

EQUITY AND ADEQUACY IN THE FINANCING OF  
PUBLIC SCHOOL EDUCATION IN CANADA:  
ISSUES AND CONCERNS

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**EQUITY AND ADEQUACY IN THE FINANCING OF PUBLIC SCHOOL  
EDUCATION IN CANADA: ISSUES AND CONCERNS**

**by**

**Bernard Mwere**

**A thesis submitted to the School of Graduate Studies in partial  
fulfillment of the requirements for the degree of Master of Education**

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## **Abstract**

Most research addressing unequal educational opportunity as regards to fiscal equity and adequacy has largely focused on disparities between school boards and to some extent individual schools in the same province. Disparities among provinces, a problem less emphasized by the research in Canada, offer a significant lens through which public education funding can be examined. A comparative rather than individual province analysis provides policy makers with rich information that can assist funding policy comparisons and decisions.

This study analyzes fiscal equity and perceptions of adequacy across ten provinces for the years 1996-2006. The results of the study reveal that the disparities have disproportionately affected the Atlantic provinces. Furthermore, the study shows that inter-provincial disparities in spending are linked to provincial resource endowment, thus highlighting the need for a federal role in ameliorating inter-provincial disparities in educational standards. Further analysis of the research revealed that there has been an increased emphasis on the perceptions of adequacy and that across most provincial jurisdictions, policies are geared towards student attainment of performance standards.



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## TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION TO THE STUDY .....	1
Historical Background .....	1
Purpose of the Study .....	5
Statement of the Problem and Rationale for the Study.....	5
Significance of the Study .....	6
Theoretical Framework.....	7
Research Questions.....	9
Provincial Reform Initiatives.....	9
School Funding: The Canadian Context.....	10
Educational Finance in Canada: An Overview.....	11
The Role of the Federal and Provincial Governments.....	13
Education Finance Equity and Adequacy in Canada.....	16
Limitations of the Study .....	18
Definition of Terms .....	19
Organization of the Thesis.....	20
CHAPTER TWO: REVIEW OF THE LITERATURE .....	21
The Evolution of Education Finance Equity .....	21
Recent Developments in Education Finance .....	23
Components of Education Funding Formulae .....	27
The Theory of Equity.....	28
Educational Finance Adequacy .....	30
Measuring Educational Finance Adequacy .....	34
Conclusions on Educational Finance Adequacy.....	37
Complexity Theory .....	38
Conclusion .....	40
CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY .....	42
Research Design .....	42
Triangulation.....	44
Purpose of Exploratory Design.....	46
Data Collection .....	46
Sampling Procedures .....	47
Primary and Secondary Instrumentation .....	48
Qualitative Data Analysis .....	49
Quantitative Data Analysis .....	52
Conclusions on Design Methodology.....	52
CHAPTER FOUR: FINDINGS AND DISCUSSION .....	54
Researcher as Instrument.....	54
Data Interpretation and Analysis .....	55
Emergent Themes .....	55
Issues and Concerns.....	62
Equity and Adequacy Funding Policies.....	65

Evolution of Emphasis on Equity and Adequacy Issues .....	66
The Politics of Education Funding .....	67
Further Reflections on Qualitative Analysis.....	68
Conclusion on Qualitative Analysis .....	69
Horizontal Equity Findings.....	70
Summary .....	74
Conclusions and Implications.....	75
 CHAPTER FIVE: SUMMARY, CONCLUSIONS AND IMPLICATIONS.....	77
Summary .....	77
Educational Finance Equity and Adequacy for Canada in the 21st Century.....	79
Future Challenges .....	81
School Choice.....	82
Future Research and Implications .....	82
Conclusions.....	83
 REFERENCES .....	85
 Appendix A: Provincial and Territory Education Funding by Source and by Province, 2002 .....	98
Appendix B: Statistical Summary .....	99
Appendix C: Interview Questions .....	101

## CHAPTER 1

### INTRODUCTION TO THE STUDY

This chapter presents an overview of the study. It begins with a brief description of the purpose, rationale, and theoretical framework as well as the research questions. This is followed by a contextualization of the research including the various limitations of the study. The chapter concludes with an explanation of terms utilized in the study.

#### Historical Background

In his book, *Governing Education*, Levin (2005) underscores the importance attached to education funding in Canada: “In education in Canada, as in health care, no one issue gets as much media and public attention as funding of schools...” (p. 119). Public financing of education remains one of the most contentious issues in Canada. There has been an increasing amount of evidence of low public confidence emanating not only from poor student performance but also from the design and governance of education in Canada (Dunleavy, 2007; Guppy & Davies, 1997; Livingstone & Hart, 1998; Nevitte, 1996). In 2004 Ontario Premier Dalton McGuinty (2004) pointed to one obvious reason for this deterioration when he declared “we’ve let public education slide to the point where the number of stories about our schools’ successes have been overwhelmed by others, about crumbling morale and schools, lost programs, and endless bickering” (para. 33). In that same vein, Young, Levin and Wallin (2007) observe that, “many people working in education feel that not enough money has been spent on public education in recent years, and that, as a result, the quality of education provided is falling” (p. 161). Consequently, a number of parents have been withdrawing their children from the public school system, while home schooling has seen an unprecedented surge in numbers (Deani, Allison, & Allison, 2007; Guppy & Davies, 1997). However, Nagy (1996), comparing Canadian public schools at the international level, has

concluded that the results are generally good. Similar positive views are shared by other authors who claim that the negative sentiments are exaggerations (Barlow & Robertson, 1994; Ungerleider, 2003).

Education reform is somewhat of a mantra in Canadian society. Issues of destreaming, technology, teachers' pay, professional competence, school board consolidations and education funding among others are at the forefront of most reform initiatives. From the east coast to the west coast of Canada, education stakeholders represented by such groups as the Organization for Quality Education in Ontario, Parents in Nova Scotia, the Society for Advancement for Excellence in Education in British Columbia among others, have voiced their calls for education reforms. These reforms are inextricably linked to the financial motives of provincial governments and they coalesce in one way or another to affect funding equity and adequacy. Indeed, as Young et al. (2007) point out, in Canada educational reform is increasingly linked to economics among other issues. In an early research study on per-pupil expenditure funding, Easton (1988) observed that the agitation for education reform contributed to more than tripling the real cost of public schooling per student between 1960 and 1982. These reforms have traveled a bumpy road since then. Yet despite all of the education reform efforts, sentiments regarding Canada's public K-12 education system are still somewhat negative.

An examination of education funding across Canada reveals that fiscal equity and adequacy challenges are not dissimilar across various provincial jurisdictions. Still, Canada's public education system is not in a league of its own as countries grappling with education reform issues have also had to contend with many impasses of these reform initiatives in addressing the systematic problems facing their respective education systems. Hepburn (1999) observed that "Canada's provincial systems of education are highly centralized structures

that are, in most cases characterized by little autonomy and accountability while public scrutiny on student performance is in some cases missing” (p. 4). This freedom from public oversight may create a weakness in the overall organizational and administrative performance of the public school system. Indeed, education funding across provinces has been shaped by evolving governance frameworks that have been in place since the inception of Canadian public schooling. These funding frameworks have evolved to address among other things, the thorny issues of school finance equity and adequacy, issues that have confounded educational economists for ages.

In Canada, the issues of finance equity and adequacy play a prominent role in public and academic discourse, especially in light of the discriminatory funding in some provinces for separate schools (Catholic) and secular (public). Card, Dooley and Payne (2008) commenting on school funding in their study on school choice and benefits of competition in Ontario have observed that:

In four provinces (Alberta, Ontario, Manitoba and Saskatchewan), Catholic parents have the choice of sending their children to two publicly funded school systems (Catholic or public). The Catholic schools are open to children of Catholic families, although non-Catholics are occasionally admitted. The two systems are run independently and receive equal funding per student. This freedom of choice for Catholic families creates an incentive for both the public and separate systems to improve in order to attract more students, thus more funding per student. (p. 3)

During the educational reforms of the early 1990s, the trend in most Canadian provinces was towards a secular and public system devoid of religious affiliation that had mostly characterized school organization in the preceding decades. As Bezeau (2002) points out, only Manitoba and British Columbia had a strictly non-denominational public education system. Quebec replaced separate Catholic and Protestant systems with linguistically-based English and French secular systems while Newfoundland and Labrador integrated its formerly denominational systems into five districts, all geographically based. Currently,

Ontario remains the only province in Canada with a significant religiously affiliated public education system.

In the 1990s, Canadian federal and provincial governments' priorities took a neo-liberal turn, curtailing expenditures on social services. Per-pupil spending dropped in real dollars from the high levels of previous decades, subsequently changing the cost-sharing and funding of education and other social services across the provinces (Barlow & Robertson, 1994; Dei & Karumanchery, 2001; Dibski, 1995). Most public social services, including education, were thus subject to strict fiscal constraints. Subsequently, provincial governments enacted education finance reforms in reaction to the federal government's austerity measures in a bid to address funding challenges. These reforms had, among other things been, aimed at ensuring efficiency in the distribution of financial resources to all students in public schools as well as addressing the various shortfalls throughout various school systems.

The development and evolution of various funding mechanisms marked an important shift in the funding of public education across the provinces with most provinces choosing to cut spending on education while also addressing various dis-equalizing factors such as cost of living, the varying costs of different educational programs, variations in the property tax base and population sparsity. Moreover, the consolidation of school districts that was taking place across the country emphasized a greater emphasis on funding classroom initiatives as opposed to solely those areas related to administrative functions. Dibski (1995) observed that continued cut-backs by the federal government on spending for social services would exacerbate regional disparities in financing public K-12 education, thus disadvantaging provinces with lower economic bases (traditionally those of the Atlantic region, Quebec and Manitoba). It is against this backdrop that the study proposes an examination of horizontal finance equity and educational finance adequacy in the ten provinces of Canada.

### **Purpose of the Study**

This mixed-methods study has a three-fold purpose. First, the study is aimed at examining whether the school finance systems that have been in place in Canada have tended towards ensuring educational finance adequacy in each of the province's public education system. Secondly, the study aims to examine trends in horizontal finance equity in ten Canadian provinces between 1996 and 2006. Lastly, the study explores some of the issues and concerns as they relate to and affect education funding. It will investigate how fiscal education policy changes of the 1990s may have affected and impacted on education finance equity and adequacy.

### **Statement of the Problem and Rationale for the Study**

An informed understanding of Canada's public school finance system with regards to finance equity and adequacy has important ramifications for public school policy. This study is premised on research which speaks to that understanding. Solving school finance problems is an essential component in addressing the myriad of issues in dysfunctional school systems especially with regards to ensuring educational opportunity. This is primarily so because an effective school finance system is part of the solution to the more complex issues of effective schools (Odden & Picus, 2007). Borrowing from the complexity theory as discussed in Chapter Two, many factors within and outside the school must system coalesce with each other for schools to function efficiently and school funding is one of the most important of these factors. Furthermore, the study is based on the theory that the federal government is to a large extent responsible for ameliorating social and economic inequalities across Canada. In tandem with previous studies on school finance, this study assumes that school finance equity and adequacy are partial but useful proxies for the presence or absence of equality of opportunity in education (Cohn & Geske, 1990; Coleman, 1990). Thus, an investigation of



educational finance equity and finance across Canada's school finance systems is expected not only to reveal trends towards equity and/or inequity but also explore the perceptions with regards to fiscal adequacy and/or inadequacy.

### **Significance of the Study**

The significance of this study will be to contribute to the ongoing debates, studies and the body of knowledge on the funding of public K-12 schools across Canada. The physical and socio-economic diversities that exist in schools across Canada significantly impact the various provincial initiatives which are grappling with a multitude of equity and adequacy challenges; this study will hopefully aid in understanding these issues. Whereas the majority of studies on finance equity and adequacy focus independently on individual provinces, this research takes a slightly different view by looking at the phenomena from an inter-provincial perspective. Unlike single entity studies, a multi-provincial comparison covering several years provides a broader range of information, patterns and trends. A second significant contribution of this research rests on the design methodology used. Most studies on the subject of school finance rely almost entirely on one design methodological strand— either the qualitative or the quantitative approach. This research approaches the subject through a mixed methods design perspective. The mixed methods design has significant advantages over either of the purist approaches; these advantages are discussed in Chapter 3.

Furthermore, understanding how school fiscal equity and educational finance adequacy have changed over the years can help in the formulation of policies and implementation of funding formulae and practices that would lead to reduced fiscal inequity while addressing finance inadequacies, not only among provinces but also among schools and school districts. It may also help in designing policies specifically meant to address fiscal equity and adequacy, being cognizant of policies that work better in reducing or eliminating

the fiscal gaps among students, schools and school boards. This study will also help in deepening the understanding of education funding in public schools so that policymakers and school administrators will be more conscious of the factors that can positively impact public education finance equity and adequacy. With this understanding, it is hoped that policymakers, school administrators and other stakeholders will be equipped with knowledge, information and skills to put in place measures to avert, alter or mitigate inherent fiscal disparities, not only among provinces but also within school districts. The issues and analyses included are relevant to policymakers, education administrators, planners and other stakeholders such as tax payers.

This study examines finance equity and adequacy in Canada's ten provinces: Alberta, British Columbia, Manitoba, Prince Edward Island, New Brunswick, Nova Scotia, Saskatchewan, Newfoundland and Labrador and Quebec. The three Canadian territories are excluded due to their significantly dissimilar funding mechanisms and lack of sufficient statistical data from these regions over the span of study. Regardless of some variations that may exist in the funding mechanisms in the ten provinces, there are significant discernible similarities in educational finance policies.

### **Theoretical Framework**

K-12 public education in Canada is exclusively, with few exceptions, within the jurisdiction of the provincial and territorial governments. Each province or territory is therefore responsible for addressing the financing of public education in their respective jurisdictions without federal oversight. With regards to striving towards equality in Canadian society, educational finance equity and adequacy pose considerable challenges to education stakeholders across the country. Research points to the socio-economic disparities across

Canada as a persistent source of educational inequality (Davies & Guppy, 2006; De Broucker & Noel, 2001; Guppy & Davies, 1997; Wanner, 1999).

Canadian researchers have found that social class variables such as family income explain as much as 45 percent of variation in achievement on mathematics and language arts tests for students in grades three and six, while school-based factors accounted for only 3 to 6 of the variation (Lytton & Pyryt, 1998). A commissioned study in New Brunswick also found that up to 50 percent of variance in elementary mathematics, science, reading and writing scores were attributable to socio-economic status (Klinger, 2000). The so-called “have-not provinces” in Canada are not only economically disadvantaged but their populations also display lower general levels of education (Wien & Corrigan-Brown, 2004). The traditional have-not provinces namely, Newfoundland and Labrador, Nova Scotia, Prince Edward Island and New Brunswick are characterized by low levels of educational attainment. Manitoba, Saskatchewan and Quebec all exhibit above mean levels of educational attainment while the “have provinces” of Ontario, Alberta and British Columbia all meet or exceed the national average (Statistics Canada, 2003).

There seems to be a consensus among education practitioners that public education should be funded in such a manner that promotes equity and adequacy in order to provide all students with equal educational opportunity. One of the theoretical tenets upon which the discourse of education in Canada rests is that all children should have access to opportunities to benefit equally from schooling, socio-economic circumstances notwithstanding. Provincial governments play a major role in financing education. In provinces like Manitoba and Saskatchewan, local school districts bear significant responsibility for raising revenue for schools with property tax as the major source of revenue. Due to variations in property taxes within and across provinces, provinces and school districts with small property tax bases find

it harder to generate local revenue for schools than those with broader tax bases. Moreover, regional disparities may exacerbate or compound the problem even within the same school districts. These disparities in tax base levels explain some of the reasons for the trend in full provincial funding across Canada.

### **Research Questions**

This study is driven by the following research questions:

- 1) What has been the perception of stakeholders toward the funding mechanisms in the ten provinces in their efforts to achieve education finance equity and adequacy in Canada's K-12 public education system?
- 2) How horizontally equitable were the systems of school finance in Canada between 1996 and 2006 and to what extent have the provincial funding mechanisms inhibited or promoted horizontal equity in the public school finance system?
- 3) What have been some of the persistent challenges, issues and concerns faced by educational administrators and policymakers in Canada in their attempts to attain fiscal equity and adequacy in K-12 public education funding?

### **Provincial Reform Initiatives**

Fleming and Hutton (1997) have observed that, “for various reasons—including the promise of greater efficiency, the need for fiscal restraint and the aim of reducing inequities among districts—provincial governments from coast to coast have recently begun to amalgamate school districts into larger units” (p. 8). These reform initiatives were nested in or can be traced to the developments of the late 1980s, such as British Columbia's 1984-85 *Provincial School Review*, and were aimed at decentralizing education services in a bid to enhance efficiency. Consequently, provincial governments across Canada initiated various

reform measures which had far reaching impacts on school finance equity and adequacy. Some of these reforms include those detailed in the following reports: *Building Partnerships* (1992) in British Columbia, *Our Children, Our Future* (1992) in Newfoundland and Labrador, *Education, A Shared Responsibility* (1992) in Prince Edward Island, *Select Committee Report on Education* (1992) in Nova Scotia, *The Commission on Excellence in Education* (1992) in New Brunswick, *Towards Education Finance Reform* (1992) Ontario, Report of the *Task Force on Educational Funding* (1992) in Manitoba, *Our Children Our Communities Our Future* (1992) in Saskatchewan and *Developing a New Framework for Funding School Boards in 1995-96 and Beyond* (1994) in Alberta.

Over the last decade, school systems experienced extensive reforms not only in Canada but also in other industrialized countries (Levin, 2001; Levin & Young, 1999). Most of these reforms had financial implications for example *Ontario's Bill 160* which centralized funding, cut the number of school boards from 129 to 72, reduced the number of trustees from 1900 to 700 and set up school councils (Canada and the World Backgrounder, 1998). Quebec also rationalized the number of school boards and introduced new governing boards. In fact, almost all provinces initiated reform measures, stream-lining education governance in an attempt to increase efficiency and effectiveness. These and other subsequent fiscal evolutions have resulted in the current school finance landscape across Canada and it is within the context of those evolutions that the current study is framed.

### **School Funding: The Canadian Context**

Public elementary and secondary education funding in Canada is a three-tiered system in a number of provinces and territories (local, provincial and federal). Resource cost and block grant programs are used where full funding comes from the provinces. Foundation programs and special purpose grant programs are used where school boards generate some

portion of the funding from the property tax base. Equalization funding is broadly agreed to be an essential component of the funding as is pupil access to appropriate learning opportunities. Traditionally, most Canadian provinces funded education through a combination of provincial and local funds. Over the last several decades, however, the balance between the two has gradually shifted toward more provincial funding. The only local revenue source has been the property tax; however, now other measures such as fundraising are taking shape.

As mentioned earlier, in order to address socio-economic differences, the trend across the provinces has been towards a centralized and full provincial funding model with increased emphasis on fiscal efficiency and accountability, issues that had little salience in the years prior to the education reforms of the early 1990s. By 1997, eight of the ten provinces were providing essentially 100 percent funding for public schools with some, namely: Alberta and Quebec even providing some form of funding and/or support for private schools (See Appendix A). This full provincial funding is in most cases accompanied by strict limits on spending levels for school boards. Alberta cut spending for schools by 10 percent when it assumed full funding in 1994, while Ontario also made significant reductions when it moved to full funding.

### **Educational Finance in Canada: An Overview**

Total expenditures on elementary and secondary education in Canada as of 2002-03 (the latest year available) accounted for some 6.4% of Canada's Gross Domestic Product (GDP) from a record high of 6.6% in 1999/2000 (CMEC, 2007). Data from the Organization for Economic Co-operation and Development (OECD) indicates that among its country members, expenditure on education averages 5.65% of Gross Domestic Product. In its most recent report on education, *Education at a Glance* (OECD, 2008), the OECD notes that for

the year ending 2007, the latest year for which comparative international data are available, Canadian expenditures on public elementary and secondary education varied from 6.7% in 1995 to 5.9% in 2000 to 6.2 % of the GDP in 2005. Moreover, it can be deduced from the report that, over the period between 1995 and 2000 Canada significantly curtailed education spending relative to other OECD countries. In terms of total dollar investments, Canada invested a total of \$44.5 billion in elementary and secondary education for the fiscal year 2004-05 (CMEC, 2004b). While the magnitude of this investment may appear large, evidence to support the adequacy of this investment remains a matter of debate. In recent years, school finance deliberations are no longer focused on the lump some amount invested, but are centered to varying extents on the determination of returns to the investments, most notably, student performance.

Relative to other OECD members, Canada had one of the highest percentages of students attending elementary and secondary education institutions, with the participation rates for the 15-year olds standing at around 95% (OECD, 2008). The *Pan-Canadian Education Indicators Program*, a joint project of Statistics Canada and the Council of Ministers of Education Canada (CMEC), reports total expenditures on elementary and secondary education in 2004-2005 to be \$44.5 billion of which about 90% came directly from public funds and the remainder from private expenditures such as school fees, private tuition, materials and supplies. Mean total per-pupil funding in Canada amounted to \$9,040 in 2004/05, an increase of 21.7% from \$7,077 in 1998/99 (CMEC, 2004b).

Provincial governments have enacted a variety of education finance reforms in an attempt to achieve fiscal equity and adequacy among students as well as among school districts. Since the 1990s, these reforms have been increasingly characterized by emphasis on funding equity and adequacy as education finance continues to take its rightful place in

educational discourses. These reform efforts are driven by the belief that fiscal inequities and inadequacies are fundamental educational policy problems that have to be addressed alongside other educational reform matters. Lawton (1996) has stated that

an objective assessment today of Canada's education systems is that national priorities, national interest groups as well as international social economic trends are influencing education governance and by extension fiscal reforms. Provinces are collaborating through inter-provincial bodies to create more uniform national systems with the federal government at least through the offices of the Supreme Court of Canada centrally involved in the reform processes, particularly, as it affects linguistic and religious minorities. (p. 5)

On the other hand, CMEC is playing a central role as an inter-provincial co-coordinating body. Lawton (1996) postulates that if these trends continue, then education finance across the provinces will lose the distinctiveness which arose from the traditional workings and policies of local school boards. Equality of educational opportunity is a widely held value in educational discourse. This is a centrally premised role played by education from the perspective of human capital theorists. As mentioned earlier, the socioeconomic standards of students are still somewhat connected to lower educational achievement. If left unchecked, unequal educational opportunities can play a significant role in the vicious cycle of inequality not only among households but also along regional lines.

### **The Role of the Federal and Provincial Governments**

This study is premised on the understanding that federal and provincial governments have important roles to play in education and especially the federal government in its broader role to ameliorate social and economic inequality. While the Constitution Act of Canada (1867) gives provinces primacy on education matters, the Act does not preclude federal government involvement. Indeed, the federal government is actively involved in financing education of certain categories of students, mainly the First Nations population. Discretionary federal spending on social services could be specifically targeted towards



ensuring equitable and adequate funding opportunities for all students. In particular, since the federal government is involved in education funding of some form or another, this funding should be targeted to best promote finance equity and adequacy on a nationwide level.

Pasachoff (2008), commenting on the United States' public education system, contends that "as long as the federal government is spending in the education arena, it should use that spending to promote equity and adequacy to the best of its ability, especially since only the federal government can ensure equity on a national level" (p. 4). Other researchers have made similar observations pointing out that if adequacy issues are considered, it may raise anew the important role of the federal government in education funding since some states may not be able to provide sufficient resources to ensure adequacy (Liu, 2006; Odden & Clune, 1998). Complementary to these assertions, Young et al. (2007) comment that

if provinces had to rely on their own resources to finance services. . . poorer provinces would be hard pressed. . . . So the federal government. . . should use some of its funds to provide extra assistance to those provinces through a number of different avenues. . . and giving the provincial governments the ability to spend the funds on whatever their priorities were. (p. 155)

There is a wide spread recognition of the importance of national policies for strategic development. In the Canadian context what may be missing is a collective will stemming from an inherent inertia to change the socio-cultural orientation of Canadian society. While some may revel in the uniqueness of Canada's educational governance structure, there is a belief that the creation of a national strategy to include governance and funding among other issues would bring more benefits to individual provinces including that of steering educational institutions to a more homogenous approach to education especially in light of the ever increasing trends of globalization.

While the education standards for the indigenous population remain a strong government priority in Canada, new and emerging discourses of education and social justice

attach greater importance to the performance of all Canadian students. This may call for discretionary funding of public education by the federal government in order to weed out inter-provincial fiscal inequalities in education. Moreover, especially in light of heightened national expectations for provincial school systems in terms of accountability, transparency and comparability, as initiated by numerous provincial and education reforms, global competition, greater centralization and educational collaborative efforts (provincial and inter-provincial initiatives such as the CMEC's *Learn Canada 2020*), it may be appropriate for the provincial and federal governments to take on a greater share of education financing to help address national financial equity and adequacy challenges.

The federal government has been known to use economic incentives to target and promote various educational initiatives. Federal government campaigns like the promotion of science and technology in the 1960s and the promotion of bilingualism through the establishment of French second language and French immersion programs from the 1970s onwards are some of the examples of initiatives taken by the federal government to address seemingly undesirable trends in the public education system (Tomkins, 1986). Relatedly, it does not take a great leap of belief to conclude that comparisons of provincial fiscal expenditures and differences in educational achievements across provincial lines will put more pressure on governments and policymakers to enact changes geared towards educational fiscal equity and adequacy among Canadian students. The federal government may not have authority over the provinces' public schools but it certainly has the national interest at the elementary and secondary levels and can influence what goes on in the provincial education systems across the country.

### **Education Finance Equity and Adequacy in Canada**

Educational fiscal equity and adequacy are primary principles pursued across Canada by all provincial governments. However, some jurisdictions require more funding to provide a basic education than others. Consequently, costs and need-adjusted indicators are more useful when comparing fiscal equity and educational adequacy across the provinces, school districts and schools as these measures are more representative of variations in education's purchasing power, as opposed to nominal amounts. Not all jurisdictions are the same; they have differing costs and needs for their students. Moreover, according to Levin (2005), no funding formula is perfect as there could always be many other reasonable bases for allocating funds. Furthermore, no formula can control the cost of providing a given level of educational services, hence the need for their continual amendment. Full provincial funding is no panacea to school funding problems either. However, the funding formulae cannot compensate for inadequate funding. School funding formulae usually are not designed to guide equity and adequacy of the total amount of funding that a government should make available for education.

Given the lack of well defined production functions as well as lack of precision with which education outcomes are measured, educational finance adequacy is likely to remain a value ridden policy judgment to some extent. Alberta, Ontario, Newfoundland and Labrador as well as Nova Scotia, all with full provincial funding still grapple with school finance equity and adequacy problems the same as Manitoba and Saskatchewan where property taxes still comprise a significant source of education funds. As mentioned later in the section on the limitations of the study, each province has its own funding criterion. Even if there were to be a single funding formula across all the provinces, imperfections would still exist. When funding formulae are deployed to distribute funding to large and complex jurisdictions, as is

the case with most Canadian provinces, they become less precise as the principle of one *size-fits-all* equality is stretched to the point of impracticality. Therefore, despite decades of interventions, financial disparities still exist across provinces. Recent statistical data show that while disparities in per-pupil expenditures within provinces may have decreased in some provinces, disparity measures among the provinces as a whole have been on the increase (CMEC, 2007). For example, per-pupil expenditure varied from a high of \$10,293 in Alberta to a low of \$7,655 in Prince Edward Island in 2005/06 (CMEC, 2007).

Jordan and Lyons (1992) commenting on the American experience state that efforts to provide funding equity and adequacy are often thwarted because of the context of local and state political environments that affect school funding decisions. These authors further observe that, more often short term political expediency, rather than sound economic and educational benefits, influences the outcome resulting in unequal access to educational opportunities. The same sentiments are shared by Henley and Young (2008) who argue that “the traditional Canadian design of public school governance, which has primary authority residing with the provincial legislature but with considerable authority delegated to local, single interest school boards, has created an enduring source of political tension” (p. 3). Manzer (1994) points out that education policy decisions are inherently political in nature since they involve questions of public choice and concern. Due to the failures inherent in the political control of education, Merrifield, Dare and Hepburn (2006) recommend political disengagement from strict central control in favor of increased professional and school autonomy and market accountability. Such a move, though not necessarily devoid of imperfections, may seem desirable to those working directly in the education field.

In Canada as in other countries, education administrative systems crucially depend on the political environment. In situations where there are varieties of options in terms of

funding or school choice, politicians can work well by developing responsible policies to address the needs of the public education system. However, this may not work well across all provinces, especially where leadership is in the hands of few elites who act as the principal decision makers. However, educational politics should be analyzed jointly with other social and political systems that determine funding policies so as to benefit all stakeholders. Alberta has taken great strides in increasing school choice (an issue that can remedy political interference), and is currently one of only a few provinces in Canada to allow charter schools. The politics of education funding are still as vicious as ever in various parts of Canada and particularly in Ontario with the discriminatory practice of funding religious schools.

### **Limitations of the Study**

The first significant limitation posed by this study involves the dimensions that are not measured or included for the length of the ten year study period. While this study does address horizontal finance equity and educational finance adequacy for the years specified, the results of this analysis contain no implications for the years and dimensions not covered by the study.

A second limitation is derived from the differences in the funding formulae and policies employed across the provinces. Differing funding formulae and policies may have different impacts on fiscal equity and adequacy. An alternative study would be one that compares equity and educational finance adequacy using similar funding formulae and policies (currently non-existent) across the ten provinces. The differences in funding formulae and policies imply that blanket comparisons across provinces should be done with caution since formulae and policies may have differing impact on finance equity and adequacy.

Furthermore, the external validity of the findings presented in this study is limited by the sources from which the qualitative and quantitative data were gathered. The views of the informants used in this study as well as the sources for secondary data were crucial in the understandings and conclusions drawn from the study; however, opinions of other constituencies such as parents, legislators, taxpayers also certainly deserve consideration. Moreover, the perceptions of educational finance adequacy in this study were derived purely from the review of literature and the responses received from semi-structured interviews, while the analysis of equity was mainly from statistical measures of horizontal equity. Unlike finance equity, educational finance adequacy is a somewhat abstract term that entails value judgments and may lack precision. An analysis of educational finance adequacy by using one or more of the four methods of estimating adequacy would provide another perspective upon which adequacy could be looked at, while the analyses of horizontal, vertical equity and/or wealth neutrality would offer a richer insight into the analyses of Canada's public K-12 education system.

Finally, determining educational adequacy (other resources and standards) of Canada's education system was considered beyond the scope of the current study. Therefore, the study does not attempt to describe the full range of funding inequities and inadequacies.

### **Definition of Terms**

The following terms appear frequently in this study and are therefore defined in this section for the purpose of clarity.

- 1) **Adequacy:** determined by quality and quantity of educational programming and services necessary to ensure that students achieve at desired levels of performance on identified indicators.

- 2) **Equity:** fair and just method of distribution resources among students in the public school system.
- 3) **Horizontal equity:** implies that all students who are equal in their abilities and needs should receive equal amounts of funding: *equal treatment of equals*.
- 4) **Per-pupil expenditure:** the total expenditures of a province divided by the eligible pupil count.
- 5) **Public education:** refers to the education program set up by the provincial governments for K-12. The term public education in this study does not include adult education, higher education and private education.
- 6) **School funding formula/mechanism:** criteria used by the provincial governments to allocate education finance for public elementary and secondary education.
- 7) **School finance:** the distribution and use of monies for the purpose of providing educational services.

### **Organization of the Thesis**

This thesis consists of five chapters. Chapter 1 gives an overview of the problem and to provide a context for the study. Chapter 2 reviews the literature on educational finance with particular reference to the issues of equity and adequacy. Chapter 3 details the methodology utilized in the collection of and the resultant analysis of that data. Chapter 4 enumerates the various findings which emanate from the data analysis and lastly Chapter 5 discusses the findings and puts forth a number of conclusions and recommendations for consideration.

## **CHAPTER 2**

### **REVIEW OF THE LITERATURE**

The purpose of this study is to examine issues and concerns of education finance equity and adequacy in the ten Canadian provinces over a period of ten years. This chapter reviews the literature pertinent to the study including the evolutions of school finance from equity concerns to its convergence with finance adequacy, measurement of equity, types of funding formulae for public education and a description of education finance adequacy.

The focus of this literature review is three-fold. First, this review will examine how equity has evolved and how it is applied in school funding. Second, the review examines school finance adequacy and the methodologies used in estimating adequate school funding levels. Lastly, this chapter links education financing with complexity theory and educational administration.

#### **The Evolution of Education Finance Equity**

School funding equity concerns (formulae) can be categorized into three different periods. The earliest funding formulae developed mostly in the second half of the 20th century and were relatively elementary, usually no more than a series of simple ratios, such as the number of pupils per teacher. Early scholars who offered insight into school finance equity issues during this period include Cubberley (1906) who advocated the use of flat school grants to serve as a foundation on which schools could build their funding foundation. He also highlighted the importance of a state taxing system that would ensure equal sharing of education costs and benefits. This formed one of the premises upon which public support for education and educational opportunity rests. Strayer and Haig (1923) introduced the concept of the minimum foundation program which would ensure that each student received a guaranteed minimum amount of funding from the state. The minimum foundation



programs were designed to address variations in local property tax bases. This formed the grounds upon which equalization formulae were designed. The foundation program envisioned by Strayer and Haig has since been used in many states across the United States as well as in Canada.

Updegraff (1922) built on the concept of education equity finance by advocating for the provision of supplemental state funds for poor districts and state support for education to guarantee an equal educational opportunity for each child regardless of where they lived. Per-pupil expenditure was advanced by Mort (1924) and ushered in the recognition of differing educational needs for each student as a funding criterion. Mort also built upon the concept of the minimum foundation program and extolled its usefulness in establishing fiscal relationships between the states and school districts. He advocated that states should take into consideration education cost factors that were not within schools' control such as sparsity and transportation costs. Morrison (1930) advocated for a full state funding model in which school districts would be eliminated and funds would come directly from state revenues rather than local property taxes. This formed the grounds for full state funding, a practice that has gained considerable prominence in recent years.

The second period, which was predominantly associated with the common school movement in the United States during the 19th century, demonstrated an egalitarian attitude towards education. According to Caldwell, Levacic and Ross (1999) this period was characterized by policy and politics and saw supplementary funding being directed to schools or school boards in which there were a disproportionately high numbers of students who were limited by social and economic disadvantage. In the second half of the 20th century, fiscal disparities resulting from an unequal distribution of the local tax base led to several litigations in the United States. In these cases, the plaintiffs argued that funding

methodologies were not only unconstitutional but also unfair (Berke, 1974; Coons, Clune & Sugarman, 1970).

The third period, starting in the 1980s, ushered in the realization of the differing costs of educating pupils across jurisdictions and funding formulae became exclusively based on actual costs. Unlike earlier formulae, these new formulae systematically desegregated all school spending in order to determine an objective and measurable cost index for most categories of expenses. In this sense, funding formulae started to become comprehensive (Caldwell, Levacic & Ross, 1999). At this point, the stage was set for funding to be based entirely on need (as advocated by Cubberley) instead of entitlement and, secondly and most importantly, it began to be linked to school performance and student outcomes. It was at this point that the adequacy movement started taking shape.

In Canada, the literature reviewed for this study shows that the concepts of education finance equity and adequacy have been greatly influenced by developments in the United States and many provincial governments have borrowed heavily from the American models (albeit to varying degrees) to formulate school funding mechanisms.

### **Recent Developments in Education Finance**

Due to the varying definitions of equity and a lack of consensus among policymakers on a specific definition of equity, Berne and Stiefel (1984) proposed a framework in the form of the following four questions to guide the evaluation of equity in education finance systems:

1. Who? What is the makeup of the group for which school finance systems should be equitable?
2. What? What services, resources, objects etc should be distributed fairly among members of the group?
3. How? What principles should be used to determine whether a particular distribution is equitable?
4. How much? What quantitative measures should be used to assess the degree of equity? (pp. 4-5)

Although Berne and Stiefel (1979; 1984; 1999) are not the only scholars to outline a school finance equity framework, their framework is one of the more comprehensive ones and it has been used by many analysts to conduct empirical studies on the equity of finance structures (Goldhaber & Callahan, 2001; Hirth, 1994; Picus, Odden & Fermanich, 2004; Prince, 1997). Odden and Picus (2004) have elaborated further on Berne and Stiefel's framework by emphasizing various elements of schooling that should matter most to equity analysis. They point out that although Berne and Stiefel's original framework focused solely on educational inputs and outcomes in terms of per pupil expenditure and standardized test scores, some researchers, however, may deem other educational inputs and outcomes to be better indicators of equity status.

Rossmiller (1987), writing on effective and efficient educational management, used concepts of educational equity that were embedded in educational finance research by Cubberley (1906) and Mort (1924) as well as Strayer and Haig (1923) to discuss the issue of educational efficiency in terms of minimum per-pupil expenditures that would result in educational finance adequacy. Rossmiller (1987) proffered that while educational expenditures are necessary, they are not sufficient to increase student achievement. Many researchers have contributed to this debate regarding the role and importance of finance in student achievement.

American researchers Odden and Clune (1998) have suggested that state school finance systems are in serious need of renovation in order to tackle the challenges of the 21st century. They have identified and discussed several reasons for this assertion; primarily they focus on the ineffectiveness of such systems in improving fiscal equity over the past several decades. These scholars argue that state school finance structures are not aligned with current standards and school-based educational reforms, particularly those that focus on teaching

students to attain high achievement standards. Similarly, during the last a number of educational economists have contributed immensely to the discourse on school finance systems (Downes & Pogue, 1994; Duncombe, Ruggiero & Yinger, 1996; Ladd & Yinger, 1994). As both Odden and Clune (1998), as well as Imazeki and Reschovsky (1999) have argued, one of the most important school finance problems today is linking school finance to strategies needed to accomplish higher standards in teaching. Odden and Picus (2008) support this assertion when they observe that

In new school finance parlance, the challenge is to determine an adequate level of spending. The task is to identify, for each district or school, the level of base spending needed to teach the average student to provincial standards and then to identify how much extra money each district or school requires to teach at-risk students to the same high and rigorous achievement standards. (p. 25)

The authors cite Clune (1994a; 1994b) who argues for a shift in school finance thinking from equity to adequacy. The arguments of these scholars herald the introduction of the concept of school finance adequacy which has become the new centerpiece in the debate about school finance. Consequently in order to address the question of finance adequacy, many jurisdictions have enacted funding mechanisms that emphasize the attainment of certain minimum educational standards by the students.

An important observation in explaining variations in education funding is that the resources needed for some schools, presumably those serving primarily at-risk student population, are greater than for other schools - a matter of vertical equity. Alternatively, student funding, again presumably those primarily serving at-risk student populations, may not be using the resources allocated to them as efficiently as other schools which is a matter of efficiency. Recently, researchers on school finance, especially in the United States, have begun to focus on expenditures in lower spending districts as well as on educational tax regimes. These researchers examine tax rates and spending levels that would be optimally

acceptable in order to adequately teach students to attain acceptable standards (Imazeki & Reschovsky, 1999; Verstegen, 2002). Others have attempted to link spending levels to student performance (Clune, 1994b; Clune, 1995; Guthrie & Rothstein, 1999). Still others have explored the degree to which any adequate spending level should be supplemented by additional money to provide extra resources to teach special needs students to attain high standards (Hinrichs & Laine, 1996; Picus, Odden & Fermanich, 2004). Most of these funding considerations have informed the study of school funding in Canada and continue to influence Canada's education funding reforms today.

Studies on educational finance equity and adequacy in Canada's public education system are relatively sparse. Literature on education funding in Canada addressing finance equity adequacy point out that expenditure disparities exist not only within but also across the provinces. Some of this literature delves into the conceptual understanding of finance equity and adequacy as well as the challenges faced by the provinces in their efforts to provide equitable and adequate educational services (Auld & Kitchen, 2006; Lawton, 1996; Levin, 2005; Young, Levin, & Wallin, 2007). In a comparative study of two provinces, Li (2008) observes that Ontario scores higher than Alberta in trying to achieve equity for students in English as a second language, special education and for those from low socio-economic backgrounds. Indeed, Ontario has been at the forefront of educational finance reform and many useful lessons can be learned from their experiences in delineating school finance equity and adequacy challenges. Levin (2005) explores equity and adequacy of education funding in Canada with particular emphasis on Manitoba's experience. Commenting on the role of politics and education taxes among other issues, he observes that school funding is a complex enterprise, that no funding formula is perfect and that regardless

of the allocation mechanism, there is sure to be criticism of the fairness and adequacy in funding education.

### **Components of Education Funding Formulae**

Public schools across Canada are in some cases financed by three different levels of government: federal, provincial and local. In most jurisdictions, flat grant programs or block grants are utilized. Flat grant programs represent the most basic type of funding mechanism and provide an equal amount of funding per student. However, such programs do not take in to consideration the ability or inability of local schools to pay for various educational services. This type of arrangement places an unfair burden on less wealthy school districts or provinces, especially when the amount of the flat grant does not cover the full cost of educational programs and services. Despite these challenges, flat grants are still widely used in education finance allocation across the provinces.

The minimum foundation program, first developed by Strayer and Haig (1923), does take into consideration the ability of each school district to pay for a minimum educational program. Under minimum foundation funding, the provinces provide additional funds for particular programs or services (e.g., special education or language education). In general, the minimum foundation program strives to promote fiscal equality throughout a province, with provincial and local funding (where applicable) combined to guarantee a minimally acceptable level of education to each child.

Another type of funding formula involves equalization funding. While funding formulae do provide a helpful framework for determining the distribution of funds for public education, there is often a need for provinces to make certain adjustments to the formula. This is true especially in provinces such as Manitoba and Saskatchewan where property tax forms a major source of school revenue: approximately 42.0% and 60.6% respectively as of 2002

(See Appendix A). In 2002, Manitoba and Saskatchewan were the only provinces that still heavily relied on local property tax as part of school funding (Appendix A). In the other provinces, funding is provided by various government revenues. Most of these adjustments are intended to improve equality of funding formula, either by addressing differences in the needs of the students across the provinces or by recognizing the variations in the costs of providing educational services in different areas of the provinces.

### **The Theory of Equity**

The preceding section discussed the various types of education funding formulae. Knowing the types and the purpose of the education funding formulae enables the evaluation of the relative equity provided by funding formulae. Prominent educational economists have adapted measures of distributional equality to the measurement of equity in educational finance by borrowing from economic literature (Berne & Stiefel, 1984; Odden, Berne, & Stiefel, 1979; Odden & Picus, 2000).

Consistent with the primary focus on the distribution of fiscal resources for education, educational finance researchers employ equity measures in the analysis of educational revenues and expenditures collectively described as educational inputs (Berne & Stiefel, 1984; Odden, 2003). Equity in school finance is concerned with fairness in terms of both per-pupil expenditures as well as fairness to taxpayers. Equity in school finance should be delineated from equality since equity does not imply evenness because equity has to cater to varying student needs and abilities. Unlike adequacy, which is primarily concerned with outputs, school finance equity reforms are primarily concerned with educational inputs.

Educational economists point out that the equity of education funding can be measured in several ways. School finance literature primarily refers to three types of finance equity: horizontal equity, vertical equity and wealth neutrality (Berne & Stiefel, 1984).

Horizontal equity implies that all students who are equal in their abilities and needs should receive equal amounts of funding—equal treatment of equals. Vertical equity recognizes the varying educational needs of students and suggests that students who are unequal in their abilities and needs require unequal amounts of financing—unequal treatment of unequals. Wealth or fiscal neutrality, also called equality of opportunity, describes the condition in which every student has an equal opportunity to receive funding, regardless of such characteristics as property wealth, household income or other measures of finance capacity. This study focuses on horizontal measures of equity from the perspective of students.

Unlike most federal countries such as Australia, Germany and the United States, the educational governance and the geopolitical landscape of Canadian society can act as a strong impediment in achieving finance equity and adequacy in the public school systems across the country. Canadian society is characterized by greater cultural and socio-economic diversity, factors that can exacerbate the challenges of achieving national equity and adequacy in the funding of K-12 education across Canada. The limited role played by the federal government in education, especially in terms of governance and funding, makes it harder to achieve homogeneity not only in education standards but also in funding.

The Canadian federal government provides a relatively small share of funding to public elementary and secondary education funding about 3.7% (CMEC, 2004b); provinces and local governments share the remaining costs. This reliance on provincial or territorial governments means that there are actually 13 different public education systems in Canada with substantial variations in finance, governance and instruction. While these factors have influenced school finance over the past, the reform initiatives of the 1990s have captured considerable public interest in Canada's K-12 school systems with an increased emphasis



placed on accountability as well as the performance of Canada's public education system. These cases and reasons form the basis of this study.

Despite the importance of equity as an educational finance concept, more recent studies of school finance systems have begun to shift from finance equity to finance adequacy which is aimed at acquiring resources necessary to provide an adequate education to all students. However, there are several reasons why finance equity analyses continue to hold a valid position in education finance policy. Firstly, there is no consensus among education economists regarding the best way to measure the cost of providing an adequate education (Reschovsky & Imazeki, 2001; Odden and Picus, 2004). Secondly, there is the philosophical notion that funding should be distributed in an equitable manner (Costrell, 2005). Thirdly, many provinces are mandated by their schools or education acts to fund schools in an equitable manner so as long as funding systems recognize differing student needs, equity will remain an important concern. And finally, there are increasing inter-provincial equity comparisons, most of which influence funding policies across the provinces.

Equity is primarily concerned with educational inputs while adequacy concerns itself with outputs. In economic production functions, these two elements are important for efficiency to be realized. It may be necessary for education finance practitioners to attempt to strike a balance between the two especially in light of the money matters debate in which some scholars point out that increasing per-pupil expenditures has a positive effect on improving student performance (Archibald, 2006; Hedge, Laine, & Greenwald, 1994a, 1994b; Ladd & Hansen, 1999a, 1999b; Odden & Clune, 1998). Meanwhile others are of the opinion that efficiency in education finance management is the crux of financial problems in the public school system (Hanushek, 1989; 1994; 1997).

### **Educational Finance Adequacy**

Minorini and Sugarman (1999) have observed that during the 1980s a shift in the school funding debate in the United States occurred:

In the courts, that shift has been away from traditional 'fiscal equity' cases (concerned with inequalities in school district per-pupil property tax bases and the per-pupil spending inequalities they yield), toward arguments focused on ensuring that all students have access to educational resources and opportunities adequate to achieve desired educational outcomes. (pp. 175-176)

This shift from equity to adequacy can be explained by a consensus among researchers in America and Canada that equity is not easily attainable. In the United States researchers declared as early as 1975 that “equity in educational financing has not been achieved” (McGrath, 1993, p. 3). McGrath further noted that educational equity in Canada has been watered down or put on the back burner “because of competition from other sources” (p. 4). Whereas equity in education finance is primarily concerned with the input variables (programs and curricula), adequacy concerns itself with both inputs and output (educational performance). This shift, what Garner (2004) describes as a movement from access to treatment of results, has been responsible for the reshaping of various school finance policies and practices.

Odden and Picus (2000) capture the paradigm shift in educational finance discourse from finance equity to adequacy when they comment that, “long focused on fiscal equity, school finance is repositioning itself to provide for fiscal adequacy while also improving equity. This shift represents a fundamental change. . . and is in the center of the education enterprise” (p. 467). Guthrie and Rothstein (2001) define adequate financing as “sufficient resources to ensure students an effective opportunity to acquire appropriately specified levels of knowledge and skills” (p. 103). The roots of the educational finance adequacy movement are anchored in the culture of litigation in the United States, which, though initially

concerned with fiscal equity, has evolved to embrace the strategy of linking educational funding to performance levels. In the United States, plaintiffs have sued state education systems for failing to provide constitutionally adequate education and have been successful in 75 per cent of cases (Rebell, 2007). The litigation and the resulting court orders have been primarily responsible for the implementation of new methodologies for determining adequate school funding of education across many states in America.

The notion of adequacy involves the provision of a set of strategies, programs, curriculum and instructions with appropriate adjustments for special-needs students, districts schools and financing that is sufficient to provide all students an equal opportunity to learn to high performance standards. (Odden & Picus, 2008, p. 75)

School finance adequacy goes beyond the notion of equity; it is based on the idea of sufficiency, anchored by the parallel assumption that, a certain level of per-pupil expenditures is necessary to achieve a specific level of student performance. According to some educational economists (Guthrie & Rothstein, 1999; Heise, 1995; Verstegen & Whitney, 1997), such a view shifts the focus of school finance reform efforts from inputs solely to school systems and their expenditures. This concept of finance adequacy is strongly linked to the accountability movement which places high emphasis on student performance.

The theory of finance adequacy is an ongoing evolution of ideas that gained prominence in the nineties through the works of Odden and Clune (1998), but Berne and Stiefel (1999) have traced it to the National Commission on Excellence in Education Report (1983) , *A Nation at Risk* in the United States. Following this report, most education finance research started shifting away from fiscal equity (Rodriguez, 2004). In an effort to try and bring adequate funding to this student population Clune (1994a; 1994b) focused on financially disadvantaged students by attempting to establish a link between educational adequacy and school finance. There were obvious concerns with the implementation of

financial adequacy and with raising the productivity of students with ever-decreasing funds (Odden & Picus, 1992; Odden & Clune, 1998; Odden & Archibald, 2001).

The concept of adequacy has grown to embrace, among other things, the achievement of high absolute standards. A review of the literature reveals several dimensions of the adequacy concept; for instance, a distinction can be made between the adequacy of education funding levels (inputs) and the adequacy of education (outcomes). Adequacy is also advanced as a legal theory or requirement by Minorini and Sugarman (1999).

Over the years, especially in the United States, there has been a growing recognition by policymakers and the courts that an equal distribution of resources will not close the achievement gaps among ethnic and socio-economic groups. This is particularly true since the amount of resources distributed equally is not sufficient to provide the instructional resources required to eliminate those gaps. Thus, consideration of equity issues has increasingly been approached from the perspective of adequacy. Educational finance adequacy can be defined as the state of being sufficient for a particular purpose. Guthrie and Rothstein (2001) blend sufficiency with desired outcomes in defining adequate financing as follows: “Sufficient resources to ensure students an effective opportunity to acquire appropriately specified levels of knowledge and skills” (p.103). Underwood (1995) states that adequacy is a form of vertical equity, nicely linking the two concepts. Similarly, Cohen (1996) suggests that the shift from equity to adequacy actually promotes equity because every child will be held to the same set of standards. Minorini and Sugarman (1999) note that finance adequacy is an important criterion for judging schools’ finance policies in relation to provisions of equality and efficiency, particularly in the context of high performance expectations. Odden and Picus (2008) point out that, “one major difference between finance equity and adequacy is that equity implies something about a relative difference, while

adequacy implies something about an absolute level” (p. 76). Hence, educational finance adequacy requires a link between inputs and outputs, a set of inputs that should lead to certain outputs or a level of spending that should be sufficient to produce some level of student achievement. Indeed, as Guthrie and Rothstein (1999) contend, moving from finance equity to adequacy requires policy and value judgment.

### **Measuring Education Finance Adequacy**

There are three steps involved in estimating educational finance adequacy when using student performance as an evaluative criterion. Firstly, measures of student performance must be selected that can be used to identify adequate and inadequate performance. Secondly, identification of the required spending for adequacy in at least one benchmark school district is required. Thirdly, adjustment of an adequate spending level is required to reflect different characteristics in other school districts (Duncombe, Lukemeyer, & Yinger, 2002)

Several methods have been developed to shed light on the concept of educational finance adequacy. Unlike finance equity, little work has been done by educational economists in establishing statistical measures of educational finance adequacy. Odden and Picus (2008) proposed what they referred to as the Odden and Picus Index (OPAI). The Odden-Picus Index includes vertical equity measures calculated on the basis of weighted students. To calculate the OPAI, one identifies an adequate spending level per pupil and the percentage of districts spending above that level. Next is the calculation of the McLoone index for the districts below that level by using the adequate expenditure level. This ratio is then multiplied by the percentage of students or school districts below the adequacy level. Lastly, these two figures are summed. Still in its infancy, its conceptualization has not been fully operationalized in most school finance studies. Four methodologies have been developed to estimate the cost of an adequate expenditure level as it relates to student

performance, namely: the successful district approach, the cost function approach, the professional judgment approach and the evidence-based approach (Guthrie & Rothstein, 1999; Odden, 2003; Odden & Picus, 2004).

The successful district approach involves identifying districts/boards that have been successful in teaching its students to state/province-set proficiency standards and calculating the adequate spending level as the weighted average of the expenditures per pupil of boards involved. Often, atypical districts are eliminated from such analyses, which usually include the highest and lowest spending and highest and lowest wealth districts, as well as large, urban districts. Applying the expenditures of successful districts/boards to other districts, which tend to deal with more complicated contexts, has led to controversy surrounding this approach, and its results have rarely been used to design an adequate finance system. Recent studies following this approach include those conducted by Augenblick, Alexander and Guthrie (1995), Augenblick (1997) and Odden (2003).

The economic cost function approach has been used by several education economists to study state finance systems. This methodology employs regression analysis with per-pupil expenditure as the dependent variable while student and district characteristics as well as achievement levels desired, act as the independent variables. The result produces an adequate expenditure per-pupil for the average district and then, for all other districts, adjusts that figure to account for differences in pupil need and educational prices. The expenditure level is higher as the performance level is higher. Studies by Duncombe and Yinger (1997; 1999) as well as a number of other studies for example, Duncombe, Ruggerio, & Yinger, 1996; Reschovsky & Imazeki, 2001) have made use of this approach.

The professional judgment approach, also called the resource cost model (Chambers & Parrish, 1994), has been the most popular approach and has been used in British Columbia,

Manitoba and a number of states in America. This approach assembles a group of educational experts and asks them to identify effective educational strategies for elementary, middle and high schools as well as special needs students, and then specify the ingredients required for each strategy. This approach attaches a price to each ingredient (usually the state/provincial average teacher salary for teacher ingredients) and then sums the costs of the ingredients to obtain a total expenditure per pupil.

The fourth approach to determining an adequate expenditure level, developed by Odden and Picus (2004), is called the evidence-based approach; this approach addresses the same educational programs and strategies within schools as the professional judgment approach, but uses evidence from research and best practices to reach conclusions about the level of resources that are required. This approach can also involve an analysis of adequate teacher salary levels as part of the process for determining the overall adequate expenditure required for a province's education system. This approach directly identifies educational strategies that produce desired results, so its recommendations for programs and resources can also be used to help guide districts and schools in how to distribute and use the funds in the most effective ways.

The professional judgment and evidence-based approaches may also provide a framework for educational strategies that will help states meet performance standards (Odden, 2003). By employing any of the four identified strategies used in estimating educational finance adequacy, a system may be defined as more or less adequate. However, a value judgment is necessary due to the continued abstraction and problematic definition of adequacy. First and Miron (1991) observe that the discussion of adequacy is incomplete if it omits the value premises of community, accountability and responsibility, noting that "these

values should form the framework to understanding social constructions of adequacy embedded in any legal (that is technical) discussion of finance adequacy” (p. 443).

Similar to equity, educational finance adequacy analysis has produced a variety of findings. This is in large part due to the difficulty of finding positive correlations between dollars spent and student achievement. Imazeki and Reschovsky (1999) summarize the root difficulty of educational finance adequacy analysis when they state, “even if we can show conclusively that spending money on public education results in substantial improvements in student performance, it is important to recognize that there is not a one-to-one relationship between spending and educational outcomes” (p. 140). Researchers tend to agree that while infusing more money into public schools can boost achievement, there are simply too many variables affecting public school operations to be able to identify one variable as key to the creation of adequate educational programming practices (Duncombe, Lukemeyer, & Yinger, 2002; Grubb & Goe, 2002; Imazeki & Reschovsky, 1999).

### **Conclusions on Educational Finance Adequacy**

The educational finance adequacy movement is not without its detractors. A number of experts argue that the shift away from the equity principle to the adequacy principle poses moral problems, noting that only an egalitarian focus satisfies the provincial interest providing all students with equality of opportunity. Still others say that advocates should work on ensuring that relatively low-cost but high-impact accountability systems are in place, while others argue that school choice, not school finance litigation, is the best way to improve the education of impoverished children. Guthrie (1983) notes that “it is difficult to define adequate with respect to education. . . . No uniform set of societal values exist with which to measure adequacy” (p. 471). Moreover, missing links have been identified by researchers like Rebell (2007) who observe that:



Little if any attention is given, to the critical, practical cost analysis question of what level of resources needs to be made available now in order to reach a desired outcome goal at a particular point in the future. To what extent do extra resources need to be provided to students currently in the second grade who are achieving at a 55 percent proficiency level to ensure that five years from now 75 percent will achieve proficiency, or that eight years from now 100 percent will? These are the types of difficult questions that must be posed and answered if the output measures used in adequacy cost study are to have any real credibility. (p. 18)

While this researcher applauds the progress in the school finance debate and increased role played by court litigations especially in the United States, valid concerns regarding school finance are still being raised. First, equal distribution of school funds does not mean overall equity nor does it guarantee finance adequacy. Second, pursuing school finance equity and adequacy is complicated thanks to the geopolitical intricacies of Canadian society. Lastly, the work of defining finance equity and adequacy and linking these concepts to school finance systems continues to evolve. Adding to these dilemmas is the lack of consensus among educators on the various objectives of school finance systems. These gaps exacerbate what researchers see as a major challenge in education funding systems: determining the quantity of resources deemed necessary to guarantee an adequate education for all students, no matter what their academic abilities are (Odden & Picus, 2008). Due to these gray areas in school finance systems, there is no question that the school finance adequacy debate will continue to impact on K-12 public school funding decisions across Canada in the foreseeable future.

### **Complexity Theory**

Morrison (1998) opines that effective management and financing of adequate and equitable education can be well explained by the understanding of complexity theory. Studies on education finance point out that education funding is an enormous and complex enterprise thanks to a multitude of socio-political and economic factors (Brimley & Garfield, 2005;

Levin, 2005; Odden & Picus, 2008). Complexity theory examines phenomena as complex adaptive systems with components at one level acting as building blocks for components at another level (Kauffman, 1995; Lewin, 1993; Waldrop, 1992).

Open systems are characterized as complex dynamic, flexible, emergent and adaptive. As products of their environment, schools exhibit several of the features of a complex adaptive system and are necessarily open systems (Scott & Meyer, 1984; Weick, 1976). Complexity theory attempts to explain how open systems operate. Educational financial management, like other public sector management, exhibits several antecedents common with complexity theory namely, unpredictability/uncertainty, novelty, non-linearity, connectedness and on occasion, chaos (Morrison, 2002).

Several aspects of complexity theory can be applied to finance issues in education. Some of the most important are unpredictability and novelty which are common in public sector management. By adopting a complex adaptive system in public sector management, policymakers and school administrators can identify patterns of behaviour or policy instruments that can be more effective to public service, decision-making and service provision. Secondly, there are many inputs into the effective financing of any education system and the various provinces' funding systems have to take these inputs into consideration.

This may call for designing complex funding formulae to cater to varied inputs and outputs while at the same time taking into consideration the constraints very much prevalent in provincial budgets. These inputs may be social, economic or political, thus making the financing of education a non-linear system. An important element of non-linear systems is uncertainty. The outcomes of these many variables cannot be definitively determined, as is

the case between financial inputs into education systems versus student performance or the tailoring of school finance to individual student or school district characteristics.

As it is the case with most education finance systems the world over, the uncertainty perspective is pervasive in Canada's public education system because of the nature of provincial control and the structure of public education funding. Even if we can account for costs today, it may not be certain what programs or how much money will be needed in the future. Thirdly, education financing is complex because of the competing nature for financial resources and the need to constantly improve performance. Moreover, the collective behaviour of educational stakeholders has an impact on education as a whole. Lastly, the education system is linked to the environment, making it important to include variables endogenous or exogenous to the system.

The entire education funding system, therefore, is interacting and adapting to a changing landscape. According to Levin (2005), "a simple formula would be unfair because it would not recognize important differences in costs" (p. 125). Change in one area reverberates through all other areas while the relationships are intricately related. Although funding and educational disparities are a central concern of this study, there is need to consider them in connection with other school systems since solving funding issues alone may not solve all other problems. As Fullan (2001) has suggested, educational financing like most other aspects of school management can best be understood holistically by examining it in relationship to the environment.

### **Conclusion**

Understanding complexity theory can be helpful in devising financial plans that would help allocate financial resources to achieve equity and adequacy across provinces, school boards and schools. Equitably and adequately financing educational systems, though a

value-laden exercise, cannot be fully answered by looking through the lens policymakers, school administrators or single entities alone. Other stakeholder perspectives can be of great value in the distilling and melding of views and values of education finance systems as serious glaring differences in the per-pupil expenditure across the nation are bound to bother education stakeholders for the foreseeable future.

## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

Chapter 3 provides an overview of the methodology selected for this study, the research design and measures of horizontal equity as well as analyses of the adequacy of funding. Additionally, this chapter describes the procedures for both the qualitative and quantitative analyses of the data.

This research relied in part on was data from Statistics Canada, the Council of Ministers of Education in Canada (CMEC), the Organization for Economic Co-operation and Development (OECD), various reports from provincial education ministries and several semi-structured interviews with those involved in school funding initiatives across Canada.

#### **Research Design**

The objective of this study was to examine educational finance equity and adequacy in the ten Canadian provinces between 1996 and 2006. The mixed-methods research design used in this study can be defined as

the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research. (Creswell, Plano Clark, Gutmann, & Hanson, 2002, p. 212)

Mixed methods research proponents posit that such designs address much more comprehensive research purposes than either qualitative or quantitative studies alone would do (Newman, Ridenour, Newman, & Demarco, 2003). Mixed methods design involves mixing qualitative and quantitative approaches within one or more of the stages in the research process. Mixed methods design is centrally premised on the understanding that a combination of the two typologies provides a better understanding of research problems than either of the purist approaches (Creswell & Plano Clark, 2007).

Research identifies four rationales for mixing quantitative and qualitative designs.

The first rationale is that the approach enhances participant enrichment which entails optimizing the sample by increasing the number of participants. Second, is the issue of instrument fidelity, meaning maximizing the appropriateness and/or utility of the instrument. Thirdly is the idea of treatment integrity which deals with maximizing qualitative and quantitative techniques in order to assess the fidelity of interventions, treatments or programs. Lastly, mixed methods approaches significantly enhance the researcher's interpretation of the data by providing more choices from which to make observations (Collins, Onwuegbuzie, & Sutton, 2006). These rationales were major concerns in this study since a purist approach of either methodology would be limited in the profile of information that it would provide and the necessary analyses that had to be done to come up with conclusions.

Proponents of mixed methods research identify the following five general purposes of mixed-methods studies: 1) triangulation-seeking convergence and corroboration of findings from different methods that study the same phenomenon; 2) complementarity-seeking elaboration, illustration, enhancement and clarification of the results from one method with results from the other method; 3) initiation-discovering paradoxes and contradictions that lead to a re-framing of the research question(s); 4) development-using the results from one method to help inform the other method; and 5) expansion-seeking to expand the breadth and range of the investigation by using different methods for different inquiry components (Creswell, 2003; Greene, Caracelli & Graham, 1989; Patton, 2002; Rossman & