

Data-driven decision making in the school divisions of Manitoba:

A critical race theory perspective

Heather Krepski

A thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

toward the partial fulfillment of the requirements of the degree of

MASTER OF EDUCATION

Department of Educational Administration, Foundations and Psychology

University of Manitoba, Winnipeg, MB, Canada

Copyright © 2016 by Heather Krepski

Abstract

The use of data to drive or inform the decision making process is gaining traction in education. In response to the data driven decision making shift, an emerging group of scholars are beginning to discuss how the data movement in education may be viewed using a critical race theory (CRT) framework. With a focus on implications for racial equity, this study explores the ways and to what degree data are valued or practically applied in the decision making process in Manitoba. Participants for this qualitative research study include ten Manitoban school superintendents. Drawing attention to the ways in which data-driven practices like all other practice in education, are not neutral acts, this study looks to contribute to the growing research area on Canadian data-driven decision making and CRT. Findings from this study indicate that school divisions in the province of Manitoba are increasingly driven by data that privileges Western or colonial ways of knowing. Some recommendations for further research include, using achievement data to resist racial oppression, exploring the dangers of Gap Talk, and looking at whether data literacy includes notions of power and privilege.

Acknowledgments

I would first and foremost like to thank my advisor, Dr. David Mandzuk, for his staunch support and encouragement throughout this 2½ year Masters journey. His caring approach instilled in me the confidence and freedom to explore a topic that I have become deeply passionate about. Thank you to my committee member Dr. Nathalie Piquemal for introducing me to ideas and literature that have transformed the way I view myself and the world. Thank you to my committee member Dr. Falkenberg for connecting me to a research community beyond my cohort program and for inspiring me to want to continue to do research.

To my beloved friends, you know who you are, thank you for supporting me in so many ways. Thank you to my entire family. I have an incredible mom, and if she hadn't nourished my desire to learn all my life I don't know where I'd be. I have wonderful in-laws who I am so grateful for. Thank you to my brilliant, inspiring, and incredibly supportive husband, Derek.

Finally, I would like to express my sincere gratitude for the generous financial support from the Province of Manitoba, Education and Training for the Manitoba Graduate Fellowship; and the Faculty Education for awarding me the Betty Nicks Fellowship from Mr. Gerry Bristow.

Dedication

Three years ago, my family and I suffered a great loss. Like Nolan Ryan, everyone was always waiting for his masterful pitch. Those who met him were instantly drawn to his unique expression of the human spirit and his insatiable quest for knowledge and inquiry ignites my own. Ayrton and Elia won't ever know how much he shaped our family. I dedicate any instances of insight to John Darby, my dad.

Table of Contents

Abstract.....	ii
Acknowledgments	iii
Dedication	iv
List of Figures.....	vii
List of Tables	vii
Chapter One - Background to the study.....	1
1.1 Introduction: The season of data.....	1
1.2 The influential outlier	5
1.3 Purpose of the study and research questions	8
1.4 Significance of the study.....	11
1.5 Organization of the study.....	12
Chapter Two - Literature Review	13
2.1 Introduction.....	13
2.2 Select definitions.....	15
2.3 The history and context of EDM in education	16
2.5 Challenges to EDM	22
2.5.1 CRT holding EDM to account.	25
2.5.2 On Assessment construction and validity.....	33
2.6 Assessment, SES, and gender.....	40
2.7 Race and Canadian performance measures.....	43
2.8 Some predictions for EDM.....	51
2.10 Concluding remarks	55
3.1 Introduction.....	59
3.2 Specific methods and participants.....	61
3.3 Coding process	65
3.4 Researcher’s positioning	69
Chapter Four – Findings.....	72
4.1 Educational monitoring, evaluation and validity.....	72
4.1.1 PISA.	72
4.1.2 PCAP.....	74
4.1.3 Provincial tests.	76
4.1.4 Report cards.	78
4.1.5 Student information systems.....	79
4.1.6 School plans.	81
4.1.7 TTFM.....	83
4.1.8 Desired data.....	84
4.2 Demographic data and equity initiatives	86
4.2.1 Gender and sexual identity data.....	86
4.2.2 Socioeconomic status.	88
4.2.3 Newcomer and EAL data.....	90
4.2.4 Race-based data.	93
4.2.5 Intersectionality.....	97

4.2.6 Data as an indicator of knowledge.....	98
4.2.7 Desired data to address equity.....	99
4.2.8 Conversations about race.....	101
4.2.9 Equity and DDD initiatives.....	103
4.3 Working with the data.....	105
4.3.1 Volume of data and sharing with the board of trustees.....	105
4.3.2 Surveillance, accountability, and sharing the data with principals.....	107
4.3.3 Data literacy and teachers work with data.....	109
4.3.4 Censorship and sharing the data with the public, parents, and students.....	111
4.3.5 The value of data.....	113
Chapter Five – Analysis and conclusions	116
5.1 Summary of the study.....	116
5.2 Limitations of the study.....	119
5.3 Summary of findings	121
5.3.1 Research Question #1: In what ways and to what degree are data valued by a sample of Manitoba school superintendents?	122
5.3.2 Research Question #2: In what ways and to what degree are the decisions in a sample of Manitoba school divisions data driven?	127
5.3.3 Research Question #3 – How might superintendents’ perspectives on educational data in select Manitoba school divisions be understood using a CRT perspective?	131
5.4 Implications for practice	137
5.5 Recommendations for future research.....	142
5.6 Conclusion	146
Appendices.....	149
Appendix 1.1 - List of acronyms	149
Appendix 1.2 - Interview guide	150
Appendix 1.3 - Invitation to participate.....	152
Appendix 1.4 - Informed consent form.....	154
References.....	158

List of Figures

<i>Figure 1 – Brown report data</i>	44
<i>Figure 2 – Manitoba student achievement</i>	45
<i>Figure 3 – B.C. graduation rates</i>	46
<i>Figure 4 – Interview guide</i>	60
<i>Figure 5 – Structural codes</i>	67
<i>Figure 6 – Emergent themes</i>	68
<i>Figure 7 – Nvivo screen capture</i>	69
<i>Figure 8 – Board word tree</i>	81

List of Tables

<i>Table 1 - Responses to race-based data</i>	93
<i>Table 2 - Summary of findings</i>	118

Chapter One - Background to the study

1.1 Introduction: The season of data

Data and the epistemological assumption that underpin them, are the subject of much debate. As with many other controversial topics, there are strong and divergent beliefs about the ways in which data should ultimately influence decisions, opinions, and beliefs. At times, data seems to reign supreme while at other times data are viewed with a strong dose of skepticism or outright rejection. While it is tempting to think that differences in opinion about data are only superficial in consequence, I propose that decisions are made every day based on data; decisions that have tangible and important consequences for all of us. The weight or value that is assigned to specific pieces of data, not only impacts but creates many of our perceptions and experiences of reality. For example, many of us begin our day with a quick check of the weather index in the morning, and then move onto choices throughout the day around personal finances, health, consumption, and leisure based on data. In my lifetime, I have been increasingly exposed to data that ostensibly steers my thoughts, behaviours, and outcomes. Implicit in our orientation toward data, are beliefs about science, empiricism, and measurability. In the same way that our beliefs about religion and politics rest on a faith that certain maxims are true, proponents of empirical data and its uses fundamentally believe in the principles of empiricism. A worldview that is positivist - one that states that knowledge includes only what is empirical - insists that knowledge must be, or have the ability to be, measured, and intersubjectively confirmed through the senses. When these empirical measurements are recorded, sifted, and sorted, the result is data. Data at all stages can be highly impactful, and there is little doubt of their snowballing presence in almost all fields, including people-centred professions like education. And just as with religion and politics, there is a dominant cultural sentiment about data that makes it difficult

in a professional context to deny or speak out against its effectiveness. Imagine a case today in a Canadian business setting where someone flatly denies the value of the Internet, the use of spreadsheets, or the idea that we should base our decisions on empirical evidence. These types of opinions are ones that many Canadians for example, appear to hold amongst their rock-bottom values. And to deny them – just as with denying the value of a secular state in our present day – would likely brand you as a social deviant, unfit for entry into the public decision making arena.

It might be said that this relatively new cultural emphasis on data reflects a broader paradigm of post-positivism – an epistemology that is empirical yet takes into consideration the ways in which our values influence what is observed - and is perhaps inextricably linked to the current season of digital innovation. The volume and speed with which specific types of data are now available may indeed reinforce this data revolution, which appears to be taking the globe by a storm (Mayer-Schönberger & Cukier, 2013). From the Big Data movement to localized evidence based decision-making, reams of data are now available and packaged for our consumption. The digital revolution, or information age, has rendered vast amounts of data and information in industries such as astronomy, biology, finance, and communications. In fields such as manufacturing, retail, banking and real estate, large data sets have helped to increase productivity, revenue, and organizational efficiency. The reach of this movement extends beyond organizations interested in profit margins as their single bottom line. Governmental organizations and not for profit initiatives have also embraced the collection of big data in entirely new ways. For example, Gapminder (gapminder.org), the New Economics Foundation (happyplanetindex.org), and the Organization for Economic Co-operation and Development (oecdbetterlifeindex.org) all collect large amounts of data for the purpose of understanding human well-being and social development.

Emerging in the field of medicine in the early 1990's, evidence-based decision making (EDM) has steadily impacted people-centred professions in fields such as social work, human resource management, and education (Biesta, 2007). In education, the standard for the use of data to drive the decision making process in the areas of policy, management, and professional practice has accelerated significantly in recent years (Davies, 1999; Eisenhart & Towne, 2003; Espeland & Sauder, 2007; Evans & Benefield, 2001; Moran & Mallot, 2004; Schildkamp, Lai, & Earl, 2012; Wellman & Lipton, 2004). Data-based or data-driven decision making is the use of data by education stakeholders, which includes but by no means is limited to policy makers, administrators, teachers, parents, and students to make decisions that improve schooling. Data, in this sense can be defined as, systematically collected information on students, schools, school leaders, and teachers or other relevant sample groups (Schildkamp, 2012, p. 277).

It may very well be the case - and is something that will be explored in this study - that data-driven decision making has become the predominant model for supporting or justifying decisions that are made at the administrative level in education. Data-driven decision making in education however, is certainly not without its critics. There is widespread debate among education scholars (e.g. Lather, 2004 and Shahjahan, 2011) on whether education should adopt a similar data-driven culture to healthcare. Lather (2004) and Shahjahan (2011) argue that while data might be useful in a profession that is concerned with the binary outcome of someone's life or death, it does not necessarily follow that data should reign supreme in a field like education. Critical theorists assert that particular notions of data or evidence are a reflection of power structures that are especially concerned with maintaining and securing control and a pre-existing social order. Of particular interest to me, is to explore the conjecture, that data-driven decision making may be contributing to the reproduction of racial inequalities. Critical race theorists, such

as Gillborn (2008) and Ladson-Billings (1998), argue that EDM in education directly propagates racism in schools. More specifically, they argue that not only are the data that are typically used in educational decision-making often devoid of any mention about race-based achievement gaps, but that Gap Talk (the discourse that includes notions of achievement gaps, performance gaps or outcome gaps) about achievement indicators strategically serves the purpose of shifting the focus away from the ongoing contributing factors that produce race inequalities. It is this interest in exploring the ways in which we use educational data in the decision making process, and the notion that these processes may contribute to racial inequality, that have motivated me to conduct this study.

Strictly speaking, this study aims to explore the current status of data-driven decision making in select Manitoba schools, which includes the ways in which some educational leaders use and value data. One area of interest is to uncover some of the ways in which the decisions in select Manitoba school divisions are driven by data. Furthermore, this study looks to probe into the ways in which practices at the divisional level may be oriented in such a way that maintains and secures the privileges of certain groups, as has been suggested by the tenants of critical theory. Critical race theory, or what I will refer to as CRT, will be used as a lens by which to interpret some of the findings in this research. CRT is a critical theory that defines race as a socially fabricated designation that is the direct result of power relations. Concerned with the deconstruction of oppressive structures and discourses, CRT aims at the reconstruction of human agency, and construction of equitable and socially just relations of power (Ladson-Billings, 1998). One desired impact of this study, is to contribute to the provincial discussion on data-driven decision making and critical theory as it relates to the areas of educational administration, educational data, and the decision making process in education.

1.2 The influential outlier

My interest in exploring the status of educational data and its uses or misuses can presumably be traced back to my undergraduate studies in philosophy. This ineffable experience left me convinced that nothing should escape scrutiny or critique, most especially arguments that rest on a premise of scientific knowledge. In the years following, my experiences in a teacher education program and as a secondary teacher in both public and private schools, provided many opportunities for analysis and critique of decision making processes at various levels. Further professional experiences working in an Ontario university in its Learning Success Centre, led to my increased interest in the role that data plays in the decision making process in educational institutions. What I would call a healthy skepticism, appeared to be only mildly encouraged in each of these systems that seemed to assign specific values to the data that were engaged with in each decision making process. My perception was that overt discussions about the data and its role in the decision making process were often discouraged, despite its significance. In particular, the tensions that surfaced during conversations that involved educational data seemed to present some of the most striking disagreements among colleagues. However, the opportunity to explore such tensions only arose once I began the current Master's program and when I was no longer positioned as a participant within the particular education systems under examination. Notably, there was one influential outlier which occurred during this professional experience which is the impetus for this study.

In 2011, I worked as a curriculum leader at a secondary school of approximately 2000 students in the largest school division in Canada. Together with administration, staff and a group of faculty from a nearby university, I planned and delivered a series of professional development (PD) sessions for school staff on the topic of culturally responsive and reflective practices. The

focus for our first PD session was the results from the research report entitled, *The Grade 9 Cohort of Fall 2002: A five-year cohort study, 2002-2007* (Brown, 2008) a previously publicly available 60-page report (that was taken down from public domain at some point in the middle of 2016) on the academic achievement of students in the division. The report contained a summary and analysis of a cohort study that tracked the academic achievement of every student in the school division who started Grade 9 in 2000, 2001, and 2002 over a five-year period. Academic achievement was operationalized in the report as the number of credits that students earned each year as well as their dropout rates. While the planning committee chose to work with this report because of its perceived importance, they recognized that academic achievement and student success are far more complex than the two measures acknowledged by the 5-year cohort study. The achievement data was presented in this report for all students in the cohort disaggregated according to: gender, first language, country of birth, and geographic location as identified on questionnaires by the parents of students. This method of reporting is called the student-tracked method and has very recently (beginning of 2016) been implemented here in Manitoba. What the report clearly showed however, was the glaring institutional achievement gaps between different racial groups (as self-identified by student's parents). The Brown report documented that students born in the Caribbean or Africa had an average 40% dropout rate compared to students born in the USA, Canada or Western Europe whose dropout rate was on average 17% (Brown, 2008). During the professional development session that focused on these findings, nearly 100 staff members participated in guided discussions about the race-based achievement data in the report. The session deteriorated very quickly into what could be described as hostile and antagonistic. Many staff members voiced anger and offensiveness, claiming that they were being accused of racism. Rejoicing opinions spoke about teachers' painstaking commitment and

devotion to their students, and even the suggestion that they may have been contributing to the institutional achievement gap was hurtful, misguided, and erroneous. Some flatly denied that the gap even existed by questioning the validity of the data. At the time, it seemed most important to me as a member of the facilitation committee, to understand how the session could have been better planned and executed. Years later however, two specific research interests emerged out of this experience. First, I developed an interest in exploring the role of educational data and understanding: the way it is collected, defined, used, valued/not valued, and the role that data plays in the decision making process. Second, I have an interest in investigating what I have come to believe is one of the most urgent disparities in education: race-based opportunity and achievement gaps. The intersectionality of educational data and racial equity, two seemingly very different education research topics, has wide-reaching implications, particularly for the province of Manitoba as I shall explain further. The questions I have started to consider are: To what degree are educational administrators and practitioners using data to inform their decisions, and if so, are they considering the ways in which that data may inadvertently disadvantage certain groups? To help me answer these questions, I believe it is important first and foremost, to try to understand and appreciate the views and perceptions that select educational leaders have about data. On the one hand, a rejection from the staff of the Brown report and the achievement gap it presented might have been about the validity of the data itself - the way it was collected, disaggregated, or presented. On the other hand, the negative force behind some teachers' responses may have been a result of the mechanistic way that we were comparing students according to institutionally defined measures, without acknowledging the strengths that exist with racial diversity. When achievement data and race are disaggregated, it is difficult to know whether objections about the data may in fact be a result of dispositions around race, or

alternatively, whether resistance to discussing race is perhaps because data is an unattractive medium through which to enter a discussion about race. In light of the prevalent and dominant cultural acceptance of data, I think it is important to try to look more closely at what the underlying reasons might be for that discomfort or mistrust when engaging in discussions about race-based data. What is clear is that certain orientations, principles, or beliefs of the various stakeholders involved in the above example did not match up. Like so many other tensions in the workplace, individual beliefs and interests blew in different directions and it resulted in a complete breakdown in communication. From my perspective, it was the beliefs about data, institutional achievement, and racial diversity (just to name a few) that erupted into emotionally charged mayhem, and a missed opportunity for productive professional growth and development. Because beliefs about educational data, institutional achievement, and racial diversity are so varied and have real consequences, it became important for me in this research to explore some of the beliefs and attitude of select educational leaders who are responsible for decisions that affect teaching and learning in Manitoba.

1.3 Purpose of the study and research questions

The purpose of this study is to offer an account of select ways that divisional data are collected, used, and valued, as well as how divisional data is considered in relation to race and racial equity. In order to understand some of the uses, values, and implications for data use in Manitoba, this study uses a qualitative research design. The data used in this study was collected from semi-structured interviews with ten school superintendents in Manitoba. The broader scope, or more ambitious purpose of this study is to: (a) explore current evidence-based practices and values in Manitoba school divisions, (b) apply a critical race theory framework when reviewing

select interview data, and (c) present findings and analysis that may in some way contribute to future research, or be useful for policy and practice in the area of educational leadership and decision making. Through the use of a qualitative research design, this study focuses on the experiences and perspectives of select educational superintendents in the K-12 education system in Manitoba as identified by them in a mediated context. Each of the interviews were conducted by me at a location that was convenient for participants, and were recorded over a duration of one to one and a half hour. In total, the recorded interviews produced over 200 pages of transcribed interview data. At its core, the purpose of the study was to probe into the experiences with and values about educational data of ten divisional leaders in Manitoba. The research questions that guided this study are:

- 1. In what ways and to what degree are data valued by a sample of Manitoba school superintendents?**
- 2. In what ways and to what degree are the decisions in a sample of Manitoba school divisions data-driven? and,**
- 3. How might superintendents' perspectives on educational data in a sample of Manitoba school divisions be understood using a CRT perspective?**

First, I am interested in understanding the experiences, values, and beliefs that overtly or silently inform the processes and behaviours of educational leaders throughout the decision making process. The question, “What is your perspective on the value of educational data? What are the benefits? Drawbacks?” from the interview guide was intended to unearth findings that would answer this research question. The second research question aims at exploring the nature, quantity and quality of the data that are collected as well as the specific role that data can play in the decision making process. Of particular interest are the specific types of data (i.e. student performance data or student demographic data) that are collected and the ways in which they are used as evidence. Wherever possible, this question seeks to uncover the weight or value that is

assigned to the data that are collected by school division offices. For example, when a participant discusses their tracking procedures for literacy across the division, and uses this data in order to allocate additional program or staff funding, this contributes to the findings of this study with one example of the type of data that is collected, utilized, and impactful. The third research question is answered predominantly by mapping select interview data onto a CRT framework that is explored in Chapter Five. Depending on the participant's knowledge or familiarity with CRT, responses to interview prompts were not always directly related to this framework. Therefore, it was my responsibility to systematically review their responses to uncover the ways in which their relevant comments might be understood from a CRT perspective. Transcripts from each interview were considered with special attention to the ways in which the use of educational data potentially perpetuates, or counters, a discourse of racial inequality.

Ideally, I hope this research will provide policymakers, superintendents, school administrators, teachers, or other educational stakeholders in Manitoba with a broader understanding of provincial data-driven practices, and will perhaps allow them to situate their own practices within the range presented. In addition, this study is meant to contribute to the academic, field, and informal conversations about educational data in a way that emphasizes the importance of approaching data with an open mind about its potential benefits and its potential for misuse or oppression. By applying a CRT framework, data-driven practice in education is showcased in multiple ways, drawing attention to the idea that the use of data in education like all other practices in education is not a neutral act. Finally, this study hopes to contribute to the limited but growing research area that explores the uses of educational data and evidenced-based decision making in the province.

1.4 Significance of the study

In recent years, there has been increasing emphasis on performance measures, data management and accountability in education (Benefield & Evans, 2001; Davies, 1999; Eisenhart & Towne, 2003; Espeland & Sauder, 2007; Moran & Mallot, 2004; Schildkamp, et. al., 2012; Wellman & Lipton, 2004). Evidence-based educational policymaking has not just nationally, but globally become a standard for practice. Various types of assessment tools which produce evidence or data for student performance provide a basis for generating information to be used for policy decisions, leadership approaches, and to motivate change and interventions in schools. Understanding the various ways in which data are used by authorities, school leaders, and teachers is therefore important for understanding possible developments and outcomes in terms of educational policymaking and educational practices. What we learn in this study about how student data are used by superintendents will ideally provide insight into the characteristics of educational decision making; furthermore, address the potential for data as a useful indicator of student learning and practitioner interventions as well as possible constraints and pitfalls that using data presents. Despite a wealth of international research in this area, there has been limited research on the topic of data-driven decision making in the Canadian educational context. With the aim of contributing to knowledge and practice, this study uses a qualitative research approach to examine the unique perspectives of superintendents in Manitoba, therefore building on previous studies and research in the area of localized data-driven or evidenced-based decision making (i.e. Atkinson, 2000; Earl & Katz, 2006; Hamilton, Marsh, & Pane, 2006; Hargreaves, 1997; Johnson, & Street, 2012; Layde, Christiansen, Peterson, Guse, Maurana, & Brandenburg, 2012). This study aims to provide an overview of current values and practices related to the use of data in Manitoba school divisions, followed by a discussion of how these practices and values

might be interpreted using a CRT perspective. As mentioned above, in some cases, data-driven decision making is oriented in such a way that maintains and secures the privileges of certain groups. Accordingly, the significance of this study is to present findings on what is becoming a familiar topic (educational data) in an unfamiliar way (through the lens of CRT). The hope is that this work will contribute to the current national discussion on the uses and limitations of educational data to inform policy decisions and practice in the Canadian context.

1.5 Organization of the study

There are five chapters in this thesis including this one. Chapter Two begins with a brief history of data-driven practice and an attempt at providing an overview of its current status in education. Next, I review select literature on the topic of evidence-based and data-driven decision making. Beginning with the history of educational evidence-based decision making, what I refer to as EDM, the cases for and against EDM, and some predictions for the role of teachers and educational leaders with respect to EDM are presented. Chapter Three describes the research methods and specific design details of this study. Study participants and their recruitment will also be described here as well as some limitations of the study and researcher positionality. Chapter Four reviews the central findings of the study, including key participant quotes when appropriate and summarizing statements about the participants in this study. Finally, Chapter Five discusses the implications of these findings, analysis of findings under a CRT framework, suggestions for future research, and concluding remarks.

Chapter Two - Literature Review

“It is not possible in the twenty-first century to ignore data.” - Schildkamp, 2012, p. 17

2.1 Introduction

In his 2010 paper, *The colour of numbers: surveys, statistics and deficit thinking about race and class*, David Gillborn exhibits how educational data has an important role to play in the pursuit for equity in education. Through the construction of a highly entertaining narrative, Gillborn illuminates key themes around the use of educational data, such as: quantitative data in education, the popular authority of numbers, methods of statistical manipulation, and the public and politicized discourse around educational data. Arguing that statistics can be a powerful form of exposing oppression, Gillborn (2010) embraces the use of quantitative data in the context of critical race theory objectives applied in the discourse of public education. This *new* use of educational data, is an important one to be added to a rapidly growing list of reasons for integrating localized data, big data, and data literacy into the teaching profession (Wellman & Lipton, 2004). Evidence based decision making has been adopted in many areas of education, and continues to swiftly gain traction (Davies, 1999; Eisenhart & Towne, 2003; Espeland & Sauder, 2007; Evans & Benefield, 2001; Moran & Mallot, 2004; Schildkamp, Lai, & Earl, 2012; Wellman & Lipton, 2004). Like many other fast-growing phenomena that impact the functioning of large-scale systems, EDM is contentious and divisive among researchers. Among the arguments that support the use of data in schools, is that data should be used, not just because accountability policies mandate it, but because evaluation research shows that data use can improve student learning and achievement (Schildkamp, et.al., 2012). There is a general consensus among EDM proponents that research and decision making in education can and should be “scientifically based,” despite there being a number of ways to interpret the meaning

of the phrase “scientific”. Dissenting researchers however, are deeply troubled by the prominence of the (post-) positivist epistemology that underlies the data movement, pointing to the decades of widely accepted critiques of positivism and “science modelled on physics” that are being ignored (Eisenhart & Towne, 2003). Many educators and educational stakeholders support the claim that data helps to improve educational outcomes, while others believe that quantitative data minimizes the human and contextual elements that are taken together, what is exclusively important in education. One major criticism levelled against the use of educational data is that monitoring, evaluating and presenting learning through an apparatus of numerical values or data sets, tries to quantify something that is unquantifiable or said differently, the production of measures as a result of EDM fails to capture the purposes of education or the complex experiences of students (Eisenheart & Towne, 2003). In light of the increasing popularity and tangible impacts that the data driven movement has on education, it is important to engage in discussions that consider the arguments both for and against the use of educational data.

This chapter explores some of the main arguments for and against the collection and use of educational data to drive decision making, both at the systemic and local levels. First, I begin with a definition for data-driven, or evidence-based, decision making (EDM). Second, I review some of the main arguments for and challenges to, the use of EDM. In particular, I view the shift toward educational data through the lens of CRT. Finally, I discuss three areas for consideration about the the future of EDM in education: opportunities for big data in education through educational data mining; opportunities for localized data through a case study of Morningside Academy; and key considerations of power-relations when moving forward with educational data.

2.2 Select definitions

Evidence-based decision making (EDM), is a term that is sometimes used interchangeably with data-based or data-driven decision making, but not always. Sometimes evidence is used to denote data that is gathered through multiple sources or mixed methods approaches. Data on the other hand, is usually referred to as a collection of data communicated through a singular type of medium, typically numerical and typically quantitative. For the purposes of this study, I have chosen to use “evidence” and “data” interchangeably. The rationale for this is that there is inconsistency throughout the literature about the ways in which data and evidence are to be distinguished and furthermore, if the research community does not have a common understanding of the distinction, then I cannot expect that participants will share a common understanding of their difference. Both evidence and data, for the purposes of this work therefore will be defined broadly as, “systematically collected information on students, schools, school leaders, and teachers or other relevant sample groups” (Schildkamp et. al., 2012, p. 9). This definition of data in the context of schools, means information that is collected and organized to represent some aspect of schools (Schildkamp et. al., 2012). The divisional level nature of research questions in this study lend themselves to a more focused discussion of larger data sets and ones that may be defined as standards-based student achievement data (vs. for example, more informal data that teachers collect based on their daily observations in the classroom). Glas, Scheerens, and Thomas (2013) provide a framework for grouping the main forms of educational monitoring and evaluation that constitute the most frequently types of educational data. These five areas of educational monitoring and evaluation are characterized as:

1. National assessments
2. International assessments
3. School performance reporting
4. Student monitoring systems, and

5. Assessment-based school self-evaluation (Glas, et al., 2013, p. 9)

EDM can be defined as the use of data, collected from one of the above five areas, by educational stakeholders (which includes but by no means is limited to policy makers, administrators, teachers, parents, and students) to make decisions that improve schooling (Schildkamp, et. al., 2012, p. 14). While there are key differences between each form of educational monitoring and evaluation, part of what follows is an attempt to show how the first three - national assessments, international assessments, and school performance reporting - encounter the same problems when viewed through a CRT lens. But first, I offer a rough timeline of events and shifts that led us to our current practices with data.

2.3 The history and context of EDM in education

The concept of evidence-based practice originates with the field of medicine and has rapidly become the main paradigm in clinical practice and clinical decision making as well as practice and decision making in many other fields (Biesta, 2007; Davies, 1999; Evans & Benefield, 2001). Furthermore, EDM terminology emerged out of this fast growing trend that has spanned over the last ten to fifteen years (Evans & Benefield, 2001). The central aim of the health-care EDM movement is to encourage practitioners and policymakers to base their courses of action on the best available evidence. But EDM in healthcare does not propose that decisions be solely based on best available evidence. From the healthcare perspective, there are three intersecting principles under this model that guide decision-making: (a) clinical expertise, (b) patient values, and (c) the best available evidence. This triangulated approach to decision making encourages questioning of current and traditional policy and practice (i.e. why do we do this; is this the best way?), and a review of the evidence, in order to determine if there are different

practices which are better supported by the available data (Evans & Benefield, 2001).

In addition to the spread of evidence-based practice from medicine to most other health fields (such as dentistry, nursing, physiotherapy, and occupational therapy), it has also been advocated and adopted in other fields of professional activity, such as social work, probation, human resource management, and education (Biesta, 2007). While accountability directed toward controlling human performance through quantification and written assessments first emerged in education around the beginning of the 17th century (Espeland & Sauder, 2007), the recent push for evidence-based education according to Biesta (2007) likely originated in Britain, as a result of numerous critical reports about educational research in the early 2000's. The call for “a *double transformation* of both educational research and educational practice lies at the very heart of the idea of evidence-based education.” (Biesta, 2007, p. 3). Several researchers also make the claim that there has been a recent proliferation of measures responding to demands from policymakers, for accountability and transparency (Espeland & Sauder, 2007; Moran & Malloy, 2004). They argue that in order to narrow the gap between research, policy, and practice, what is needed is increased rigor, accountability, quality, and relevance of educational research. Evidence-based practice has been one direct answer to this call, in that it “conceives of professional action in education as intervention, and looks to research for evidence about the effectiveness of those interventions” (Biesta, 2007, p.13). The broad implementation of standards-based accountability under the federal No Child Left Behind Act (NCLB) by our neighbours to the south, has had a significant impact on the advancement of the data movement, by providing schools and districts in the U.S. with additional data for analysis, as well as increasing the encumbrance on them to improve student test scores (Massell, 2001).

The mandate for increased accountability, quality and relevance of educational research

begs the question: What do we mean by accountable, quality, and relevant educational reporting and data? Naturally, there is no straightforward answer, and so there remains an ongoing discussion regarding the process of using educational data; about what comprises reliable data and the possible ways in which data might serve to maintain power structures. One aspect to consider is that the data that are often collected, presented and shared in healthcare are predominantly quantitative in nature. In educational research, the data are often qualitative in nature. In educational practice, the data that are talked about are often linked to standardized performance measures or local reporting measures which are frequently presented in a quantitative or numerical way. It is important then to consider the standards with which we treat or talk about quantitative data versus qualitative data. As Eisenhart and Towne (2003) point out, much of the public debate around EDM has turned on two questions: What constitutes “scientifically based” reporting in education? and, is scientifically based research the only or the best approach to understand educational phenomena? Hamilton, Marsh and Pane (2006) offer a unique conceptual framework of EDM in which decisions may be informed by multiple types of data, including both qualitative and quantitative data (see Appendix 1.2, p.61). Possible data sets include: input data, such as school expenditures or the demographics of the student population; process data, such as the quality of instruction; outcome data, such as dropout rates or student test scores; and satisfaction data, such as opinions from teachers, students, parents, or the community (see Appendix 1.1). Once collected, raw data must be organized and combined with an understanding of contextual factors (i.e., insights regarding explanations of the observed data) through a process of analysis and summarization to yield information (Hamilton, et. al., 2006). The EDM process, according to the framework offered by Hamilton et al. (2006), governs that the “analysis of the raw data becomes actionable knowledge when data users synthesize the

information, apply their judgment to prioritize it, and weigh the relative merits of possible solutions” (p. 2).

While Hamilton et al. (2006) conceptualize EDM primarily at the local, or school-based micro level, other researchers discuss EDM on a more macro level. Davies (1999) contends that evidence-based education first operates “to utilize existing evidence from worldwide research and literature on education and associated subjects,” (p. 108) and second to “establish sound evidence where existing evidence is lacking or of a questionable, uncertain, or weak nature” (p. 109). The emphasis in this case is on research synthesis, or what some are now calling Big Data, rather than a piecemeal or localized data approach. It may be that both localized and synthesized data play unique and relational roles in the future of EDM (which I will discuss later in this chapter). But does EDM, at the macro or micro level, have any business in the field of education?

