answers” rather than let them explore and be active learners. This was an area of oversight for me as the professional development offered was to the teachers only and not to the EAs.

One student during the study went into foster care. The student remained in the same classroom, but went to live with a different family. The teacher of this student was worried that because of this student’s situation, he may negatively affect the study results. However, the teacher did not notice any obvious signs in the classroom, but felt I needed to be aware.

**Teacher Beliefs/Characteristics Support or Challenge UDL Implementation.** The teachers in the treatment group had conflicting experiences with UDL where one said, “I found it valuable for the students in terms of understanding and respecting diversity,” but the other stated, “the model is difficult.” The one teacher felt the RD Program was laid out well and had a lot of fun going on-line to supplement the lessons. He downloaded career charts to help his students understand there is a place for everyone in the world. From doing these types of activities with his students he stated, “This was so good for building their self-esteem. This has allowed some of the kids to realize their hopes and dreams can be achieved. This has helped their social/emotional growth.” In addition to that, he felt the UDL unit “worked well in my multi-age classroom.” Although, the other teacher worried about not having any leaders in her class, which would make group work difficult to manage. “I have a homogenous group of students, who are not very strong and this makes it difficult to do some of the inquiry based learning suggested by UDL.”

One teacher provided a complaint box, which addressed the issues of telling on students. She implemented this in an effort to incorporate the democratic classroom. When there was a complaint in the complaint box, the class would have a class meeting so that problems could be resolved collaboratively. “I created a complaint box for my students and this has worked well for us as a class.”

**UDL Model is Difficult.** I had worked with both teachers in the treatment group in that a UDL sample unit was provided with support on how the units would fit within their classroom “culture”. In addition to the UDL units, I provided the RD Program lessons and gave a one day workshop to show the teachers how to teach the various lesson plans. Both teachers responded that they had completed the RD Program and both teachers responded that they had completed the units I provided. One teacher said he “blended the unit with my own materials and made it my own.” It allowed him to “address the essential understandings for both grades.” However, the other teacher

“found the framework difficult and tried to make it her own.” Despite her best efforts, she still found it challenging. Although both teachers could see the benefits of teaching through a UDL lens, they did have some reservations and struggles for a variety of reasons. Initially, both found the framework difficult to navigate, but did appreciate it would become easier with practice. “I’ll keep working with it and I suspect it will get easier.” The one teacher claimed she “finds it easier to be the teacher rather than facilitator because that is what I know best.” This is understandable when some teachers take intensive coursework to have a basic understanding of the RD Program and the Three Block Model of UDL, and these teachers were given only one day of professional development with access to me for support. This limited amount of professional development may have made it difficult for the teachers to feel comfortable in implementing the units provided. One of the teachers stated, “the model is not an easy one to follow.” The other teacher in the treatment group agreed that it takes some work to understand the notion of understanding by design, but felt committed to working through it. He noted how he “found it kind of difficult finding ways for kids to represent their knowledge.”

**Administrator Support is Required.** There was some serious concern about whether the administrator of the school would understand what these teachers were doing. For one of the teachers, it was an evaluation year and she did not want a change in her teaching style to reflect negatively upon her performance appraisal. “I’m worried I may not be doing things the way my principal wants me to do them.” Ironically, what she is trying to promote in her classroom is not what she experiences in her school. She works in a school with many new initiatives being promoted; therefore, she said, “Trying to connect all the pieces is difficult because some [of the initiatives] vary from the UDL framework. It’s like flushing out the old to make room for the new.”

Although both teachers worked through the UDL units and did the RD Program, they had some conflicting experiences. One teacher seemed more receptive to working through the

challenges, whereas the other worried about not doing the framework justice and having it negatively affect her performance appraisal. However, they both agreed that working through the Three Block Model of UDL was challenging, but that more practice would make it more manageable. More professional development or time to work with professional learning communities and prep may have helped with struggles they experienced.

### **Conclusion**

The research questions initially inquired as to whether UDL principles would help to facilitate authentic engagement in boys. More specifically, would professional development for teachers on respecting diversity help boys enjoy their school experiences and improve engagement, and if boys respect diversity would they value their own unique intelligence, thereby elevating their self-concept and sense of belonging at school? From the data provided in this study, we see that the boys did benefit from the change in pedagogy in that they were more engaged in their learning. However, the quantitative research did not show significant gains in their social emotional learning even though the qualitative research would indicate from both students and teachers that the boys felt better about themselves and were more willing to take risks.

In recent years, research and the literature have shown that boys' performance in schools have begun to erode (Gurian & Stevens, 2010), and those who are struggling begin to see themselves as failures. Teachers across the country see this situation early in a boy's school career (James, 2007), and yet, as teachers, we are challenged with how to provide curricula that addresses the needs of all our students. Teachers spend a great deal of time with our children and therefore, have a significant amount of influence on how children see themselves. Teachers assess, evaluate, challenge and support students on a daily basis, but when a boy does not have the verbal linguistic skills that his female counterpart may possess, he can fall prey to feelings of inadequacy (James, 2007). The result can lead to a boy not performing to his academic potential and marginalizing his

self worth (Bausch, 2007). Grover, Ginsburg, and Ialongo (2007) state that learning cannot be separated from our lives and that the human brain cannot learn when consumed with feelings of anxiety, alienation and stress. When we put boys into stressful situations, where their learning styles are not appreciated, we set them up to experience these negative emotions. Palmer (1998/99) suggests that by not addressing the social emotional needs of our children we put them at risk for alienating themselves from school. This can be a daunting task for teachers, and if we avoid addressing this area of growth, we may see increases in depression, substance abuse, and suicide (Modrcin-McCarthy & Dalton, 1996). Providing professional development to teachers to support students in their academic learning as well as their social emotional learning is the natural way to provide a strong foundation to promote academic excellence for all. Although this study focussed on boys, the larger study by Katz (2012b) showed that all students, including those with exceptionalities, benefited from addressing their social emotional needs.

In response to the social emotional needs of the students, Katz (2012a) developed the Respecting Diversity Program, which promotes social emotional learning and the valuing of diversity for what it brings, not only to the classroom, but also ultimately to society. When children are given the opportunity to look at the world through a larger lens, we open their minds to appreciate all that the world can offer. By promoting self-respect and raising self-esteem we prepare children to feel confident in who they are, which in turn helps to prepare them for adolescent challenges (Greenberg et al., 2001; Zins, Bloodworth, Wiessbert, & Walbert, 2004). Gardner (1983) showed us that learning through different modalities and appreciating our multiple intelligences helps us all to learn in a way that gives us better access to information. The RD program's use of learning about the multiple intelligences creates a venue for student metacognition, which Zimmerman (1990) says is necessary for student motivation and allows for active engagement.

When students have the ability to think about their own learning, they are then able to determine what works best for them to achieve their academic potential.

During this study, the boys developed pride in knowing how they learned. When one boy said, “I am really proud of what I can do in gym, music, science and social studies and it makes me glad to come to class,” and another is “proud of being math smart,” you know you have created an environment for learning. When a child wants to go to school, s/he is likely much more invested in what s/he will potentially learn. Another boy summed it up perfectly when he stated, “Learning how I learn makes me feel like a better student. Makes me feel smarter.” Consequently, when one of the boys said, “It makes sense to find out your multiple intelligence so now I know what I need to keep working on,” we can see that he is taking responsibility and ownership for his own learning.

Introducing the Three Block Model of Universal Design for Learning was an appropriate framework to organize all the suggestions of best practise. One teacher completely embraced the principles of UDL while the other teacher found the change in pedagogy more challenging. In these units, opportunities for the students to receive differentiated instruction and cooperative learning were embedded. This allowed for students to learn and represent their learning through their intelligence strengths while still working on their learning challenges.

In the quantitative data, the results were overwhelmingly significant that student engagement increased in the treatment classrooms. Tasks were such that students were invested in learning all they could of the information presented because it was presented in ways the students were able to process multi-modally. Post study the treatment teachers were more purposeful about the student groupings and results were such that the students were more engaged. Students were able to work in the large group, small groups, and as partners and one of the boys said he preferred to work in groups as it allowed him support when he needed it. In addition to this, by working in these groups, the boys were given more opportunity to interact with their peers as well as with the teacher.

Although this study focussed on boys, Katz's (2012b) larger study suggested all students benefit from this model of teaching. By presenting information in a way that students are most comfortable to take it in, and equally as important, allowing them to show their knowledge in their learning strengths, we teach them to respect themselves and the diversity that is evident in every classroom in the public school system. Bausch (2007) suggests that we need to be concerned about our boys and their lack of performance in school, while Wesley (1998/99) confirms that in every classroom we need to remember to value and believe in the spirit of the child, for it is in this spirit that our children remain healthy in their social/emotional learning as well as their academic learning. With the latest research showing that boys are struggling to perform to their academic potential, putting them at risk of school withdrawal, substance abuse, and depression (Curwin, 2006), we need to take the step to teach beyond the traditional verbal linguistic learner and teach to all who represent the classroom. To do this we need to keep in mind the needs of our students whether they are biological or emotional. Using the Three Block Model of UDL in conjunction with the RD Program promotes the notion of appreciating diverse learners, appreciating multiple intelligences and appreciating all people for who they are and what they have to offer (Katz, 2012a).

### **Strengths and Limitations**

Throughout this study, there were many strengths and limitations, which helped to create implications for future research studies. To begin with, I was the researcher, the person who collected the data, administered the interviews as well as analyzed both qualitative and quantitative data, with support from my cohort of grad students and faculty advisor. Even with ensuring that impartial input from cohorts and faculty advisor were in place, I have to note that there could be bias in the way I observed the students. My definitions of the types of engagement were described, but where there are observations, there is subjectivity.



One advantage of a small study is the relationships that can be built. Because this sample size was small, I was able to conduct all of the research on my own. It allowed me to begin to develop relationships with the participants in the study. However, with the advantage of building relationships also comes the possibility of students and teachers saying what they “think” you may want to hear rather than what really happened. For example, a student could tell me he really liked learning about his learning strengths because that is what he thought I wanted to hear. But, I came to this study with experiences and skills in listening to people. With a background as a classroom teacher, resource teacher, school administrator and finally a student services administrator, I have had to become an active listener to listen for understanding, which I have done while working through this study.

The teachers in the treatment group were from the same school so they were able to collaborate and support one another while they sorted through the UDL units provided. As well, I was able to get to know the teachers and students, perhaps enhancing responses to interviews, although as stated earlier, this may also have increased the possibility of bias.

Perhaps the greatest strength of the study was having the opportunity to hear student and teacher voice. The students had a lot to say about how they appreciated learning about the different types of intelligence. More importantly, they enjoyed knowing that they were intelligent in so many different ways. Subject areas they thought had been marginalized in the past suddenly were areas of strength for them. Knowing they were valued for all their strengths, not just the ones we measure in a typical classroom, was exciting for them. Had I not had the opportunity to interview the students and teachers, these perspectives may have been overlooked.

An area of limitation was definitely the sample size of the study. Having only six students in the treatment group and six students in the control group did not allow for making any definitive conclusions. In fact, because the sample size was so small, some of the quantitative results may have

been skewed making the precision/degree of effect unreliable. The data from a small sample size needs to be read and evaluated differently; therefore, further studies should be considered.

A second limitation is that the teachers and students from the control group were not involved in the qualitative research. Because the teachers were not changing their pedagogy, I felt the teachers and students may not have had anything to contribute. However, in retrospect, that is not true. The reality is that I did not give them the opportunity to give me their perspectives on traditional inclusion models and how they best address the needs of the boys who were studied. In analyzing the data, their input would have been interesting for making comparisons pre and post.

In addition to not being interviewed, the control group was excluded from the data collection after the RD program was completed by the treatment group. Although I wanted to see if the RD program created change for the students, without the control group's input, there was nothing to compare to the treatment group's data. In retrospect, I should have collected from both groups during that time.

Finally, the amount of professional development provided for the teachers in the treatment group was a limiting factor. They were given one full day of professional development with the option of me coming to assist in the class. Unfortunately, the teachers did not share with me the difficulties they were experiencing with the units until the end of the study. There needed to be much more professional development available for these teachers. Also, there was a lack of professional development for the other adults who were in the classrooms. For example, EAs, clinicians and speciality teachers were in the classrooms at different times. None of these teachers, clinicians or EAs received the professional development offered to the classroom teachers. With no PD offered to them, the classroom teachers were forced to either teach it to them as best they could or try to implement UDL without the support of the other adults in the room. Teachers who decide to embrace UDL principles and specifically the Three Block Model of UDL can take intensive courses

at University to prepare them for using the framework in their classrooms. This amount of professional development the teachers were given in this study was not adequate to do true UDL justice.

Looking at the limitations opens up possibilities for further study. There were a number of independent variables that were not considered in this study, for example, the other adults in the classroom, school climate (ie what other classrooms are doing), administration support, teacher evaluations, etc.

### **Implications**

Clearly, this study showed improvement for the boys in the treatment group, but in looking at the results through a skeptical and critical lens, strengths and limitations reveal areas for further study, which includes: longitudinal studies, how and if engagement promotes curricular success, how school leadership or divisional leadership affects the promotion of UDL, and the effect of UDL and the RD Program on girls. My study may be a spring board for ongoing study regarding The Three Block Model of Universal Design for Learning and the RD Program and how it may affect other specific sample groups of students in addition to school wide and division wide implementation. As Parker et al. (2012) would suggest, it is through emotion and passion that we develop our ideas, which gives us the momentum and commitment to challenge ourselves in becoming agents in our areas of interest.

### References

- Anderson, M., Maier, L., & Shepard, M. (2012). Skepticism to success: Meeting critical workforce needs through innovation and collaboration. *Journal of Asynchronous Learning Networks*, 4 (3), 60-67.
- Annett, M. (1992). Spatial ability in subgroups of left- and right-handers. *British Journal of Psychology*, 83 (4), 493-515.
- Baker, J. A., Clark, T. P., Maier, K. S., & Viger, S. (2008). The differential influence of instructional context on the academic engagement of students with behaviour problems. *Teaching and Teacher Education*, 24 (7), 1876-1883.
- Barth, R. (1999). *Improving school from within: Teachers, parents and principals can make a difference*. San Francisco: CA Jossey-Bass.
- Bausch, L. (2007). Boy-talk around texts: Considering how a third grade boy transforms the shape of literacy in book talk discussions. *Journal of Early Childhood Literacy*, 7 (2), 199-218.
- Brighton, C. M., Hertberg, H. L., Moon, T. R., Tomlinson, C. A. & Callahan, C. M. (2005). *The feasibility of high end learning in a diverse middle school*. Storrs, CT: University of Connecticut: National Research Center on the Gifted and Talented.
- Brock, L. L., Nishida, T. K., Chiong, C., Grimm, K. J., & Rimm-Kaufmann, S. E. (2008). Children's perceptions of the classroom environment and social and academic performance: A longitudinal analysis of the contribution of the responsive classroom approach. *Journal of School Psychology*, 46, 129-149.
- Bryce, T.G.K., Blown, E. J. (2007). Gender effects in children's development and education. *International Journal of Science Education*, 29 (13), 1655-1678.
- Bull, R., Davidson, W., & Nordmann, E. (2010). Prenatal testosterone, visual-spatial

memory, and numerical skills in young children. *Learning and Individual Differences*, (20), 246-250.

Burgstahler, S. (2008). *Universal design of instruction (UDI): Definition, principles, and examples*. Seattle: University of Washington.

Burgstahler, S. (2007). *Universal design in education: Principles and application*. Seattle: University of Washington.

Carr, D. (2011). Values, virtues and professional development in education and teaching. *International Journal of Educational Research*, 50 (3), 171-176.

C.A.S.T. (n.d.). Retrieved from <http://www.cast.org/udl/>

Child Development Centre (2005). *Scales from student questionnaire, child development project for elementary school students (grades 3-6)*. Oakland, CA.

Curwin, R. L. (2006). *Motivating students left behind*. Rochester, NY: Discipline Associates.

Eliot, L. (2010). The myth of pink. *Educational Leadership*, November, 32-33.

Falk, B. (2001). *Teachers caught in the action: Professional development that matters*. New York: Teachers' College Press.

Francis, B. (2010). Gender, toys and learning. *Oxford Review of Education*, 36 (3), 325-344.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Gardner, H. (1995). Multiple intelligences as a catalyst. *English Journal*, 84, 16-18.

Good, T., (1987). Two decades of research on teacher expectations: findings and future directions. *Journal of Teacher Education*. 38, 32-47.

- Goran, M. I., Nazy, T. R., Gower, B. A., Mazariegos, M., Solomons, N., Hood, V., et al. (1998). Influence of sex, seasonality, ethnicity, and geographic location on the components of total energy expenditure in young children: Implications for energy requirements. *American Journal of Clinical Nutrition*, *68*, 675-682.
- Greenberg, M. T., Domitrovich, C., & Bumbarger, B. (2001). The prevention of mental disorders in school aged children: Current state of the field. *Prevention & Treatment*, *4* (1) Article 1a. Retrieved December, 2012 from <http://www.apa.org/psycarticles/>
- Greenwood, C.R., Carta, J.J., Kamps, D., Arreaga-Mayer, C. (1990). *Ecobehavioral analysis of classroom instruction*. In S. R. Schroeder (Ed.) *Ecobehavioral analysis and developmental disabilities: The twenty-first century*. New York: Springer-Verlag.
- Greenwood, C.R., Carta, J.J., Kamps, D., Terry, B., Delquadri J. (1994). Development and validation of standard classroom observation systems for school practitioners: Ecobehavioural assessment systems software (EBASS). *Exceptional Children*, *61*, 197-210.
- Greenwood, C., Schulte, D., Kohler, F., Dinwiddie, G., Carta, J. (1986). *Assessment and analysis of ecobehavioral interaction in school settings*. In R. J. Prinz (Ed.) *Advances in behavioural assessment of children and families*. Lincoln, NB: JAI Press.
- Grover, R. & Ginsburg, G., Ialongo, N. (2007). Psychosocial outcomes of anxious first graders: a seven year follow-up. *Depression & Anxiety*, *24*, 410-420.
- Gurian, M., Stevens, K. (2010). 10 essential strategies for teaching boys effectively. *ASCD Express Publications*, *6*(4), 1-2.
- Hair, J., Anderson, R., Tatham, R. & Black, W. (1998). *Multivariate data analysis*. New Jersey: Prentice Hall.
- Hall, C. & Coles, M. (2001). Boys, books and breaking boundaries: Developing literacy in and out

- of school. In W. Martino & B. Meyenn (Eds.), *What about the boys? Issues of masculinity in schools* (pp. 211-221). Buckingham, England: Open University Press.
- Hansen, P. & Mulholland, J.A. (2005). Caring and elementary teachers: the concerns of male beginning teachers. *Journal of Teacher Education*, 56 (2), 119-131.
- Hawley, R. & Reichert, M. (2010). Successfully teaching boys, findings from a new international study. *ASCD Express Publications*, 6 (4), 1-3.
- James, A. N. (2007). *Teaching the male brain*. California: Corwin Press.
- James, A. N. Boyd, S. A., Zimmerman, M. C. (2011). *Active lessons for active brains: Teaching boys and other experiential learners, grades 3 – 10*. California: Corwin Press.
- Katz, J. (2008). *Creating compassionate learning communities for diverse elementary school students: The effects of demystification on social and emotional learning*. Vancouver, BC: University of British Columbia.
- Katz, J. (2012a). *Teaching to diversity: The three-block model of universal design for learning*. Winnipeg, MB: Portage & Main Press.
- Katz, J. (2012b). Reimagining Inclusion. *Canadian Association of Principals Journal*. Summer, 22-26.
- Katz, J. (2012c). Making imagination real: Inclusive education and the Three Block Model of Universal Design for Learning. *Canadian Association of Principals Journal*. Summer, 30-34.
- Katz, J., & Porath, M. (2011). Teaching to diversity: Creating compassionate learning communities for diverse elementary school students. *International Journal of Special Education*, 26(2), 1-13.
- Katz, J., Porath, M., Bendu, C., Epp, B. (2012). Diverse voices: Middle years students' insights into life in inclusive classrooms. *Exceptionality Education International*,

22 (1), 2-16.

King, K., Gurian, M., Stevens, K., (2010). Gender-friendly. *Educational Leadership*, (November), 38-39.

Khush, F. M (2010). Teachers' professional development through whole school improvement program. *International Journal of Business and Social Science*, 1 (2), 213-221.

Logan, S. & Johnston, R., (2010). Investigating gender differences in reading. *Educational Review*, 62 (2), 175-187.

Logan, K. R., & Malone, D. M. (1998). Comparing instructional contexts of students with and without severe disabilities in general education classrooms. *Exceptional Children*, 64, 343-358.

Logan, K. R., Bakeman, R., Keefe, E. B. (1997). Effects of instructional variables on engaged behaviour of students with disabilities in general education classrooms. *Exceptional Children*, 63, 481-497.

Louse, E. (2004). Gender differences in spatial orientation: A review. *Journal of Environmental Psychology*, 24 (3), 329-340.

Maccoby, E. E. (1998). *The two sexes, growing up apart, coming together*. London, England: Harvard University Press.

Mangahas, A., (2010). Teaching the female brain. *Childhood Education*, 87 (1), 73.

Manitoba Department of Education, (2004). *Me read? No way!*. Winnipeg: Manitoba Education, Citizenship and Youth Cataloguing in Publication Data.

Manitoba Department of Education, (2006). *Appropriate education programming in manitoba. Standard for student services* Winnipeg, MB: Manitoba Education, Citizenship and Youth Cataloguing in Publication Data.



Manitoba Education, (2012). *Student services special needs categorical funding for level 2 and 3*.

Retrieved from: <http://www.edu.gov.mb.ca/k12/specedu/funding/level2-3.html>.

Martino, W. & Meyenn, B. (2001). *What about the boys?* Philadelphia, PA: Open University Press.

McClure, A. (2008). *Making it better for boys*. New York: Continuum International Publishing Group.

McCoog, I. J. (2010). The existential learner. *The Clearing House*, 83, 126-128.

Mendler, A. (2000). *Motivating students who don't care*. Indiana: Solution Tree.

Miranda, P. (2008). *Workshop on inclusive education*. Winnipeg, MB.

Modrcin-McCarthy, M.A. & Dalton, M. M. (1996). Responding to healthy people 2000; Depression in our youth, common yet misunderstood. *Issues in Comprehensive Pediatric Nursing*, 19, 275-290.

Noble, C., Brown, J. & Murphy, J. (2001). *How to raise boys' achievement*. London, UK: David Fulton Publishers.

Ostroff, E., Limont, M. & Hunter D.G. (2002). *Building a world fit for people: Designers with disabilities at work*. Boston, MA: Adaptive Environment Center.

Palmer, P. J. (1998/99). Evoking the spirit in public education. *Educational Leadership*, 56, 6-11.

Parker, J. N. & Hackett, E. J. (2012). Hot spots and hot moments in scientific collaborations and social movements. *American Sociological Review*. 77 (1) 21-44.

Rosenthal, R. & Jacobson, L. (1968). Pygmalion in the classroom. *The Urban Review*. 3 (1) 16-20.

Rubie-Davies, C., (2006). Teacher expectations and student self-perceptions: exploring Relationships. *Psychology in the Schools*, 43 (5). 538-552.

- Savasci, F. & Berlin, D. F. (2012). Science teacher beliefs and classroom practice related to constructivism in different school settings. *Journal of Science Teacher Education*, 23 (1), 65-86.
- Schlechty, P. C. (2002). *Working on the work*. San Francisco, CA: Jossey-Bass.
- Scott, T. M. (2001). A schoolwide example of positive behaviour support. *Positive Behaviour Interventions*. 3, 88-94.
- Sergiovanni, T. J. (1998). Leadership as pedagogy, capital development and school effectiveness. *International Journal of Leadership in Education*, 1, 37-46.
- Silver, D. (2005). *Drumming to the beat of different marchers*. Nashville, TN: Incentive Publication.
- Smith, M. & Wilhelm, J. (2002). *Reading don't fix no chevys*. Portsmouth, NH: Heinemann.
- Szwed, C. (2010). Gender balance in primary initial teacher education: some current perspectives. *Journal of Education for Teaching*, 36 (3), 303-317.
- Tilleczek, K., Furlong, A. & Ferguson, B. (2010). Marginalized youth in contemporary educational contexts: a tranquil invitation to a rebellious celebration. *Canada Education*, 50 (5) 6-10.
- Tomlinson C. A., & Impeau, M. B. (2010). *Leading and managing a differentiated classroom*. Alexandria, VA: ASCD Publications.
- Van de gaer, E., Pustjens, H., Damme, J. & De Munter, A. (2009). School achievement and language achievement. A longitudinal study of gender differences across secondary school. *Merrill-Palmer Quarterly*, 55 (4), 373-405.
- Van den Bergh, L., Denessen, E., Hornstra, L., Voeten, M. & Holland, R., (2010). The implicit prejudiced attitudes of teachers: relations to teacher expectations and the

ethnic achievement gap. *American Educational Research Journal*, 47, 497-527.

Weaver-Hightower, M. (2003). The “boy turn” in research on gender and education.

*Review of Educational Research*, 73 (4), 471-498.

Wesley, D. C. (1998/99). Believing in our students. *Educational Leadership*, 56, 42-45.

Wiggins, G. P. & McTighe, J. (1998). *Understanding by design*. Alexandria, VA:

Association for Supervision and Curriculum Development.

Williams, C. L., Barnett, A. M. & Meck, W. H. (1990). Organizational effects of early

gonadal secretions on sexual differentiation in spatial memory. *Behavioural*

*Neuroscience*, 104 (1), 84-97.

Willms, J. F., Friesen, S., & Milton, P. (2009). *What did you do in school today?*

*Transforming classrooms through social, academic, and intellectual engagement*

(First national Report) Toronto: Canadian Education Association.

Zimmerman, B. (1990). Self-regulated learning and academic achievement: An

overview. *Educational Psychologist*, 25, 3-17.

Zins, J. E., Bloodworth, M. R., Weissbert, R. P., & Walbert, H. J. (2004). The scientific

base linking social and emotional learning to school success. In J. E. Zins, R. P.

Weissberg, M. C. Wang, & H. J. Walberg (Eds.), *Building Academic Success on*

*Social and Emotional Learning* (pp. 23-39). New York: Teachers College Press.

**Appendix A**  
**RD Program**  
**Developed by Jennifer Katz**

**Lesson 1****Introducing Multiple Intelligences**

Rationale: The intent of this lesson is to introduce language, develop accurate self-perception, recognize strengths, needs and values, and expand children's idea of what "smart" means, as a means of developing self-awareness.

- Brainstorm "what does it mean to be smart"
- Discuss what other ways can people be smart, what things are "you" good at, how do you learn best?
- As kids give answers, record on chart paper, group into MI categories (e.g. can read well, knows lots of words, etc.)
- Prompt until all 9 intelligences are on the board, fill in as necessary e.g. does anyone here play piano?"
- Introduce vocabulary of multiple intelligences
  - E.g. "There are people who are word smart – they are good at . . . we call the Verbal Linguistic" – do this for each intelligence
- Kids Discuss, Draw and/or Journal Reflection – what do you think are your strengths.

**Lesson 2****MI Survey**

Rationale: Individual demystification allows children to develop accurate self-perception and a realistic self-concept by recognizing their strengths, needs and values, and increases self-efficacy as self-awareness grows. As well, journal reflections give students a chance to reflect, identify and recognize their emotions, and evaluate their reactions regarding their learning profile.

- Complete survey as a class
- Add up totals, bar graph
- Discussion and Journal reflection – were your predictions of your strengths correct? Why do you think this happened? Were there any surprises for you? How do you feel about profile?

**Lesson 3****Community Brain**

Rationale: This lesson is intended to develop social awareness and relationship management skills by fostering a sense of interdependence and community. All students have a chance to be the helper, and at times need help, thus developing students help seeking and providing skills as well as problem solving skills. This also allows students a positive framework for managing cooperative relationships, developing communication and social engagement.

- Create a model of the brain from plasticene.
- Have students write their strength on a flag, and put in the appropriate area of the community brain with their name.

Discuss:

- When you need help, look for someone with strength in that area.
- We all have strengths and challenges – so we all will be the helpers sometimes, and the “helpees” sometimes.
- Be sure to call on students at times for help (e.g. to draw on a chart for you, or fix something), using the brain.

Lesson 4

#### MI & Career

Rationale: This lesson is intended to build self-management skills related to self-motivation by demonstrating hope for students, as they see that there will be opportunities for success, and even fame, regardless of their learning profile.

- Looking at the earlier chart, brainstorm some activities, careers, famous people who would fit in each category (e.g. require or have great verbal-linguistic strength)
- Discuss the career possibilities for people with various profiles.

Lesson 5

#### MI & Interdependence

Rationale: This lesson is intended to create social awareness of the value of diversity, and develop students’ respect for others.

- Discuss, role play, reflection journal – what would the world be like without people who have strength in \_\_\_\_? For instance, what would the world be like if no one was visual spatial?
  - E.g. What would be missing in the world from your life?
- What if everyone were \_\_\_\_? For instance, what would the world be like if everyone was verbal linguistic?
  - E.g. What would be missing from the world, from your life?
- Discuss/Journal reflection – why is diversity necessary? How would your life be more difficult without it? (E.g. How would I build my own house, make my own music, etc.?)

Lesson 6

#### Valuing Diversity

Rationale: The intention of this lesson is to build students’ explicit awareness of the value of diversity. It is intended to allow students to explore the pros and cons of working with similar and differing types of learners, and to see value in all. Students thus develop social awareness and relationship management skills.

- Activity – Break students into groups by intelligence strength – assign a task (e.g. a poster and oral presentation about a topic.) Then mix groups, repeat task – which worked better? Why?

Lesson 7

#### Goal Setting

Rationale: This lesson is intended to develop students' self-management for goal setting and organizational skills, and self-awareness of the need to both develop strength areas, as well as challenge oneself in areas of weakness. Setting strength goals helps to explore stress management techniques for dealing with challenge goals, as students learn to use their strengths to overcome challenges, and to develop eminence.

- Set goals for which intelligences you would like to develop, and how you will achieve your goal.
- Set one goal in an area of strength, and one in an area of challenge.
- Emphasize setting strength goals! There would be no Mozart, no Lebron James if someone had said, "you're already good enough in music/basketball, you really need to work on \_\_\_\_\_"!

### Lesson 8

#### Data Analysis (Optional Lesson – for Upper Intermediates)

Rationale: This lesson is intended to develop students' social awareness of common misconceptions about what intelligence is and the diversity of learning profiles.

- Have students create a survey regarding Multiple Intelligences (e.g. which of the following activities is your favourite, who do you think is the smartest, etc.)
- Tally results.
- Record using a variety of graph types.
- Reflection Journal – What were the results of your survey? What does this tell you about how people think?

### Lesson 9

#### The Brain and Disabilities

Rationale: This lesson is intended to develop students' social awareness, and an awareness of and empathy for the challenges people with disabilities face through perspective taking role-plays. It also encourages students to reflect on their personal, moral, and ethical responsibilities within diverse communities – at the same time making students aware that having a challenge in one area doesn't mean you are 'dumb,' and that there are other things people with challenges can do. It develops students' respect for others.

- Discuss with students: We all have strengths and challenges, but what would it be like to have a severe challenge in each one of the intelligences? (e.g. visual spatial – blindness). Go through each intelligence, noting the associated disabilities. Then have kids work with partners, groups to role-play.
  - VL – LD, Hearing Impaired, Mute, etc.
  - VS – Visually Impaired
  - LM – Dyscalculia
  - BK – Physical Challenges, ADHD
  - MR – Tone deaf
  - Interpersonal – Conduct disorder, NVLD, Autism
  - Intrapersonal – Anxiety disorder, Mood disorders, Autism
  - Naturalist – Phobias

- Existential –
- If you had a severe challenge in one of these intelligences, what other things could you do for activities / careers?
- What could you do to support community members with disabilities?

### Extending the Program Across the Curriculum

There are two primary methods of extending the RD program into the daily life of your classroom community:

- Use MI language and activities across the curriculum. This reinforces the notion that we all have strengths and weaknesses, and allows all of your students to have a chance to develop leadership skills and self-esteem. You can extend the use of MI in each curricular area by:
  - Language Arts** – Using MI language when discussing ideas and activities, doing readers theatre (body kinaesthetic), adding musical elements to performance of plays or scenes from books (musical rhythmic), giving value to illustrations of understanding (visual spatial), writing sportscasts (kinesthetic), having students discuss their thinking in groups or book clubs (interpersonal), exploring nonfiction related to the natural world (naturalistic), and discussing deeper themes such as racism, spiritual values, globalism, etc. (existentialist) and it's relation to students' lives (interpersonal).
  - Math** – Using MI language when discussing ideas and activities, having students work at math centres related to different intelligences such as tangrams (visual spatial), geoboards (kinesthetic),. Measurement tools (kinesthetic), musical patterning (musical rhythmic), architecture and 3D shapes (visual kinesthetic), solving word problems (linguistic), etc.
  - Science and Social Studies** – Using MI language when discussing ideas and activities, engaging students in explorations and investigations such as research (linguistic and logical), experiments (kinesthetic), murals and films (visual spatial), building models (kinesthetic), cultural studies (musical, visual, linguistic, existential), environmental studies (naturalist), etc.
- Emphasizing the social curriculum as extensively as the academic curriculum – holding class meetings weekly, goal setting and reflecting on strengths and challenges, reading books about diversity, writing about community issues/interdependence, having students work in flexible groupings, developing a class code of conduct, and weaving social issues across the curriculum.

Multiple Intelligence Survey

## Part 1

Complete each section by placing a "1" next to each statement you feel accurately describes you. If you do not identify with a statement, leave the space provided blank. Then total the column in each section.

## Section 1

- \_\_\_ I enjoy sorting things into groups
- \_\_\_ I care about animals and saving trees
- \_\_\_ Hiking and camping are fun
- \_\_\_ I like taking care of plants or helping in the garden
- \_\_\_ I think we should save parks for animals and trees to live in
- \_\_\_ I like putting things in order
- \_\_\_ Animals are important in my life
- \_\_\_ I recycle cans, bottles, paper
- \_\_\_ I like learning about animals, plants, and science
- \_\_\_ I like playing outside a lot.
  
- \_\_\_ TOTAL for Section 1

## Section 2

- \_\_\_ I hum or sing a lot to myself without even realizing I'm doing it
- \_\_\_ I pay attention to noise and sounds
- \_\_\_ Moving to a beat is easy for me
- \_\_\_ I am interested in playing an instrument
- \_\_\_ I like listening to poetry
- \_\_\_ I remember things by putting them in a rhyme
- \_\_\_ I like listening to music when I'm studying/doing homework
- \_\_\_ I like lots of different kinds of music
- \_\_\_ I like movies with singing and dancing in them
- \_\_\_ Remembering the words in songs is easy for me.
  
- \_\_\_ TOTAL for Section 2

## Section 3

- \_\_\_ I keep my things neat and orderly
- \_\_\_ Step-by-step directions are a big help when I'm trying to do things
- \_\_\_ Solving problems comes easily to me
- \_\_\_ I ask a lot of questions about how things work
- \_\_\_ I can do math in my head quickly
- \_\_\_ Word problems and brain teasers are fun
- \_\_\_ I can't start my work until I know for sure all the things I have to do
- \_\_\_ It's easier if teachers or parents tell me exactly how to do things



- I like using the computer to do my work  
 Things have to make sense to me or I get upset  
  
 TOTAL for Section 3

## Section 4

- It is important to me to know how I fit in with the world or a group  
 I enjoy discussing questions about life  
 Religion is important to me (I like going to church/temple/mosque – praying)  
 I like looking at paintings and sculptures  
 I like relaxation and meditation exercises  
 I like visiting beautiful places in nature  
 I enjoy reading about what ancient and modern people thought about the world  
 Learning new things is easier when I know why it's important  
 I wonder if there are other forms of intelligent life in the universe (like aliens)  
 Studying about what people used to do and think long ago is interesting  
  
 TOTAL for Section 4

## Section 5

- I learn best when I work with others  
 I like having lots of people around  
 It helps me to practice things with a partner  
 I like talking to people on the phone, email, etc.  
 I have more than 3 friends  
 I am a leader amongst my friends  
 I understand how other people feel and I try to help them  
 I like to teach other kids  
 Clubs and extracurricular activities are fun  
 Lots of people ask me to play with them  
  
 TOTAL for Section 5

## Section 6

- I enjoy making things with my hands  
 Sitting still for long periods of time is difficult for me  
 I like outdoor games and sports  
 I pay attention to the looks on peoples' faces when they're talking  
 I try to keep my body healthy  
 I like to take things apart and put them back together again  
 I like watching people dance  
 I like working with tools  
 I do a lot of sports or exercise  
 I learn by doing and touching

\_\_\_ TOTAL for Section 6

Section 7

- \_\_\_ I enjoy reading books, magazines, comics, etc.
- \_\_\_ I know a lot of words for a kid my age
- \_\_\_ I like writing letters, email, poems, or stories
- \_\_\_ It is easy for me to explain my ideas to others
- \_\_\_ I can spell words accurately
- \_\_\_ I like listening to other people talk or read stories
- \_\_\_ I write for fun, or keep a diary
- \_\_\_ I enjoy playing with words like puns, anagrams or tongue twisters
- \_\_\_ It is fun to make up stories
- \_\_\_ I like talking in front of the class

\_\_\_ TOTAL for Section 7

Section 8

- \_\_\_ I know what is appropriate and what is not right to do
- \_\_\_ I learn best when I care about what I'm studying
- \_\_\_ Fairness is important to me
- \_\_\_ I like playing alone
- \_\_\_ I am very independent and like to do my own thing
- \_\_\_ I like to work alone
- \_\_\_ I need to know why I should do something before I agree to do it
- \_\_\_ When I like something I try my hardest
- \_\_\_ I know what I am good at
- \_\_\_ I tell people if I think something is not nice

\_\_\_ TOTAL for Section 8

Section 9

- \_\_\_ I can imagine ideas in my mind
- \_\_\_ Rearranging a room is fun for me
- \_\_\_ I enjoy creating art
- \_\_\_ I remember well using webs, mind maps, pictures, etc.
- \_\_\_ Watching people perform (act, dance, sing) is fun
- \_\_\_ I like making pictures on the computer
- \_\_\_ I like making things with LEGO, K'Nex, etc.
- \_\_\_ I daydream more than other kids
- \_\_\_ I can recall what things looked like from a long time ago
- \_\_\_ I am a good artist

\_\_\_ TOTAL for Section 9

## Part 2

Now carry forward your total from each section:

Section	Score
1	
2	
3	
4	
5	
6	
7	
8	
9	

## Part 3

Key:

- Section 1 – This reflects your Naturalist strength
- Section 2 – This suggests your Musical strength
- Section 3 – This indicates your Logical strength
- Section 4 – This illustrates your Existential strength
- Section 5 – This shows your Interpersonal strength
- Section 6 – This tells your Kinesthetic strength
- Section 7 – This indicates your Verbal strength
- Section 8 – This reflects your Intrapersonal strength
- Section 9 – This suggests your Visual strength

**Appendix B**  
**Data Collection Sheet - Engagement**

Date: \_\_\_\_\_

ID Code: \_\_\_\_\_

Class: \_\_\_\_\_

Subject: \_\_\_\_\_

Interval	Engaged Behavior 1 = Active 2 = Passive 3 = Non-Engagement	Task 1 = Paper & Pencil 2 = Other Media 3 = No Task	Grouping 1 = Whole 2 = Small group/partner 3 = Independent	Interacting 1 = Yes 2 = No	With Whom 1 = Adult 2 = Peer 3 = None
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					

**Appendix C**  
**Developmental Studies Center**  
**Scales from Student Questionnaire,**  
**Child Development Project**  
**For Elementary School Students**  
**Grades 3-6**

(Grades at which the scales have been used, and for which we therefore have normative data, are indicated for each scale and item). Items that are reverse-scored are indicated by an R.

**Personal Feelings/Self-Assessment – Self Efficacy**

**General Self-Esteem** Students' general feelings about themselves. Internal consistency reliability = .80, 4 Likert-type items (1=Disagree a lot to 5=Agree a lot).

Items:

1. I like myself just the way I am.
2. I wish I were different from the way I am. (R)
3. I am happy with myself.
4. I like myself.

**Academic Self-Esteem** Students' assessment of their own academic skills and performance. Internal consistency reliability = .74, 5 Likert-type items (1=Disagree a lot to 5=Agree a lot).

Items:

1. I am not a very good student. (R)
2. I think I'm a good student.
3. I have trouble figuring things out in school. (R)
4. I am doing a good job in school.
5. I don't do very well in school (R)

**Appendix D**  
**Developmental Studies Center**  
**Scales from Student Questionnaire,**  
**Child Development Project**  
**For Elementary School Students**  
**Grades 3-6**

(Grades at which the scales have been used, and for which we therefore have normative data, are indicated for each scale and item). Items that are reverse-scored are indicated by an R.

**Student Perceptions of, Feelings about Classroom and School - Belonging**

**Liking of School** Students' enjoyment of, feeling of attachment to school. Internal consistency reliability = .81, 7 Likert-type items (1=Disagree a lot to 5=Agree a lot).

Items:

1. I like my school.
2. I wish I didn't have to go to school (R)
3. I wish I could go to a different school. (R)
4. I am bored in school. (R)
5. I am glad to get back to school after summer vacation.
6. I would be very sad if I had to go to a different school.
7. I hate being in school. (R)

**Enjoyment of School** Students' positive feelings about being in the class. Internal consistency reliability = .66, 4 Likert-type items (1=Disagree a lot to 5=Agree a lot).

Items:

1. My classroom is a fun place to be.
2. What we do in class is a waste of time. (R)
3. I would rather be in my class than any other one.
4. I enjoy what I do in class.

**Appendix E**  
**Interview Guide for Teachers**  
**In the Treatment Group**

Pseudonym: \_\_\_\_\_ Date: \_\_\_\_\_

Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_ Duration: \_\_\_\_\_

Opening Comments: You may be aware, I am a student at the University of Manitoba working toward my Master's in Education. I am interested in the Respecting Diversity Program and Universal Design for Learning framework and how it may be helpful or not helpful in the classroom. This interview is about judging the model and how it works in the classroom regarding boys and their learning, not your teaching. Please know, if at any time you feel you would like to opt out of the interview or do not want to answer any of the questions, you may choose to do so. In addition, I will be audio taping this interview so that I am sure to get all the information you want to share with me. I hope you are O.K. with that. In addition, I will also be taking notes.

1. How long have you been teaching?
2. What is your level of education?
3. So, tell me about what you did in the class. Eg. What was the unit?
4. Can you tell me how that (the unit) went?
  - o Possible prompts may include: How did this impact your students? Tell me about the students' experiences? Ask for examples.
5. How was this experience for you?
  - o Possible prompts may include: What was the planning process like? Would the teacher want to use these models in the future?

Closing: Is there anything I have forgotten to ask you? Do you have anything you would like to add to your answers?

Thank you for your time and commitment to my research. If you want to contact me to add anything to your answers or confirm something you have said, you can reach me at work –, cell –, or home –

**Appendix F**  
**Interview Guide for Boys**  
**In the Treatment Group**

Pseudonym: \_\_\_\_\_ Date: \_\_\_\_\_

Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_ Duration: \_\_\_\_\_

Introduction: You may not know this, but I am a teacher and a student. Today I'm going to ask you a few questions about school because I'd like to hear what school has been like for you. I hope you don't mind, but I will be taping what you say so that I don't miss anything you say. I will also take notes. If at any time you want to quit or you don't want to answer a question, just say so and we'll move on.

1. So, can you tell me what school has been like for you?
  - o Prompts may include:
    - i. What do you like about school?
    - ii. What don't you like about school?
    - iii. What kind of student are you?

One of the things I have been doing in my school is working a little bit in your classroom and also working with your teacher. Your teacher was teaching you about the different ways people learn (Respecting Diversity Program). Do you remember learning about the multiple intelligences?

2. What kind of advise would you give me or your teachers about learning that way (Respecting Diversity Program)?
  - o Possible prompts would be:
    - i. Why was it so cool/uncool?
    - ii. Could you share something with me that you're really proud of? Tell me about it.
    - iii. What was it like for you (learning this way)?
    - iv. Does it make sense to you to find out what type of learner you are?
    - v. How does it make you feel about coming to school/class?
3. Your teacher told me you did a unit on . . . What kind of things did you do?
  - o Possible prompts may be:
    - i. What did you like doing?

Closing: Is there anything I have forgotten to ask you? Do you have anything you would like to add to your answers?



## **Appendix G**

### **Letter to Superintendent**

#### A Constructivist Approach to Creating Learning Environments for Disengaged Boys: Bridging the Gender Gap with Universal Design for Learning

Dear Superintendent:

Today's classrooms are more diverse than ever. Educational policy, research, and practice have been changing significantly in recent times to reflect an inclusive teaching philosophy. Researchers have become interested in the growing statistics of underachievement in boys and most recent reports suggest boys do not view education highly. As a result theories are currently developing to determine why boys are falling behind their female counterparts.

The research your division is being asked to participate in is an attempt to survey teachers to explore current practice in inclusive classrooms, provide professional development to build competency in Universal Design for Learning and inclusive instruction, and assess the outcomes for student engagement, sense of belonging and self esteem. Schools / teachers that choose to be involved will be provided with professional development in the Three Block Model of Universal Design for Learning framework developed by Dr. Jennifer Katz at the University of Manitoba that includes: Building compassionate learning communities (social and emotional learning and school and classroom climate), Inclusive Instructional Practice, and Systems and Structures that support inclusive learning communities. In addition, professional development on the Respecting Diversity Program also developed by Dr. Katz will be provided for participating teachers.

The research is confidential and will be used in partial fulfillment of the requirements for the degree of Masters in Education in the Faculty of Graduate Studies. Changes to current inclusive pedagogy will be analyzed to determine the effects on academic engagement, self esteem and sense of belonging for boys in school classrooms. The study is asking whether principles of Universal Design for Learning to structure classroom management, instruction, and assessment help to facilitate authentic engagement in boys and encourage them to be motivated participants in their own learning.

Schools / teachers who choose to be involved will be provided with 2 days of professional development, supports for implementation, and follow-up, after some time to experiment with the model. The cost to your division will be release time for teachers in the form of substitute costs for the professional development provided by me. This P.D. will take place at the Student Services Centre conference room. There will be no cost for services to participate in the P.D. provided. If you choose to deny substitute costs, I am prepared to ask teachers to come in on two consecutive Saturdays so that I may provide the P.D. All participation is voluntary. Student selection for the research will be based on boys who do not meet the criteria for level II and level III provincial funding nor will they have a medical diagnosis. The boys selected for the research will have received resource support in the form of pull-out intervention at some point

during their school careers. Knowing that these boys require additional resource support is a clear indicator that regular programming in the classroom is not addressing their specific learning needs. Input from resource teachers, classroom teachers and principals will be necessary to identify the boys for the research.

Participation will involve students completing a short (20 minute) questionnaire regarding self efficacy and sense of belonging at school and in the classroom pre the professional development to determine a base line and twice post professional development, one month into the study and once upon completion of the study. I will also complete, on these three separate occasions observations of students' engaged behaviour. Once the unit is completed, teachers and students will complete a short interview with me to hear their perspectives of the Universal Design for Learning framework and the Respecting Diversity Program. Each interview for teachers will take approximately thirty minutes and twenty minutes for each interview with the students. These interviews will be audio taped.

My hope is that I will be able to start this research in September, 2011 and have the data collected by January 31, 2012. The time commitment for teacher participants in the treatment group will be two days of P.D. and a thirty minute interview with me at the end of the study. In both the treatment group and control group teachers will have to meet for approximately one hour with resource and administration to determine candidates for the research. The time commitment for student participants in the treatment and control groups will be filling out the questionnaires on sense of belonging and self esteem three times, which take approximately fifteen minutes each; however, the treatment group will also be interviewed by me at the end of the study for approximately twenty minutes each. Classroom teachers will be required to allow me to meet with their students. I am hopeful that the school will be able to provide a quiet place in one of the resource/clinician areas or out in the hallway while the students are in class.

This research will help to complete the requirements for fulfillment of my Masters Program. As well, this type of research serves to inform the field of education in order to help plan for teacher education in the province.

The University of Manitoba Research Ethics Boards(s) and a representative(s) of the University of Manitoba Research Quality management/Assurance office may also require access to my research records for safety and quality assurance purposes. This research has been approved by the Education and Nursing Research Ethics Board. If you have any concerns or complaints about this project please feel free to contact any of the following: Margaret (Maggie Bowman), Coordinator – Human Ethics, CTC Building, 208-194 Davoe Road, Winnipeg, (204) 474-7122, [Margaret\\_Bowman@umanitoba.ca](mailto:Margaret_Bowman@umanitoba.ca) or Dr. Jennifer Katz, Faculty of Education, Room 230, University of Manitoba, Winnipeg, (204) 474-6109 or me. A copy of this consent form has been given to you to keep for your records and reference.

Thank you for your consideration.

Theresa Glass  
Principal Investigator

-----

A summary of the results will be emailed to the participant teachers, parents of participating boys, school principals and divisional superintendent when the research has been completed if requested.

- Yes, please provide summary and send to: \_\_\_\_\_
- No, do not provide summary.

Superintendent's Signature \_\_\_\_\_ Date \_\_\_\_\_

Researcher's Signature \_\_\_\_\_ Date \_\_\_\_\_

Please sign and return in the self addressed stamped envelope to T. Glass by September 7, 2011.

## **Appendix H** **Letter to Teacher**

### A Constructivist Approach to Creating Learning Environments for Disengaged Boys: Bridging the Gender Gap with Universal Design for Learning

Dear Teacher:

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 the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned, or information not included, you should feel free to contact Theresa Glass. Please take the time to read this carefully and to understand any accompanying information.

Today's classrooms are more diverse than ever. Educational policy, research, and practice have been changing significantly in recent times to reflect an inclusive teaching philosophy. Researchers have become interested in the growing statistics of underachievement in boys and most recent reports suggest the boys do not view education highly. As a result theories are currently developing to determine why boys are falling behind their female counterparts.

The research you are being asked to participate in is an attempt to survey teachers in your division to explore current practice in inclusive classrooms, provide professional development to build competency in Universal Design for Learning and inclusive instruction, and assess the outcomes for student engagement, sense of belonging and self esteem. Schools / teachers that choose to be involved will be provided with professional development in the Three Block Model of Universal Design for Learning framework developed by Dr. Jennifer Katz at the University of Manitoba that includes: Building compassionate learning communities (social and emotional learning and school and classroom climate), Inclusive Instructional Practice, and Systems and Structures that support inclusive learning communities. In addition, professional development on the Respecting Diversity Program also developed by Dr. Katz will be provided for participating teachers. Students will also be surveyed / observed to explore their experiences in inclusive classrooms, and determine the current levels of student engagement and its relationship to tasks and curricula. Your feedback will be kept anonymous and confidential!

In this study, there will be a treatment group/classroom (the group that receives the change in teaching methods) and a control group/classroom (the group that receives traditional teaching methods). The treatment group/classroom will be randomly picked. In both the treatment group and control group, students will be observed to measure engagement and questionnaires will be filled out to reflect their perceptions of school and classroom climate. If you are in the treatment classroom, you will be asked to participate in an interview with me reflecting your practice and perceptions of school and classroom climate at the end of the study. The interview should take approximately thirty minutes to complete and can be done at your earliest convenience. Classroom teachers in the treatment group will also be asked to allow students to complete an interview with me regarding school and classroom climate, which will take approximately twenty minutes for each interview. I will need a space in the school to speak

privately with each of the participants. All interviews will be audio taped. In addition, boys will be asked to fill out a questionnaire on self esteem and sense of belonging that, will take approximately fifteen minutes each. Teachers will also be asked to allow me to enter their classrooms to possibly assist with teaching and but mainly to observe the participating male students in the class. I will sit where I can watch the students, and observe the students' engaged behaviour. I will do my best to be as unobtrusive as possible when I am doing my observations. Teachers are not being observed or evaluated!

Classrooms in the treatment group will be provided with professional development on the Respecting Diversity Program and Universal Design for Learning framework. My intention is to offer it during school time over two days at the Student Services conference room. However, if this cannot be approved at the divisional level, I will offer the P.D. over two weekends at the Student Services conference room, one day each weekend. The control classrooms will not be provided with the P.D. at that time so as not to contaminate research results, but if the teachers in the control group want the P.D., I can make arrangements to provide this for you after the research is completed.

In the treatment group, teaching methods will change in that teachers will look at essential learnings and essential questions to create thematic units that address all curricular areas. Outcomes will be taught through large group, small groups and independent learning opportunities. Appreciation of the multiple intelligences will determine the activities provided for the students while creating a classroom community where all students are valued, despite their limitations. The class will be set up to provide instruction to all students and all students will participate in centers, regardless of their learning challenges.

Criteria for boys to participate in this study will be that they have received resource support/intervention at some time during their school careers as this would indicate that regular classroom programming is not meeting their academic needs. They will not, however, meet the criteria for level II or level III provincial funding or have a significant disability. Therefore, meeting time with the resource teacher, administration and yourself will have to take place so that discussion can determine which boys in your class might be recruited to participate. I anticipate this process may take up to an hour to complete.

Your participation in this study is voluntary! Results of the research will be used toward partial fulfillment of the requirements for the degree of Masters in Education and will be shared with my Faculty Advisor, Dr. Jennifer Katz; however, confidentiality of the participants will be maintained! Of course, should a student disclose abuse of any kind, Manitoba Education protocols for reporting will be followed. Any data provided by you will be given a numbered/lettered code and your name removed. There are no risks to you as your interview is confidential and you may find the professional development supportive of your practice. 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 the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence.

This study is in partial fulfillment of the requirements for the degree of Masters in Education; therefore, upon completion of the study, data will be kept in a locked cabinet in my home, and stored until the thesis is completed, after which it will be shredded as confidential documents and destroyed.

The University of Manitoba Research Ethics Boards(s) and a representative(s) of the University of Manitoba Research Quality management/Assurance office may also require access to my research records for safety and quality assurance purposes. This research has been approved by the Education and Nursing Research Ethics Board. If you have any concerns or complaints about this project please feel free to contact any of the following: Margaret (Maggie Bowman), Coordinator – Human Ethics, CTC Building, 208-194 Davoe Road, Winnipeg, (204) 474-7122, [Margaret.Bowman@umanitoba.ca](mailto:Margaret.Bowman@umanitoba.ca) or Dr. Jennifer Katz, Faculty of Education, Room 230, University of Manitoba, Winnipeg, (204) 474-6109 or me. A copy of this consent form has been given to you to keep for your records and reference.

Thank you,  
Theresa Glass  
Principal Investigator

-----

A summary of the results will be emailed to the participant teachers, parents of participating boys, school principals and divisional superintendent when the research has been completed if requested.

- Yes, please provide summary and send to: \_\_\_\_\_
- No, do not provide summary.

Participant's Signature \_\_\_\_\_ Date \_\_\_\_\_

Researcher's Signature \_\_\_\_\_ Date \_\_\_\_\_

Please sign and return in the self addressed stamped envelope to T. Glass by September 15, 2011.

## **Appendix I** **Letter to Parent**

### A Constructivist Approach to Creating Learning Environments for Disengaged Boys: Bridging the Gender Gap with Universal Design for Learning

Dear Parent:

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 the basic idea of what the research is about and what your child's 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.

The purpose of this study is to explore what teaching practices and techniques improve male student engagement (motivation and participation) in their learning, self esteem and sense of belonging in their classrooms. Teachers involved in the study will participate in professional development exploring methods for improving the ability for boys to make better connections in their learning, be exposed to learning in a variety of ways, and think deeply about the "Big Ideas" of the curriculum. Your child's feedback will be confidential! It will be pooled with feedback from other students' experiences of social and emotional climate, academic learning, and their motivation to engage in learning.

Your child is being considered as a possible candidate to participate in this study because at some point in his school career, he has received additional support through the resource department at his school. This would indicate regular programming in the classroom was not addressing his academic needs.

In this study, there will be a treatment group/classroom (the group that receives the change in teaching methods) and a control group/classroom (the group that receives traditional teaching methods). The treatment group/classroom will be randomly picked. In both the treatment group and control group students will be observed to measure engagement and questionnaires will be filled out to reflect their perceptions of school and classroom climate. These will be done three times throughout the study. In the treatment group only, the boys will participate in an interview with me that should take about 15-20 minutes each to complete. Interviews will be audio-taped. Observations will not disrupt classroom learning in any way, and it will not be known which students are being observed. In the observations, I will be recording the types of tasks students are involved in, their participation in them, and the grouping structures they are in (e.g. whether they are working alone, in a group, etc.). This information will allow me to determine whether the types of tasks, grouping structures, etc. affect student motivation! There are no risks to your child beyond those in a regular educational setting, as they will simply be participating in the academic activities of the class, and we hope your child will benefit from the opportunity to participate in highly engaging learning activities.

Participation in the study is voluntary. Your decision to allow your child to participate has absolutely no effect on his schooling. The students are not being evaluated; rather this is a study to look at ways to improve teaching methods to support student success. Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to allow your child 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. Of course, should a student disclose abuse of any kind, Manitoba Education protocols for reporting will be followed. If you choose to allow your son to participate in this study, I have prepared an assent letter so that I can be assured he would also like to participate. My intention in this study is to hear the voice of the student; therefore, if he does not want to participate, I will grant his wishes.

Your child is free to withdraw from the study at any time, and / or refrain from answering any questions they prefer to omit, without prejudice or consequence. He can simply inform you, his teacher or me that he no longer wants to participate, and his interview and data will be destroyed. His 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. You can call me at anytime!

The University of Manitoba Research Ethics Boards(s) and a representative(s) of the University of Manitoba Research Quality management/Assurance office may also require access to my research records for safety and quality assurance purposes. This research has been approved by the Education and Nursing Research Ethics Board. If you have any concerns or complaints about this project please feel free to contact any of the following: Margaret (Maggie Bowman), Coordinator – Human Ethics, CTC Building, 208-194 Davoe Road, Winnipeg, (204) 474-7122, [Margaret\\_Bowman@umanitoba.ca](mailto:Margaret_Bowman@umanitoba.ca) or Dr. Jennifer Katz, Faculty of Education, Room 230, University of Manitoba, Winnipeg, (204) 474-6109 or me. A copy of this consent form has been given to you to keep for your records and reference.

Thank you,

Theresa Glass  
Principal Investigator



-----  
A summary of the results will be emailed to the participant teachers, parents of participating boys, school principals and divisional superintendent when the research has been completed if requested.

- Yes, please provide summary and send to: \_\_\_\_\_
- No, do not provide summary.

Parent's Signature \_\_\_\_\_ Date \_\_\_\_\_

Researcher's Signature \_\_\_\_\_ Date \_\_\_\_\_

Please sign and return in the self addressed stamped envelope to T. Glass by September 20, 2011.

**Appendix J**  
**Participant Assent Form**

**A Constructivist Approach to Creating Learning Environments for Disengaged Boys:  
Bridging the Gender Gap with Universal Design for Learning**

**Principal Investigator:** Theresa Glass

Dear Participant:

I am doing a project about boys in school. I am really interested in how boys with different interests, strengths and challenges get along in the classroom. I am also interested in what you think motivates you to learn!

I will come to your classroom three times, once before meeting with your teachers to plan some new ways of teaching and learning in your classroom, once one month into my research and once at the end of the unit. I will ask you some questions about your class and your learning. This should take about 15-20 minutes for me to fill out, and will be done during class time. In addition, I will ask you some questions at the end of the unit about your learning experiences. Those questions will take about 20 minutes as well. I will be recording your answers. I will also come and observe in your classroom, to see what kinds of activities you are doing in the class.

The reason you have been selected as someone for this project is because at some point since you have been going to school, you received additional help from the resource teacher or an educational assistant. I am trying to find out if there is a better way to make school interesting for boys so that this won't have to happen very often.

All of the things we do with you will help us know how to make classrooms and schools a more respectful, enjoyable place to live and learn! They are intended to help your teachers know how you learn best, what motivates you, and what might make learning more interesting and rewarding for you. You are not being evaluated at all, instead you are helping me to improve ways we teach. Everything we do with you is private. Your teachers and principal will not see them. Only the people I work with will read what you tell us. Of course, if you tell us about any harm that has come to you, we will call to get you help.

You can ask me questions any time you want, and you can stop working on the project if you want, just tell your teacher or me and we will destroy your answers. If you would like to be part of this project, please sign this form and return it me. I really appreciate your input and help! If you choose not to be a part of this project, it will have no effect on your schooling what so ever.

A summary of results will be sent to your parents if they request it. If they have any concerns or complaints about this project they can contact any of the following: Margaret (Maggie Bowman), Coordinator – Human Ethics, CTC Building, 208-194 Davoe Road, Winnipeg, (204) 474-7122, [Margaret.Bowman@umanitoba.ca](mailto:Margaret.Bowman@umanitoba.ca) or Dr. Jennifer Katz, Faculty of Education, Room 230, University of Manitoba, Winnipeg, (204) 474-6109 or me.

I agree to participate in this study.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Appendix K**  
**Letter to Principal**

A Constructivist Approach to Creating Learning Environments for Disengaged Boys:  
Bridging the Gender Gap with Universal Design for Learning

Dear Principal:

Today's classrooms are more diverse than ever. Educational policy, research, and practice have been changing significantly in recent times to reflect an inclusive teaching philosophy. Researchers have become interested in the growing statistics of underachievement in boys and most recent reports suggest boys do not view education highly. As a result theories are currently developing to determine why boys are falling behind their female counterparts. This has placed a great demand on teachers, school based administrators, and other school staff to develop new techniques and strategies!

The research your division is being asked to participate in is an attempt to survey teachers in your division to explore current practice in inclusive classrooms, provide professional development to build competency in Universal Design for Learning and inclusive instruction, and assess the outcomes for student engagement, sense of belonging and self esteem. Schools / teachers that choose to be involved will be provided with professional development in the Three Block Model of Universal Design for Learning framework developed by Dr. Jennifer Katz at the University of Manitoba that includes: Building compassionate learning communities (social and emotional learning and school and classroom climate), Inclusive Instructional Practice, and Systems and Structures that support inclusive learning communities. In addition, professional development on the Respecting Diversity Program also developed by Dr. Katz will be provided for participating teachers.

The research is confidential and will be used in partial fulfillment of the requirements for the degree of Masters in Education in the Faculty of Graduate Studies. In addition, changes to current inclusive pedagogy will be analyzed to determine the effects on academic engagement, self esteem and sense of belonging for boys in school classrooms. The study is asking whether principles of Universal Design for Learning to structure classroom management, instruction, and assessment help to facilitate authentic engagement in boys and encourage them to be motivated participants in their own learning.

Schools / teachers who choose to be involved will be provided with 2 days of professional development, supports for implementation, and follow-up, after some time to experiment with the model. There will be cost to your school; however you will need to provide release time for the teachers in the treatment group for the professional development provided by me. This P.D. will take place at the Student Services Centre conference room and I will pay for the sub costs for the teachers. There will be no cost for services to participate in the P.D. provided. All participation is voluntary. Participation will involve students completing a short (20 minute) questionnaire regarding self efficacy and sense of belonging at school and in the classroom pre the professional development to determine a base line and twice post professional

development, one month into the study and once upon completion of the study. I will also complete, on these three separate occasions, observations of students' engaged behaviour. Once the unit is completed, teachers and students will complete a short interview with me to hear their perspectives of the Universal Design for Learning framework and the Respecting Diversity Program. Each interview for teachers will take approximately thirty minutes and twenty minutes for each interview with the students. These interviews will be audio taped.

This research will help to complete the requirements for fulfillment of my Masters Program. As well, this type of research serves to inform the field of education in order to help plan for teacher education in the province.

The University of Manitoba Research Ethics Boards(s) and a representative(s) of the University of Manitoba Research Quality management/Assurance office may also require access to my research records for safety and quality assurance purposes. This research has been approved by the Education and Nursing Research Ethics Board. If you have any concerns or complaints about this project please feel free to contact any of the following: Margaret (Maggie Bowman), Coordinator – Human Ethics, CTC Building, 208-194 Davoe Road, Winnipeg, (204) 474-7122, [Margaret.Bowman@umanitoba.ca](mailto:Margaret.Bowman@umanitoba.ca) or Dr. Jennifer Katz, Faculty of Education, Room 230, University of Manitoba, Winnipeg, (204) 474-6109 or me. A copy of this consent form has been given to you to keep for your records and reference.

Thank you for your consideration.

Theresa Glass  
Principal Investigator

-----

A summary of the results will be emailed to the participant teachers, parents of participating boys, school principals and divisional superintendent when the research has been completed if requested.

Yes, please provide summary and send to: \_\_\_\_\_

No, do not provide summary.

Principal's Signature \_\_\_\_\_ Date \_\_\_\_\_

Researcher's Signature \_\_\_\_\_ Date \_\_\_\_\_

Please sign and return in the self addressed stamped envelope to T. Glass September 15, 2011.