2.4 The case for EDM in education

In a culture that privileges scientific inquiry, the dominant discourse is one that emphasizes data in the form of empirical evidence. In this sense, the breeding ground for the EDM movement was ripe, and so EDM in industry and social services was in some sense a foregone conclusion. Subsequently, and because the EDM movement has its origins in health care, there is ample support for EDM in education based on the similarities between the two fields. However, it is important to note that proponents of EDM in education are not advocating for replacing professional judgement or experience with data alone. EDM in education, like healthcare, relies on an interpretation of the data and an understanding of contextual elements. The case for educational EDM begins with the case for how and why education can benefit from the EDM

approach in healthcare. Davies (1999) asserts that with the exception of the binary outcome of death/survival, almost every other outcome of health care depends on whether one is concerned with objective or subjective dimensions of health and illness. Analogous to learning in education, healthcare involves “the interaction of signs and symptoms on the one hand and variations in health and illness behaviour according to social class, gender, ethnicity, and cultural practices on the other” (Davies, 1999, p. 109). In other words, educational EDM may reference objective-like measures such as test scores or attendance while also referencing more subjective dimensions such as enjoyment of learning or self-efficacy. Hargreaves (1997) adds that both education and medicine are profoundly people-centred professions. Practitioners in neither profession believe that helping people is a matter of simple technical application but rather a highly skilled process in which a sophisticated judgement matches a professional decision to the unique needs of each client.

Importantly, proponents of EDM in education argue that it does not preclude, but rather relies on, the continued judgement and experience of professionals in the field, just as with the three-pronged healthcare EDM model. Not only does professional judgement play an important role in the decision-making process, but it also helps to assess, contextualize and ask the right questions of the data available to them. Pursuing a parallel to the three components found in healthcare EDM - namely, clinical expertise, patient preferences, and evidence from research - educational researchers and practitioners might explore a new kind of partnership, in order to improve the quality of teacher decision-making and student support (Hargreaves, 1997). For many proponents of EDM, there is no question of evidence replacing clinical/practical judgement or experience, but of uniting these two dimensions of knowledge to provide a sound basis for action (Davies, 1999). An evidence-based education system should mean the integration

of individual judgement about teaching and learning, with the best available external evidence from systematic research or evaluation and monitoring (Davies, 1999). The emphasis in EDM therefore, is not just on the data alone, but on the *quality* of data and the knowledge that emerges from engaging with it; by asking questions, and in thinking analytically about it. For instance, it is quite likely that erroneous assumptions about teaching or learning needs would result from looking at achievement data alone. Buly and Valencia (2004) provide a good example from a policy perspective on the importance of basing intervention on specific profiles of teaching and learning needs, rather than on assumptions about what children need. In their study, a policy mandating phonics instruction for all students in the state of Washington who fell below literacy proficiency levels was shown to have missed the needs of the majority of students, whose decoding was strong but who struggled with comprehension or language requirements for the tests (Buly & Valencia, 2004). Clearly, understanding the data and the limitations or meanings of the data is a process that practitioners must engage in for EDM to be effective.

EDM also does not dictate that all data be treated equally. Educational decisions that are made using merely data that are available, rather than data that are appropriate, is not congruent with the principles of EDM. As data use becomes more pervasive, educators run the increasing risk of being overwhelmed, enslaved, or misguided by data rather than steered by appropriate data in their decision making process. Therefore, the role of data is “to provide information that educators use to engage in thoughtful planning and make reasoned and targeted decisions to move toward continuous improvement” (Earl & Katz, 2006, p. 22). There is therefore, a critical need for educators to become *data literate*, or,

adept at understanding the nature of and assumptions behind these large data sets, so that they can be participants in the discussions that arise from these data sets: by challenging positions taken by others, being sophisticated consumers of educational data, and turning their questions into

the appropriate analyses of these “big” quantitative data sets to consider patterns and relationships that matter to them. (Schildkamp, et al., 2012, p. 18)

Data sets can also inform decision-making in a way that is recursive. Once a decision that involves data has been made, new data can be collected to begin assessing the effectiveness of the resulting actions, leading to a continuous cycle of collection, organization, and synthesis of data in support of decision making (Hamilton, et al., 2006).

A shift toward decision making that emphasizes data, like any paradigmatic change in practice, may be a difficult or uncomfortable one for education professionals who are unaccustomed to this form of practice. Nevertheless, many would argue that EDM as the norm in education is not only conceivable, but imminent. Evans and Benefield (2001) argue that the experience of health care has paved the way for education and has, “indicated that it is possible to move from a situation where practice is based on tradition or personal preference to one where it is based on sound research evidence” (p. 528). As Schildkamp and Kuiper (2010) note, data can be extremely helpful to “remove politics and ideology from decisions, and focus on teaching and learning” (p. 482). The case they present is that the use of data in the decision making process will result in fairer and better justified practices in schools and classrooms. Many critics of this view would refute the idea that educational data removes politics and ideology from decisions. However, before exploring this concept further, it is first important to address more broadly, the set of challenges to EDM.

2.5 Challenges to EDM

One does not have to look very far before they find a plethora of criticisms levelled against educational EDM. Oakley (2002) describes as, “at least four issues ahead of [social science] in

accommodating itself to the challenge of the evidence movement” (p. 279). These are to: (a) revisit critically the question of the distinctions between medicine and education, (b) review ways of reducing bias in policy and practice evaluation, (c) develop methods for assessing the trustworthiness of qualitative research and (d) soften the polemic of ‘quantitative’ versus ‘qualitative’ methods (Oakley, 2002). As mentioned above, there is dissension among a number of scholars (e.g. Biesta, 2007; Lather, 2004; Shahjahan, 2011) that education should follow the healthcare example in becoming an EDM profession. Even EDM within healthcare is not without its opponents. Layde, Christiansen, Peterson, Guse, Maurana, and Brandenburg (2012) claim that the serious limitations of EDM approaches to evidence-based public health can be seen when “fundamental characteristics of the specific community are ignored or not understood and do not feel ownership of health improvement interventions” (p. 617). Although “community values” is one part of the three-pronged EDM approach, they argue that in practice the weighting is so imbalanced that these values are almost always neglected. If true, then this objection resonates profoundly when applied to the educational context; if research-driven processes overshadow or fail to adequately consider community priorities, community assets and challenges, or community commitment, implementation and sustainability are seriously jeopardized (Layde et al., 2012). Of particular importance in this study, are the aspects of community priorities, and community assets and challenges which can be framed as racial priorities, assets, and challenges. It is important to consider whether an EDM approach in practice, ignores community priorities, assets, and challenges. Perhaps it is the case that community priorities are often identified through qualitative research methods, and this data therefore is neglected because of its perceived subjectivity and therefore inferiority in a dominant culture of (post)positivism.

While there is a commonly accepted need for developing methods for assessing the

trustworthiness of qualitative research, as Gillborn (2010) and others point out, there is also a need for developing methods for assessing the merit and trustworthiness of data and quantitative research. A requirement for data literacy – the ability to derive meaning from and ask questions of data – is a critical one for sound EDM processes. If this process of becoming data literate is glossed over or attempted with isolated professional development training, then the EDM process is not a reliable one. In some cases, the exercise of decoding and deconstructing certain types of data may call for an inconceivable investment of time within the already demanding schedules of education practitioners. As Gillborn (2010) points out, there is great danger in relying on numerical data without the ability to spot misuses of the data, just as in the case of the report discussed in his article, “statistical manipulations erase all but the most extreme inequalities...their inequality has been ‘controlled’ out of existence” (p. 271). Put another way, quantitative research is no less subject to misrepresenting, misunderstanding and researcher bias than any other research method. Gorard (2010) criticizes the multiplicity of educational research claims that are based on “the flawed panoply of sampling-theory statistics” and sample sizes that are limited in scope (ex. census data that does not take into account changes over time) and are therefore not statistically significant. Yet, even if ‘properly’ or ‘academically’ understood, quantitative data sets face further critique. There are epistemological limitations to using even statistically sound data. Serious deficiencies can be found in the use of “systematic reviews, instrumentalist language, the restrictions of experimentalism, the narrow definitions of science, as well as the positivist assumptions underlying the evidence-based education discourse” (Shahjahan, 2011, p. 198). Such a positivist approach some argue, erroneously reduces educational research questions to the pragmatics of technical efficiency and effectiveness. In other words, educational practice is not a matter of input/output in which a small number of

independent variables can be isolated and subsequently dissected or properly understood in isolation. The very process of measurement elicits responses from people who intervene in the objects they measure. Test scores, for instance, cannot be treated as measurements that indicate much beyond performance in a testing environment. In this case, it would be willful blindness to overlook confounding and intervening variables such as, test-anxiety, self-efficacy, or physical/emotional/spiritual well-being when defining the meaning of test scores and the role that data should have in the decision making process.

Finally, this positivist record keeping approach, actively detracts from the ongoing discussions that should be taking place instead around the purposes of education. It is meaningless to talk about effective teaching or effective schooling before asking and discussing the purpose for education; educators should instead look to explore the question, *effective for what* (Biesta, 2007)? Biesta and others raise important questions that must be asked by anyone engaging with educational data, namely: Who is driving data collection? Who has the power to collect data? Who does not have access? What should be encouraged and why? Is research which explores the wider social, philosophical or ethical issues which are implicit in all social policy decisions happening (Evans & Benefield, 2001)? In other words, the collection of use of educational data is intricately tied to a complex network of power relations. The next section explores some of the implications within the social and political landscape for an EDM approach in education, with a particular focus on critical race theory.

2.5.1 CRT holding EDM to account.

“Power is not an institution, and not a structure; neither is it a certain strength we are endowed with; it is the name that one attributes to a complex strategical situation in a particular society.”
- M. Foucault, 1977, p. 93

An analysis of the racial implications for performance measures can perhaps best be carried out by applying some of the work done by critical race theorists. Critical race theory is one of many theories (along with feminist theory, culture theory, queer theory, and many others) situated within the more general tradition labelled critical theory, which seeks to emancipate the disempowered, to redress in-equality and to promote individual freedoms within a democratic society (Cohen, Manion & Morrison, 2000). Ladson-Billings (1998), in her seminal writings on CRT identifies how whiteness and blackness are conceptual terms in which the meaning and value for each are socially constructed. For example, as an African American female academic, she believes that she is “sometimes positioned as conceptually White in relation to, perhaps, a Latino, Spanish-speaking gardener. In that instance, my class and social position override my racial identification and for that moment she becomes ‘White’” (Ladson-Billings, 1998, p.8). CRT exposes that whiteness and blackness are not simply two neutrally different terms, but rather all non-white races are always assessed in terms of degrees away from the concept of whiteness. Sociological theory has long emphasized a socially constructed definition of race in which members of society, not principles of biology, define who belongs to what race and what such a membership means in terms of power and access to social resources (Lucas & Beresford, 2010). Race therefore, is a socially fabricated designation and “a product of historical circumstances and the operation of power in context, racial demarcations and categories can change over time and differ across space” (Lucas & Beresford, 2010, p. 35). In their research, Diamond, Lewis, and Gordon, (2007) found that oppositional culture and a burden of ‘acting White’ emerges for Black students in desegregated schools in which Whites are perceived (by both races) as having greater educational opportunities. Minority students who “pass” physically or culturally as White, often find that the social and psychological costs are very high

(Ogbu, 2004). In my own experiences as a classroom teacher, minoritized students repeatedly report that they experience a tension between “fitting in” to White culture and expressing themselves in the ways they were taught and raised at home. Minoritized students may experience a range of cultural pressures within a colonial education system that are in contradiction to their own unique cultural understanding, which includes for example the ways they are taught they should dress, enunciate, play, eat, laugh, respect, believe, and comply. CRT makes the case that racism is “normal, not aberrant, in American (and let us add, Canadian) society” (Delgado & Stefancic, 1995, p. 462), and, because it is “so enmeshed in the fabric of our social order, it appears both normal and natural to people in this culture” (Delgado & Stefancic, 1995, p. 462). CRT emphasizes the importance of storytelling to analyze the myths, presuppositions, and received wisdoms that make up the common culture about race and that invariably render minorities lesser-than whites (Delgado & Stefancic, 1995). A significant intellectual and social tool, CRT is a critical theory that advances the deconstruction of oppressive structures and discourses, reconstruction of human agency, and construction of equitable and socially just relations of power (Ladson-Billings, 1998). Although CRT theorists and practitioners have diverse approaches and emphases, their scholarship and advocacy share common ground in the following six basic tenets:

1. Endemic racism exists
2. Race is a social construction
3. There exists a differential racialization
4. Interest convergence/materialist determinism exists
5. Voices of colour must be heard
6. Antiessentialism/intersectionality must be recognized (Abrams, & Moio, 2009, p. 251-2).

The elements of CRT that are the focus in this study are items two, three, four, and six.

Standardized performance measures and EDM viewed through these particular aspects of a CRT

lens reveals the power structures embedded in these assessment methods, which is a very different view from those outlined in section 2.4 above. To whichever degree that standardized tests claim to measure the abilities of a country, province, city or school, they can also be impeached as an oppressive structure that serves to maintain the power structures and white privilege of those who are often their authors and advocates. Critical race theorists reject the view that performance measures have almost any value at all. It is only when the business of performance measures is set aside, that teachers and communities can focus on building equitable relationships and laying the groundwork for genuine cultural pluralism. In order to acknowledge the role of the educational system in the production and reproduction of racial, class, and gender inequality in society, it is important to use an antiracism discursive framework (Dei & Karumanchery, 1999).

Like critical race scholars, postcolonial theorists contend that oppression and racism are reproduced by social structures and cultural meanings (Kaplan, 2013). Revisiting histories of colonial educational policy in schooling contextualizes and demonstrates how evidence-based education, particularly that tied to high-stakes testing, reproduces past colonial ideologies with respect to developing colonized labour (Shahjahan, 2011). This perspective identifies EDM proponents, who are well-intentioned, as unknowingly perpetuating a colonial discourse where scientific knowledge is viewed as a special gift for the field of education, “which otherwise remains in a state of barbarous disorder” (Shahjahan, 2011, p. 182). Key to this rationale, is the recognition of an ideological construct that provides those in power with the language and tools to assert power, dominance, and imposition through a binary discourse of superiority such as superior/inferior, rational/irrational, veridical/intuitive, masculine/feminine, and mind/body. Correspondingly, the underlying narrative of the scientific discourse of which EDM is a part, is

one of superiority, salvation and enlightenment (Shahjahan, 2011). The rhetoric of *bias* is used in the EDM movement to negate other ways of knowing so that control is maintained. The language and epistemology that are used to frame an EDM educational policy discourse, is one that CRT theory identifies as employing particular notions of evidence which reflect a colonial discourse of scientific civilization, rationality, control, and order. Shahjahan, (2011) contends that the EDM policy narrative promotes the idea that if educators do not take evidence into account when making decisions (i.e. about policy or teaching/administrative practices), the field will lag behind other professions in terms of quality, respectability, and accountability. Atkinson (2000) charges advocates of EDM (Hargreaves, specifically) of falsely claiming that teachers' practice does not already possess a theoretical infrastructure. Indeed, in his research findings, teachers' practices reflect their understandings of several theoretical traditions (e.g., the developmental and learning theories of Piaget, Vygotsky, and Gardner) just not the one of the current more scientific EDM discourse. Learning theories when compared to the EDM model, are portrayed by EDM proponents as inferior, less rational and in need of civilizing.

The struggle to maintain colonial or White power structures can manifest itself in so many ways, through policy decisions, public discourse or at local levels. Critical race theorists argue that EDM policies are principally far more concerned with maintaining and securing the privileges traditionally associated with learning than about improving quality to access to education, or whether diversity initiatives actually foster students' capacity to learn (Chang, 2002). The very concept of diversity calls into question not only how learning is viewed and what is valued, but also how learning should be assessed (Shahjahan, 2011). This group of critics posit that EDM espouses a certain conception of educational practice and policy which does not tolerate diversity (i.e. diverse bodies and knowledge forms) and thus promotes a monoculture of

the mind. In short, “a high-stakes performativity and accountability culture is fixing while colonizing diverse ways of knowing and being” (Shahjahan, 2011, p. 184). Espeland and Sauder (2007), who are proponents of a certain form of EDM, acknowledge that “public measures affect the distribution of resources, redefine statuses which can become reified and enduring, produce and reinforce inequality, and transform the language in which power presents and defends itself” (p. 4).

A sociological concept that critical race theorists adopt is the notion of social capital. Social capital as defined by Bourdieu & Wacquant (1992) is, “the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (p. 119). From a CRT perspective, it is easy to see how individuals who are data literate within an EDM framework are the ones who possess social capital and continue therefore to be the dominant group. Within the EDM movement, it is those who have access to data and data literacy skills who are situated among those resources and therefore garner mutual recognition within the dominant group. Portes and Sensenbrenner (1993) wish to redefine social capital as, “those expectations for action within a collectivity that affect the economic goals and goal-seeking behaviour of its members, even if these expectations are not oriented toward the economic sphere” (p. 1322). Under the redefined definition of social capital, the expectations of underprivileged, under-performing students in an institutionalized EDM would continue to manifest themselves in opportunities to learn, and be concretized either directly, for example in ‘below average’ performance data or covertly through statistically manipulated reports of negligible differences between dominant and marginalized groups. The key here, is that those who possess social capital must be understood as possessing the power to not just advance a

person's social positioning, but also to constrain individual goal-seeking and even redefine the content of such goals (Portes & Sensenbrenner, 1993). However, understanding educational data does not guarantee social improvement. A community of educators who are data literate, and are evidence based decision makers, does not necessarily result in any form of social change or redistribution of social capital for its learners.

The relationship between those who have 'ownership' of educational data, and racialized stratifications must be explored further. Racism plays a large part in shaping social institutions, and continues although more subtly, to impact institutions of socialization such as education. "[R]esearchers, practitioners and students are still searching for the necessary tools to effectively analyze and challenge the impact of race and racism" (Yosso, 2005, p.70). Perhaps with a shift in the mindset of the producers of the data, EDM can be used in such a way that is helpful in uncovering the impacts of racism. Numerous scholars have in fact already researched and identified the racial stratification and opportunity gap that exists throughout each stage of the learning process. Specifically, much research can be found in the area of racial stratification and the transition to higher education (i.e., Alon & Tienda, 2007; Astin & Oseguera, 2004; Buchmann, Condron, & Roscigno 2010; Gillborn, 2010; Posselt, et al., 2010). Buchmann et al. (2010) have argued that upper and middle-class families access opportunities beyond classroom instruction such as SAT preparation courses, tutoring and other related activities that together, constitute a very real shadow education. Alon and Tienda (2007), demonstrate how the race-based gap in standardized test scores is larger than that in class rank, and because this disparity continues to rise, the minority disadvantage will persist and even widen if the college meritocracy continues its shift toward greater emphasis on test-based, relative to performance-based, measures of achievement. A longitudinal survey of admissions officers revealed that in

response to swelling applicant pools, colleges have placed an increasing emphasis on test scores in admission decisions (Alon & Tienda, 2007). Astin (2004) shows that while first-generation students do have an increased presence in tertiary education, as the public discourse claims, a closer look at the data reveals their presence becoming increasingly concentrated in the least selective institutions. First-generation students now account for more than a third of the students enrolling at the least selective institutions and less than one in 10 at the most selective colleges and universities (Astin & Oseguera, 2004), suggesting a thriving stratification at the post-secondary level in the U.S. A closer reading of U.S. standardized performance data shows that White non-Free School Meal (FSM) students outperform their peers from the same gender from different ethnic groups with the largest disparity existing between White students and their Black Caribbean counterparts, “White non-FSM girls outperform their Black Caribbean counterparts by 9.7 percentage points while the achievement gap between ‘White non-FSM boys’ and Black Caribbean students is 17.2% points” (Gillborn, 2008, p. 17). The American SAT test has been accused of being both “culturally and statistically biased against African Americans, Hispanic Americans, and Asian Americans” (Wiliam, 2010). Lingered, Creagh, and Vass (2011) argue that NAPLAN – the national Australian literacy and numeracy test - is a mechanism of rewarding those capable of demonstrating suitable quantities of White cultural capital, whose same principles can be extended to almost all forms of standardized performance measures. In using and valuing standardized performance measures, the education system “reinforces social differences through the implementation and use of dominant Eurocentric notions of what is valid and invalid knowledge” (Dei & Karumanchery, 1999, p. 114). However, the accountability debate is seldom placed within its proper historical context, and often neglects the importance of race, class, and culture in measuring student outcomes (Jordan, 2010). As Ladson-Billings

(1998) argues, children of colour are often viewed as White students who simply need extra help to succeed in school.

In 2007, Diamond, Lewis and Gordan published a case study of Riverview High School to demonstrate how social constructions of race continue to oppress black students. Riverview is located in a mid-sized U.S. city within a large metropolitan area over 3000 students is primarily Black and White students, of whom nearly 80% of its graduates attend college. In examining Riverview students' beliefs about the implications of race for their life chances and their current experiences in their local communities and schools Diamond et al. found substantial differences along racial lines. Black students were far more likely to see race as a meaningful part of their identity and to believe that their race would have negative implications for their chances of 'getting ahead' in the U.S. than were White students. It is research findings contained in studies like these, that moderate EDM critics might agree, are needed to resist and reverse forms of dominance and oppression. Indeed, there may be an opportunity for accountability to be understood quantitatively and it equates with good governance and educational values— such as accessibility, equity, transparency, responsibility, responsiveness, and even democracy—can be redefined and reinscribed in our institutions as technical yet meaningful accomplishments.

2.5.2 On Assessment construction and validity.

Currently, there are multiple forms of summative assessment that claim to gauge student learning and therefore educational quality. These widely accepted assessments and provide evidence for policymakers at the provincial, national, and international levels (Wiseman, 2010). There is a great deal of literature that explores the nature of summative assessments in terms of their construction, purpose and validity. This section will only scratch the surface of the debate.

However, it is useful to consider some key findings and frameworks for thinking about local, national and global performance measures that are used in education systems, drawing on in particular, a CRT perspective.

Schooling and learning are not neutral acts. They reside in the political, social, emotional and moral spheres of daily life. Assessments and performance measures are an attempt then to quantify learning and assess the effectiveness of the teaching environment. Schooling today is positioned within an increasingly globalized and evidence-based culture that is shifting toward accountability, comparisons, and data-driven decision making. As I put forth in chapter one, Big data is fashionable. In education, the Big data that is the subject of discourse is large scale assessments such as Programme for International Student Assessments (PISA) or Trends in International Mathematics and Science Study (TIMSS). What necessarily follows are international and national comparisons (a monoculture of knowledge) and a growing trend of learning for a specific purpose, a purpose which should be measurable and with reference to particular (non-neutral) outcomes (Biesta, 2012). Biesta (2007) claims that evidence-based advocates promote the view that,

[education] is too important to allow it to be determined by unfounded opinion, whether of politicians, teachers, researchers or anyone else. What is needed is a culture ‘in which evidence is valued over opinion’ and any approach to decision making that is not evidence-based is simply pre-scientific (p. 9).

It would be unsound however, to claim that politicians and policymakers who use evidence as a basis for their decisions, do so without bias or prejudices leading the way in the process.

Nevertheless, national and international performance comparisons continue to gain popularity, precisely because of their unbiased appearance. According to Soudien, Apple and Slaughter (2013), the dominance of testing and reductive models of accountability is pronounced across the globe. Baker and Wiseman (2005) argue that aspects of the new public management and

educational accountability trends are attributable to increased awareness of national and international educational achievements. Comparative international tests of student achievement have become increasingly popular over the past decade. International comparative assessments like PISA influence education policy in many countries today (Gorur, 2013). Grek (2009) suggests that the comparative turn, or, a more “scientific” approach to political decision making, has been the main driver of the PISA success. PISA, created by the Organization for Economic Co-operation and Development (OECD), is a triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students’ success (OECD, n.d.). Through the presentation of statistics, reports and studies, it has achieved a brand which most regard as indisputable; OECD’s policy recommendations are accepted as valid by politicians and scholars alike, “without the author seeing any need beyond the label ‘OECD’ to justify the authoritative character of the knowledge contained therein” (Grek, 2009). PISA now accounts for approximately 30% of the Education Directorate’s budget inside the OECD and is funded directly by participating nations. In fact, one could argue that the OECD’s greatest impact has been in relation to its indicators agenda (Grek, 2009). In other words, OECD has had a tremendous impact on individual nations adopting similar indicators of educational success, in order to increase the national performance outcomes on this particular test.

One outcome of the widespread emphasis on international assessments is the tendency for countries to monitor and evaluate their national success according to their pupils' international ranking in such achievement tests, partly due to the common belief that high ranking is an indication of the nation's future ability to compete in the global market (Feniger, Livneh, & Yogevev, 2012). Wiseman (2010) argues quite persuasively that the rise in the use of scientific

evidence for educational policymaking rests on two beliefs: one is the belief that school knowledge is abstract and universal, and the other is the belief that empirical evidence is an efficient indicator of knowledge and learning. There is now a perceived need by policymakers to attend to the “marketization of education, culture of measurability and accountability influenced by transnational policy actors, ministries and ministers of education, the media, administrative bodies and economic organizations” (Martino & Rezal-Rashti, 2013). International reports such as the PISA, TIMSS, PIRLS and national reports such as PCAP are used to justify changes or provide support for existing policy direction in both the domestic and the international contexts (Grek, 2009). This comparative and competitive use of data paints a stark picture of which countries are successful and those who are not. As was recently experienced in Manitoba, the notion of ‘average’ creates the ‘below average’ and the latter is seen as abnormal and in need of “fixing”. This is a particularly important reminder in education, where every country wants to be in the ‘top ten’ or at least ‘above average’ – “a mathematical impossibility” (Gorur, 2012, p. 98). And still, countries like Canada, Israel, Japan and others respond by making significant policy changes based on these standardized assessments. Although this study is concerned with divisional data, there is a trickle-down effect when national and provincial priorities are structured in response to such international and national standardized assessments.

Why are we experiencing a shift toward standardized assessments and evidence based educational decision making? According to Wiseman (2010) it is about a new form of control. Control by whichever person or group has responsibility for evaluating the results of assessment. So in the classroom, a teacher can control (to some degree at least) both what students learn and whether they advance through their class and through the school system. Operating within a CRT framework, it could be said that by focusing on the evidence that is deemed important - i.e. math,

science and literacy PCAP scores - teachers, schools, and communities have a mechanism of controlling how and what students learn (and do not learn). For example, these “core subjects”, while important, do not lend themselves very easily to a larger curricular focus on citizenship education for the purposes of reconstructing racialized constructs.

It is perhaps important to note, that even if math, science and literacy skills were indisputably the most important in education, there is still grounds to inquire into the validity and reliability of the instruments used to test ability in these areas. Reliability of instruments is an issue from the local level all the way up to the global level (Wiseman, 2010) and the possibility that international educational data are unreliable is more a question of degree than anything else. Gorur (2013) claims that much of the literature in this area highlights the absurdity of attempting to meaningfully capture the complexities of educational settings and systems, which differ widely from context to context, through standardized assessments. And so, even in a world where different stakeholders agree about the importance of the material to be assessed, the assessments themselves become vigorously contested (William, 2010). As soon as there is an attempt to generalize assessment results, either in the form of a statement about ability or predictions for the future, we are guilty of a logical fallacy by way of induction. As William (2010) suggests,

Assessment is contentious, because when we assess we go beyond the construct and claim that certain tasks, if performed successfully, indicate the presence of the ability in the individual, although if the individual does not perform the task successfully, this is taken as evidence that the individual does not have the ability in question. In other words, assessments operationalize constructs. (p. 260)

In order to make the claim that an assessment is valid, the definition or operationalization of each construct it is testing must be narrow, clearly defined, and well-represented. William’s point above is that it is faulty logic to claim that a single test can alone confirm or disconfirm the

presence of a broad construct such as mathematical ability or citizenship. Herein lies the tension between the stated purpose of education and the practice of monitoring and evaluation. For example, the mission statement of Manitoba Education and Advanced Learning (MEAL),

To ensure that all Manitoba's children and youth have access to an array of educational opportunities such that every learner experiences success through relevant, engaging and high quality education that prepares them for lifelong learning and citizenship in a democratic, socially just and sustainable way.
(Education and Advanced Learning, n.d.)

This robust statement arguably presents constructs that are quite broad and student-focused ones. However, this mission conflicts with the necessarily narrowly-defined PCAP and provincial standardized tests. While the mission statement sounds ideal, the reality is that teachers' responsibilities are required to be visibly tied to measurable goals, while other less measurable, but nevertheless important, goals tend to be neglected (Edling & Freling, 2013). Professional practice it would seem, is often aligned with less advertised priorities to raise test scores. Teacher professionalism as a result, tends in the age of measurement, to be about given responsibilities; thereby indirectly rendering the teachers' felt responsibilities (for example, addressing their students' well-being) as unprofessional (Edling & Frelin, 2013). Not only are schools and pupils being commodified, but so too are knowledge and policy themselves (Soudien et al., 2013).

Finally, consider what would happen if Gap Talk was meaningful, and actually led to a Gap walk of some sorts. Gap talk, refers to the discourse that includes notions of achievement gaps, performance gaps or outcome gaps. Beyond doubt about whether Gap talk is sincere in nature, Jordan (2010) believes for example that even if equal standardized test scores in American schools were attainable, it would not be desirable in light of the required diversity of knowledge, skills, and interest needed to maintain democracy and global competitiveness. Clearly, if the purpose of education in Manitoba is to foster "lifelong learning and citizenship in

a democratic, socially just and sustainable society” (Education and Learning, n.d.) then a one-size-fits-all approach to a diverse student body, is not the best model.

Learning and educational outcomes are frequently used concepts, but they are complex ones to actually assess and evaluate. The reason for using evidence as a basis for policymaking is attached to a chain of assumptions about individual student learning and performance. The logic is as follows: the more students learn, the more they know. The more students know, the better their test performance (a key form of evidence) will be. The better test performances are, the better the teacher or school is. And, so the chain of association continues (Wiseman, 2010). Performance measures like the PCAP and PISA aim for a universal fit through streamlining what are deemed to be “the essentials” which can then be measured based on test performance. But the process of learning is a phenomenon that is “too nuanced and dynamic to form a basis for policy to improve schools, teaching, and learning” (Jordan, 2010, p. 156), particularly when standardized test scores are used to measure whether and how well learning is taking place. In considering how the evidence-based model has its roots in medical practice, Biesta (2007) suggests that, the model of professional action implied in evidence-based practice — that is, the idea of education as a treatment or intervention that is a causal means to bring about particular, pre-established ends — is not appropriate for the field of education.

This first problem with this approach is the role of causality: apart from the obvious fact that the condition of being a student is quite different from that of being a patient — being a student is not an illness, just as teaching is not a cure — the most important argument against the idea that education is a causal process lies in the fact that education is not a process of physical interaction but a process of symbolic or symbolically mediated interaction. (Biesta, 2007)

Not only are human minds and lives too complex for this type of stimulus-response conjunction, but a CRT approach reveals that these established and reestablished ends are ones that have been and continue to be defined by a dominant discourse of White privilege.

It would be dogmatic to neglect any possibility for value in standardized performance measures. And so the question is one of degree, or an analysis of costs and benefits. As mentioned above, proponents of standardized tests often assume that the creation of uniform mechanisms of measurement, appraisal and comparison will make it possible to increase the efficiency of various educational systems, and ultimately result in students acquiring the tools which will enable them to be successful in the future (Feniger et al., 2012). Indeed, globalization is changing the landscape of how we do business and what skills may be required in the 21st century. But it is doubtful that the narrowly defined performance standards on tests such as PISA or PCAP are an authority on what those desirable skills will be. Yet, these global assessment values continue to gain traction, and countries subordinate their own historical, cultural and political complexity, to the logic of the global economy (Feniger et al., 2012). By valuing these types of standardized performance measures, the organization, school, college, university and agency, and the person are all treated in exactly the same way (Soudien et. al., 2013).

2.6 Assessment, SES, and gender

Some brief comments follow on the relationship between performance measures and gender, acknowledging that it is another topic in it of itself and there is substantial literature that will be omitted here for reasons of space and focus. According to Wiseman (2010), gender equity in education is one of the most researched, discussed, and politicized issues in educational policy. Standardized test results are frequently delivered packaged and presented in the form of gender breakdowns, highlighting where gender gaps occur. For example, the PCAP results are presented by province and test score data are disaggregated solely along the lines of gender and the two official languages. This specific focus on gender is “justified in terms of ‘policy makers

(including educators at all levels, parents, and other interested parties)’ as having a particular interest ‘in reducing disparities in educational performance’” (Martino & Rezal-Rashti, 2013, p.592). Throughout the report, gender comparisons are highlighted for each of the subject areas across all provinces and territories (PCAP, 2014). According to Martino and Rezal-Rashti (2013),

The use of such disaggregated data and their representation in bar-graph form is designed to illuminate the phenomenon of ‘failing boys’. This immediately produces a significant blind spot in terms of significant disparities in achievement that exist for minority populations and in terms of socio-economic background, which, as already pointed out, is far greater than any gender gap (p. 591)

Analyzed using CRT, the claim can be made that the discourse around gender gaps aims at preserving a hierarchical male Whiteness while diverting the focus away from the much wider gaps and inequities that have been sustained over time. Since the mid-2000’s, a particular focus of popular discourse has been White working-class boys (Gillborn, 2008). Compounding the problems that are inherent in the test itself (discussed above), the ways in which the aggregate data are presented supports a particular policy agenda of preserving privilege. In other words, by shifting the discussion of disadvantage to boys, initiatives that focus on (White) boys’ success, and the financial investment that follows, are justified while authentic race disparities are preserved. Along these lines, what is also important to highlight is that a significant number of the most disadvantaged and at-risk students in school systems in Canada, are not included in the PISA sample (which tests students at the age of 15), because they have already dropped out of the system (Martino & Rezal-Rashti, 2013). Once again, the assumption behind EDM is that school-based interventions are the determinant of increased (or decreased) performance outcomes; there is much debate however about whether this is indeed the case. Variations in family background and outside-of-school environments affect achievement at least as much as

variations in school resources and quality do (Wiseman, 2010). According to Wiseman (2010), a child's family background and a school community's socioeconomic makeup are the best predictors of student achievement. Davies and Guppy (2014) echo this sentiment outlining the ways in which relative inequalities along socio-economic lines have persisted. A statistical analysis of educational attainment based on socio-economic backgrounds, or socio-economic gradient - demonstrates that "it persists over time and space" (Davies & Guppy, 2014, p. 116). Between 1986 and 2006, the disparities in income between black families with young children and the general population have only grown larger, both for single and dual parent families (Livingstone & Weinfeld, 2015). In a culture of White hierarchy, it is simplified yet accurate to recognize that the oppressed "non-Whites" make up a larger proportion of students who come from the low end of the socio-economic scale, and therefore if socio-economic status does play a key role in achievement then it's no surprise that this group is statistically likely to do poorly on standardized performance measures. While this hierarchical system indirectly influences students' success, the microsystem directly impacts students' development and opportunities for success.

Now to add what may be the other half of the picture, school-culture, and there is a compelling argument for the unchanging nature of oppression facilitated in schools. Jean Anyon (1981) makes the case that despite similarities in some curriculum topics and materials, there are profound differences in the curriculum and the curriculum-in-use in different socio-economic school cultures. School knowledge in working-class schools emphasizes curriculum as mechanical behaviours and rote learning rather than teaching for understanding and sustained conception. According to Anyon (1981), working-class children are not offered, what for them would be cultural capital - knowledge and skill at manipulating ideas and symbols, e.g.,

“historical knowledge and analysis that legitimates their dissent and furthers their own class in society and in social transformation” (Anyon, 1981, p. 34). Despite many well-intentioned educators, an argument could be made that students from low socio-economic backgrounds, disproportionately non-white citizens, are actually trained *not* to perform well on performance measures due to the cumulative effect of a range of socio-demographic and structural influences as well as school culture, which intersect with race.

2.7 Race and Canadian performance measures

Gillborn (2008) puts it bluntly: “conspiracy is not only a useful metaphor for how the education system operates, it accurately describes the nature of the problem and the scale of the task facing anti-racists” (p. 233). Understanding that there are inherent flaws with standardized performance measures in their construction, validity and the political misuses, it should not be ignored that data of all kinds exist - and are not talked about - that attests to a pattern of inequity based on race.

Although Canadian standardized performance measures from assessments (such as the PISA or PCAP) disaggregated based on race are not readily available (I waited a full year to receive a disaggregated report from PISA which did include race), there are select publications that confirm a race-based achievement gap in Canada.

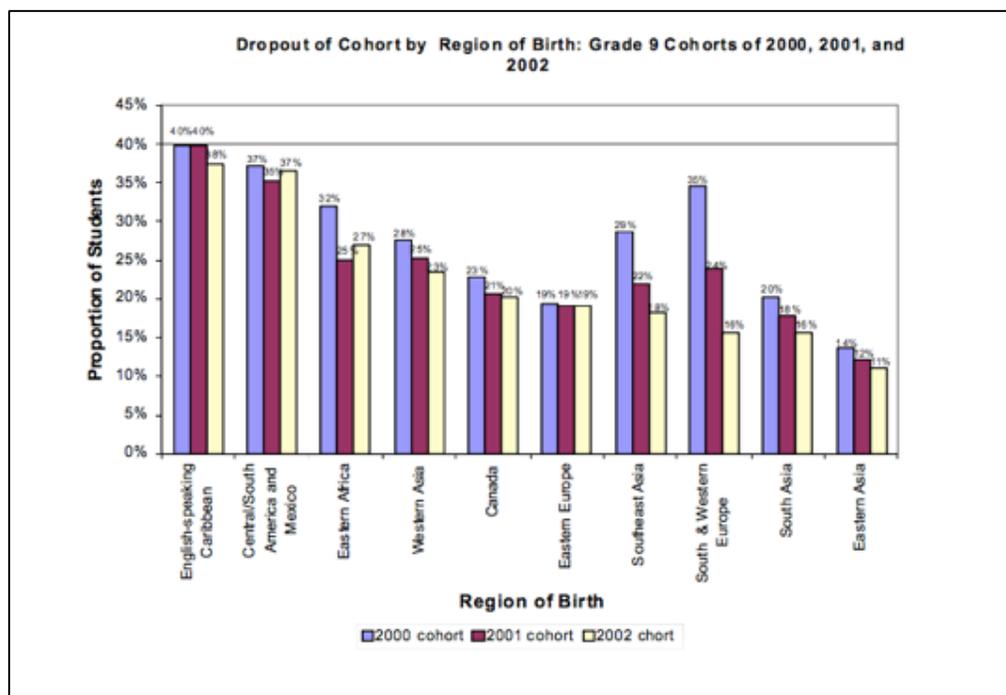


Figure 1 – Brown report data

As Figure 1 illustrates, students that were born in the English-speaking Caribbean (avg= 39% dropout), Central/South America and Mexico (avg= 36% dropout), and Eastern Africa (average= 28% dropout) were found to be significantly more likely to drop out of school, while students from Eastern Asia were the least likely to leave school early (avg= 12% dropout). As Figure 2 illustrates, British Columbia's *Aboriginal Report 2009/10 - 2013/14 - How Are We Doing?*, shows that in the 2013/2014 school year the average high school completion rate for Aboriginal students was 38% compared to 14% for non-Aboriginal students (Ministry of Education, British Columbia, 2014).

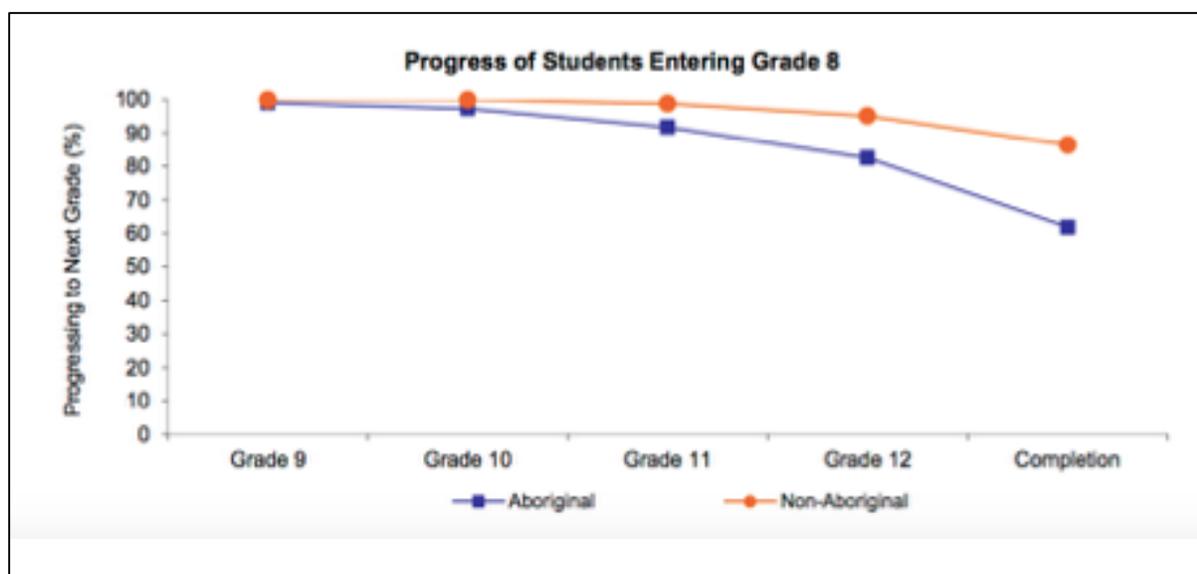
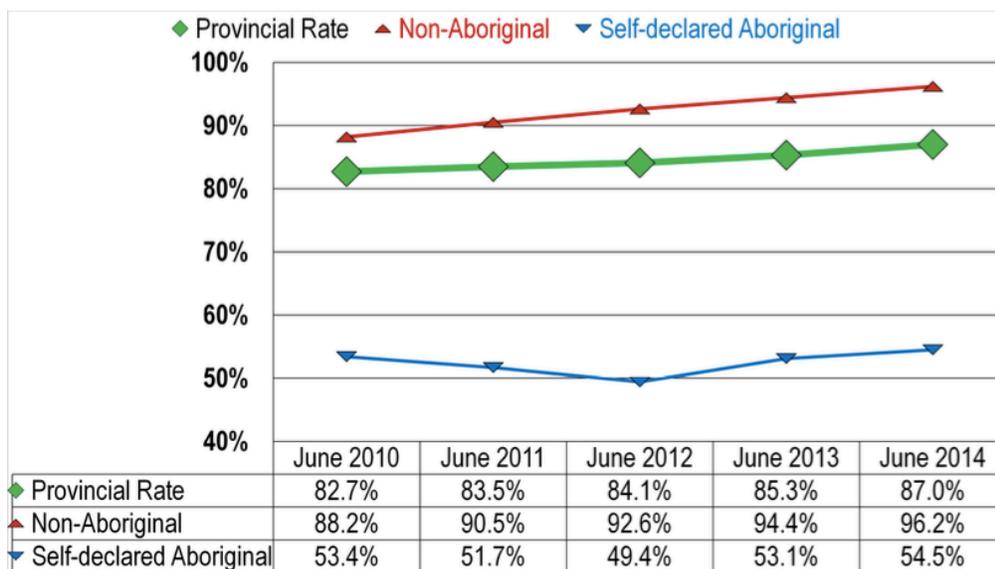


Figure 2 – Manitoba student achievement

What is key in examining data sets and educational outcomes, is that race should be viewed in a broader historical, social and political context. Race can and should be viewed from the intersection of other forms of oppression such as class, gender, religion, nationality, sexual orientation, immigration status, surname, phenotype, accent, and special needs, by illustrating how these forms of oppression interlock creating a system of oppression (Jordan, 2010). From an integrative antiracist perspective, it is recognized that all social oppressions intersect with each other and that a discussion of one such oppression—racism—necessarily entails a discussion of class, gender, and sexual inequality in schooling as well (Dei & Karumanchery, 1999). Earlier this year, in the beginning of 2016, the Government of Manitoba, Education and Training published for the first time a reported Manitoba's Proxy Cohort High School Graduation Rate, Non-Aboriginal and Self-Declared Aboriginal Students 2010-2014 (Education and Training, n.d.). The "proxy cohort" method for reporting used by the provincial Department of Education uses graduation rates, calculated by taking the number of students graduating from high school in

a given year and dividing that by the number of students enrolled in grade 9 four years previously.



Note: Includes only students from public and funded independent schools. Does not include students from non-funded independent schools, or those in schools that do not fall under the [Public Schools Act](#), such as First Nations schools (including those administered by Frontier School Division under educational agreements), or Adult Learning Centres.

Figure 3 – B.C. graduation rates

The numbers are staggering and incontestable. There is a 41.8-point difference between the graduation rates of those who are grouped as self-declared Aboriginal and non-Aboriginal students (Education and Training, n.d.).

It has now been three years since a public spotlight shone on Manitoba resulting in a number of national headlines looking like this one: *Manitoba students worst in Canada in math, science and reading*, published by CBC News (2014). Statements like this one, were in reference to the recently published results from the Pan-Canadian Assessment Program (PCAP), a Canadian-wide standardized test of student achievement in mathematics, reading, and science established by the Council of Canadian Ministers of Education with the aim of providing provinces and territories with a basis for examining their curriculum and improving their

assessment tools (PCAP, 2014). Further on in the CBC article, are statements from Paul Olson, the former president of the Manitoba Teachers' Society, who is critical of the test but nevertheless acknowledges that there is a gap that needs to be closed, and that “the government's strategy to close the gap could take up to a decade to bear fruit” (CBC, 2014). In another similarly veined article published by the Winnipeg Free Press (Martin, 2014), Manitoba’s then Education Minister James Allum promises to address these deficits in math, science and reading by, “enhancing teacher education, provide more early years support, focusing on fundamental skills, providing more parent support, and become more accountable on ensuring students’ progress” (Martin, 2014). Our Dean of the Faculty of Education at the University of Manitoba, Dr. Mandzuk, shared a response to the attention around the province’s low PCAP scores with an opinion piece in the Winnipeg Free Press, entitled *With test scores, keep calm and carry on*. Mandzuk states that, “Regardless of how one feels about standardized tests, to dismiss the results would be irresponsible and a flagrant disregard for the students of Manitoba and their parents” (Mandzuk, 2014). To summarize, although it seems that certain key public figures in education may view the test’s validity in different ways, it is widely acknowledged that Manitoba’s achievement gap in math, science and literacy compared to the rest of the country is significant, and is important to address. Implicit in this view, is the assumption that standard performance measures, such as the PCAP, are in some way valuable, valid, and reflect the goals and purposes of education in Manitoba.

In order to gain insight into whether standard performance measures like the PCAP do reflect the goals and purposes of education in Manitoba. It is important to consider the ways in which standardized performance measures not only fail to contribute to the mission statement above, but in actuality are in direct opposition. As has been outlined above, embedded in Gap

Talk on achievement indicators, are often misrepresentations of the data, political motivations, and a diversion from the underlying issues of racism, classism and while privilege.

The media has functioned in notable ways within a network of policymaking practices, as evidenced by both the role of the PCAP to constitute a particular policy embodiment of cultural capital (Martino & Rezal-Rashti, 2013). As mentioned earlier, the image of failing White boys in the media may go further than merely highlighting a difference in attainment, it might actually include the suggestion that White failure is somehow the fault of minoritized students and/or their advocates. In article published by Radio Canada International (2001) entitled *Girls doing better in school not just at reading but at science too*, Professor Kehler is quoted as saying, “we need to work at addressing different boys in our schools... boys who are not white middle-class boys because those boys are actually are doing well within our education system” (Radio Canada International, 2001) as a juxtaposition to the claims about how far behind boys score on the PCAP from girls. The article is set up in such a way that his comment could be construed as an argument against helping White boys in order to support minoritized students, therefore setting up a false dichotomy between diversity initiatives and White success.

In order to increase understanding of the media, it may be useful to look at relevant examples from the UK, Israel, and Japan. In the U.K., the country's most popular news service, the BBC has ostensibly promoted the view that White children are the victims of ethnic diversity in general and race equality in particular (Gillborn, 2008):

The particular manifestation of White victimology in recent academic and media analyses of examination performance is especially dangerous for several reasons. The discourse presents Whites as the victims of race equality measures. Consequently, moves that have been inspired by a commitment to social justice become recast as if they represent a competitive threat to White people; they are redefined as a sectional (racialized, even racist) campaign. Simultaneously, this refrain of racial competition has the effect of erasing from sight the possibility that members of all ethnic groups might excel in a single educational system. (p. 233)

This type of media attention is particularly dangerous insofar as it has the capacity to impact public opinion and policy decisions. Recent examples of the media influencing policy can be found in Israel and Japan. In Israel, the results of international educational rankings such as PISA are not only highly publicized in the mass media, but so too are remedies for low achievement suggested. The Israeli mass media has emphasized in recent years the low rankings of Israeli pupils in comparison to other industrialized nations which has resulted in the commission of a ‘national task force’ for school reform by the Israeli government (Feniger et. al., 2012). In Japan, after the release of the PISA 2000 results, the major newspapers in Japan celebrated the leading position of the Japanese students, who were ranked first in the world in mathematics and second in science. Three years later, when the PISA 2003 findings became public, the headlines of the main newspapers in Japan devoted extensive coverage to the decline of Japanese student achievement. The Minister of the national task force declared, that “[w]hile Japan slows down, other neighbouring nations are catching up. We will be sorry for our children and grandchildren if we are left behind” (Feniger et al. 2012, p. 332).

Without apology or ambiguity, Dei and Karumanchery (1999) explain that in Canada the “belief in principles of fairness, justice, and equity conflict but coexist with attitudes that reflect racism and discrimination against minority groups” (p. 112). A liberal, or neoliberal political philosophy starts with the ideals of free market, slow and small change, democratic freedoms and meritocracy. In order to successfully change the current structures with which CRT is concerned, however, dramatic changes are required to simply level a dramatically unjust playing field. Add to the equation, the views of the general public, and more specifically parents, when it comes to educational policy and decision making and the development of egalitarian policies, with respect to select socioeconomically advantaged parents’ use of means and resources to preserve their

advantages (Lucas & Beresford, 2010). Policymakers then, are perhaps relatively unwilling to make any drastic changes in the name of equity, and here is where Gap Talk becomes particularly relevant. Gilborn's (2008) view, is that,

Whenever policy-makers are challenged about their record on race equality, they typically respond with Gap Talk, that is, they assert that an ethnic inequity is getting better, that a gap (in attainment, retention, exclusion or some other measure) is getting smaller. This assertion is usually (but not always) supported by the use of statistics. This "Gap Talk" serves a particular strategic and political purpose: it reassures that things are improving and, therefore, operates to silence calls for radical dedicated action on race equality. After all, why consider radical change if things are already improving? Despite the frequency with which Gap Talk appears in official pronouncements, the reality is that deep-level race inequalities are a fundamental and relatively stable feature of the education system. (p. 236)

A comparison of Black/White achievement on U.K. national standardized performance measures reveals that over a period of 6, 10 and 15 years, in practical terms, Black/White inequality is a permanent feature of the system. "Over 15 years the gap grew by three percentage points; over 10 years it narrowed by one point; and over six years it grew by nine points" (Gillborn, 2008, p. 243). In Australia and Canada - particularly right here in Manitoba - a similar phenomenon is occurring with respect to students of Indigenous backgrounds:

The strategic deployment of 'gap talk' to draw attention away from the 'education debt'. In other words, in emphasizing the achievement 'gap', the education system is able to measure and celebrate relative 'success', while continuing to overlook the ongoing effects of relative poverty and ongoing (post-colonial) violence. With respect to Indigenous students in Australia, gap talk also serves to ignore past and present practices of (post)colonization. (Lingard, 2011, p. 317)

The Truth and Reconciliation Commission of Canada, identifies the educational achievement gap in their *Calls to Action* report published just last year in 2015:

We call on the federal government to draft new Aboriginal education legislation with the full participation and informed consent of Aboriginal peoples. The new legislation would include a commitment to sufficient funding and would incorporate the following principle: Providing sufficient funding to close identified educational achievement gaps within one generation. (TRC, 2015)

While there is the phrase “educational achievement gap” in this call to action, it is clear that the context for this type of Gap Talk is one that acknowledges the legacy of residential schooling and the context of continued institutional racism. Nonetheless, the language of “closing the gap” can be interpreted as an acceptance of the current paradigm of knowledge and learning. It could suggest that we accept the current paradigm of learning and knowledge, but it could also mean that the process of closing the gap could and should involve the integration of other ways of knowing and assessing student success. Overall, as was mentioned above, Gap Talk lends itself to being co-opted by a recuperative politics, that it, construing White men as victims (Martino & Rezal-Rashti, 2013) but, in so doing, it sidesteps important questions of class privilege and the complex issues of how race and ethnicity intersect with gender and social class to impact on groups of students differently (Martino & Rezal-Rashti, 2013). Gap Talk, transports the discussion to a more comfortable place whereby the actual size and scope of the disparities to be overlooked – the focus is now simply on a general sentiment of improvement (Lingard et al., 2012).

2.8 Some predictions for EDM

There is much work to be done to ensure the CRT and critical theory voices are heard by educational decision makers at all levels. Consequently, it may be useful to consider some of the areas where educational EDM might burgeon in the coming years. First, it is useful to consider what the shift toward data and accessing large data sets (Big data) might look like. Second, it may be useful to explore what the localized context for EDM could look like through a brief case analysis of Morningside Academy.

The answer to the question about Big educational data, almost certainly lies within a relatively new area of inquiry in the field of computer science, called Educational Data Mining

(also given the acronym EDM, but for to avoid confusion here will be referred to as EdM). EdM is the application of data mining techniques to educational data. EdM has grown substantially in the past five years, with the first workshop referred to as “Educational Data Mining” occurring in 2005. This process converts raw data from educational systems into useful information that can be used by educational software developers, teachers, educational researchers, etc. (Garcia, Romero, Ventura, & de Castro, 2011) The reality of what this might look like is almost too futuristic and difficult to imagine. However, large data sets as instruments to inform decision-making are already happening in several other fields such as business, genetics, medicine, and other clinical practices. The primary goal of EdM is to use large scale educational data sets to better understand learning and to provide information about the learning process. And so, EdM is most easily mapped onto online learning environments, since these environments can provide a huge amount of data to produce learning profiles and trend reports. In contexts where informal monitoring is less possible, educators would look for and select other ways to attain information about student learning processes. The application of knowledge extraction techniques to improve learning in educational systems can be viewed as a formative evaluation technique. A number of educational stakeholders stand to benefit from the richer reporting made possible with EdM. Obvious interested parties, as have already been mentioned, are teachers and students. However, what about students’ parents? Would it make sense for them to receive reports? (Romero & Ventura, 2007). This raises concerns related to critical theory, the access and agency for parents and students alike to meaningfully interact with the data must not be divided between privileged and oppressed groups.

At this time, EdM is still in its infancy. Currently, there are very few mining tools, and those that exist are often used by a group of instructors and experts involved in the development

of the tools themselves (Garcia et. al., 2011). Of note - and perhaps not surprising - is that the general opinion of these experts and teachers who participated in the experiments has been very good, showing a high level of interest and motivation (Garcia et al., 2011). Looking toward the future, EdM tools will need robust test interactions with several groups of external instructors and experts to determine its usability with external users. It is unclear whether Canadian provinces or school divisions are beginning to consider the capabilities for EdM. In Ontario, the mandated Trillium reporting system houses educational data such as achievement, enrolment, attendance, and other demographic information for all Ontario public school students. However, it is unclear how this large volume of data is actually being used as there exists a current gap in the literature in the area of EdM in the Canadian education context.

While EdM drives at the question of Big data (specifically, its extraction and processing), the case of Morningside Academy may be a useful one to consider in the localized life-cycle of educational data and EDM. In 1980, Dr. Kent Johnson founded Morningside Academy, a private state-approved private school in Seattle, Washington. Its mission is to provide academic and social programs for students who did not perform at grade level, or to their potential, in their previous schools (Morningside Academy, n.d.). Students typically enter Morningside with scores in the first and second quartiles on standardized achievement tests in reading, language, and mathematics. Some have diagnosed learning disabilities; others are labeled as having attention deficit disorder or attention deficit hyperactivity disorder. Some lag behind their peer group for no “diagnosed” reason (Johnson & Street, 2012). Its foundation programs in reading, writing, and mathematics, include measures of student performance on a daily basis. Teachers and students use these data to make decisions about what would be best for the learner to do next. Perhaps the learner needs more instruction in a skill, or maybe more practice. Or maybe a student

can skip over some instruction or practice. In fact, learner outcomes making up as much as one-third of a course of instruction may emerge ‘for free’ along the way, as the component skills that make up an emerging skill are mastered (Johnson & Street, 2012, p. 21).

At Morningside, there is continuous interplay between instruction and assessment. Teachers “constantly strive to make the instructional choices and decision-making process transparent to parents and students” (Moran & Malott, 2004, p. 162); they encourage students to “take charge of their own learning” (p. 175). Students chart their own timings and begin to set their own goals. Data about the student belongs to that student; students manage their own practice and recommend program modifications. They also have the freedom to take breaks, skip lessons when they can demonstrate mastery, move through the curriculum at their own pace, select their own arrangement of tasks to accomplish in a class period, choose their own free-time activities, and give themselves report card points, among other opportunities (Moran & Malott, 2004). The student’s median achievement test performance gains remain above two grade levels per year in reading, language arts, and math (Johnson & Street, 2012). It would be a grave mistake to assess the effectiveness of a school strictly on improvements in performance measures in reading, language and mathematics; however, as critics of EDM have articulated, the EDM environment of Morningside deserves a closer look and further inquiry into other measures of success in order to gain insight into the strengths and weaknesses of such an approach including and well beyond core academic performance measures. Morningside may serve as an example of the objectives of how the objectives of critical theory can be operationalized, whereby students who are otherwise marginalized, are empowered by knowledge (their data) and self-determination (curriculum).

2.10 Concluding remarks

Writers like Hargreaves (1997) believe that without evidence, educators find themselves “reducing the matter to a contest between a professional opinion and a political one” (p. 409). Opponents of this view, such as Biesta (2007) would respond with objections to the concept of evidence as divorced from opinion or politics. What is emerging is for the ability for EDM to both collect and report large-scale data, as well as be driven by local community demands. For both, the central issue seems to lie in how accessible the data is, and the practitioner’s level of data literacy. Anecdotally, it is my opinion that only a small number of educators have the interest or training that may be needed when engaging with and understanding educational data. Ideally, however, all school staff would have the skills and ability to turn raw data from many different sources into meaningful information that they and others understand and can act upon (Newman, King, & Rigdon, 1997). From a CRT perspective, a situation where only select numbers have authority in the decision-making process is potentially very dangerous. Data and EDM, have the potential to be used as a tool of control (i.e. a champion for equity-mandates or tool of oppression) which must be understood as a vital component of data literacy and teacher education.

Recall Gillborn’s (2010) argument, that statistics or data, can be used as a form of resisting oppression. If data, in relation to educational inputs and outputs, were non-selectively and transparently placed in the hands of teachers and students, there is a great potential to mitigate the impacts of institutional discrimination. The school organization and context can influence data-based decision making to a large degree. Several factors have to be in place in order to enable sound data use in schools, including leadership and time for data use, teacher collaboration, vision, norms and goals for data use, a culture of inquiry, training and support,

ownership and autonomy, and the availability of support resources by staff and students (Schildkamp et al., 2012). Shahjahan (2011) suggests that using data is a complicated process that involves:

- standing back and deciding what you need to know and why
- collecting or locating the necessary data or evidence
- ensuring that the data are worth considering
- being aware of their limitations
- finding ways to link key data sources through organization and analysis
- thinking about what the results mean, and finally,
- systematically considering an issue from a range of perspectives and using the data to either explain, support, or challenge a point of view. (p. 185)

A moderate, and likely the preferred, approach to EDM is to include research, evidence, and performance data in the form of an additional component in professional judgement - to enhance, not displace, practitioner knowledge, and deeper understandings of the needs of their students. Just as the principles of EDM in healthcare dictate that good doctors use both individual clinical expertise and the best available evidence, and neither alone is enough, so too should educators use practitioner judgement.

One positive outcome of these ongoing discussions is that some proponents of an evidence-based approach in education have begun to talk in a more nuanced way about the link between research, policy, and practice, using notions such as “evidence-informed”, “evidence-influenced,” and “evidence-aware” practice (Biesta, 2007). Evidence-based everything, which includes evidence-informed education, represents a paradigm shift in thinking about the relationship between academic research and real world policy and practice (Oakley, 2010). In terms of Gap Talk and evidence-based decision making in education, it seems clear that a focus on universally applied performance measures have the power to overshadow a commitment to addressing and tackling the underlying causes of educational failure (Martino & Rezal-Rashti, 2013). While valuing standardized test results is perhaps in some cases adopted out of a desire to

promote equity, they often end up creating contexts that are more unjust than the situations they were attempting to remedy. It is uncertain at best and unconscionable at worst, whether imposing an instructional mandate that focuses on achievement in standardized tests is the best mode of governance (Gorur, 2012). Dei and Karumanchery (1999) suggest that school administrators, teachers, students, parents, and other local community groups must see themselves as part of the planning, initiation, implementation, and evaluation process in school reform. The integration of school, family, and community partnerships needs school structures to adapt a more cooperative and collaborative learning model.

Other educational thinkers don't believe that school reform is enough to combat the deeply rooted racism in our society. While policy makers attempt to narrow the focus of the education debate with Gap talk, what is actually needed is a far broader approach. The policy makers who shift the focus to an emphasis on school-based reform and the centrality of teachers that are most important are actively preventing a more considered engagement with a broader societal politics of redistribution (Martino & Rezal-Rashti, 2013). Inequities encountered by diverse students are experienced in many facets of social life, above and beyond education, so that closing the educational achievement gap cannot be adequately pursued without closing gaps in health, housing, employment, equal justice under the law, and so forth. Anyon (1997) thus concludes that the public will to improve school quality is a necessary precursor, along with bold thinking which combine educational policymaking with social policy reform.

In closing, it is useful perhaps to return to MEAL's mission statement on education:

To ensure that all Manitoba's children and youth have access to an array of educational opportunities such that every learner experiences success through relevant, engaging and high quality education that prepares them for lifelong learning and citizenship in a democratic, socially just and sustainable society. (Education and Training, Government of Manitoba, n.d)

The words of equity are all there: all children and youth; every learner experiences success; lifelong learning and a socially just and sustainable society. But much of the work that is being done in schools seems to teach kids to the standardized test, which may be directly undermining these stated objectives. Furthermore, standardized performance measures distract and detracts from real conversations about how to achieve the kinds of equities that are described above. As long as performance measures such as PCAP and PISA have a substantial influence on the public arena when defining educational success, the concept of Whiteness will remain unchallenged by our students, teachers, administrators, and policy shapers. A community of educators who are data literate, evidence-based decision makers, does not necessarily result in social change or a redistribution of social capital for its learners. It seems important therefore, to unearth the ways in which the educational decisions based on data may be inadvertently contributing to social reproduction. The purpose of this research study is to explore the current values and status of data-driven decision making in Manitoba, and to understand the degree to which performance measures influence educational decisions at the divisional and school-based levels. In the following chapter, the research methods and methodology are outlined.

Chapter Three - Methods

3.1 Introduction

As outlined in the preceding chapters, the collection and use of data in the field of education is rapidly increasing (Davies, 1999; Eisenhart & Towne, 2003; Espeland, 2007; Evans & Benefield, 2001; Moran & Mallot, 2004; Schildkamp, et. al., 2012; Wellman & Lipton, 2004). Wiseman (2010) argues that embedded into the increased emphasis on data in educational decision making are assumptions about data as an efficient indicator of knowledge and learning. The idea of our assumptions about data is what governs the first of the three research questions in this project, “In what ways and to what degree are data valued by a sample of Manitoba school superintendents?” as well as the following question in the interview guide: “In what ways do you find student data to be a useful or limiting indicator of knowledge and learning in your division/school? Can you share some examples?” Beliefs about the role and authority of data have implications in terms of power and control; control by whichever person or group has responsibility for evaluating the results of assessments (Wiseman, 2010). In response to the evidence-based shift, a number of scholars (e.g. Atkinson, 2000; Chang, 2002; Gillborn, 2010; Oakley, 2002) are beginning to discuss the data-driven movement using theoretical frameworks that have power relations at its core. Critical race theorists maintain that data-driven policies are much more concerned about maintaining and securing the privileges traditionally associated with learning than about whether diversity initiatives actually foster students' capacity to learn (Chang, 2002). These ideas based on the tradition of critical theory, motivate the second and third research questions in this study, “In what ways and to what degree are the decisions in a sample of Manitoba school divisions data driven?” and, “How might the superintendents’ perspectives on educational data in select Manitoba school divisions be understood using a CRT

perspective? Figure 4 outlines the relationship between the three research questions for this study, and the questions that were posed from the interview guide.

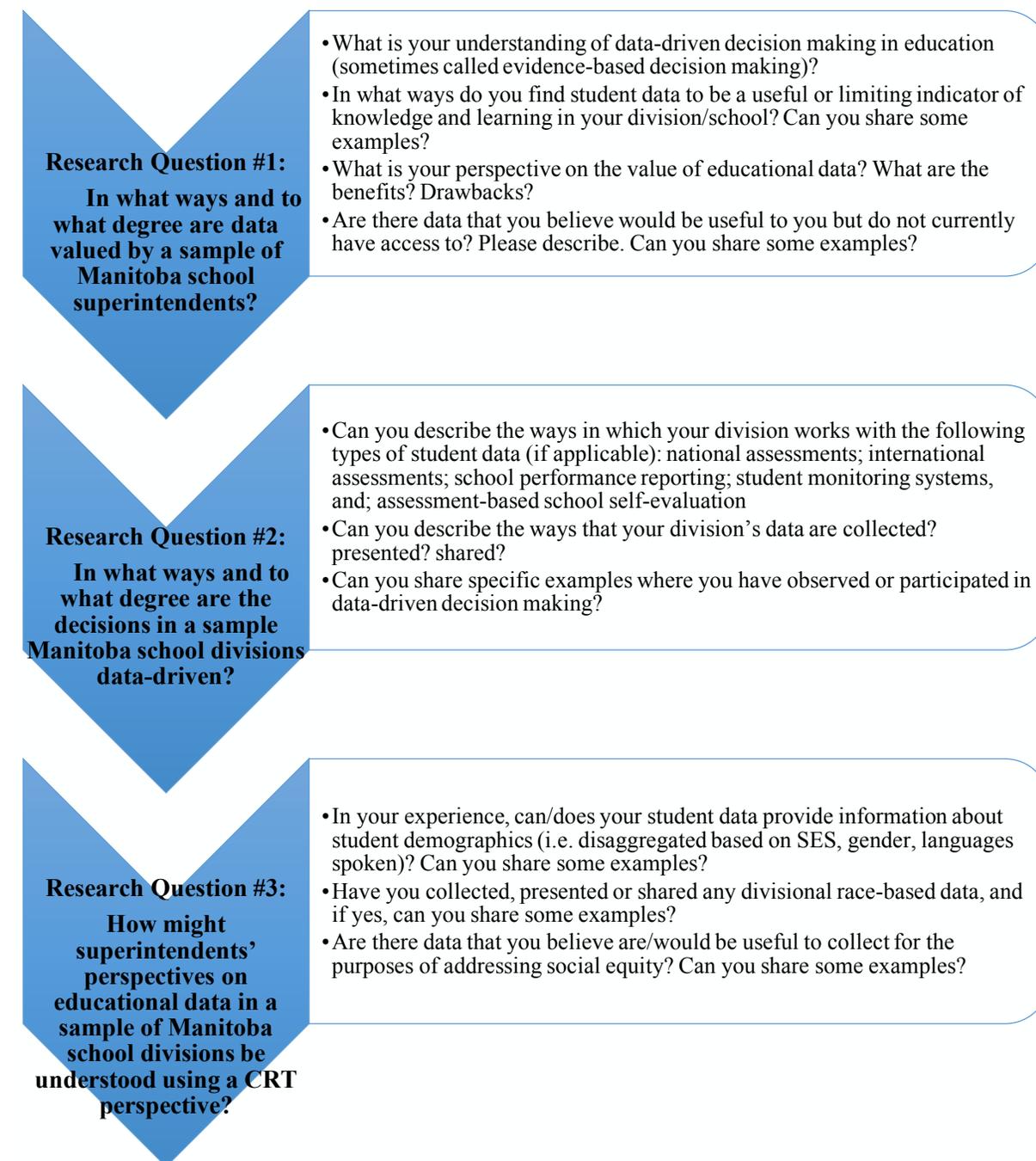


Figure 4 – Interview guide

As stated by Atkinson (2000), the purpose of educational research is not merely to

provide ‘answers’ to the problems of the next decade or so, but to continue to inform discussion, among practitioners, researchers and policy-makers, about the nature, purpose and content of the educational enterprise. It is in this spirit of moving discussion about educational practices forward that this study aims to understand and explore the theme of educational data as well as its relationship to racial equity. Through soliciting the perspectives and experiences of superintendents who are responsible for system-wide decision making in Manitoba, this study looks to extend the knowledge and understanding of the perspectives on and uses for educational data. Specifically, the scope of this study was to explore the nature of current evidence-based practices in select school divisions and school within the K-12 system in Manitoba using a qualitative interview design. The term “current” in this case, denotes the year in which this research study was conducted which was the 2015-2016 academic year.

3.2 Specific methods and participants

In order to gain a better understanding of the perspectives and current uses of data in select Manitoba school divisions, the research model chosen for this study was a qualitative research approach with semi-structured interviews. Throughout the research process, this study has been viewed as a process of inquiry that is “not a mechanical technique but part of the larger process of reasoning, argumentation, and critical thinking” (Bentz & Shapiro, 1998). As noted by Huby, Robertson, Creswell, Crowe, Avery, and Sheikh (2011) the qualitative interview approach is particularly useful when there is a desire to obtain an in-depth appreciation of an issue, event or phenomenon of interest, in its natural real-life context. I was interested in probing into the perspectives and key experiences of ten superintendents who are currently practicing in the field and working with educational data. Furthermore, because of my limited experience engaging in educational research, one benefit to this approach is the byproduct of developing my

understanding of qualitative research and fieldwork skills – i.e. preparing an interview guide, recruiting and working with participants, understanding the ways in which the researcher impacts the study - through one-on-one interactions with superintendents in a concrete, context-dependent experience (Flyvberg, 2006). Beyond gaining experience with conducting interviews, an equally important opportunity for personal growth as a researcher happened during the interview coding process (a process that is outlined in more detail later in this chapter). As Bogdan and Biklan (2007) state, “interviewers have to be detectives, fitting bits of information and pieces of conversation, personal histories, and experiences together in order to develop an understanding of the informant’s perspective” (p. 112). I found myself in awe at several points during this process, particularly when I linked ideas together thematically to the ideas I have been exploring within a CRT framework.

At its core, the purpose of this study was to probe into the experiences, values, and beliefs about educational data of ten superintendents in Manitoba. At the conceptual phase of this study, I was concerned only with uncovering the use of data that is collected and used in school divisions, and how that may be viewed using a CRT framework. It became clear to me however, that the experiences, values, and beliefs that silently (or overtly) inform some of the thought processes and behaviours of select superintendents throughout the decision making process must first be acknowledged. In order to gain insight into participant values, the interview guide posed the question: “What is your perspective on the value of educational data? What are the benefits and the drawbacks?” This question was intended to bring to the surface some of the perspectives and attitudes from superintendents on divisional data. In addition to asking questions about the attitudes and beliefs about data, the semi-structured interview approach was useful for gaining insight into divisional and school level processes that involve the use of data to make important

decisions. Superintendents were asked about the ways in which their data were collected, presented and shared. An open-ended interview approach allowed for superintendents to highlight context-specific processes and initiatives that take place within their division. My interpretation of this open-ended form of questioning was that it allowed for participants to be strengths-based in their responses, since some questions were broad and open to interpretation. Therefore, participants often demonstrated a willingness to share detailed descriptions of experiences and opinions with me. The final reason this approach worked well for this study was that it aligns with the tenants of CRT, which are to place emphasis on personal narratives and, humanizing or empowering the individual.

The interview guide (see [Appendix 1.2](#)) was divided into two sections and was sent to participants one week in advance of their scheduled meeting date. The first section of the guide posed a series of questions based on the key themes explored in the literature review as they relate to the three research questions. The framework provided by Glas et al. (2013) was useful in constructing a question about the ways and degree to which superintendents use and value specific forms of educational data. This framework defines five main forms of educational monitoring and evaluation. Participants were asked about the ways in which they value and work with each of the following areas of focus:

1. national assessments
2. international assessments
3. school performance reporting
4. student monitoring systems, and
5. assessment-based school self-evaluation (Glas et al., 2013, p. 9)

The second part of the interview guide centres on the experiences and participants' attitudes toward the use of educational data as they related to diversity and equity (see [Appendix 1.2](#)).

Recruitment of participants was conducted electronically by sending an invitation to participate. Upon receiving the approval from the Education and Nursing Research Ethics Board (ENREB) from the University of Manitoba, I began to recruit participants via email invitation. Superintendent emails are available on the public domain at: http://www.edu.gov.mb.ca/k12/schools/sb_contacts.html. Fifteen Manitoba superintendents were contacted based on the criteria that their website indicated they serve a diverse student population. Because this study uses an anti-racist framework, it was imperative that participants serve a diverse student population and that they have the opportunities to collect and use data that are disaggregated by racial or cultural differences. I identified a division as serving a diverse population by finding a reference to diversity on the division's website. While acknowledging that the term diversity may refer to a range of attributes, my hope was that racial diversity was included in this particular reference. The first ten superintendents who responded positively were confirmed as participants. The final participant group for this research was comprised of ten superintendents. Participants came from both rural and urban settings as well as small divisions ($n < 2000$ students) and large divisions ($n > 13,000$ students).

Each interview lasted between 50 minutes and 1.5 hours and took place at a location that was chosen by the participants. Eight out of ten interviews took place at the participant's division office, while one meeting was held at a café, and another in the Education Building at the University of Manitoba. All interviews took place between the months of May and July of 2016. Before each interview began, participants were asked to review the consent form before signing. Participants were reminded explicitly of their right to withdraw from the study at any time, and to whom they could direct any questions or concerns about the study. There were minimal physical, psychological and/or emotional risks for the participants in this study. They did not

experience any visible discomfort while discussing various aspects of working with educational data. Nearly all participants reported that the experience was interesting and beneficial in some way. Many expressed a shared interest in the topic of educational data. Participants were all thanked for their time with a hand-written card thanking them for their time and valuable input. Included in the card was a modest honorarium approved by ENREB in advance, in the form of a \$10 gift card to a coffee shop. No participants chose to withdraw from the study.

All the interviews were recorded using an application (app) called MyNotes with the explicit permission of all participants. In total, this study collected over 200 pages of transcribed interview data. Individual transcripts were sent via email to the participants for their review with a request that they respond within two weeks if they wished to make any changes, additions, or omissions. To my surprise, eight out of ten participants responded, all positively. The only comment I received from participants is that they wished to have the grammar “cleaned up” or fixed before I quoted them for my thesis. Subsequently, I informed all participants through email that I would fix any grammatical errors that I could identify (as long as it did not impact the meaning of their statements) and I reminded them that I would remove all identifiers throughout my work.

3.3 Coding process

A code “in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (Saldaña, 2016, p. 4). The coding process informally began as data was collected and transcribed through researcher notes and memos that included words or phrases as ideas for consideration while the study progresses. Saladaña (2016) suggests that

some questions to consider when working on preliminary codes are:

(a) what are people doing? what are they trying to accomplish? (b) how exactly do they do this? what specific means and/or strategies do they use? (c) how do members talk about, characterize, and understand what is going on? (d) what assumptions are they making? (p. 22)

Each of the above questions may be applied to the research questions posed in this study. For instance, question (a) could specifically refer to what educational administrators are doing with student data, i.e. what are *administrators* doing *with student data*? what are they trying to accomplish *with student data*? By framing the coding process in this way, it became clear once more that the research questions for this study are epistemological in nature. Epistemological questions suggest the exploration of participant actions, processes and perceptions found within the data, in contrast with questions of a more ontological nature which are concerned with participants' personal and interpretive meanings (Saldaña, 2016). An appropriate form of coding for this type of epistemological inquiry, according to Namey, Guest, Thairu, & Johnson (2008) is structural coding. Consequently, the first stage in the coding process involved the development of structural codes. The structure of these codes corresponds to the structure within the interview guide. Therefore, each question and prompt found within the interview guide, represents a structural code.

Once the interview data was transcribed and participants had the opportunity to member check, the transcripts were migrated into a qualitative analysis program called NVivo. NVivo is a program that allows researchers to categorize and visualize data in different ways. This process is called Computer Assisted Qualitative Data Analysis (CAQDAS) (Bazeley & Jackson, 2013). The CAQDAS allowed me to first visualize the structural codes that directly answered my research question. Figure 4 was created in NVivo to represent these structural codes that

corresponded to my interview guide and first two research questions. The next step was to assign codes to particular pieces of text for each transcript. From this process, emergent codes were developed (see Figure 5). The emergent codes were developed based on when the interview data addressed one of three factors: (1) themes from the literature review that were reflected in the participant's language or ideas (i.e. data literacy), (2) a common idea that surfaced from two or more participants (e.g. data as surveillance), or (3) an unanticipated topic of conversation that came up in relation to questions about the use of data (e.g. the role of the superintendent). Each of the interview transcripts were read line by line for the purposes of assigning codes, three times. Several portions of the text were assigned multiple codes.

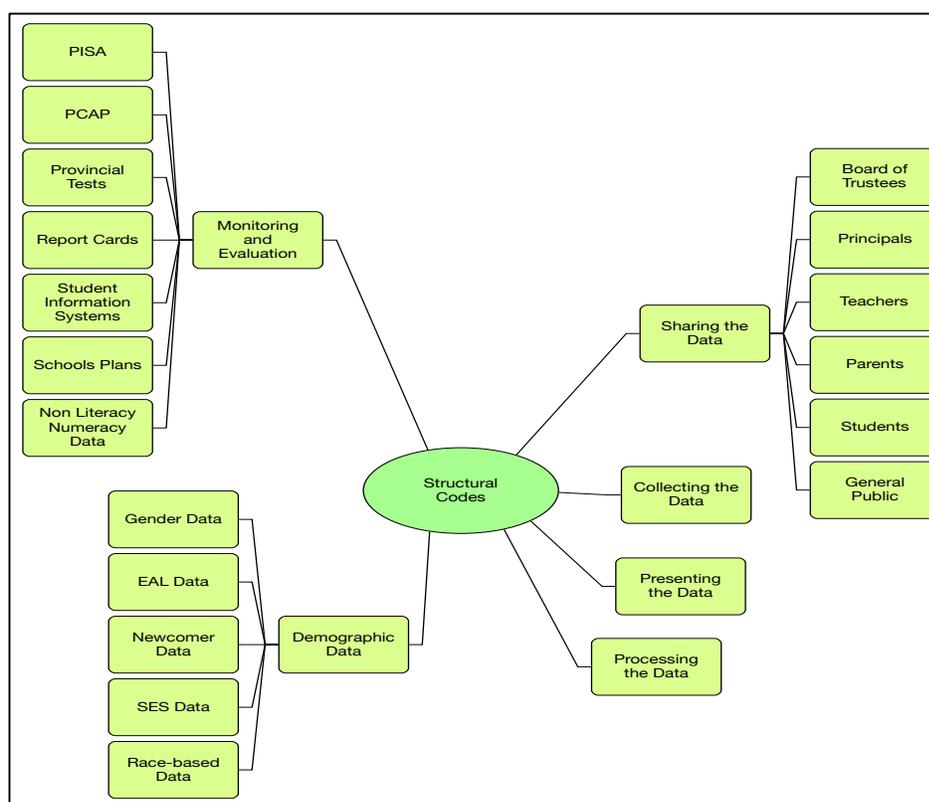


Figure 5 – Structural codes

Matrix coding queries are used to ask a wide range of questions about patterns in the data and gain access to the content that shows those patterns (Bazeley & Jackson, 2013). In this case, the matrix coding query was used to determine the frequency of intersection between two codes for the purposes of identifying which might best be grouped together (Figure 7). A total of 42 codes were therefore reduced to 22. The final organization of the codes involved a process of mapping emergent codes onto the structural codes and resulted in the following categories: (a) Monitoring, evaluating, and validity, (b) Demographic data and equity initiatives, and (c)

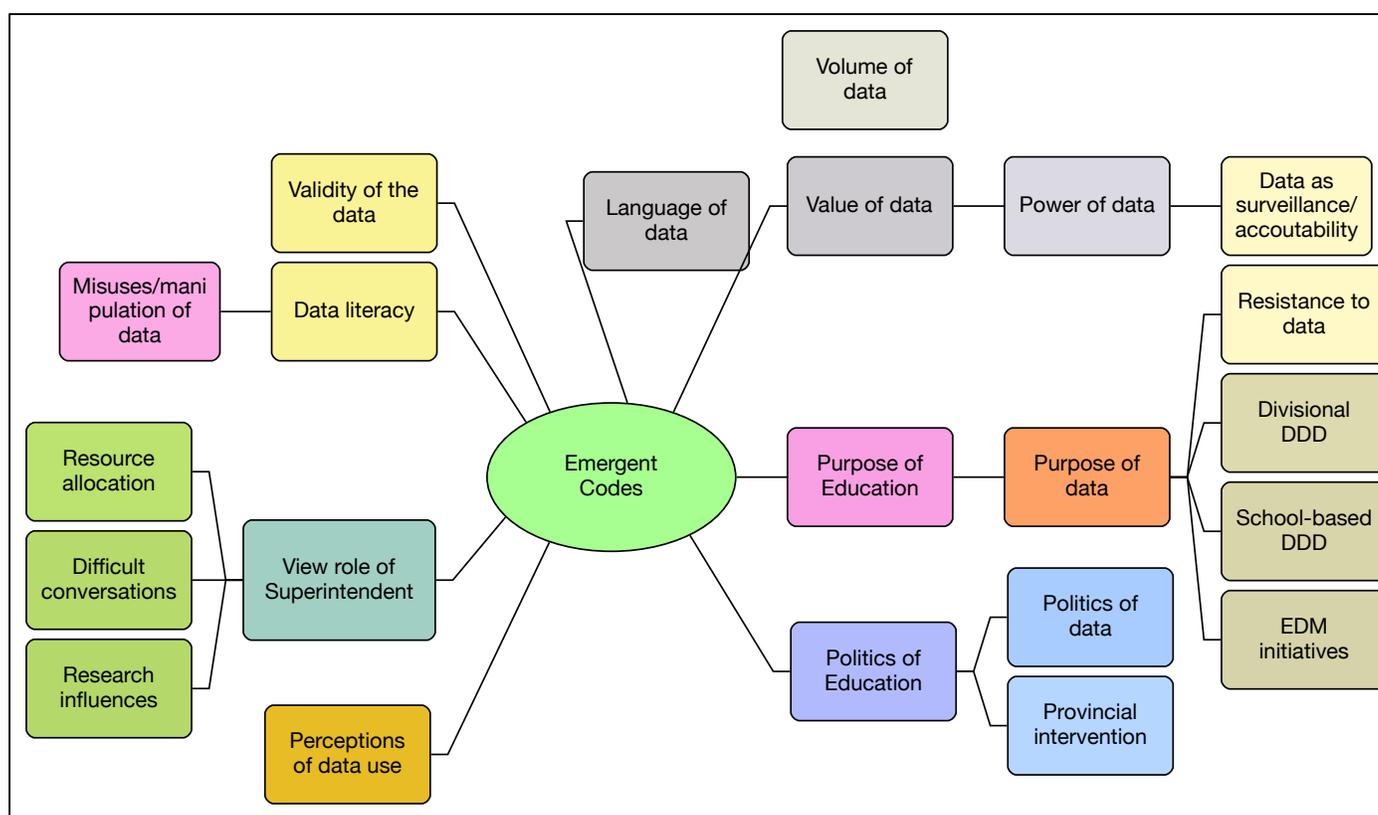
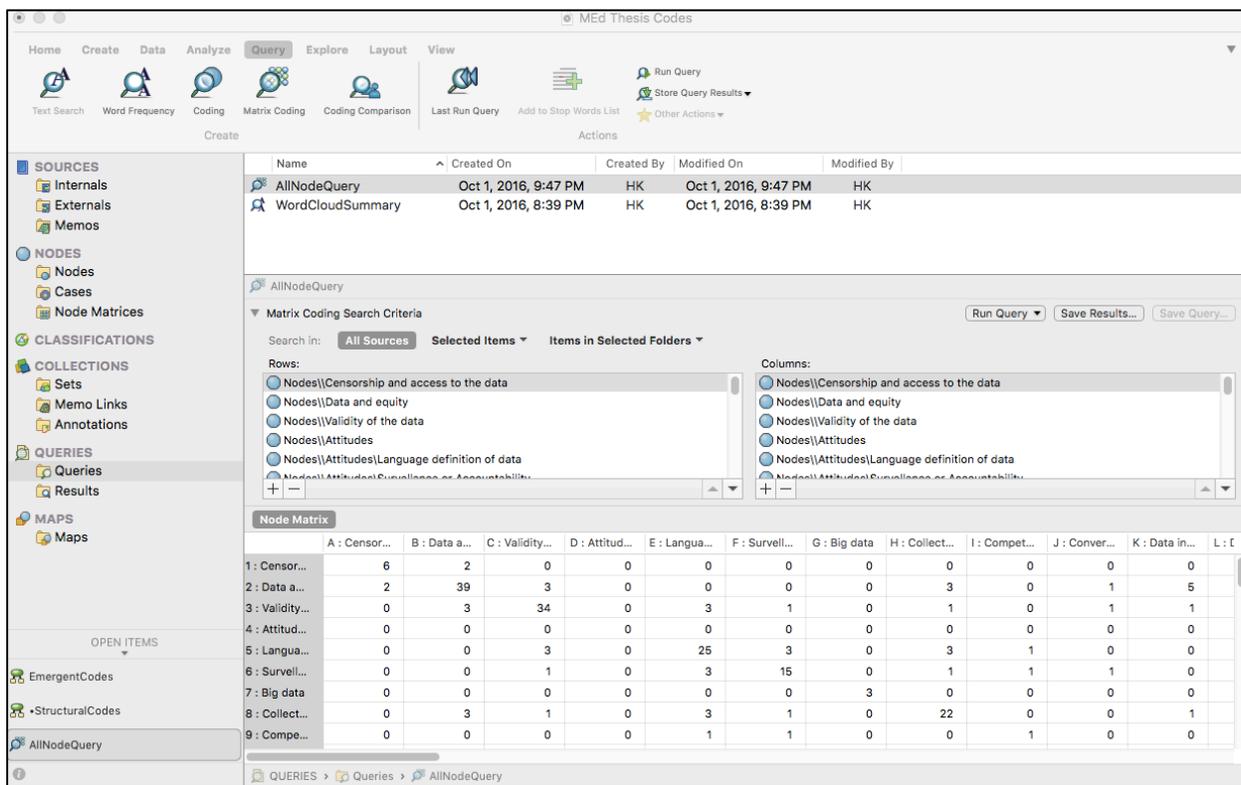


Figure 6 – Emergent themes

Working with the data.



	A : Censor...	B : Data a...	C : Validity...	D : Attitud...	E : Langua...	F : Surveill...	G : Big data	H : Collect...	I : Compet...	J : Conver...	K : Data in...	L : t
1 : Censor...	6	2	0	0	0	0	0	0	0	0	0	0
2 : Data a...	2	39	3	0	0	0	0	3	0	1	5	
3 : Validity...	0	3	34	0	3	1	0	1	0	1	1	
4 : Attitud...	0	0	0	0	0	0	0	0	0	0	0	
5 : Langua...	0	0	3	0	25	3	0	3	1	0	0	
6 : Surveill...	0	0	1	0	3	15	0	1	1	1	0	
7 : Big data	0	0	0	0	0	0	3	0	0	0	0	
8 : Collect...	0	3	1	0	3	1	0	22	0	0	1	
9 : Compe...	0	0	0	0	1	1	0	0	1	0	0	

Figure 7 – Nvivo screen capture

3.4 Researcher's positioning

Particularly important for any qualitative and perhaps any type of research, is an acknowledgement of the researcher's personal history, opinions, prejudices, and biases that may affect their interpretation of the data. As described in Chapter One, there was one influential experience that led to my consolidated interest in EDM in education with respect to racial equity, but it stands to reason that every experience leading up to that one influenced me to land in this space. There are certain aspects of my personal history that must be acknowledged in relation to my present moral, epistemological and ontological standpoint. First and foremost, my lived experience identifying as a White female is one of privilege. I grew up in a two, heterosexual-parent Anglophone household, identify as able-bodied, and have received a university education.

I believe these benefits resulted in a prolonged ignorance - until formally engaging with philosophy and critical theory - of the existence and importance of different types of equity (e.g. racism and homophobia). At present, these issues are now a deep concern for me and have impacted my everyday experience and behaviours. My particular interest in SES likely stems from the experience of growing up in modest circumstances and as the first person from both maternal and paternal sides of the family to have a university degree. Perhaps also relevant is the absence of any religious teachings or affiliation in my household growing up, in conjunction with the promotion of scientific knowledge as an unparalleled authority. Together, these experiences and influences have shaped an interest in the benefits and limitations of scientific methods when applied to human-centred research and professions. While acknowledging the ease with which positivist record keeping seems to sit with me, my particular interest has shifted to uncovering ways that EDM in education may result in decisions that disadvantage certain groups while privileging others. It is a very real possibility that my research agenda is a manifestation of the direction that my moral compass forcefully points me toward, while trying to preserve my core belief in recordkeeping and/or science. As Kovach, (2009) points out, the explicitness of our choices and the beliefs that influence our research design sends a purposeful message about who I am as a researcher. Who I am is revealed throughout the research project from my motivations to each research choice. The research framework that I have chosen for this study allows me to be honest and explicit about my perspective as a person and a researcher. When viewing the data, the principles of neutrality, open-mindedness, questioning assumptions, and continually revising my interpretations are ones that I recognize to be elusive, yet continue to strive for on a personal level and for the purposes of producing sound research. Ongoing discussions with my advisor, Dr. Mandzuk have further strengthened my understanding about

why an honest and thorough qualitative research approach must also try to be systematic and held to a high standard.

Chapter Four – Findings

What follows is a summary of the findings from all ten interview transcripts that are linked most closely to the research questions for this study. This chapter is divided into three main sections, (a) Educational monitoring, evaluation, and validity (b) Demographic data and equity initiatives, and (c) Working with the data. There is no reference to any participant names, pseudonyms, or other details about the sources of the data for the simple reason that Manitoba is a small province, and any string of comments that are linked together could potentially compromise the anonymity of participants in this study.

4.1 Educational monitoring, evaluation and validity

Each participant was asked to what degree they value and work with the following types of monitoring and evaluation pieces: international tests, national tests, provincial tests, report cards, student information systems, and school plans. Therefore, for each of these categories I received some form of response from all ten participants. Below, I attempt to summarize some of the main ideas that were presented for each category. The range or spectrum of views, as well as some select quotes illustrate either a trend in perspectives, or a particularly divergent viewpoint. Because the approach for this study is not a discourse analysis, in some cases I implemented very minor changes to the wording without changing the meaning when necessary in order to protect the anonymity of participants.

4.1.1 PISA.

All of the superintendents interviewed clearly demonstrated some knowledge about the Programme for International Student Assessments, or what is commonly referred to as PISA. Created by the Organization for Economic Co-operation and Development (OECD), PISA is a

triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students' success (OECD, n.d.). Overall, participants in this study believe that PISA results are data that is only very indirectly related to the work that happens within their division. While all ten participants noted that they do indeed look at the PISA scores at the provincial level, they generally place very little value in those results. The main concern for most superintendents was that they could not access either statistically significant or granular results for their particular division or schools. This common sentiment is reflected in the following statement:

PISA not so much, because they don't break it down by school divisions, the province may know it but PISA doesn't share it with us. Or the province doesn't share it with us. In terms of its value, I'm not sure how valuable PISA would be to a school division. It really is more about a provincial systems approach. (Manitoba superintendent)

Reflected in this quote and others that were similar, is a general consensus that the data provided by PISA are not disaggregated at the level of the division, and so its results cannot be used in any practical sense by individual school divisions, schools, or classroom teachers.

Responses varied in degree to which participants believe PISA is a good indicator of knowledge versus something that governments use for the purpose of competing interests within the political arena or the media. One participant expressed skepticism about the political motivations behind conversations around PISA when she stated that, "the government looks at international comparisons for the wrong reasons, and they're for political reasons, and they're for climbing reasons." While some participants seemed to agree with this criticism, claiming that PISA results have little to no impact on their practice, other superintendents indicated that they take the responses and reactions of others (i.e. government, media, parents, community) to the test results seriously. For example, one superintendent stated, "we encourage our administrators at schools to put emphasis and to prepare kids and to be ready". A word frequency search in

NVivo revealed that the terms “political, politically, or politics” were used fifteen times in responses to the discussion about PISA. Three participants spoke in detail about their experiences with and understanding of PISA, demonstrating for example, that Finland is doing well. PISA is a well-known assessment tool in division offices, but the results from PISA are not used at the division level by participants in this study.

4.1.2 PCAP.

In the same vein as the values and opinions about PISA, one interviewee said that the PCAP test, “...doesn’t tell us anything. It really does not tell us anything about our kids, about our schools.” However, while some participants, indicated they have not been given their division’s PCAP results by the province, others indicated they had access to PCAP scores, and further indicated that they valued those results:

We pay a fair bit of attention to PCAP because the province has shared our 2010 and 2013 PCAP results with us... they of course put a rider on that saying that they’re not statistically accurate or valid because the potential for our sample size being too small is pretty high... However, in 2010 and 2013 our sample size was significant within PCAP and so the data that we got from the province we consider to be valid for our division... But we pay attention to them because we want to know how we’re doing. We want to know if we’re doing things in the right way. It’s one indicator which does confirm for us that we’re doing things well in our division. Very well. Super well. (Manitoba superintendent)

This superintendent draws a connection between what she believes to be a statistically significant number and the weight that her division places on that data. Three participants pointed out that the PCAP is a lagging test result, so by the time you receive the cohort data, that group of students has moved through another year. Perhaps somewhat in contrast to her earlier statement, the participant quoted above claims that a lagging result is not as useful for teachers at the classroom level, but is useful rather for policy making and for policymakers. Most participants responded in similar ways about both the PISA and PCAP tests, by stating that these are two

pieces of data to consider among many. However, three participants stated that the PCAP results did play a role in assessing how well they were doing as a division, but that they did not believe the data from these tests influence what and how their teachers teach. One participant made a point of saying that he does not condone teaching to the PCAP test in his division:

For the PCAP, some of the provinces that did better from a number of years ago to this last one, they did teach to the test, and they admitted it. So, in some ways it's disappointing they did that. But it also shows the danger of taking one data set, one type of test, and you only use that to say we've improved, or our kids are doing better than four years ago. So, I think we have really worked hard to make sure that it's not about teaching to the test. It's about doing something authentic and doing something that's right for the kids. (Manitoba superintendent)

This individual does not promote teaching to the test, however he did acknowledge that it would be nice to do better. This sentiment of desired improvement indicates that he values the results to some degree. Several participants questioned the reliability of the PCAP results in terms of the student selection process. One participant argued that compared to other provinces, our PCAP scores in Manitoba are below other provinces because of our genuinely random student sample and inclusive classroom structure:

If you look at it a little deeper, Manitoba had a participation rate of 99% and many provinces were 84-88%, so who were the students who didn't write the PCAP? If we had the same average percentage rate, maybe we're fourth, maybe we're first in the country... I also know that different provinces choose their students differently where Manitoba is truly random. Alberta is well known for being very selective on who writes the PCAP and it's a different system. So, is that data valid? Not as a comparison.... I can also tell you that Manitoba is probably the most inclusive province in the country. Where there's very little segregated programs in Manitoba. There's a lot of segregated programs elsewhere. I think it's, to me, it's disappointing how that assessment is being used in a political way. Not saying that we can't get better, but I think it's a potentially damaging tool. (Manitoba superintendent)

This is an interesting statement, and requires some further digging to confirm its veracity. This individual elaborated on the quote above, stating that it is damaging to use test scores as political

pawns to negotiate for personal, political or financial gains. Two others were also concerned with knee jerk reactions to these test scores, with one stating,

So, you know if 86% of kids are at or above grade level, we don't chuck out everything we're doing. We don't say, now it's time to try phonics again, now let's try and go back to rote memorization in math. Who are those kids who are struggling, and then I can in our system some of the markers we've looked at, again temperature check. (Manitoba superintendent)

One participant talked about all of the radical changes that were made in the past few years in P.E.I. as a result of their PCAP scores. He told me that jobs were lost and measures were taken that were completely unwarranted when PCAP testing itself is so flawed.

4.1.3 Provincial tests.

Although participants were not explicitly asked about provincial tests, every participant talked about these assessments (on average, the phrase “provincial test” was used 9.4 times per interview). Participants talked about how that they are required to forward divisional data to the province from grade 3, 7, 8, and 12 provincial test results. These tests are administered and graded by individual classroom teachers for each of these grades. Although each division is required to collect this data from assessments given to students, and present it to the provincial government, participants said that they valued the provincial testing data in varying ways. An experienced superintendent stated, “We use the provincial assessments as one of our main forms of collecting data for our monitoring reports in our division.” Similarly, another equally experienced interviewee explained that one of her assistant superintendents spends a great deal of time reviewing the provincial test data, although she did not elaborate on whether that data drives or informed decision making practice. Two participants talked about their teachers having a high degree of professional judgement which governs their assessment and evaluation practice.

Half of the participants were highly critical about the usefulness of provincial test data. In principle, because schools (teachers) are the ones to generate provincial assessment data, provincial test data reflects the achievement of their specific student population (in a way, addressing their concerns with the PISA test and to a smaller degree the PCAP test). However, the concern that was brought forth by participants, was that the data collected by schools for provincial tests lacks inter-rater reliability. In other words, different teachers are likely to interpret answers differently and assign marks that are inconsistent and unreliable. Four participants in this study explicitly raised concerns about the reliability of the data, particularly for the grade 3, 7, and 8 provincial tests. One quote perhaps best illustrates this perspective:

The strong provincial assessments are the grade 12 standardized tests... The provincial assessments themselves, we had the grade 3, 4, 7 and 8 assessments, I would say they're not very valid; even though I could look at our data and say we're doing pretty good compared provincially. The reason they're not valid is because there are different interpretations from one teacher to the next or from one school to the next. It makes it unreliable. (Manitoba superintendent)

To overcome this issue, one participant followed up on his criticisms with a strategy to address the inconsistencies among teachers in his division. He stated that he has begun to work with administrators and teachers in his division to try to make the data more reliable internally.

Internal consistency is something that another participant emphasized when she talked about professional judgement. She notes that her teachers use a high degree of professionalism and look at exemplars to drive their assessment and evaluation practices. The issue of internal reliability appeared to be a concern for at least three superintendents because they believe that only when data is reliable and valid can it play an important role in driving professional conversations about what is good thinking and good learning beyond trying to reach standards. Several participants mentioned that they are very careful in the way that they respond to provincial test scores. They value the data, but do not give the results too much weight in the

decision-making process. There were no examples of division-wide initiatives or EDM around provincial assessment data, unless that data was given back to them disaggregated by the province (more on this particular type of data below).

4.1.4 Report cards.

Responses about the degree to which participants work with or value report cards varied from “we put a lot of emphasis on report cards”, to “we don’t use the report cards”. Three participants expressed concerns about consistency in assessment and evaluation between classrooms and between schools. In the words of one of them, “Some work that needs to be done. It needs to be valid.” Another superintendent told me that there is a great deal of variability in how teachers are reporting, and that the data is “indeed subjective”. Most striking in this part of the interviews, was an example from another participant describing her experience with the reliability of report card data. She told me that in her division,

We found that the reports that we submit to the province on student achievement are significantly lower for the same students the teachers are reporting to the parents on the report cards. There’s a discrepancy between the two. Why is there a discrepancy? I can only speculate that teachers have some concern about engaging in too many difficult conversations with parents when the marks are too low. And so without pointing any fingers at individual cases, I’m saying that as a group we as teachers have found it easier to give a little higher mark than maybe that student deserved in order to make those conversations go a little easier. There’s always a bit of discretion, right? Whereas when we’re reporting to the black hole on Broadway, or 1181 Portage Avenue, teachers felt a little more bound by validity I suppose and so would report something lower. That gap is troubling. (Manitoba superintendent)

This participant wanted to see more consistency between the report card data and what is reported to the province. She was the only participant to raise this concern, perhaps because her division was consciously aware of and working to address this issue, she was comfortable raising it with me. Another important consideration that was brought to the surface by this example is

how relevant the audience can be when entering data and preparing data reports. Her response raises important considerations about how data are valued and the relevance to different audiences when teachers generate school-based data. When assessing the validity and nature of the educational data we receive, participants in this study mostly believed that report card data is not necessarily intended for the divisional level.

4.1.5 Student information systems.

There is a wide range of divisional student information systems (SIS) in Manitoba to collect student data from schools and generate reports for the province and other stakeholders. SIS's in Manitoba include the following: Maplewood, Tyler, and PowerSchool, as well as additional software that is compatible with other SIS's such as Clever. One participant expressed his disapproval about the inconsistency between divisions, saying that the "province has failed to provide a system like some other provinces where they can aggregate the data in good ways" and continued stating that, "[the province] doesn't want to spend the money, they just want to offload it onto the local divisions. And then the local taxpayers just have to pay more." This participant was correct when he said that some other provinces (such as British Columbia and Ontario) have a centralized SIS that is supported by the provincial government. The question from the interview guide that I posed to participants was: "What data do you collect and/or work with using your division's SIS?". For organizational reasons, I have chosen to omit any responses that relate to equity (i.e. gender, race, SES, languages spoken, country of origin) in this section, and instead wish to address it separately in its own section below. Otherwise, participants spoke about collecting various types of information through their division's SIS. Attendance, suspensions, student behavior, IEPs, medical information, report cards, provincial test scores, literacy and numeracy data, student services data, guidance data, transportation information,

parent portals, graduation status, and credit accumulation. A forthcoming participant said that she established a goal last year to track attendance, reviewing “who’s missing, who’s no longer attending, who’s gone and where are they? We did that project last year.” She found out that the graduation rates that her division had previously been reporting via SIS to the province were in fact calculated incorrectly. In her words, “the numbers were startling. We showed a graduation rate above 100%. The population growth was overshadowing the fact that we had people dropping out.” This raised an important issue about how SIS and the province are calculating certain achievement indicators (not unlike the proxy cohort vs. student tracked method). Another superintendent described how her division works to support students who are at-risk through the use of log notes in the SIS. Teachers and administrators electronically document important information about students that may be useful for the educational community to track:

We use logs, and we’re starting to do that in our community now with all of our players, so that includes police, child and family services, Manitoba housing, family resource centres, and healthcare. You could be experiencing difficulty over there, but if I don’t know that, then I don’t know how to help. So we’re just connecting, that’s what log entries do. (Manitoba superintendent)

The degree to which divisions use and explore the capabilities of their SIS varies from “we don’t use it in a significant way” to “we use it for so much”. Two things however, were common in the responses among participants: (1) individual schools use it in unique ways from one another and from the division office, and (2) divisional leaders see themselves starting on a learning curve when it comes to understanding and using their SIS technologies.

Attendance, IEPs, and literacy and numeracy data emerged as the data sets that were most commonly mentioned by superintendents. One participant relayed that these particular items are used for determining resource allocation as well as the annual report that they prepare for their board of trustees. Another participant noted that they use their SIS to send in provincial reporting

on literacy and numeracy (I suspect this is true for all other divisions). Other participants mentioned that the literacy and numeracy data they house in their SIS, are results from external assessment instruments that they have created or purchased, i.e. the Fautes and Pinnell literacy tests. I elaborate more on these instruments on the section on *Working with the data* section 4.3, below.

4.1.6 School plans.

Participants spoke about school plans at great length. In fact, one interviewee talked about schools plans for 11.5% of our interview time. Through a word analysis query using Nvivo (see Figure 7 below), I discerned that the word “board” comes up 21 times in all the interview

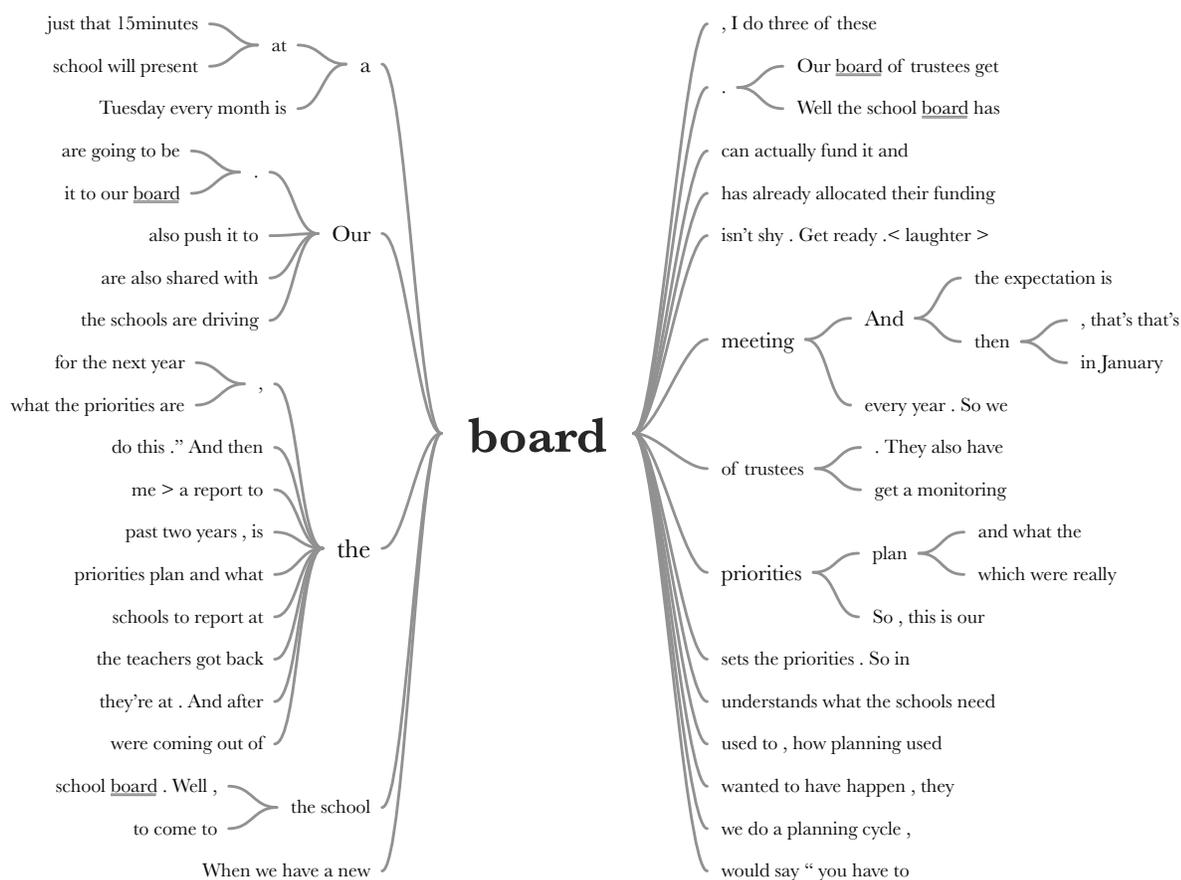


Figure 8 – Board word tree

text coded under school plan (in third place, after the words “school” which was used 61 times and “year” which was used 22 times). Often the board of trustees was referred to in terms of setting the priorities for the divisions, which therefore must be reflected in the school plans. This speaks to the process or flow of information and may be one indicator of one trajectory for divisional data.

As you can see from Figure 7, the board is referenced to as it relates to reporting, planning, funding and meeting. One participant stated, “Our board of trustees get a monitoring report from me on a regular basis and that’s all tied to the school planning question, but it’s also tied to our school district or division planning as well.” Across the map in this study, school plans were viewed as extremely important at the divisional level and in the division office. In particular, all participants spoke about the different ways they work together with principals across the division to achieve alignment between the provincial, board and divisional priorities.

So basically what we expect without exception is that school plans will incorporate the division plan. So you can see on this one the first two mirror what the province wants, so there’s complete alignment. What we expect in the school plan is not only those goals but each school will present at a board meeting every year. (Manitoba superintendent)

Considering then the role that data plays in school planning, five participants mentioned some type of educational data when questioned about school plans. The ways in which they talked about data in reference to school planning varied significantly. One superintendent disclosed that she did not like a lot of data in school plans because of how people (my interpretation is that she meant the board of trustees) might interpret that data. On the other side of the spectrum, one superintendent talked about how his school planning sessions are a collective process shared among principals and are “completely data-driven”. Three additional participants viewed data as playing a significant role in the school planning process. Furthermore, the only types of data that were mentioned in a specific way - which does not imply there are no other types - were literacy

and numeracy data. Of course, this was not surprising, given the provincial mandate for divisions to report on literacy and numeracy goals and outcomes. It stands to reason that if superintendents aim to align school and division plans with the provincial reporting framework, then the central focus for data collection and reporting will be literacy and numeracy assessment results.

4.1.7 TTFM.

Nine out of ten participants in this study spoke about the *Tell Them From Me* (TTFM) assessment even though they were not specifically asked about it. With pride, two individuals brought up the history their division has with the assessment. I learned that TTFM is a survey developed by The Learning Bar Inc., a private education company that offers educational tools designed to “inform educators, guide school planning, and give a voice to students, parents, and teachers” (The Learning Bar, n.d.). Specific items that participants said they focus on from the TTFM survey results included: school safety, emotional and social engagement, school engagement or connection to school, citizenship and character building. While different divisions seemed to value different aspects of TTFM, no participant spoke about TTFM in a way that indicated it is an unwelcomed assessment. No one spoke in a way that I interpret to be negative, nor did anyone level the same criticisms (i.e. validity, reliability, used as a political tool) as they had about PISA, PCAP, report cards, or provincial tests. One person in this study commended the province for offering this assessment to divisions because it provides useful information, “some of those questions in TTFM which is a provincial assessment - and good on the province for doing it - they ask some very good questions, give us information and ideas about where the problems are.” The assessment tool is purchased by the province and according to participants, parts of the tool (I interpret this to mean, some sections or topics from the master TTFM student

questionnaire) are made available to divisions, and divisions are given the option to purchase additional sections. It appears that divisions are all asked by the province to use the survey, but it is not clear from the interviews in this study that divisions are asked to do anything in particular with the results. No one spoke about being asked to report the results back to the province, or about including TTFM data in their school or division plan. One participant said that, like many other pieces of data his division collects, he views TTFM results as a “temperature check” or a quick way to access one piece of information about the students in his division. Another participant said that she believes that some schools in her division have committees that are reviewing the TTFM data, although she did not offer any specific EDM examples. There were no specific details offered about the ways in which schools or divisions are working with TTFM data to inform decision making or intervention strategies. Of course, that does not mean this is not happening, only that it was not discussed in the ten interviews that I conducted.

4.1.8 Desired data.

Each participant was asked at two different times in the interview whether there are data that they: wished they could collect, plan to collect, or would like to work with more (see Appendix 1.2, question 6 and 10). In this section, I explore the responses to question #6, and in the section ([Desired data to address equity, section 4.2.7](#)) below I explore the responses to question #10 which looks specifically at desired data for the purposes of addressing social equity. When participants were asked at the end of the first half of the interview whether there was data that they wished they could collect, plan to collect, or would like to work with more, answers generally fell into one of four categories: (a) student writing data, (b) data from parents, (c) more detailed or disaggregated achievement data, and (d) well-being data. First, several participants spoke very directly about wanting more data collection on writing; one

superintendent even said that he believes that, “writing is probably the most important part of the education system.” Next, when asked what he would like to collect, another participant spoke about the importance of increased communication with parent communities; he returned to his earlier comments about the capabilities of the SIS and expressed that things like parent portals are the direction that he would like his division to take in the coming years. Thirdly, several participants expressed an interest in obtaining more achievement results from the province, broken down by year (rather the ones that are in some cases only given in 5-year averages) and by school. Finally, five superintendents expressed a desire to collect data related to student well-being, rendering this area a notable one. One person talked about how the preoccupation with literacy and numeracy leads us to neglect measures such as “passion, self-knowledge, and direction.” Another participant talked about schooling as far more than about marks and grades. He wanted to know “how kids are connecting to school, how they’re connected to their teacher, all kind of other things too.” Another participant was also concerned with how well his students related to and worked with others. Yet another superintendent discusses the ways in which we might want to consider exploring and assessing the less material needs of students, such as power, fun, belonging, and freedom. Someone else talks about the ways that we can begin to view our students holistically. Well-being is something that several participants, despite the provincially administered TTFM assessment, appeared to want to assess. In the words of one participant, “what matters in education parents say is, ‘I want my kid to be happy’ ...we don’t measure that.” It remains unclear from these interviews, what they might do with that data were they to collect it.

4.2 Demographic data and equity initiatives

In section B of the interview guide, participants were asked about various types of demographic data as well as demographic data as it correlates with achievement data. This section of the findings is most directly linked to my research question about the use of data viewed using a CRT lens. In Chapter 5, I elaborate on how the findings presented below may be explored and interpreted using this critical framework.

4.2.1 Gender and sexual identity data.

Question #8 of the interview guide asked, “In your experience, can/does your student data provide information about student demographics (i.e. disaggregated based on SES, gender, languages spoken)? Can you share some examples?” The range of answers with respect to data broken out by gender varied from, “not at all” to collecting, reporting and large-scale planning initiatives based on gender data. Three participants reported that they did not look at gender data at all at the divisional level. One participant told me that gender is pretty easy to pull out but that he does not know if his division does enough with it. It was also reported that while there has not been any gender-related data disaggregated and discussed within his division, one participant was aware of school-based data driven dialogue that was initiated by two of the principals in his division. Three participants offered specific details about gender data in their division and mentioned that this data has played a role in either their division planning or reports they prepare for the board of trustees. One person described the content of her gender breakdown by stating, “our reports to the board, we show it. And we know this to be true, we know that overwhelmingly, girls are doing better in nearly all subject areas than boys.” What is referred to

as the Gap between boys and girls, where girls are “outperforming” boys, is a common feature among the described experiences of participants who work with gender data. Another participant states for example “if our grad rate is 80%, it was 90% for girls and 70% for boys.”

Consequently, the initiatives or interventions to address this Gap, were designed with the primary goal of raising boys’ achievement. The three examples of specific division-wide interventions based on gender achievement data were: (1) student engagement/relationship building, (2) allowing for more movement and alternative classroom arrangements, and (3) providing more books that boys can connect with. Overall, these were some of the most specific examples that were offered on the topic of data driving an equity-related initiative.

While I believe quite strongly on a personal level that the topic of gender identity – which includes people who identify as gender fluid, gender queer, bi-gender, non-gender, etc. – is of critical importance in relation to student data and equity, it was not a topic that I explicitly broached during the interviews for this study for two reasons. First, because I did not have what I believed to be the necessary background and understanding on the topic, since my literature review focused on the relationship between educational data and race, and I did not find any literature in the area of educational data and gender identity. And the second reason I did not raise this topic, was out of an effort to stick closely to the scope of my research questions. However, there were two unsolicited and notably binary opinions put forth about data that was collected for a specific study that was recently conducted by Dr. Catherine Taylor on the topic of LGBTTQ* student experiences. A quick Google search following the interviews finds that the survey that was mentioned was likely part of the *The first national climate survey on homophobia, biphobia, and transphobia in Canadian schools* (Taylor, Peter, Campbell, Meyer, Ristock, Short, 2015). To summarize, as a result of the survey instrument that was developed for

this national climate survey, and the results that showed that LGBTTTQ* discrimination was occurring in his division, one superintendent outlined a targeted intervention in his division. The intervention was designed to explore attitudes and beliefs of students and teachers in the division in order to support the students in that division who were experiencing discrimination. This particular division, according to the superintendent I spoke with, continues to try to track the experiences of LGBTTTQ* students and the effectiveness of the divisional support programs. In what appeared to be in stark contrast to this, a second participant brought up this same study, and described how he reacted by calling Dr. Taylor to tell her that the questions on the survey instrument were so biased that she was only looking for data to support her lived experiences. In this context, this participant stated that, “we really see people manipulating data for bad purposes or for their own purposes.” Not only does this example raise similar concerns as those raised in my influential outlier ([Chapter 1](#)) about the use of data for charged topics, but it also raises questions about the ways in which we perceive the instruments that are used to collect data in relation to our biases, values, and beliefs.

4.2.2 Socioeconomic status.

Socioeconomic status (SES) refers to an individual's or family's economic and social position in relation to others, based on income, education, and occupation. Just as with gender, participants were given a prompt about student SES data among a range of other prompts that were all listed at the same time (and not one by one). Although no one indicated that they have correlated achievement with SES indicators, almost all participants mentioned that they look at or pay attention to student demographic data in relation to SES indicators. Many superintendents mentioned that the SES indicators data they use is from the Canadian census and that their SIS can or does incorporate census data into their data queries (through the program Clever for

example). Several participants noted however, that the census data is lagging and outdated and that the most recent data we have is over five years old, from 2011. One superintendent also noted that the census data is broken up by health jurisdictions, “but your health jurisdiction and school divisions don’t match.” Therefore, it seems clear that there are some limitations for divisions when using student demographic data based on census reports. In spite of these challenges, I was told by one superintendent that in one division, census data is used to determine part of resource allocation,

We staff based on student count and need. And so if anything we actually give more to the schools where there’s a greater need... There’s another example of using data. We actually have our schools categorized on a scales of need, one being the least need and the five being the highest need based on SES background, transiency, poverty, parents employed or unemployed and the education of the parents. We use census data.

Beyond this example however, and perhaps in some way related to the challenges with census data, not many specific examples of decision making processes or initiatives to respond to student SES indicators were offered. Significantly, nutrition programs were described by three participants as interventions to address inequalities based on SES in the division. Other supports mentioned were subsidized school trip fees, and subsidized school supplies. It was never explicitly said that these initiatives were driven by, or tracked using, specific student data. One superintendent mentioned that he knows which communities need additional supports based on anecdotal from the teachers and principals as well as his own school visits. Lastly, one group of students who were referred to in relation to SES indicators were children who are living with a foster family, colloquially referred to by participants as children in care. A summary of findings about experiences with students who are living with a foster family is reflected in the section entitled, *Intersectionality*, Section 4.2.5.

4.2.3 Newcomer and EAL data.

When participants were asked “in your experience, can/does your student data provide information about student demographics (i.e. disaggregated based on SES, gender, languages spoken)?”, there were frequent references made to newcomer or EAL students. For reasons of space, I group participant discussion about students who are newcomers to Canada with discussion about students who are learning English as an additional language (EAL). I recognize however, that students may or may not be both new to Canada and learning English as an additional language. This section contains one discussion for both of these student groups for two reasons. First, participants in this study often grouped these students together or at least appeared to use these terms interchangeably. Second, I did not feel I had a sufficient amount of data to warrant two separate sections. However, I want to note that in the future I will make a point of clearly separating the interview questions and discussion for these two groups.

Certain pieces of data in relation to newcomer students seemed to be more readily available and committed to memory than any other pieces of data offered in interviews. One participant knows for example, that a major population in her division is immigrants; over 50% of the students attending the largest high school in the division who were not born in Canada, but she does not correlate country of origin with achievement. Thirty-six percent of the students in another participant’s division were not born in Canada. One school in a third participant’s division, has 147 students representing 51 different nations. A fourth participant said that a few years ago a divisional survey that found that 37 staff and students were born in 37 different countries, but he thinks it is probably 50 by now. Over several years in a fifth participant’s division, a “critical mass” of students and families immigrated from the same country of origin, “and then they were pouring out and into their own schools. And we thought, what have we done

wrong? And then we realized that was the intention all along” (Manitoba superintendent). I was told that these families intended on homeschooling their children once there was a large enough number of children from the same background. Another participant reported that they had a large number of transient students to accommodate. In this division, there is a high enrolment of students from South America, Mexico, Central America, Bolivia, Paraguay, any of whom he says are fairly transient. In response, this division had to take what is called a self-corrected learning approach (SEL) so that,

When the kids come back, after they’ve left and gone back to Mexico, they’re back for spring for seeding, that we can pick up... you know, so it is a paperwork nightmare, trying to keep this all straight. So you have to have a very individual plan for some students. (Manitoba superintendent)

In terms of dialogue, decision-making, or program initiatives that respond to student data on country of origin, very little else was talked about beyond the above example. One participant shared that flags reflecting students’ country of origin were put up all around one of the schools in his division. Another participant spoke about a cultural day where kids got to learn about different customs and traditions, where:

What staff have been able to do is take those norm violations and create normalcy around them. And little things like trying to get kids to eat with chop sticks right? Instead of making fun of Heather for doing that, it’s organized so that everybody gets to try it and then Heather who’s an expert at it can teach the other kids... (Manitoba superintendent)

The phrase “norm violations” denotes an understanding of a dominant culture that exists across the school division.

One superintendent showed me information about the number of EAL students and how EAL students score on select achievement measures is given to divisions through reports from the province. In this case, she knew without looking at the report that 41% of the students in her division are EAL learners. Although there were no specifics offered, other participants expressed

that they have access to data (presumably through their SIS) that denotes the languages spoken by students in their division. Many divisional leaders mentioned that they have liaison worker(s) or social worker(s) who operate in schools to assist newcomer families with their enrolment and integration into our education system. Several participants also told me they have one or more language interpreters. For example, a participant told me, “We’ll bring someone in who speaks Punjabi and we’ll bring in someone who speaks Mandarin, or Arabic. We’ve had people come in to be interpreters for parents, but it’s probably an area where we could probably use information better.” This quote seems to indicate that this participant is thinking about the ways in which he could, but currently does not, collect data in relation to languages spoken home. The decision that appeared to be the most explicitly driven by data in relation to EAL students in the division was staffing. One superintendent said,

It drives where we place our EAL teachers. We have a fairly standard EAL staffing formula. Based on the number of approved EAL students in our division. So, it drives it very much in terms of staffing. Don’t know if it does anything else...EAL...Not really. (Manitoba superintendent)

Not everyone indicated that they think there should be more supports in place for newcomer and EAL students. In fact, I detected a degree of complacency with the education and/or divisional supports provided for EAL students. For example, one participant stated, “We don’t worry about EAL. There’s no point in worrying about those kids. They do great... most newcomer kids are going to do fine and we shouldn’t be fussing about them.” And another commented that, “Just like everybody else, we still have some issues with EAL kids. But against the province we always do exceptionally well.” These two statements appear to be in direct opposition to one another. The first of the two quotes identifies that EAL students as doing very well while the second quote acknowledges that there are some problems. What is uncertain is whether these two statements are based on achievement data (e.g. report card data, provincial testing data), or other

sources of data for example anecdotal or more qualitative data. It is unclear what measures these two participants have in mind when making their two assertions. In the case of the second quote, it seems to be implied that the unit of measurement is provincial test scores, since the province is referred to as a reference point. It is also unclear in this statement whether this superintendent means that EAL students in his division do well against EAL students in other divisions, or that the overall average in his division is better than the provincial average. These two comments are taken up in more details in the next chapter ([see section 5.2.1](#)).

4.2.4 Race-based data.

Near the very end of the interview guide, question number nine of ten, all participants were asked: “Have you collected, presented or shared any divisional race-based data, and if yes, can you share some examples?” Because this question most directly relates to the research questions in this study, I believe it is worthwhile to include all ten responses to this question:

Table 1 - Responses to race-based data

1. “We are aware of it.”
2. “I mean like I say, we talk about the Aboriginal um the EAL, I mean what we try to use that as a positive. Our schools do these cultural celebrations. For example, I was just at one two weeks ago, they have 24 countries represented in that school, so they do a parade of nations, and then they do a whole celebration to create understanding about different cultures, they have food. The place is like the Folkorama.”
3. “Yes, we have a number of that stuff that we do in different types of things. Um, so certainly you know our Aboriginal numbers for sure, we’ve tracked that data. And we track that. We kind of track in our division, we did a survey a couple years ago for all of our staff, and there would be more now, so about eight years ago I think we had 37 staff and students who were born in 37 different countries. But I think probably now it’s about 50 for sure.”
4. “I think the only race-based data that we have or use, is declaration of Aboriginal background. And we go, just as it comes to us. Again, I think that, the way that we work with that piece is probably not that different from other school divisions. I, we don’t, we haven’t done any other race-based data.”
5. P: Ahhh, specifically, is it separated out and presented? H: Yes.

P: No. No not... They can if they want to... but you know as far as... I think it is school-based.
6. "We have not presented any divisional race-based data. We have presented, well I shouldn't say... we have collected self-declared Aboriginal, we have Metis data. But we haven't really done a broad base of outside of that. And outside of some of the major ones. There might be some use in that."
7. "Mm, I want to be, we try to do it in a positive sense. Ah, and race-based data I think Heather, I probably would want to know what your definition is, because race is an important topic to talk about and acknowledge and work with, but the definition has to be clear. And so I'm assuming when you talk about race-based, it's more people of colour, it's more the Aboriginal issue, it's the bullying due to race, etc. Those types of data we do have, though that type of data is one where I think we need to continue to dig deeper."
8. "Yes. And that is just so very recent. We would have, did we receive it... we have our own data in terms of self-declared Indigenous students based on their form. We would've just very recently received data that has... but other than that... no."
9. "Not really. I think we're still, you still have the challenge between what's declared officially and what's reported. So, kind of rate of self-declaration versus the rate of voluntary identification... In a sense we don't have enough of an accurate enough data set, in terms of to do that many crosstabs. So that is something that...and I see the level of self-declaration as a statement about how comfortable you are declaring. We have a divisional elder who works with us, and she counseled her own kids not to tell people that they were Native, growing up."
10. "We do have access to... the information we have access to is based on the last Canadian census, and that's built into our SIS package, but you know that gets dated. Especially when we had the short form."

Every participant in this study is either aware of, talks about, or has access to some kind of race-based data. In relation to the question that was asked, every participant indicated that they know some kind of race-based data for their division, but not one participant indicated they have presented or shared any race-based data. One participant elaborated later on in the interview what she meant when she says she is aware of the student population in her division,

We are very aware of it. You can't help but be very aware of it. You walk into SchoolX or SchoolY... then you go to SchoolZ, lily white and Indigenous. So those two populations are there, but there's ... you'd be hard pressed to find a dark-skinned person in SchoolX...African-Canadian, or from the Islands. (Manitoba superintendent)

Participants provided several different interpretations of what race-based data actually means in this context. Some participants responded by discussing only self-declared Aboriginal student data, others included EAL data, while others seemed to indicate a broader interpretation of race-based data. One unique response included a question about my definition of race-based data, which she followed up by stating that she assumes that I meant “it’s more people of colour, it’s more the Aboriginal issue, it’s the bullying due to race, etcetera.” I find this quote to be particularly interesting, because it reveals something about this participant’s train of thought when considering a question about race. First, she remarks that I might mean people of colour, followed by a reference to a specific group, and finally a comment about bullying in relation to race. One interpretation of the first part of this quote, that refers to people of colour, is that it appears to consider the question about race as separate from White people, or that the dominant race is White and therefore any additional data that looks at racial differences is about non-Whites. Next, the reference to Indigenous students as “the Aboriginal issue” may just be a comment about a matter of fact in question. However, it could also connote a more unique problem in the education system that is either experienced by people who identify as Indigenous, or by people who identify as non-Indigenous or part of the dominant culture. The last part of this quote, which refers to bullying due to race, is interesting because it is an acknowledgement of the occurrence of racism in the form of bullying in schools. I return to in the analysis section in Chapter Five. There are several other notable aspects within this complete list of responses. First, a number of superintendents collect data from student forms that asks them (or likely their parents) to indicate whether they are self-declared or self-identified Indigenous. Three participants discussed the accuracy of the self-declaration process. A superintendent suggested that some students in his division perhaps choose not to declare themselves as Indigenous,

something which raises a broader concern about how such data is collected and the accuracy of the data that are collected. Another individual described an example from a number of years ago, when she worked in a school that had a high East Indian population and suddenly based on how families interpreted the self-declaration question, were identified as having an extraordinarily high number of Indigenous students. Another superintendent stated that his SIS tells him he has around an 18% Aboriginal/Métis population, but that he believes it is in actuality much closer to 30% based on the information that his local principals report to him. The information about race demographics that is collected in another division, comes from the census data (concerns about the census data are addressed above in the section *Socioeconomic status*, 4.2.2). A total of three superintendents suggested it might be useful to collect more race-based data, although it was not clear whether they believed it was useful to collect only demographic data, achievement data, or program data. According to several participants, divisions are asked annually by the province to collect and report specifically on the progress of Aboriginal students for the purposes of qualifying for what is referred to as the Aboriginal Academic Achievement (AAA) grant. Perhaps as a function of this system, every participant in this study demonstrated that they knew the number of what they refer to as self-declared Aboriginal students in their division. According to Manitoba Education and Training, (n.d.), divisions must submit a report and a plan that supports Aboriginal success to qualify for the AAA grant. The plan must:

Focus on strategies which result in measurable increases in Aboriginal student achievement, particularly related to literacy and numeracy for a minimum of 50% of the grant allocation. The remainder of the grant, if any, can be used to support educationally and culturally relevant programming. (Education and Training, n.d.)

At this point in the interviews many participants explained, and some physically showed me, the binder that the province has provided filled with pages of data that visually presents achievement from their school division. Much of the data that is presented in this binder has been

disaggregated and presented in line and bar graphs. The information presents, among other things, Aboriginal achievement over time and the achievement of EAL students. The source of the information is the Student Achievement Support Unit (SASU), of Manitoba Education and Training. One participant acknowledged that the disaggregated data in her division's binder shows a "huge gap", and that the "data basically says that if you are a non-Aboriginal female, you're fine. If you are an Aboriginal male, and we don't have many of them..." she does not finish the sentence, but she looked at me and then her eyes faced the floor as if to say this is not a good thing. Four other participants referenced a strikingly similar observation; that "Aboriginal students don't graduate and succeed to the same degree that non-Aboriginal students do" (Manitoba superintendent). To summarize, it appears that for the most part, superintendents who participated in this study have a clear idea of the number of self-declared Indigenous students (whether that information is from the 2011 census or from the division's own collection process), although they also have significant reservation about the reliability of that data. Generally speaking, participants indicated that they have a clear idea, mostly due to the reports recently administered to divisions by the SASU unit, of the different performance outcomes in achievement in literacy, numeracy, credit accumulation and graduation for self-identified EAL, self-identified Indigenous students and the provincial average (which includes these numbers).

4.2.5 Intersectionality.

At this point in the chapter, I would like to recognize and acknowledge the intersectionality that exists between the above categories (gender, SES, newcomer and EAL, and race data). One participant for example, appeared to have adopted a more holistic approach to student demographic data as it relates to achievement:

To look at how well the kids are doing in math it's really important through different types of assessment, but there are other things that come into play and so, SES, poverty, where they come from, their experiences, their experiences in the community... it goes on and on (Manitoban superintendent)

The most frequent example provided in these ten interviews of intersectionality was with respect to students who are living with a foster family (often referred to by participants as children in care). I gathered that children in care is also a recognized demographic group by the province, since several participants had data sets to show me or talk about with respect to “children in care”. According to several interviewees, children who are living with a foster family and who have self-declared as Indigenous students as a group, score much lower on provincial achievement metrics than any other group. For example, it is explained to me by a participant that, “our kids who are in care are doing nowhere as near as well as kids from other demographic backgrounds”. Despite this group of students being clearly identified as highly disadvantaged, there was no mention from participants in these interviews about whether or how data specifically about children who are living with foster families is presented, shared, or used in the decision making process in their division.

4.2.6 Data as an indicator of knowledge.

Participants were asked whether they believe that the data they collect and work with is a useful or limiting indicator of knowledge. Everyone agreed that to some degree, achievement data about literacy and numeracy is valuable. But everyone also agreed through various expressions, that this data reflects only one component of the process of teaching and learning in their division. Some participants reported that they view literacy and numeracy data as “a start” but that their teachers must go “further”. Sometimes however, participants speculated that teachers can be swept up into thinking about just a score, particularly when it comes to

marginalized or minoritized students. While emphasizing the importance of teaching kids to be creative problem solvers, one participant wondered if teachers and principals in his division sometimes think that success for EAL students means “getting kids literate and numerate” and then their work is over. Participants seemed to beg the question, Do some educational practitioners consciously or unconsciously view the purpose of education as a scaled back version of learning for kids who do not fall into a standard of Whiteness? For example, there is a possibility that teacher expectations are reduced to an exclusive focus on their EAL students meeting a baseline literacy score. It may be that this superintendent’s quote implies just this:

I’ll say in particular with schools with immigrant children and maybe schools with higher levels of poverty, sometimes the school staff can be just thinking about a score. And if the kids get to the score that’s enough. And education is more than getting to a score.
(Manitoba superintendent)

One key feature of this quote is that this person views the purpose of education as more than just a score, but he is not confident that each of the staff members in his division shares the same value.

4.2.7 Desired data to address equity.

One of the agendas for this research project was to determine the degree to which select superintendents in Manitoba value or use data. One indicator of the ways in which superintendents value divisional data was in their answers to the question: “Are there any data that you wished you had access to or time to work with, for the purposes of addressing social equity in your division?”. Some participants indicated their appreciation for or value of the newly administered data from SASU - which included select divisional literacy, numeracy, credit accumulation and graduation rate data – by expressing that they wished they could acquire more detailed or disaggregated reports of the same nature. One superintendent noted that he would

ideally like access to school-based disaggregated literacy and numeracy data of the same type as the divisional data he was given. In fact, when asked what data she would like for the purposes of addressing social equity, another participant told me that she's finally now got what she has been asking for from the Department for quite some time. In her words, "and it's going to be disaggregated. So we'll be able to pull our EAL, male/female, Aboriginal/non-Aboriginal. And then we can compare to the province as well as the division." Someone else expressed a desire for the province to take a lead on providing data that addresses equity, since he does not believe that his and many other divisions have the capacity to generate these types of reports. Three superintendents expressed an interest in more specific and reliable demographic information. And one participant talked about wanting data about his students' cultural and national identity. In his words, "we don't want a category that just says 'brown people' we'd like to be able to say: Somali, Eritrean, that would be that would be that granularity of information we don't have yet." I think the following quote illustrates one participant's reasons for wanting more specific student data:

To me it's the process of making sure that you try to understand what your classroom, what your, who your kids are, who your families are, what your classroom looks like, what they're made up of, what your school is made up of. What your division's all about. And the process of collecting that, and then looking at it and then doing what you need to do to do the right thing, is what I concentrate on. (Manitoba superintendent)

This participant presumably wants more specific data about the students in his division for the purposes of his staff fulfilling a mandate to respond to and reflect these students in their practice. As evidenced by the above quotes, this level of disaggregation is not currently happening. Whether the reason for this is a matter of logistics or technical capacity, or whether it is a result of a colourblind approach or a lack of cultural competency is unclear. One step toward a deeper understanding of the differences within their student population is the recognition as

demonstrated by these participants for the need to collect more specific information about their students' personal histories. On this topic, a different superintendent shifted the narrative away from a focus on demographics, and instead spoke about the importance of collecting different kinds of assessment data altogether. To be able to respond effectively to students from different backgrounds and cultures, he talked about needing to value different kinds of knowledges while still keeping high expectations for all students. One suggestion he offered is to begin to spend time on and value individual stories. However, he did not indicate whether or not his division has started to value alternative assessment strategies such as this one however.

4.2.8 Conversations about race.

In my conversations with participants, I learned that there have been a number of workshops offered by SASU in the past year for leaders in all the Manitoba school divisions on the topic of data driven dialogue. And so perhaps in relation to these workshops, several participants raised the topic of how to approach conversations around data and conversations about race. Two participants discussed how data might be an effective or ineffective tool when engaging in conversation about race. On the one hand, the first participant emphasized how a careful approach to presenting such data can facilitate conversation and raise awareness about perhaps something that was either unacknowledged or unrecognized before,

If used properly it helps people to say, "oh my gosh I didn't realize that". It helps us to realize that these Indigenous kids who are walking our hallways, yes it's great that they're here, we're all inclusive, but as a cohort they are not doing as well as the other students. It is about developing the skills within which you can create environments for safe conversations around data. Safe conversations around race and around inequities. Because if you don't, and you can't, people will fold their arms, they're not listening. In many cases they'll go to the school, they'll see these kids having hard luck, not making it, and in some senses for some of them, they come with their perceived notions of a meritocracy actually hardened. "They're lazy" "they're not getting to school" "those parents aren't getting their kids to school" "Screw them". So, it's the knowledge it's the

data but it's the skill to work with the data and have those conversations is paramount.
(Manitoba superintendent)

This quote demonstrates some of the principles outlined by Wellman and Lipton (2004), that focused and purposeful approach to working with data have the potential to make difficult conversations safe, and challenge people's assumptions and biases. Perhaps an example of how superintendents may want to approach conversations about race and data is expressed in the second of the two participants who reflect on the experience of staff shutting down and not listening if the data is contextualized a certain way,

You can take a piece of data, the number of Aboriginal kids which you have that are struggling, and you can present that as a cold hard fact, and tell people they have to change and do something about it. Or you can say, "here's the situation with these kids, what more do we need to know to find out the rest of the story?" And then get people to go into the data to go further and ask other questions and to find out how to address that need. What's driving that issue. So the data is a result, what's the process that's getting that result, and how can we go back and affect that process? Which is very different from saying 'it's black and white'. (Manitoba superintendent)

Both seem to agree that conversations about race and racism must be approached with sensitivity, planning and care. They both also recount experiences where they have witnessed staff members "shutting down" or not listening. The former quote seems to indicate that presenting the achievement data about Indigenous students in her division may cause staff to (a) confront and realize an urgent inequity that should be addressed and, (b) enact changes to their thinking and their individual practice as a result. The latter of the two quotes, emphasizes the importance of facilitating an exploratory practice with staff in order to understand the influences that led to the achievement results expressed through the data. This participant wants to emphasize how important it is that teachers do not feel as though they are being told they must change or that things are black and white; which, in this case, is an interesting choice of words, since (and perhaps this is an unfair analogy to draw) some students indeed are Black or White

and a failure to recognize this difference is an outdated form of colorblindness. Perhaps one additional difference is that the first quote focusses on the capacity for conversations around data to challenge personal assumptions and biases about race, while the second quote explores the potential for these conversations to address the broader social factors that contribute to racial inequity, and our own positioning within that context. The second quote however, seems less urgent in tone and tenor. There does seem to me to be a subtle yet important difference in the language used by these two participants when they talk about conversations about race and racism, which may reflect a difference in attitude toward the value of using data, or toward using data specifically for the purpose having conversations about race.

4.2.9 Equity and DDD initiatives.

Although it was not always clear that it was in response to or in light of any quantitative data per se, participants shared various program initiatives designed to support underprivileged students that take place in their division. One division is hosting its first ever graduation Pow Wow this year to shine a light on their Indigenous past and present, to celebrate the achievement of these students and other students, and to create “greater awareness in the public”. Another division has hired an Indigenous curriculum consultant. Yet another division has established a targeted after school homework program aimed at providing academic support for children in care. Some divisions proudly host cultural celebrations. One participant elaborated about the purpose of the Folkorama-like celebration in her division; this example that outlined kids who could teach others how to use chopsticks was mentioned above. Several participants spoke about alternative accommodations or programs and even alternative schools. Other than one example of an Alternative school which predominantly serves a particular religious community, I was unable to learn much about the racial make-up of students who attend the alternative schools that

participants spoke about. The impression I was left with, was that participants structured the majority of their non-provincially driven equity initiatives to serve lower SES communities. It stands to reason that racialized and minoritized students are also supported by these initiatives. This conjecture is based on two specific examples offered by different participants about the use of data in establishing a division-wide nutrition program. One superintendent spoke about her division's program at length and in this case how she collected data for the purposes of informing the decision making:

One of the things that we're looking at in our division is equity. Equity means many different things and I guess it depends what you're looking at. So, in this particular item or set, is not on student learning, so I'm giving you an example where it's not... But we were looking at kids and the ability to eat properly. At lunch time. And so, we have different indicators, different data sets, about single parents, you know, income, it goes on and on and on... We needed to go out there and dig down a little bit deeper and do a survey. And we brought that set back and we started having a discussion. And the topic, the conversation stayed quite similar because I think people were correct in their assumptions, but they had something now in front of them. (Manitoba superintendent)

According to her, this nutrition program provides food for in areas with the highest need. While data that was collected certainly played a role in this initiative, it is unclear with only this level of detail, about whether this was indeed a data-informed, data-driven, or data-involved process. With respect to providing students with nutritional support, another interviewee discussed a similar program in his division where all students are to take advantage of the nutrition program irrespective of demonstrated need. For many participants, it appears that the social inequities they see and try to address are traced back to variations between SES indicators. One superintendent may have perhaps spoken for several others when she stated, "what's going to get equity fixed in our society is narrowing the gap between rich and poor and that takes government policies that I don't think any of us have the stomach for."

4.3 Working with the data

Every participant was asked the guiding question, “How are your division’s data (a) collected, (b) presented and (c) shared?” I was curious to learn about some examples of data driven dialogue and data driven (or informed) decision making, and in which directions the data were shared within the division. Finally, when appropriate, I probed for some examples of initiatives or programs that have been created as a result of a data driven (or informed) initiative. Below is a brief summary of how the data are shared by some of the participants with: the board of trustees, principals, teachers, parents, students, and the general public.

4.3.1 Volume of data and sharing with the board of trustees.

The types of student assessment data that were reported in this study were shared predominantly with the board of trustees and related to literacy and numeracy. Overall, participants conveyed that it is the board of trustees they are accountable to and so a central responsibility they have is to prepare these reports. On an annual basis, superintendents share the school plans with trustees. For their division plan they either work with or simply share it with trustees, who in turn asks questions and decide whether they will give their approval (I suspect by way of a vote). Many participants spoke about a history of strong support they have garnered from the board of trustees. The most detailed description of how the board of trustees works with the data and engages in divisional evidenced based decision making, is as follows:

We share [school plans] with our trustees at the annual planning retreat that we have with senior admin trustees. And they came up with the three expectations for student learning based on student data. They said that every student would be personally and intellectually engaged in their learning so that was from the TTFM data. The board also said that every student by the time they reach grade 8 would be reading at or above grade level and have at or above grade level numeracy skills to better prepare them for success in high school. Well, how did they know if we are? Well, we have to give them data reports. The third one is that every student in our division would graduate. (Manitoba superintendent)

This divisional plan sounds like it follows a similar structure to many other divisions and predominantly echoes the format of the provincial reporting framework; there are particular goals and benchmarks set for literacy and numeracy in the division, and then there is a third category that is open, in one case for example this category was defined as student engagement. In addition to literacy and numeracy reports, one superintendent reported to her trustees on retention and graduation rates in the division. Another participant discussed how she prepares reports alongside her senior administration team for the board of trustees which include information about infrastructure, transportation and maintenance. I suspect the same is also true for other divisions. Three participants specifically talked about how schools or students are sometimes invited to present to the board of trustees. These individuals remarked on the positive impact that practitioner or student presentations seemed to have on the board of trustees. While it was clear that the board of trustees generally expects to see some student data, no one conveyed that they had experienced any pressure from the board of trustees with regard to student data, or conversations about student data. Unlike provincial reporting, where there appears to be something of a fill-in-the-blank template, divisional CEO/superintendents get to choose what and how much they prepare for the board of trustees in terms of divisional data. As one superintendent put it, “What we share with the board it’s basically like a dipstick. We couldn’t show them everything because it’s overwhelming. So we put together snapshot pages for example.”

The participants described how challenging it was to process the high volume of data that they have access to. Five participants shared that they have more data than they can work with, and so data often sits on a shelf. “In our division we have gobs, and gobs if I can use that term, of different types of data.” said one interviewee. Three other participants told me they have a lot of

data but are just not able to get to it all. The volume of data that superintendents have access to appears to just be greater than what can be meaningfully reviewed, discussed, or shared.

4.3.2 Surveillance, accountability, and sharing the data with principals.

One theme that emerged when participants discussed how they share data with school principals, was that data can be used as, or perceived as, a means for surveillance. There were several examples described by participants of the ways that they share the data with school principals and vice-principals. First, there were several examples of a collaborative school planning process among school principals with the senior administration, that involves data. Also, there were some examples whereby participants shared the report card, provincial testing, other literacy or numeracy scores (i.e. collected via instruments purchased from external sources such as Fountas and Pinnel literacy assessment) or the TTFM scores. Every participant spoke about the process or act of sharing at least one of these types of divisional data with principals. Based on this study, it appears that out of all the stakeholders, principals are the primary beneficiary of the data that superintendents select to share. In other words, participants spoke the most about sharing data with principals over any other group. In what I would describe as one of the most data-committed initiatives, for the past five years in one participant's division, each principals' meeting showcases a select school's data, and the principal "talks to the group about what data they're looking at, why they're looking at it, why they're doing it, what the impact of that data has been on their school and how its changing their decision-making." Another superintendent described a very similar process whereby principals sit together in small groups arranged by early, middle or senior years principals, and they discuss data reports that are prepared by the division office. There are two other participants who similarly describe engaging in a data driven dialogue with their principals at school administration meetings. Principals are

the only group, aside from one case with the board of trustees, that participants talked about a collaborative data driven dialogue happening outside of the division office.

In at least three divisions, principals have access not only to their own school's literacy and numeracy data, but they also have access to this same data from all of the other schools in the division. One participant described her experience sharing literacy and numeracy provincial test data with her school administrators, which resulted in "a defensive posturing" from principals, at least at first. She told me that certain data can feel threatening, not only to school administrators, but also to superintendents. The topic of data as surveillance, or judgement, spontaneously emerged at some point for seven of the ten participants. On the one hand, the purpose of sharing every school's data at administrator meetings might be, "so that principals can learn from each other in terms of what are some of the strategies that you are using to be successful in your school" (Manitoba superintendent).

On the other hand, some participants noted that presenting the data may be viewed as surveillance, or worse, as a means for being punitive. It was twice pointed out to me in different interviews that this is precisely one of the reasons that grade inflation happens. The line of reasoning is as follows: if principals are given the impression that their school's data is a measure for their own fitness or effectiveness as a principal, then it is a very real possibility that they will encourage (in whatever form that might take) raising test scores. One participant described a hypothetical situation where a principal might influence their teachers to think, "we need to be at 80%? Ok, I think we can do that. We can have a whole class at 80%." In cases like these, the result becomes either grade inflation or a shift in the amount of time spent teaching to the test, depending on the instrument and the context. An interviewee raised an important question when he asked, "how do we learn more and become able to use that data better without

feeling threatened?” This topic will be taken up and discussed further in the last chapter, in the section, *Implications for practice* (section 5.3).

Throughout the interviews, participants used several metaphors to answer to the guiding questions that were asked. For example, educational data was compared to a thermometer (a temperature check), a photograph or a snapshot, an artifact, a story, or a tool. The most memorable metaphor came about when I asked one participant whether or not the divisional or school-based data that she shared with principals was then shared with teachers, her response (shared with specific permission) made me laugh:

We expect [principals] to share it with teachers. Absolutely. That’s the whole point of it. If we know that you’re putting 36-strokes, look at the putting scores. You can no longer ignore the putting scores. The data is clear, right? And if you’re a shitty putter, get to the putting green, like everybody wants to buy the driver, \$500 hit is as far as you can. No, forget your 500 slides from Egypt, look at the essential learnings your PLC has declared. (Manitoba superintendent)

The slides from Egypt in this case, are the things that teachers love to teach, like the driver club in golf. The point here seems to be that teachers will teach only what they love even if it is not an essential learning, unless they begin to pay attention and respond to the data.

4.3.3 Data literacy and teachers work with data.

The relationship between teachers and student data was generally discussed in two ways. The first way that some participants described teachers working with data was with respect to data walls in their school. The second way they spoke about teachers working with data was in relation to the act of principals sharing school-based or divisional data with them, either at a professional learning community (PLC) or staff meeting. The lifecycle of the data throughout these two processes looks quite different. In the former case, it is teachers who assign students

(based on their expertise and understandings of assessment) to a category that reflects either “exceeding”, “meeting”, or “approaching expectations.” Each of the data wall examples that were offered were with respect to literacy achievement. For every student, the teacher assigns a group and posts their name on either a physical wall, or in some cases enters this information into the SIS for the school. If you were to walk into at least one early years school in Manitoba, I am told that you would see the striking visual of student data posted up across three walls, categorized in different ways. My understanding is that in this school, the teachers discuss any observations, changes, or challenges with respect to the student’s placement on the data wall during regular PLC meetings. There was no mention of the data from these walls being reported in any formal sense to an external party (i.e. the division office, parent community, board of trustees, or the province). One participant states clearly that “the most important evidence is what the evidence is in your classroom of your students learning, and how that is informing your daily practice in the classroom.” But this is not evidence that was reported to me in this study.

The second way that teachers work with student data is when their principal shares it with them, either at a staff meeting or PLC setting according to the participants in this study. The types of data that were described as shared with teachers include: literacy and numeracy scores from report cards, division-wide literacy and numeracy assessment results, provincial test results, and TTFM findings. In a similar fashion to principals, some teachers are described as resistant to engaging in a process of working with data; some superintendents speculated about the reasons for this resistance. One such speculation came from a superintendent who said, “there is a fair bit of resistance often from front line people like teachers, because there’s miscommunication, misunderstanding around what data is.” To some degree, one participant embraced the discord among teachers around data, because he believes that “having professional conversations among

educators is the point, and when they disagree that's when the learning happens for teachers.”

The challenge of the constraints of time is raised again when one participant told me “it's always an add on for teachers” (Manitoba superintendent). Another participant suggested that “if teachers see this as another thing that infringes on their time, and they don't have enough time as it is, I'm not criticizing the teacher for it, but it becomes sort of a problem we have to look at and fix.” She believed strongly that it is not okay for teacher-practitioners to say, “I know what I need to do because I just know and I know my kids are really great and they're succeeding because I'm a professional and I know.” She further believes that good strong communication is imperative to overcome this intuitive attitude toward teaching. Another participant did not believe that she should “push [data] upon teachers and infringe on their teaching, because then I don't think you have something that's either sustainable or authentic.” Interestingly, the word conversation was used 31 times in total from all sources, while the word communication was used only 4 times throughout all ten interviews. This might suggest that participants view data as something around which conversation can or should happen, rather than something to be communicated via a top down approach.

4.3.4 Censorship and sharing the data with the public, parents, and students.

I learned from participants, that they are required to produce community reports on an annual basis. According to one participant, “some community reports from divisions are quite statistically based and others are more anecdotal. But that's one form of doing it.” Another superintendent told me that on the front page of her division website, her office posted their annual report to the community, but that she deliberately did not include a lot of quantitative data in her report to the public, “because of interpretation”. Several others, told me, “we have not shared too much data with our community.” One participant says that sharing data with the

public without good conversation and analysis, will lead to “people getting more worried about scores than you do about what is your child really good at? What are they really interested in?” Implicit in this comment is that the public will start to worry about the incorrect things, or things that are not directly related to the purpose of schooling. Perhaps superintendents fear that some parents will misinterpret or read too much into the data. Two superintendents told me that the reason they choose not to publish graduation data is because of the flawed proxy cohort method used by the province for determining graduation rates. Note, the Province of Manitoba Education and Training still post the proxy cohort method (for the reasons explained on page 81 above), but have now added select student-tracked data as well. One person in the study discussed the importance of carefully curating the demographic data that is shared in her division. She reported that principals share some of the data with their community,

I’m saying certain levels, because you need to watch how you give things such as languages spoken, number of single parents, etc. at a school level to the parents, without everybody either feeling lousy, leaving, or hopeless. So you have to sort of watch how you’re giving that. The staff and the principals look at it closely. And then they try to make sure that they’ve got a handle on the culture and the climate of the school. It’s a very, to me, extremely important piece. It goes back to the whole thing that it’s not just about the quantitative number and assessment, and this is where we’re at. (Manitoba superintendent)

Instead of a published document, one superintendent said that she prefers to present data to her community face-to-face, at parent meetings for example, so they can talk about the data. The counterexample, was a superintendent who told me that in her annual report that is posted on her division website, she shares her literacy, numeracy, and engagement data (relative to provincial averages) with the public. She is proud of the numbers in her division compared to the provincial average. While a third participant did not concur with either position above, he acknowledged that, some people have the view that parents or the public should not have access to a lot of the

data, because they do not have the context, or they do not understand it, and it becomes politicized.

One final group that, of course, should not be overlooked with respect to sharing the data with is, students. At different times in various interviews I found myself wondering about, and in two cases found an appropriate time to ask the question: Do students have access to their own data, and if so, which data? One superintendent told me that students would have an understanding or appreciation for where they located on the student data walls (literacy and numeracy) based on information given to them from their teacher. The only other participant I had the opportunity to ask, talked about how her students were, “increasingly self-evaluating their work and evaluating the work of their peers.” She told me that what often happens is that students are tougher on themselves than the teachers are on them. I did not learn of any instances where students had access to, or participated in discussions about student data beyond their own individual assignments or report card.

4.3.5 The value of data.

Every participant was asked the question: “what is the value of educational data?” In addition to the answers to this question, many participants emphasized the importance of the language we use when referring to the use of data. Three participants told me at the very beginning of our interview that they strongly prefer the term “data-informed”. Another participant preferred to use the phrase “evidence of impact.” The participants in this study wanted me to understand that the data that I asked about, the data that is presented in quantitative forms, was not the exclusive driving force behind a decision, or the only way of looking at the world. One superintendent was concerned that one piece of data interpreted a certain way should not, in his words “rule the roost”. This sentiment is perhaps best expressed when a participant

stated that, “one of my fears is we find one data source and we say ‘ah-ha’ because of this we need to do that. Or this one set of data tells us the definite truth, and frankly that is usually not the case.” For example, she continued, does improving numeracy and literacy scores mean that she should cut instructional time from other disciplines such as the arts?

It is fair to say that the participants in this study value data insofar as it is one additional method for improving the quality of education for students. The value of data was commonly framed as valuable for-the-sake of something, such as: to inform educational conversation and practitioner reflection, to engage in a series of questions about students, and to try to go deeper into the learning or the learning needs and challenges of a particular student, or a group of students. Two participants stressed the need for accepting the data when it shows something that you would not necessarily predict or even want to see; the value in the data, is only realized they communicated, when you are genuinely prepared to act on it. One of these two participants also explained that “it’s important to make sure we keep on asking the questions about what else do we need, and what are we looking at? And then making sure that you move on it. It’s a matter of making sure you do something about it.”

Perhaps one of the most interesting contrasts in this study was between two responses on the topic of the value of data. I believe the following two quotes demonstrate the spectrum of ways that data can, or is being used by school superintendents in Manitoba:

Where it’s a term that’s in vogue, and a lot of people apply what they are doing now to that term. And a lot of it is operating at a system level and is highly superficial. A lot of it is not really influencing practice in deep ways and not really influencing important outcomes. (Manitoba superintendent)

Before this past year we did not break out self-identified Indigenous youth. But we did decide to break it out, we looked at the numbers, we do it school by school now. And what’s the story tell us? The story it tells us is that we can be doing much more and it begs the questions, what can we do differently in terms of meeting the needs of these students? (Manitoba superintendent)

One participant may very well be right about EDM being a fad, or a highly superficial term for something that is not currently influencing important outcomes in Manitoba. The other participant's perspective seems to be that she is meaningfully engaging in EDM and she is looking for ways to meaningfully impact Indigenous students in her division. One final example to illustrate how TTFM data was used for the purpose of responding to racism and discrimination in another division:

When staff can sit down and look at TTFM results, they can say 'Ok, we think that we're very open with kids, but kids think that we judge them because of marks, the colour of their skin, because of their race or their religion.' That creates a very meaningful conversation with the teaching staff that we've never had before. Because people see it's more than one or two students talking about it. (Manitoba superintendent)

I follow-up on what challenges might be associated with EDM in cases like the ones above in the final chapter which follows.

Chapter Five – Analysis and conclusions

5.1 Summary of the study

The more immersed I become in this topic, the more I realize that I have selected perhaps one of the most quintessential examples of the Western paradigm – the use of data – to interface with a decolonizing aim that many believe is inherently opposed to positivism and record keeping. In this final chapter, I discuss the ways in which these two understandings, namely positivism and critical race theory, are in opposition and the ways in which they might be reconciled in the case of data-driven decision making in education.

The purpose of this study was to investigate the ways in which select school divisions are collecting, using, and valuing educational data and to explore the ways in which divisional data-driven practices impact racial equity. The design of this study is based on a qualitative semi-structured interview approach where data were collected through 50 to 90-minute one-on-one interviews with ten superintendents in Manitoba. The research questions that guided this study were:

- 1. In what ways and to what degree are data valued a sample of Manitoba school superintendents?**
- 2. In what ways and to what degree are the decisions in a sample of Manitoba school divisions data driven? and,**
- 3. How might superintendents' perspectives on educational data in a sample of Manitoba school divisions be understood using a CRT perspective?**

With an interest in exploring power relations as they relate to the data-driven decision making process, the theoretical framework that is the vehicle for analysis is critical race theory (CRT). CRT is a critical theory that defines race as a socially fabricated designation that is the direct result of power-relations. CRT aims at the reconstruction of human agency, and construction of

equitable and socially just relations of power (Ladson-Billings, 1998). CRT theorists share the following six basic tenets:

1. Endemic racism exists
2. Race is a social construction
3. There exists a differential racialization
4. Interest convergence/materialist determinism exists
5. Voices of colour must be heard
6. Antiessentialism/intersectionality must be recognized (Abrams, & Moio, 2009, p. 251-2).

The elements of CRT that are the focus in this study are items two, three, four, and six. Analysis in this section emphasizes the ways in which race is socially construction, how groups are differentially racialized, materialism and resource allocation are tied to power, and the recognition of intersectionality's. Data-driven decision making viewed through a CRT lens highlights the ways, for example, in which standardized tests are oppressive structures that operate to maintain power, dominance, and White privilege that is possessed by those people who are often their authors and advocates. In this chapter, I identify the ways in which power structures are inadvertently reproduced or maintained in select Manitoba school divisions.

The participants for this study included ten school superintendents; four who work in urban and six who work in rural school divisions in Manitoba. Because participants are from both rural and urban settings as well as small divisions ($n < 2000$ students) and large divisions ($n > 13,000$ students) the interviewees are somewhat representational of the 37 superintendents within the province of Manitoba. Throughout the data collection phase, participants were interviewed based using a semi-structured interview approach, and asked questions about the ways in which their divisional data are collected, presented and shared. Questions such as: "What is your perspective on the value of educational data? What are the benefits? Drawbacks?" aimed to unearth some of the perspectives and attitudes about divisional data. Member checking

included transcripts sent via email to all participants for their review - eight out of ten superintendents responded, without any modifications beyond grammar or spelling errors.

Findings that have emerged out of the CAQDAS coding process as it relates to a CRT framework, revealed structural and emergent codes. Out of these codes, several themes were identified, for example: data as surveillance; the colonial language of data; Gap talk; interventions and race; and the art of race conversations. To answer each research question, I identify a series of statements, each of which I elaborate on below.

Table 2 - Summary of findings

Research Question #1 Participants in this study...	Research Question #2 Participants in this study...	Research Question #3 Participants in this study...
<ul style="list-style-type: none"> ➤ Value educational data that is reliable and valid ➤ Value data but do not always have the time to work with it ➤ Wish to avoid the use of data as a form of surveillance ➤ Demonstrated different understandings of what race-based data means 	<ul style="list-style-type: none"> ➤ Predominantly collect data from schools and present it to the province, and the board of trustees ➤ Mainly focus on literacy and numeracy data for data-driven dialogue about student achievement ➤ Are not accustomed to regularly sharing or discussing race-based data ➤ Described examples of data driving resource allocation ➤ Are concerned with data literacy 	<ul style="list-style-type: none"> ➤ Have some understanding of the oppressive nature of standardized performance measures ➤ Operate within a colonizing paradigm of data ➤ Are accustomed to Gap talk ➤ Say they are concerned about teacher's lower expectations of minoritized students ➤ Used language that suggests they view equity as a priority

Each statement discuss central findings or themes. Next, I offer some suggestions for the implications this research has for practice. In closing, this chapter ends with a discussion on possibilities for future research and a few summarizing thoughts.

5.2 Limitations of the study

One of the key methodological considerations of this study, due to its qualitative interview design, is its limited generalizability. With a sample size of ten participants, findings in this study are on the one hand quite context- and person-specific. On the other hand, a sample size of ten rural and urban school superintendents in a province of 37 school divisions represents over one quarter or 27% of the total divisional leadership across Manitoba. Creswell (2015) states that external validity, or transferability, is the degree to which findings can be applied from one setting to another. While the percentage of total superintendents interviewed is a rather small number, there are good reasons to think that the experiences that are shared among these ten individuals may also be shared among the remaining 27 superintendents in Manitoba. For example, all superintendents in the province are required to follow the same reporting framework. Furthermore, many of the 37 superintendents in the province have participated in a range of common professional development opportunities, which includes working with the student tracked data that has been administered by SASU to each division. Therefore, I propose that the findings in this study are to some degree transferable across the province of Manitoba in light of the common experiences, sentiments, and examples when superintendents across the province work with educational data. I do not believe that participants in this study can reflect all of the complexities, orientations and needs of all divisions across the province. Four participants are located in an urban setting, two participants are from one of the most populated rural school divisions, and four more are from mid-sized rural divisions.

With respect to the interview design and interpretation of results, I view my own subjectivity as neither irrelevant or problematic. This research design does not include control

groups or quantitative measures, but rather is designed in a way that embraces my influence on the research process recognizes my subjective role in the way that findings are presented. Consistent with the way that I focus on specific data from what was collected for this study (namely, those that I determine relate to the research questions), the statements that were made by participants in this study should also be viewed as only one very small part of a much larger network of beliefs and experiences that participants did not share. Statements from participants throughout each transcript are also recognized as a product of many variables, for instance: how they were feeling that day, the level of trust and comfort I was able to build in a short amount of time, their prior experiences working with data, their perception of what the researcher or research community/their colleagues/the province/other stakeholders might want to hear, and more. It is important to view participants as systems of a complexity who possess self-awareness (Cohen, Manion & Morrison, 2000) and with the ability to think strategically in an interview setting. The awareness by participants of the theoretical framework that was chosen for this study almost certainly played a role in the production of select responses from participants. In other words, participants may have chosen to frame certain ideas in ways that are intentionally consistent with anti-racist tenants once they learned that a focus for this study was racial equity. As well, my own biases and in particular my anti-racist motivations behind this study, I can only assume would have flickered through at certain points in the interviews, however much I tried to stay neutral and balanced in my approach. As Bentz & Shapiro (1998) point out, over the past several decades it has been repeatedly demonstrated that researchers often find what they expect to find. And the very process of measurement elicits responses from people who intervene in the objects they measure (Shahjahan, 2011). Therefore, it is with this understanding that I present

my data and findings as ones that may be influenced by my role in this study as well as interpreted through a lens that has particular biases and motivations.

And just as the positivist paradigm has framed much of the way that I was educated and see the world, it also frames the ways in which I view the interview data that was collected. Biesta (2010) argues for why those of us doing social science research should not write-off positivism as simply a prohibited matter, since it prohibits an important discussion about whether, how, and to what extent it might be possible to make a distinction between positive knowledge and speculative knowledge (Biesta, 2010). In this study, the data that was collected is positive knowledge insofar as I can generally confirm that those were the words that were uttered, evidenced by my recorded interviews and eight out of ten participants confirming the written transcript as acceptable and veridical (assuming they took the time to read it through). In the final analysis section, I do my best to avoid gratuitous speculative knowledge or interpretations into the meaning that lies behind the words from participants. While I have not selected discourse analysis as a conceptual framework, I think it is important in this study to stick closely to the words that were used in the context they were used, and take them at face value for the sake of fair and justified analysis. Under the research design that was selected, it would be impossible to determine the veracity of the statements that were made (i.e. do they really do what they say they do?), or the underlying motivations (i.e. political or aspirational motivations). I elaborate on the specific limitation of researcher biases in the next section.

5.3 Summary of findings

What follows in this section is series of statements that reflect a consolidation of the findings presented in Chapter Four, arranged according to each research question. For each statement, there is a connection drawn between the relevant findings, select literature and theory

from Chapter Two, and my own analysis. On account of their more clearly defined character, the first two research questions are in large part answered throughout the previous chapter. The degree to which superintendents value and use data is essentially reflected in the assembly of answers above, which I acknowledge are an interpretation of findings through which I cannot separate from my framework, which I wear like spectacles (Brown & Strega, 2005). The main focus for this section is to explore question three, which is an analysis of the findings using a CRT framework.

5.3.1 Research Question #1: In what ways and to what degree are data valued by a sample of Manitoba school superintendents?

Participants in this study said that they value educational data that is reliable and valid. More specifically, superintendents in this study indicated that they are concerned with the validity and reliability of select evaluations and assessments in their division. The reasons that participants offered for why they do not want to give select data too much power, is because they doubt whether their student data is reliable enough or valid enough. For school report card and provincial test scores, there is a widespread concern that one student's level three score may not equal a level three score from another student in another division, school, or classroom. Notably, concerns about inter-rater reliability were not raised for non-teacher evaluated tests such as the PCAP or external contracted testing instruments such as the Fautes and Pinnel literacy tests. These instruments were valued indicators of knowledge, as long as statistically significant data for individual students or schools is made available. This "objective" form of data - in that it is externally marked - was valued differently than teacher-assigned marks. In terms of non-literacy and numeracy data, participants demonstrated that they value data from the TTFM student surveys, but that they also doubt the reliability of these instruments, since students may not all

interpret the questions as they are phrased in the same way. Participants acknowledged that students have multiple and diverse understandings and interpretations of questions from TTFM, but do not in this study, extend this same mode of thinking to literacy, numeracy or other assessments. This is perhaps indicative of a belief in the clarity and cultural neutrality of what is more commonly measured (i.e. literacy and numeracy assessments). I take this point up in more detail below in response to Research Question #3. In terms of demographic data that is collected by divisions, instruments such as the census can be unreliable as well as the collection methods used by schools. For example, I was told that that some students and families have chosen at times not to formally declare themselves as Aboriginal. There is a clear “buy in” to the EDM methods and movement from participants, as long as the data is valid and reliable. The very idea of achievement data that is valid and reliable raises an important question about methods of assessment and whether or not alternative methods of assessment are being valued. If participants value achievement data that is standardized and therefore valid, can schools still honour multiple ways of knowing, such as orality as a medium for assessment? One participant tangentially raised this concern. It appears that standardized assessment techniques are being privileged and yet participants in this study say that observational data, panels, or individual stories are the best way to address social inequity.

Participants in this study reported that they value data but do not always have the time to work with it. The volume of data that superintendents have access to appears to just be greater than what can be meaningfully reviewed, discussed, or shared. Many of the statements from superintendents reveal that they have access to “gobs, and gobs of different types of data.” (Manitoba superintendent). The capacity for the SIS to collect data is what the EdM movement is beginning to explore, but there is still the issue of making time to understand and work with the

data reports. Discussions about time constraints in this study remind me that the pace in the field is in some ways very different from the pace of a researcher. As one superintendent told me, “we have so much data available right now, one of our challenges is really being able to access it and manipulate it or present it in quick easy ways.” The data that is collected has to be packaged and presented quickly amidst an array of other competing priorities. As with so many other facets of life, the limiting factor for superintendents when it comes to student data is not necessarily the desire but rather, the time. As another superintendent put it, when it comes to working with data it seems, “there’s a tension between what would be nice and what there’s time for.” If superintendents are expected to collect, present, and make decisions based on data, then it is conceivable that they could find themselves backed into a corner where they have no choice but to use data that they either know to be misleading, incomplete, or data they simply have not had the time to analyze thoroughly. Conversely, and in light of how often the theme of data literacy came up in these interviews, I question whether superintendents must choose to disregard what would otherwise be valuable and helpful data because they do not have the time to work with and understand it.

Participants in this study wished to avoid the use of data as a form of surveillance. The topic of accountability was raised at numerous times throughout the interviews in this study. I was told that presenting achievement data runs a serious risk of being perceived as surveillance, control or for the purposes of being punitive. I should have anticipated this theme, since this is one of the most likely reasons for the situation that occurred in my influential outlier while teaching several years ago in Toronto. Twice it was pointed out to me by participants that the perception of monitoring and surveilling teachers or principals is one of the reasons that grade inflation happens. Several participants spoke about how certain data can feel threatening, not

only to school administrators, but also to superintendents. The topic of data as surveillance or judgement raises questions about power relations and control. Who is controlling which data are valued and which are not? If teachers and administrators are concerned about how data might influence their professional reputation or job security, then certain data must have the capacity for enormous power. I would propose that practitioners must extend their thinking beyond how data might impact their personal interests to the ways in which it impacts student experiences and outcomes. Data appears to be welcomed if it is not perceived as a form of practitioner surveillance. Consider the unanimously positive response from participants about the TTFM assessment. There were no indications that there has been any dissent from school staff. It is possible this is because TTFM assesses those things that teachers view as highly important, such as school safety and student engagement. But it may also be the case that teachers do not perceive this data as powerful or formally related to the ways in which their practice is evaluated by their superiors.

Participants in this study demonstrated different understandings of what race-based data means. When asked the question, “Have you collected, presented or shared any divisional race-based data, and if yes, can you share some examples?” participants offered a wide range of answers. Among the responses, one participant used the word “Indigenous”, four participants used the word “Aboriginal” in their answer, one participant used the word “Native”. This not only reflects different understandings of the appropriate language to use for students who self-declare as Indigenous, but also that participants overwhelmingly associate a question about race in their divisions with that particular student population. Race-based data for some people it is constructed as “an Aboriginal issue”, for others, it refers to “anyone who’s not from Canada”. It is not to say that answers to my question reflect participants’ understanding of race, only that is

where his or her mind went when I talked about data. Reflecting back as a researcher, I should have prompted participants to further explain what they meant by race. It seemed difficult to know from the range of responses given, the degree to which they even reflect on race. The statements based on their different interpretation of the question however, do reveal a certain orientation. While one participant referred to “the Aboriginal issue”, another told me that he does not “worry about EAL. There’s no point in worrying about those kids. They do great.” There was a common sentiment among participants that Indigenous students are “lagging behind” others and they are the ones who must be helped or supported. On the other hand, students who are newcomers and English language learners I was told, “there is no point in worrying about those kids” and that will “be fine.” The suggestion being made by this participant is that EAL students and newcomers do not require additional support. This distinction is interesting and a lingering concern I have is whether this juxtaposition is supported by the achievement data that superintendents have access to, or if it is based on multiple factors including participants’ biases and personal beliefs. It is difficult to believe that students who are not native English speakers or who were not born in Canada and therefore do not possess the same cultural capital, do not require additional support. Unless of course, the underlying belief behind this quote is that EAL students and newcomers do not need support in order to meet an average score on literacy and numeracy performance measures, for example to meet the provincial average on provincial tests. It is unclear but possible if this definition of success is what another participant might mean when he says that “we still have some issues with EAL kids.” In each of these cases, EAL students and newcomers are perhaps described as either doing fine or having problems, based on whether they meet the provincial average on literacy and numeracy provincial tests. This idea of lower standards for minoritized students is taken up below under the section for research

question #3; however, what this possibly reveals about the ways in which data are valued is that the data for EAL and newcomer students may be viewed in terms of how well these students can “fit in” to the dominant way of knowing as defined by standardized tests. The provincial data in some ways then is responsible for defining, categorizing, and creating what are (or people who are) *issues*. It is important to acknowledge that this mode of defining students is non-neutral. The description offered by a divisional leader of “having some issues” with a group of students, without acknowledging the nature, source, or colonial roots for how those issues are defined, is an example of how institutional racism creates social reproduction.

5.3.2 Research Question #2: In what ways and to what degree are the decisions in a sample of Manitoba school divisions data driven?

Participants in this study predominantly collect data from schools and present it to the Province (meaning, the Government of Manitoba, Education and Advanced Learning), their board of trustees, and repackage it to present back to school principals. The first stage of the lifecycle of the data that was commonly described in this study, was collecting data from schools, which would include achievement data (report cards, provincial assessment results, and any purchased instruments from external sources) and demographic or other types of data (attendance, self-declared Aboriginal, etc.) via the division’s SIS. Select data that are collected is then shared with the province and the board of trustees in two different ways. First, achievement data and select demographic data is sent to the Province electronically using a specific reporting format as defined by the Province. Second, the division office also prepares a report for the board of trustees which includes select data (my understanding based on the data collected for this study is that it is often achievement data and not demographic data) and is presented as a handout of some kind at a board of trustees meeting. The format for the reports that are prepared for the

board of trustees is freeform and different for each division. Sharing divisional data beyond these two stakeholder groups appears to be very minimal. Select data in some divisions are shared with the public via the provincially-mandated annual community report made available to the public usually on divisions' websites. Data are sometimes also shared at parent council meetings. Otherwise, data such as literacy, numeracy, provincial tests scores, credit attainment, and graduation rates are sometimes shared with school administrators, many times in relation to the school planning process. There is an effort in many divisions to align school plans, division plans, and the provincial reporting template – which results in a high degree of work and emphasis placed on literacy and numeracy data in school and division plans. I elaborate more on this in next section (Research Question #3, section 5.2.3).

Participants in this study focused primarily on literacy and numeracy data for data-driven dialogue about student achievement. The data-driven decision making examples that were discussed by participants in this study, orbited in large part around literacy and numeracy achievement results. The data that are presented to the province is almost exclusively literacy and numeracy data. The data that are frequently presented to the board are literacy, numeracy, credit accumulation and graduation rates. The data that are presented, collected, and shared with principals are related predominantly to literacy and numeracy. Finally, in terms of a data-driven dialogue with teachers, nearly every example shared in this study was about literacy and numeracy. Data walls appear to be a commonly practiced platform for data driven dialogue among teachers, school administrators and superintendents. The examples that were described were data walls that track student literacy achievement. What is not clear, is whether data walls are being used for anything other than a visual reminder or cue for teachers and administrators for which students have yet to meet expectations. Effectively, it is unclear whether or not data

walls are ostensibly any different than other tracking tools available to teachers. The descriptions by participants of how data walls are being used, did not include a description of how the data in these cases are informing specific decisions. However, if we assume that data walls serve as an important *visual* reminder of which students are approaching but not yet meeting expectations, for the sake of driving instruction and supports for students, then in this way the data walls may indeed be influencing specific strategies and interventions in the classroom.

Participants in this study were not accustomed to regularly sharing or discussing race-based data. Participants for the most part have a clear idea, in large part due to the reports recently administered to divisions by the SASU unit, of the different performance outcomes in achievement in literacy, numeracy, credit accumulation and graduation for self-identified EAL, self-identified Indigenous students and the provincial average (which includes these numbers). Participants did not offer any examples when prompted, of sharing race-based data with teachers, principals, or their board of trustees. However, as I explain in the next section, superintendents described sharing race-based data with the Province.

Participants in this study described examples of data driving resource allocation. There were a few clear examples of how data drives resource allocation, including: transportation, infrastructure, and staffing. Beyond teaching and curriculum staff, various participants referred to social workers, translators, and in one case an Indigenous consultant. A few participants outlined financial subsidies for student supplies or field trips who demonstrate need. Espeland and Sauder (2007), proponents of a certain form of EDM, acknowledge that “public measures affect the distribution of resources, redefine statuses which can become reified and enduring, produce and reinforce inequality, and transform the language in which power presents and defends itself” (p. 4). In the case of Manitoba, I was told by participants that this province uses

the data that is reported by the divisions, to determine additional funding such as the AAA. One piece of data that drives financial support therefore, is the number of self-identified Indigenous students. Allocation of funds from AAA was never explicitly explained to me in these interviews. The types of equity related programs that were described by participants were nutrition programs and after school homework programs (section 4.2.2). Select participants discussed the challenge they experience of ensuring that targeted students access the programs that were designed with them in mind. These individuals also commented that if all students benefit then that's not a bad thing. I was left wondering why not a single participant in this study talked about the decision making process for determining the AAA grant. It could be the case that the AAA grant is being spent on nutritional and homework programs that were acknowledged as sometimes not reaching targeted students.

Participants in this study indicated that they are concerned with data literacy. Participants did not convey an equal concern among educational stakeholders. For example, no one expressed any challenges with the level to which members on the board of trustees were data literate. While it was clear that the members of the board of trustees generally expects to see some student data, no one suggested that they experienced any pressure from the board of trustees with respect to student data, or that they have been challenged about the nature of the data. Perhaps if this had occurred, it would not be something they would have freely discussed with me. The individuals interviewed in this study did speak about the routine practice of inviting school presentations at board meetings. Many also talked about the "snapshot" of data that they present to the board. Based on what was described, board of trustees do not require a high degree of data literacy because they either do not have access to a great deal of student data, or they do not make decisions based on student data. The board of trustees has a great deal of

decision making power, at least in theory; however, based on the interviews in this study, they are not the ones driving the data collection process. On the other hand, participants expressed a desire for school administrators, teachers, and teachers in training to cultivate skills in the area of data literacy although they did not elaborate on their definition of data literacy. Biesta (2007) and others raise important questions for anyone engaging with educational data, namely: Who is driving data collection? Who has the power to collect data? Who does not have access? What should be encouraged and why? If the process for training practitioners to be data literate included these questions, then the future of data-driven dialogue would include the wider social, philosophical or ethical issues which are implicit in decisions (Evans & Benefield, 2001).

5.3.3 Research Question #3 – How might superintendents’ perspectives on educational data in a sample of Manitoba school divisions be understood using a CRT perspective?

Participants demonstrated that they have some understanding of the oppressive nature of standardized performance measures. It is only when the business of performance measures is set aside, that teachers and communities can focus on building equitable relationships and laying the groundwork for genuine cultural pluralism. While participants in this study said that they do not particularly place a lot of value in the standardized PISA and PCAP tests, their stated reason for this was that the results do not provide statistically significant information for their particular division. In one case, a superintendent did receive significant PCAP results, and therefore reported that she valued those results. There was a general sentiment from participants however, that the province both values these standardized results and makes decisions based on these results. Presumably, it is no coincidence that the mandatory provincial tests and mandatory reporting process for divisions, centres on literacy and numeracy measures that are akin to those

measures on the PISA and PCAP. Furthermore, as was discussed on page 96, divisional leaders in this study emphasized the work that is done to align school and division plans with the provincial reporting framework. The provincial reporting framework overwhelmingly focuses on literacy and numeracy. It is my opinion then, based on this research, that standardized measures and the EDM movement significantly impact the decisions at the divisional level, which in turn impacts the work of school administrators in schools and teachers in classrooms. Something to consider then, is whether the language of standardized measures and EDM contributes to the production of inferiorizing racialized students. The reason for this is simple. In terms of standardized performance measures like PCAP, it is not logically possible for everyone to be at the top and so as long as educational data is organized in such a way that it is comparative, then the moving target of knowledge capital will move along with the knowledge that is dominantly White. In the case of how achievement data is reported by the province of Manitoba, while it is not arranged in a comparative way (like PISA and PCAP which are necessarily ranked), the data is still presented in a way that is meant to show gaps, implicitly (re)stating a hierarchy of knowledge and success and (re)producing Gap Talk. Imagine if there were no “gaps” to be spoken about and instead there were only different ways of learning for students. What would the provincial reporting framework look like? Perhaps it could report on the areas of growth and learning as defined by students and their communities. The example of Morningside Academy, where students track their own data and use it to set their own goals, suggests an interesting alternative to Manitoba’s reporting – namely, personal improvements as measures of success rather than system-wide improvements in areas defined by a top-down system. The very act of reporting however, demands some kind of sifting and sorting. I believe this very act brings up yet another important question. If this sifting and sorting were more reflective of a broad range of

learning approaches and epistemologies, would the K-12 system be doing a disservice to students by rejecting to follow a tertiary model for learning and teaching? K-12 schooling does not and I would argue cannot operate in a vacuum; it is adaptive and responsive to the macro systems it necessarily plugs into such as workforce training, and post-secondary education. Perhaps this is one of the reasons that Gillborn (2010) advocates for operating within the current EDM parameters, but with the agenda of collecting and presenting data for the purposes of exposing institutional oppression. Dei and Karumanchery (1999) argue that in order to acknowledge the role of the educational system in the production and reproduction of racial, class, and gender inequality in society, it is important to use an antiracism discursive framework. Therefore, whether discussions take place at the level of assessment practices, reporting methods, or at the level of policy and standardized measures (Gap talk), what is key is that notions of political interests, power, and privilege do not get swept aside. Like all of us, superintendents have a tall order to balance their personal beliefs and interests with those that are imposed on them from the educational context they are positioned within. In one interview, a participant even jokes about how he would lose his job if he implemented the things that he knows are needed to “fix” the system. It seems to me that superintendents face similar pressures and fears of becoming replaceable if they threaten the well-established power/social structures.

Participants operate within a colonizing paradigm of data. Shahjahan, (2011) argues that the language of EDM perpetuates a colonial discourse where scientific knowledge is viewed as a special gift for the field of education which would otherwise be in a state of disorder and dysfunction. Participants in this study generally did not share this view of scientific or quantitative data as a special gift to education. However, many participants are consciously making efforts to become increasingly data-driven and almost all participants in this study

expressed to me that they very willingly embrace the EDM movement as part of the future of their school division. Key to Shahjahan's statement, is the idea that an ideological construct of EDM provides those in power with the language and tools to assert power, dominance, and imposition through a binary discourse of superiority such as superior/inferior, rational/irrational, and veridical/intuitive. Two participants indeed openly criticized the use of intuition in education. There were numerous references to the idea that data is a more rational, reliable, and superior way to inform decisions. But what are the implications for minoritized students and non-White students then when the underlying narrative of the EDM discourse is one of superiority, salvation and enlightenment? There is indeed a colonial construct that continues to produce and reproduce what is viewed as relevant data as well as the degree to which large data sets should inform decisions and resource allocation in school divisions. Potentially, this view about the superiority of data might mean an outright rejection of alternative forms of assessment, alternative measures for success, or worse, a vehicle to deny and redirect away from any form of resistance to social reproduction in schools. Earlier it was mentioned (Research Question #1) that superintendents are concerned with validity, but that their concerns about validity were not equally applied to different types of assessments (i.e. students' interpretation of questions on PCAP vs. TTFM). Critical race theorists contend that a rhetoric of *bias* is used in the EDM movement to negate other ways of knowing so that control is maintained. One of the more profound moments of this study for me, was when I began to wonder if the language (or rhetoric) of *reliability* and *validity* can and should be exposed as carrying the same sort of agenda as the rhetoric of *bias* in order to maintain control. Superintendents in this study frequently used the terms *reliability* and *validity* in ways that were selective and inconsistent with those assessments and data sets that they noted as valuable. Perhaps assessments are viewed as valid by divisional

leaders when they are consistent with the dominant views of what is valuable in a White, colonial school system. Certainly, the colonial language and Western epistemology that are used to frame an EDM educational policy discourse is one that CRT identifies as using particular notions of evidence and validity which reflect a colonial discourse of rationality, control, and order.

Participants in this study are accustomed to Gap talk. “Where are the gaps. How can we help them to work harder, work longer?” says one participant. Another participant describes the disaggregated data given to her in the binder from the province shows a, “huge gap”, and that the “data basically says that if you are a non-Aboriginal female, you’re fine. If you are an Aboriginal male, and we don’t have many of them...<trails off>” Not only, as was mentioned above, does Gap talk lends itself easily to being co-opted by a recuperative politics, that is, construing White masculinity as the victims of feminism or critical theory, but, in so doing, it sidesteps important questions of class privilege and the complex issues of how race and ethnicity intersect with gender and social class to impact on groups of students differently (Martino, Rezal-Rashti, 2013). Gap talk transports the discussion to a more comfortable place whereby the actual size and scope of the disparities are overlooked and the focus is shifted to a more general sentiment of improvement (Lingard et al., 2012). In interviews for this study, there were no references to the specific point-spread between the gaps. Recall, that in the TRC *Calls to Action* report published just last year in 2015 there is a call on the federal government “to close identified educational achievement gaps within one generation” (TRC, 2015). In order to avoid the pitfalls of Gap Talk, including the interpretation of acceptance for the current paradigm of knowledge and learning, it would be useful to clearly identify the details of “educational achievement gaps” as well as specific plans to support minoritized and racialized students. If there is no follow-up or

accountability for reports like this call to action, statements made to the media, or education practitioners who commit to “closing the gap” then Gap talk is another exercise in shifting the discourse away from challenging the structures that actually produce racial inequality.

Participants in this study say they are concerned about teachers’ lower expectations of minoritized students. Responses from many of the participants in this study confirm the research that says the expectations of underprivileged, under-performing students in an institutionalized EDM continue to manifest themselves in opportunities to learn. Two participants expressed a concern that teachers may have the tendency to set lower expectations for minority students, and that they may, in effect, limit certain students while privileging others because of these different expectations. For example, one participant speculated that teachers are particularly swept up by test scores for marginalized or minoritized students. Another participant suggested that teachers feel successful if their EAL students are “literate and numerate”. What is being implied by these participants is that some teachers consciously or inadvertently scale back their expectations for kids who do not fall well enough into a normative standard of Whiteness. The following quote implies just this:

I’ll say in particular with kids with immigrant children and maybe schools with higher levels of poverty, sometimes the school staff can be just thinking about a score. And if the kids get to the score that’s enough. And education is more than getting to a score.
(Manitoba superintendent)

One key feature of this superintendent’s quote is that she herself views education as more than just a score, but she is not confident each staff in her division shares the same value. If more superintendents than the ones who identify this in my study are noticing this phenomena, then what kinds of strategies are they actively pursuing (if any) to address it? If teachers do in fact set different and lower expectations for minoritized and racialized students, then this is a clear example of discrimination. School divisions have a responsibility to address this phenomenon,

and actively work toward changing the culture of the division to one that offers underprivileged students not just the same opportunities to learn, but ones that are responsive and reflective of their individual identities beyond the acquisition of a mono-epistemic notion of literacy and numeracy.

Participants in this study used language that suggests they view equity as a priority but that inequity is an issue that happens outside of themselves. As a final point for discussion, there is something that stands out in the language used by select participants who participated in this study. At times, it is not an inclusive language. It is “that issue”, rather than our issue. Or the “problems with Aboriginal achievement” rather than differences that relate to power and privilege. As I continue to engage in a process of questioning my racial biases and reconstruction of White privilege, I cannot help but wonder whether the well-meaning and hardworking participants in this study also experience moments of dehumanizing minority students, or treating them as an Other, rather than including themselves as part of the broader community that is responsible for their success and well-being.

5.4 Implications for practice

In the opening paragraphs of the literature review in this study, there is a brief overview of the healthcare EDM model and the reasons for and against comparing it to the process of EDM in education. Only one participant in this study touched upon the healthcare model for EDM as it related to education. The analogy went as follows,

I’ll tell you a quick personal story. Two years ago my doctor told me that I was one blood test away from a chronic health problem. My family had a history of this, but I thought I was going to beat the odds. I ignored the data that I had a genetic predisposition to this disease. I ignored the research, until that moment... The point I want to make is that I started following the data; I paid attention to my weight, I paid attention to the sugar, and I watched my blood sugar drop to where now it is absolutely normal. The reason I’m

sharing this story is that in our personal lives data means something to us. And if we ignore it, we pay the price. So, with student learning, data has got to mean something. And by ignoring the data, the kids pay the price. So, it can't be a fad. Because our kids deserve better than it being a fad. (Manitoba superintendent)

Upon reflection about this example as well as the literature that compares the use of data for personal health decisions to using the data in educational contexts, I think there is an important distinction to be made between the two endeavors. In the health context, people are treated on an individual basis. It is not the case that a group of patients walks into a room, each with different backgrounds, histories, symptoms, and requirements, and asks to be treated at the same time. Sure, the desired outcome of good health might be the same, or compatible, for each member of the group. But because they are unique individuals, their health intervention plan is also unique. Take a moment to imagine how different schooling would be if programs were designed for each individual student. In brief, it may be useful to keep in mind that the decisions in healthcare that are driven by data are case-by-case decisions. If a patient demonstrates a certain list of symptoms, it is the best available evidence on individuals who also exhibit those symptoms that will direct the practitioner to a specific intervention. The case of Morningside Academy might be the closest comparison to the healthcare model, since students at Morningside Academy all have access to their individual data for the purposes of co-constructing their individualized curricular plan. In Manitoba's public education system on the other hand, the teacher-practitioner typically works within a group setting of between 20-30 students. While teachers may have some one-on-one interaction, it is difficult to conceive that teachers are providing specific curricular and intervention plans for each student. Teaching, for this reason and others, should be treated distinctly apart from healthcare practice when considering implications for practice for EDM in educational settings.

Nevertheless, if the educational data that is collected by school divisions fails to impact the teaching, learning and student experiences in the classroom, then the entire premise upon which this thesis was built, remains locked up in the conceptual ivory tower of good intentions. According to research, data-driven or data-informed decision making is impacting student learning and student experiences in schools, and after conducting this study, I believe that is true in the Manitoba context. According to participants in this study, there is a great deal of work done in schools that focuses on literacy and numeracy data in a way that informs classroom practices. Whether or not Manitoba has become, what Shahjahan, (2011) calls, “a high-stakes performativity and accountability culture” (p. 184) which colonizes diverse ways of knowing and being, remains to be explored. The significance of this study for educational practice and policy is to ask whether the EDM process encourages diversity (i.e. diverse bodies and knowledge forms), promotes a monoculture of the mind, and contributes to social reproduction and constructs Whiteness as the dominant form of being and knowing. There is certainly some evidence presented in this study that points to this phenomenon. Consequently, there are implications for practice in the spheres of policymaking, and administrative as well as teacher decision-making to uncover the power relations and privilege that underpins educational EDM practice.

At all levels, data should be regarded in such a way that brings to the forefront notions of power and privilege. Gap talk only serves to shift the focus on “fixing”, or on the methods needed to address or band-aid over those gaps, rather than encouraging further inquiry into the institutional and systemic factors that produce the gap. Understandably, this line of inquiry can be overwhelming for educational leaders and practitioners who are not accustomed to thinking this way, and/or when facing multiple competing priorities and time constraints. The alternative

however, is a continuation of Gap talk, which preserving the structures and systems that reproduce a monoculture of knowledge and the dominant discourse of Whiteness. For example, the findings in this study confirms the research that says educational leaders have an understanding of the gender gaps in achievement. As outlined in the findings, select Manitoba divisions have developed initiatives in order to address this gap. However, participants in this study did not demonstrate the same level of understanding or, with one exception, offer examples of an intervention to address this gap. In order to avoid the pitfalls of Gap talk, the acknowledgement and response to racial differences in school outcomes can become part of an ongoing discussion that becomes central to division and school cultures. In short, acknowledging racial difference at the policy and practitioner spheres, can rather be done in a way that works toward depoliticizing difference. Recognizing racial differences and racial differences in achievement as they relate to power and privilege, is an important step from a CRT perspective. One way to accomplish a more refined understanding of the differences among various student populations and within school divisions, is to collect more specific data about students' cultural and racial identity. Ideally, this data collection process would happen at multiple levels of the education system. Centrally, data can be collected and tracked by the Provincial level through registration forms. But because this data would likely be quantitative in nature, due to the volume of students tracked and methods of data collection that are commonly valued at this level. Similarly, data can be collected and reviewed at the divisional level, in alignment with the Province. At the school and classroom levels, data collection can take on a richer and multifaceted approach. In line with one of the central tenants of CRT (Abrams, & Moio, 2009; Delgado & Stefancic, 1995; Ladson-Billings, 1998) schools and classrooms should emphasize the importance of storytelling and ensuring that voice of colour are heard. In practice, this could

look like students sharing their stories orally, visually, artistically, interpretively, auditory, etc. in ways that are connected with broader themes that are explored in classrooms and schools. For the purposes of achieving an antiracist and decolonial discursive, the racial and cultural identity of students cannot simply be acknowledged through quantitative methods of data collection.

However, it is my opinion that unearthing this type of data is one approach among many that should be considered at various level in practice and policy. There is evidence, such as the proxy and student-tracked achievement data on the Education and Training website (Education and Training, n.d.), that demonstrates that policymakers in Manitoba are publicly acknowledging the racial differences in achievement. Perhaps Manitoba is beginning a journey toward using statistics for the purpose of exposing oppression, as argued by Gillborn (2010).

One key example of the ways in which data are collected in Manitoba is revealed by the findings on SES. Despite reporting that their SIS has the capacity to correlate student achievement data with SES factors, no one in this study indicated that that they have compiled or used this data in the decision-making process. Furthermore, several participants (n=3) identified that the methods for collecting SES data are unreliable (e.g. census data). Perhaps it is reasonable to think that the decision from the current (2016) federal government to bring back the census this year will result in more precise and reliable data for use by the school divisions. However, it is also questionable whether division offices have the time, expertise, or inclination to use this data. In the case that comprehensive and reliable SES data are not available to division offices from the census, there are ways that the province or divisions can consider collecting this information themselves. In this case, it would be important for practitioners and policymakers to work together to identify the data that should be collected from a utilization perspective. Participants noted that they already have access to more data than they have the time to work

with, therefore, it is important that the people who are expected to use the data are involved in the process of determining which data are collected.

Finally, one of the most important implications for practice, is understanding the significance of building data literacy into teacher education programs and more generally into the culture of the school divisions. Data can absolutely result in remarkable efficiencies, precision interventions, and responsive teaching practices. It is also the case that data can be used as a tool for surveillance, to misguide and to oppress. The more teachers, staff, and administrators become accustomed to understanding data, and asking questions about power and privilege when reviewing data, the more effectively they will find ways to use data for genuinely positive change.

5.5 Recommendations for future research

The starting point for recommendations for future research is an answer to a question from my advisor: What would have made this a better study? As a beginning researcher I found myself thinking on numerous occasions that if only I would have thought of this or that detail to include in the design of the study, my findings might be more robust. For starters, I think that a more complex study would be to stratify and widen the superintendent sample group, by male/female, rural/urban, smaller/larger division, for the purposes of identifying trends among these different groups. My hypothesis is that a smaller division would yield completely different processes and viewpoints on educational data than larger divisions with greater resources and more opportunities for Big data collection. I would also propose extending the scope of this study to a mixed-methods approach. Findings from this study could be applied for the purpose of creating a survey instrument to administer to a much larger number of school leaders across the province, or country. A Delphi study is another possible research design that would be well-

suited to this topic, since a number of experts could weigh in over several phases on the ways in which they use and value data in the decision making process, for developing a framework for the use of data in relation to social or racial equity.

This study focuses on the types of data that school divisions collect, present, and share generally, and for the purposes of addressing equity. Results of this study indicate that there is an enormous emphasis placed on literacy and numeracy achievement data. Of great relevance is that not one participant in this study spoke about the content of those tests being culturally responsive or adapted for their population. If literacy and numeracy data are the central paradigms for learning and knowledge then it is of utmost importance to explore the ways in which, and the degree to which it is possible to pursue social equity within this literacy/numeracy paradigm. For example, there are multiple approaches to teaching and learning mathematics and literacy that incorporate different ways of knowing and thinking. Further research in this area could and should include reporting mechanisms that are culturally responsive and reflective as well as allow for multiple indicators of knowledge about numeracy and literacy. Assessment and evaluation in the K-12 arena has a tall order in trying to reconcile how to honour multiple ways of knowing, with the goal of preparing students for a tertiary education that is situated well within a colonial framework and privileges select ways of knowing that are associated with Whiteness. Further research into monitoring and reporting for social reconstruction is a key area to be explored.

There is reason to speculate about whether the people who possess White privilege, and White cultural and social capital are almost exclusively driving policymaking in education. For example, participants in this study indicate that several boards of trustees represent White privilege. One participant acknowledged that the members of their division's school trustees are

all “well-off and don't understand poverty.” Interestingly, if you look at board of trustee pictures on websites, they are virtually all what I would identify as white. Research into the biases, prejudices and beliefs of school trustees is imperative for the purposes of addressing social equity in the decision making sphere. Similarly, it would be interesting to explore the degree to which board members demonstrate data literacy in general and more specifically in understanding the ways in which data can be used as a tool for oppression or for uncovering oppression. With respect to policy making at the provincial level, it is critical that questions are asked about the principles that underpin reporting frameworks and funding models. As well, it would be interesting to follow the data trail, or the lifecycle of the data, in more detail. Questions about the provincial mechanisms could include: (a) how does the province determine which data should be reported and in which format? and (b) how does the province go about choosing which data to make publicly available and who has access to which data?

One additional avenue for further research is to continue to pursue research that has been done in the field of EDM in healthcare and its implications for social equity. An area for further inquiry perhaps, is to explore the nature of trust-building, inclusivity and equity practices in the more EDM-advanced healthcare field. There have been several recent publications in this area and it is important to consider the similarities and differences between education and healthcare when using an EDM approach.

One notable and unexpected finding in this study was about the contrasting ways (as outlined in section 4.2.1 above) that a study by Dr. Catherine Taylor et. al (2015) that explored the experiences of LGBTTTQ* students was received. It is interesting to think about why Dr. Taylor's research study evoked two completely opposite responses from two superintendents. On the one hand, it was reported in this study that the survey led to a division-wide intervention,

while another superintendent told me that he called Dr. Taylor to tell her why he did not agree with the framing of the instrument, and therefore the results did not hold any weight in his eyes.

In future research, it would be interesting to explore the ways in which different data collection instruments match the opinions and biases we all have about the purposes of schooling.

Similarly, it would be worthwhile to explore the ways in which the fundamental beliefs of educational decision makers influence the value that is assigned to various data sets.

Furthermore, the area of gender identity and school achievement data is one that appears to me to be relatively unexplored. I was not able to find any reports or publications on the topic of EDM or DDD in relation to the gender or sexual identity of students, and so it is possible that there are no published studies that correlate achievement or performance outcomes. For the same reasons that data should be disaggregated according to racial identity, data that is disaggregated by the gender or sexual identity of students may uncover unidentified trends and have the potential for informing a more responsive practitioner approach.

Finally, a further area for research with respect to student assessment is an area that I hope to pursue if I am fortunate enough to be able to continue on in the field of educational research. Several participants expressed a desire to meaningfully assess student well-being. One participant echoed the common sentiment, that “parents want their kids to be happy. But we don’t measure that.” I contend that one way to address social equity within the Western, positivist paradigm of EDM is to begin to take seriously the measurement of the underlying social and relational aspects that produce and reproduce social inequality. By pursuing further research in the area of student well-being/well-becoming, I hope to see a shift in the narrative of Gap talk (away from being exclusively about literacy and numeracy) toward well-being

measures, and subsequently, interventions that target precisely those factors that contribute to systemic racism.

5.6 Conclusion

Across Canada, there is an increased focus on the data from national and international measures, such as the PISA and PCAP tests, influencing what some call a high-stakes performativity and accountability culture in education. While it appears that Canadian provinces are all jockeying to be in the top percentile - and we can't all be - these public measures affect the distribution of resources, redefine statuses, produce or reinforce inequality, and transform the language in which power is presented and defended. Public measures “affect the distribution of resources, redefine statuses which can become reified and enduring, produce and reinforce inequality, and transform the language in which power presents and defends itself” (Espeland & Sauder, 2007, p. 4). The findings in this study, confirm that there is indeed a shift toward data-focused interventions and outcomes in school divisions in Manitoba, and that the discourse around data frequently centers on traditional performance measures in the areas of literacy and numeracy.

A CRT perspective suggests that with a shift in the mindset by the producers of the data, EDM can be used in such a way that is helpful in uncovering the structures that propagate institutional racism. Numerous scholars (who are mentioned in Chapter Two), have in fact already published research on the racial stratification and opportunity gap that exists throughout each stage of the learning process. But the data alone will never tell us how to act. The data will not tell us how to think about the purpose of education, or which numbers or gaps most urgently need to be addressed. Even more, the gaps in the data will not speak to the ways in which the measures of success need to be revisited, responsive, reflective, and respectful of all our students.

That critical process is a human endeavor. Understanding educational data does not guarantee social improvement for groups who are marginalized, racialized, or oppressed. A community of educators who are data literate, and are evidence-based decision makers, does not necessarily result in any form of social change or redistribution of social capital for its learners.

We know that under certain circumstances, data-driven decision making can result in remarkable efficiencies, precise interventions, and responsive teaching practices. If we collect and employ data, with the aim of creating opportunities for success for all of our students, data may work to empower rather than oppress. At times throughout this project, I have been left wondering whether Whiteness and EDM are so intertwined, that the work of exposing power and privilege might never be accomplished while operating within these systems. As a white female who herself has undergone transformation on a personal and professional level, I believe in the capacity for engaging with a theory, such as CRT, to transform one's thinking and understanding of the ways in which they contribute to social inequality in a personal and professional way.

I find it appropriate to end by returning to a recurring idea throughout this study - that all of us must continue to deliberately ask questions that relate to power and privilege about our data. Recall that one of the most researched, discussed, and politicized issues in educational policy is gender equity. Big data and localized data are frequently disaggregated by gender yet they rarely reveal the disparities for minority populations which are consistently four times greater than any gender gap. Public discourse about these figures, without reducing the narrative to Gap talk, may be one step toward depoliticizing racial difference. Furthermore, the concept of a data-driven education calls into question not only how learning is viewed and valued, but also how learning should be assessed. Data have great power. Therefore, I end with a call to action for practitioners and policymakers. In order to acknowledge our role in the social reproduction of racial inequality

when working with data, it is imperative that we ask questions about power, privilege, and racial discrimination.

Appendices

Appendix 1.1 - List of acronyms

CRT - Critical Race Theory. A theoretical framework that emphasizes how whiteness and blackness are conceptual terms in which the meaning and value for each are socially constructed a product of historical circumstances and the operation of power in context.

DDM - Data-based or Data-driven decision making (used interchangeably with evidence-based decision making is the use of data by education stakeholders, which includes but by no means is limited to policy makers, administrators, teachers, parents, and students to make decisions that improve schooling

EdM - Educational Data Mining (also given the acronym EDM, but for to avoid confusion here will be referred to as EdM). EdM is the application of data mining techniques to educational data

EDM - Evidence-based decision making (used interchangeably with data-based or data-driven decision making) is the use of data by education stakeholders, which includes but by no means is limited to policy makers, administrators, teachers, parents, and students to make decisions that improve schooling. Evidence, in this sense can be defined as, systematically collected information on students, schools, school leaders, and teachers or other relevant sample groups (Schildkamp, 2012, p.277).

Appendix 1.2 - Interview guide



UNIVERSITY
OF MANITOBA

Interview Guide

June 13, 2016

M.Ed. study: Data-driven decision-making in education: A critical race theory perspective on how select Manitoba school divisions use data

Principal Investigator: Ms. Heather Krepski

To begin, could you describe briefly your current role, and your experience in education more generally?

Thank you for providing this context. Let's move on to Part A of the interview.

PART A

1. What is your understanding of data-driven decision making in education (sometimes called evidence-based decision making)?
2. Can you describe the ways in which your division works with the following types of student data (if applicable):
 - A. national assessments
 - B. international assessments
 - C. school performance reporting
 - D. student monitoring systems, and
 - E. assessment-based school self-evaluation
3. I am interested in how school-based data are collected, presented and shared. How are your division's data
 - A. collected?
 - B. presented?
 - C. shared?
4. Can you share specific examples where you have observed or participated in data-driven decision making?

5. In what ways do you find student data to be a useful or limiting indicator of knowledge and learning in your division/school? Can you share some examples?
6. What is your perspective on the value of educational data? What are the benefits? Drawbacks?
7. Are there data that you believe would be useful to you but do not currently have access to? Please describe. Can you share some examples?

PART B

8. In your experience, can/does your student data provide information about student demographics (i.e. disaggregated based on SES, gender, languages spoken)? Can you share some examples?
9. Have you collected, presented or shared any divisional race-based data, and if yes, can you share some examples?
10. Are there data that you believe are/would be useful to collect for the purposes of addressing social equity? Can you share some examples?

Appendix 1.3 - Invitation to participate



UNIVERSITY
OF MANITOBA

Invitation to participate in an Interview for the study:

Data-driven decision-making in education:

A critical race theory perspective on how select Manitoba school divisions use data

May 9, 2016

Hello, my name is Heather Krepski, and I am a Master's student in the Faculty of Education at the University of Manitoba. I am interested in exploring the perspectives of superintendents or assistant superintendents on the value of school-based data and data-driven decision making in your school. I chose this division because I am interested in exploring the perspectives of educational leaders who serve diverse student populations.

In order to conduct this research, I am looking to recruit eight to twelve superintendents or assistant superintendents, maximum one from each division, to participate in a one-on-one interview on the topic of school-based data and the role it plays in decision-making. The first twelve to respond positively will be accepted as participants. If you agree to participate, I will contact you through email to arrange a meeting time, date and location that is convenient for you. Each interview will take approximately one hour and will be carried out at the participant's work site, or at a location that is convenient for the participant. An interview guide that contains the questions I am planning to ask will be sent to each participant electronically one week ahead of the scheduled interview. Before the interview, I will give you a consent form to read, consider, and sign. I will review the consent form with you in person before the interview begins. Beyond the one-hour interview, participants will be invited through e-mail to review the transcribed document from the interview, over a two-week period, in order to make any changes or additions to the transcript.

If you participate, I will ask you, to discuss the types of divisional data you work with, how that data is collected, presented and shared, your experiences using divisional data when making decisions, and to share other positive or negative aspects of using data in your division. These interviews will be recorded using the electronic application My Notes, using a personal iPad that is password protected. All interviews will be transcribed by the principal investigator (myself) onto a Macbook Air laptop computer that is user password protected, in a further password protected document on Pages. Transcribed data will then be anonymized. Original data will be printed and locked in a personal filing cabinet with a physical lock, and will be saved on a password protected hard drive. Any identifying information (i.e. division, names, schools, colleagues) will be anonymized. Any documents containing personal information (such

as the consent form signed in the event you participate) both paper and electronic copies will be destroyed after after I have completed the Master's thesis requirements (anticipated October 30, 2016).

If you choose to participate in the project, you may refuse to answer any questions, end the interview, or withdraw from the study completely at any time. Participants can contact the PI by email at krepshih@myumanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed. In consideration for your involvement, you will be given a \$10 coffee card honorarium, even if you choose to withdraw from the study.

I do not anticipate more than minimal risks to you as a result of participating in this study. This research has been approved by the Education and Nursing Research Ethics Board (ENREB). If participants have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building) or by email at humanethics@umanitoba.ca. If participants have clarification questions, they should contact myself at krepshih@myumanitoba.ca, my advisor Dr. David Mandzuk at David.Mandzuk@umanitoba.ca, or members of my advisory committee .

If you would be interested in participating in this project, please email me at krepshih@umanitoba.ca by no later than Friday May 27th, 2016. I will respond to your email promptly to indicate whether you are one of the first six people to contact me, and are accepted as a study participant. If you are selected, I will contact you about possible meeting times within a few days of your response. Your participation is confidential. If you think of any questions, please do not hesitate to contact me.

I look forward to hearing from you.

Sincerely,

Heather Krepski

Appendix 1.4 - Informed consent form

June 2, 2016

Informed Consent Form

Study Title: Data-driven decision-making in education: A critical race theory perspective on how select Manitoba divisions use data

Principal Investigator: Heather Krepski, Faculty of Education, University of Manitoba
204-XXX-XXXX; krepskih@myumanitoba.ca

Degree: Masters in Education, Foundations in Education

Supervisor: Dr. David Mandzuk, Dean Faculty of Education, Associate Professor
David.Mandzuk@umanitoba.ca

Hello, my name is Heather Krepski, and I am a Masters student in the Faculty of Education at the University of Manitoba. I am interested in exploring the perspectives of eight to twelve school superintendents/assistant superintendents on the value of divisional data and data-driven decision making in the province of Manitoba. I chose this division because of the diverse student population and commitment to building partnerships between home, school and community. The theoretical framework that I have selected for this study is critical race theory (CRT). CRT is a critical theory that defines race as a socially fabricated designation that is the direct result of power relations. CRT aims at the construction of equitable and socially just relations of power. The interview questions are meant to explore the perspectives and experiences working with educational data as well as the relationship between educational data and various forms of equity, with a particular focus on racial equity.

The first twelve superintendents/assistant superintendents to respond will be accepted as participants in the project and will be contacted through email to arrange a meeting time, date and location. Interviews may take place either within or outside of school hours.

This consent form, a copy of which I will leave 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 here, or information not included here, you should feel free to ask. Please take the time to read this carefully.

Project Description:

The use of big data, or data sets, has grown in popularity in recent years in the field of Education.

In order to gain a better understanding of the use of data in certain Manitoba schools - and the ways in which a data-driven dialogue may or may not reflect the goals and purposes of schooling as stated by the government of Manitoba's Education and Advanced Learning - twelve divisional leaders will be interviewed on the topic of data collection and utility.

The aim of this project is to explore the views of school superintendents/assistant superintendents on the value of educational data and data-driven decision making. This research project is carried out for the purposes of completing the Master's thesis requirements for the Faculty of Education, University of Manitoba.

Location and Time Requirement:

Participation will require approximately one hour of your time and would take place at your work site or another location at your request. I will request that you permit me to digitally record our conversations using MYNotes on my personal iPad that is password protected. If you object to being recorded, I will transcribe it by hand. Beyond the one-hour interview, participants will be invited through e-mail to review the transcribed document over a two-week period, in order to make any changes or additions to the transcribed interview.

Participation in this project is completely voluntary and you may decline to answer any question or withdraw from the study without any negative consequences regarding the services you may be receiving from the government and social services agencies discussed in the interview. Participants can contact the PI by email at krepshih@myumanitoba.ca to withdraw from the study at any time.

Confidentiality:

I will keep any information gathered in this research strictly confidential. Our conversation will be transcribed by the PI onto a Macbook Air laptop computer (within two weeks of each interview) that is user password protected, in a further password protected document on Pages. Transcribed data will then be anonymized. Original data will be printed and locked in a personal filing cabinet with a physical lock, and saved on a password protected hard drive. Anonymized data will be interpreted and coded using the same home computer that is password protected. Data that has identifying information will be stored in a separate filing drawer from the anonymized data. You will not be named or identifiable in any reports of this study. If any statement you made during this interview is used in a research report it will be attributed to an anonymous source. Information containing personal identifiers (e.g., this consent form) will be destroyed as soon as the PI has successfully fulfilled the requirements for the Master's thesis, anticipated October 30, 2016. Identifying interview transcript files will be deleted and trash can have emptied (if electronic) and destroyed (if hard copy) by shredding once the project reaches its conclusion. Anonymized data will be destroyed one-year after the thesis has been successfully defended.

Dissemination:

Dissemination of the findings from this study will be used for the M.Ed. thesis. It is also anticipated that a summary of the study findings will be written up for the purposes of submitting

to a peer-reviewed journal for publication or conference presentations.

Risks and Benefits:

There is minimal physical, psychological and/or emotional risks for participants in this study. Participants may experience a certain level of discomfort discussing experiences relating to school-based data and decision making. The experience of sharing their perspective on the role of data in their school however, may offer participants the benefit of reviewing and reflecting upon system goals, priorities and current practices.

Consent:

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. If you choose to withdraw from the study you will still be entitled to receive the \$10 coffee card. Participants can contact the PI by email at krepshih@myumanitoba.ca to withdraw from the study at any time. Should you choose to withdraw from the study all electronic and hard copy data collected will be promptly destroyed. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education and Nursing Research Ethics Board (ENREB). *If you have any concerns or complaints about this project you may contact the Human Ethics Coordinator, Room 208-194 Dafoe Road (CTC Building) or by email at humanethics@umanitoba.ca. If you have clarification questions, please contact myself at krepshih@myumanitoba.ca, my advisor Dr. David Mandzuk David.Mandzuk@umanitoba.ca, or members of my advisory committee.*

Participant's Signature

Date

Researcher Signature

Date

Please check below if you wish to receive a summary of the results of this project.

Yes, please send me a summary of the results electronically at:

Yes, please send me a summary of the results in hardcopy by mail to:

References

- Abrams, L., & Moio, J. (2009). Critical race theory and the cultural competence dilemma in social work education. *Journal of Social Work Education, 45*(2), 245-261.
- Alon, S., & Tienda, M. (2007). Diversity, opportunity, and the shifting meritocracy in higher education. *American Sociological Review, 72*(4), 487-511.
- Anisef, P., Brown, R. S., Phythian, K., Sweet, R., & Walters, D. (2010). Early school leaving among immigrants in Toronto secondary schools. *Canadian Review of Sociology/Revue Canadienne De Sociologie, 47*(2), 103-128.
- Anyon, J. (1981). Social class and school knowledge. *Curriculum Inquiry, 11*(1), 3-42.
- Anyon, J. (1997). *Ghetto schooling: A political economy of urban educational reform*. New York: Teachers College Press.
- Astin, A. W., & Oseguera, L. (2004). The declining "equity" of American higher education. *The Review of Higher Education, 27*(3), 321-341.
- Atkinson, E. (2000). In defence of ideas, or why 'what works' is not enough. *British Journal of Sociology of Education, 21*(3), 317-330.
- Baker, D., & Wiseman, A. (2005). *Global Trends in Educational Policy*. Burlington: Emerald Group Publishing Limited.
- Bazeley, P. & Jackson, K. (2013). *Qualitative data analysis with NVivo*. London: Sage Publications.
- Bentz, V. M., & Shapiro, J. J. (1998). *Mindful inquiry in social research*. Thousand Oaks, CA: SAGE Publications.
- Biesta, G. (2007). Why "what works" won't work: Evidence-based practice and the democratic deficit in educational research. *Educational Theory, 57*(1), 1-22.
- Biesta, G. (2010). Pragmatism and the philosophical foundations of mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *SAGE handbook of mixed methods in social & behavioral research* (2nded.; pp. 95-117). Los Angeles, CA: SAGE Publications.
- Biesta, G. (2012). Philosophy of education for the public good: Five challenges and an agenda. *Educational Philosophy and Theory, 44*(6), 581-593.
- Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste*. Cambridge, Mass.: Harvard University Press.

- Bourdieu, P., & Wacquant, Loïc J. D. (1992). *An invitation to reflexive sociology*. Chicago: University of Chicago Press.
- Brown, R., for the Toronto District School Board. (2008, September 1). Research Report: THE grade 9 cohort of fall 2002: a five-year cohort study, 2002-2007. Retrieved November 30, 2014, from [http://www.tdsb.on.ca/Portals/0/AboutUs/Research/The 5 Yr Study 02-07.pdf](http://www.tdsb.on.ca/Portals/0/AboutUs/Research/The%205%20Yr%20Study%2002-07.pdf)
- Brown, L. A., & Strega, S. (2005). *Research As Resistance: Critical, Indigenous and Anti-oppressive Approaches*. Toronto: Canadian Scholar's Press, Inc.
- Buchmann, C., Condrón, D. J., & Roscigno, V. J. (2010). Shadow education, American style: Test preparation, the SAT and college enrollment. *Social Forces*, 89(2), 435-461.
- CBC News. (2014, October 7). Manitoba students worst in Canada in math, science and reading. CBC News Manitoba. Retrieved November 5, 2014, from <http://www.cbc.ca/news/canada/manitoba/manitoba-students-worst-in-canada-in-math-science-and-reading-1.2789907>
- Chang, M. J. (2002). Preservation or transformation: Where's the real educational discourse on diversity? *The Review of Higher Education*, 25(2), 125-140.
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education* (5th ed.). London, England: Routledge.
- Connolly, P. (2008). A critical review of some recent developments in quantitative research on gender and achievement in the United Kingdom. *British Journal of Sociology of Education*, 29(3), 249-260.
- Creswell, J.W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks: Sage Publications, Inc.
- Critical Race and Postcolonial Theory. (n.d.). Retrieved October 29, 2015. from <http://routledgesoc.com/profile/critical-race-and-postcolonial-theory>
- Davies, P. (1999). What is evidence-based education? *British Journal of Educational Studies*, 47(2), 108-121.
- Davies, S., & Guppy, N. (2014). *The schooled society: An introduction to the sociology of education* (3rd ed.). Don Mills, Ont.: Oxford University Press.
- Dei, G. J. S., & Karumanchery, L. L. (1999). School reforms in Ontario: The "marketization of education" and the resulting silence on equity. *Alberta Journal of Educational Research*, 45(2), 111-31.
- Delgado, R., & Stefancic, J. (1995). Critical race theory: An annotated bibliography *Virginia Law Review*, 79(2), 461-516.

- Diamond, J., Lewis, A., Gordon, L., (2007). Race and school achievement in a desegregated suburb: Reconsidering the oppositional culture explanation. *International Journal of Qualitative Studies in Education*, 20(6), 655-679.
- Dixon-Román, E. J., (2013). The forms of capital and the developed achievement of black males. *Urban Education*, 48(6), 828-862.
- Earl, L., & Katz, S. (2006). *Leading schools in a data-rich world: Harnessing data for school improvement*. Thousand Oaks, California: Corwin Press.
- Edling, S., & Frelin, A., (2013). Doing good? interpreting teachers' given and felt responsibilities for pupils' well-being in an age of measurement. *Teachers and Teaching: Theory and Practice*, (4), 419-432.
- Education and Advanced Learning, Government of Manitoba. (n.d.). Mandate, Mission, and Priority areas. Retrieved November 30, 2014, from <http://www.edu.gov.mb.ca/edu/mandate.html>
- Education and Training, Government of Manitoba (n.d.). High school graduation rates and achievement statistics. Retrieved October 13, 2016, from http://www.edu.gov.mb.ca/k12/grad_rates/index.html
- Eisenhart, M., & Towne, L. (2003). Contestation and change in national policy on "scientifically based" education research. *Educational Researcher*, 32(7), 31-38.
- Espeland, W., & Sauder, M. (2007). Rankings and reactivity: How public measures recreate social worlds. *American Journal of Sociology*, 113(1), 1-40.
- Evans, J., & Benefield, P. (2001). Systematic reviews of educational research: Does the medical model fit? *British Educational Research Journal*, 27(5), 527-41.
- Feniger, Y., Livneh, I., Yogevev, A., (2012). Globalization and the politics of international tests: The case of Israel. *Comparative Education*, 48(3), 323-335.
- Flyvberg, B. (2006). Five Misunderstandings About Case-Study Research. In P. Atkinson, & S. Delamont (Eds.), *SAGE Qualitative Research Methods*. (Vol. 12, pp. 220-1). Thousand Oaks, CA: SAGE Publications, Inc. Retrieved from <http://srmo.sagepub.com.uml.idm.oclc.org/view/sage-qualitative-research-methods/SAGE.xml>
- Foucault, M. (1977). *Discipline and punish: The birth of the prison*. London: Allen Lane.
- Garcia, E., Romero, C., Ventura, S., & de Castro, C. (2011). A collaborative educational association rule mining tool. *Internet and Higher Education*, 14(2), 77-88.

- Gillborn, D. (2008). Coincidence or conspiracy? Whiteness, policy and the persistence of the Black/White achievement gap. *Educational Review*, 60(3), 229-248.
- Gillborn, D. (2010). The colour of numbers: Surveys, statistics and deficit-thinking about race and class. *Journal of Education Policy*, 25(2), 253-276.
- Glas, C., Scheerens, J., & Thomas, S. M. (2013). *Educational Evaluation, Assessment and Monitoring A Systematic Approach (Contexts of Learning)*. Hoboken, N.J.: Taylor and Francis.
- Gorard, S. (2010). Education "can" compensate for society--A bit. *British Journal of Educational Studies*, 58(1), 47-65.
- Gorur, R. (2013). The invisible infrastructure of standards. *Critical Studies in Education*, 54(2).
- Grek, S. (2009). Governing by numbers: The PISA " effect" in Europe. *Journal of Education Policy*, 24(1), 23-37.
- Hamilton, L., Marsh, J., & Pane, J. (2006). Making sense of data-driven decision making in education. RAND Education, Occasional paper series. Retrieved March 29, 2015, from http://www.rand.org/content/dam/rand/pubs/occasional_papers/2006/RAND_OP170.pdf
- Hargreaves, D. (1997). In defence of research for evidence-based teaching: A rejoinder to Martyn Hammersley. *British Educational Research Journal*, 23(4), 405-419.
- Huby G., Robertson A., Cresswell K., Crowe S., Avery A., & Sheikh A. (2011). The case study approach. *BMC Medical Research Methodology*, 11(1), 100.
- Johnson, K., & Street, E. M. (2012). From the laboratory to the field and back again: Morningside academy's 32 years of improving students' academic performance. *The Behavior Analyst Today*, 13(1), 20-40.
- Jordan, W. J. (2010). Defining equity: Multiple perspectives to analyzing the performance of diverse learners. *Review of Research in Education*, 34(1), 142-178.
- Kaplan, M. (2013). Postcolonial Theory. *Theory in social and cultural anthropology: An encyclopedia*. Los Angeles: Sage Reference.
- Kovach, M. (2009). *Indigenous methodologies: Characteristics, conversations, and contexts*. Toronto, ON: University of Toronto Press.
- Ladson-Billings, G. (1998). Just what is critical race theory and what's it doing in a nice field like education? *International Journal of Qualitative Studies in Education*, 11(1), 7-24.
- Lather, P. (2004). Scientific research in education: A critical perspective. *British Educational Research Journal*, 30(6), 759-772.

- Layde, P. M., Christiansen, A. L., Peterson, D. J., Guse, C. E., Maurana, C. A., & Brandenburg, T. (2012). A model to translate evidence-based interventions into community practice. *American Journal of Public Health, 102*(4), 617.
- Lingard, B., Creagh, S., & Vass, G. (2012). Education policy as numbers: Data categories and two Australian cases of misrecognition. *Journal of Education Policy, 27*(3), 315-333.
- Livingstone, A., & Weinfeld, M. (2015). Black families and socio-economic inequality in Canada. *Canadian Ethnic Studies, 47*(3), 1-23.
- Lucas, S. (2000). Hope, anguish, and the problem of our time: An essay on publication of the Black-White test score gap. *Teachers College Record, 102*(2), 461-473.
- Lucas, S. R., Beresford, L. (2010). Naming and classifying: Theory, evidence, and equity in education. *Review of Research in Education, 34*(1), 25-84.
- Mandzuk, D. (2014, October 8). With test scores, keep calm and carry on. The Winnipeg Free Press. Retrieved November 7, 2014, from <http://www.winnipegfreepress.com/opinion/analysis/with-test-scores--keep--calm--and-carry-on-278497841.html>
- Martin, N. (2014, October 7). Education minister promises Manitoba kids can, will do better. The Winnipeg Free Press. Retrieved November 5, 2014, from <http://www.winnipegfreepress.com/local/Manitoba-ranks-last-nationally-in-core-education-elements-278356561.html>
- Martino, W., Rezai-Rashti, G. (2013). 'Gap talk' and the global rescaling of educational accountability in Canada. *Journal of Education Policy, 28*(5), 589-611.
- Massell, D. (2001). The theory and practice of using data to build capacity: State and local strategies and their effects. Chicago: University of Chicago Press.
- Mayer-Schönberger, V., & Cukier, K. (2013). Big Data: A revolution that will transform how we live, work, and think. Houghton Mifflin Harcourt.
- Ministry of Education, British Columbia (2014). *Aboriginal Report 2009/10 - 2013/14 How Are We Doing?*. Retrieved on October, 21, 2015, from: https://www.bced.gov.bc.ca/reports/pdfs/ab_hawd/Public.pdf
- Moore, S., Daniel, M., Gauvin, L., & Dube, L. (2009). Not all social capital is good capital. *Health and Place, 15*(4), 1071.
- Moran, D. J. & Malott R. W. (2004). *Evidence-based educational methods*. Burlington: Elsevier Science.

- Morningside Academy. (n.d.). Morningside Academy. Retrieved April 4, 2015, from <http://www.morningsideacademy.org>
- Newman, F., King, B. & Rigdon, M. (1997). Accountability and school performance: Implications from restructuring schools. *Harvard's Educational Review*, 67(1), 41-74.
- Oakes, J. (1994). More than misapplied technology: A normative and political response to Hallinan on tracking. *Sociology of Education*, 67(2), 84-89.
- Oakley, A. (2002). Social science and evidence- based everything: The case of education. *Educational Review*, 54(3), 277-286. doi:10.1080/0013191022000016329
- Ogbu, J. U. (2004). Collective Identity and the Burden of "Acting White" in Black History, Community, and Education. *Urban Review: Issues and Ideas in Public Education*, 36(1), 1-35.
- Pan-Canadian Assessment Program (PCAP). CMEC Pan Canadian Assessment Program. Retrieved November 30, 2014, from [http://cmec.ca/240/Programs-and-Initiatives/Assessment/Pan-Canadian-Assessment-Program-\(PCAP\)/Overview/index.html](http://cmec.ca/240/Programs-and-Initiatives/Assessment/Pan-Canadian-Assessment-Program-(PCAP)/Overview/index.html)
- PISA - OECD. (n.d.). Retrieved November 30, 2014, from <http://www.oecd.org/pisa/aboutpisa/>
- Portes, A., & Hao, L. (1998). E Pluribus Unum: Bilingualism and loss of language in the second generation. *Sociology of Education*, 71(4), 269-294.
- Portes, A., & Sensenbrenner, J. (1993). Embeddedness and immigration: Notes on the social determinants of economic action. *American Journal of Sociology*, 98(6), 1320-50.
- Posselt, J. R., Jaquette, O., Bielby, R., & Bastedo, M. N. (2012). Access without equity: Longitudinal analyses of institutional stratification by race and ethnicity, 1972-2004. *American Educational Research Journal*, 49(6), 1074-1111.
- Radio Canada International. (2001, November 11). *Girls doing better in school not just at reading but at science too*. Retrieved October 31, 2015, from http://www.rcinet.ca/english/archives/column/the-link-s-top-stories/15-57_2011-11-29-girls-doing-better-in-school-not-just-at-reading-but-at-science-too/
- Rapley, T. (2001). The art(fulness) of open-ended interviewing: some considerations on analyzing interviews. In P. Atkinson, & S. Delamont (Eds.), *SAGE Qualitative Research Methods*. (Vol. 1, pp. 304-325). Thousand Oaks, CA: SAGE Publications, Inc. Retrieved from <http://srmo.sagepub.com.uml.idm.oclc.org/view/sage-qualitative-research-methods/SAGE.xml>
- Romero, C., & Ventura, S. (2007). Educational data mining: A survey from 1995 to 2005. *Expert*

Systems with Applications, 33(1), 135-146.

- Schildkamp, K., & Kuiper, W. (2010). Data-informed curriculum reform: Which data, what purposes, and promoting and hindering factors. *Teaching and Teacher Education: An International Journal of Research and Studies*, 26(3), 482-496.
- Schildkamp, K., Lai, Mei K., & Earl, L. (2012). *Data-based decision making in Education: Challenges and opportunities*. (Studies in Educational Leadership). Dordrecht: Springer.
- Shahjahan, R. A. (2011). Decolonizing the evidence-based education and policy movement: Revealing the colonial vestiges in educational policy, research, and neoliberal reform. *Journal of Education Policy*, 26(2), 181-206.
- Soudien, C., Apple, M. W., Slaughter, S. (2013). Global education inc: New policy networks and the neo- liberal imaginary. *British Journal of Sociology of Education*, 34(3), 453-466.
- Taylor, C., Peter, T., Campbell, C., Meyer, E. J., Ristock, J. L., Short, D. (2015). *The Every Teacher Project on LGBTQ-Inclusive Education in Canada's K-12 Schools. Final report* (Canadian Electronic Library. Documents collection).
- The Learning Bar. (n.d.). *Our Solutions*. Retrieved October 16, 2016 from <http://thelearningbar.com/>
- Truth and Reconciliation Commission of Canada. (2015). Truth and Reconciliation Commission of Canada: Calls to action. Winnipeg, MB: Author. Retrieved from http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls_to_Action_English2.pdf
- Valencia, S., & Buly, M. (2004). Behind test scores: What struggling readers really need. *The Reading Teacher*, 57(6), 520-531.
- Veerman, G. M., Van De Werfhorst, H. G., & Dronkers, J. (2013). Ethnic composition of the class and educational performance in primary education in the Netherlands. *Educational Research and Evaluation*, 19(5), 370-401.
- Wellman, B., & Lipton, L. (2004). *Data-driven dialogue: A facilitator's guide to collaborative inquiry*. Sherman, CT: Mira Via, LLC.
- Wiliam, D. (2010). What counts as evidence of educational achievement? the role of constructs in the pursuit of equity in assessment. *Review of Research in Education*, 34(1), 254-284.
- Wiseman, A. W. (2010). The uses of evidence for educational policymaking: Global contexts and international trends. *Review of Research in Education*, 34(1), 1-24.
- Yosso, T. J. (2005). Whose culture has capital? A critical race theory discussion of community. *Race Ethnicity and Education*, 8(1), 69-91.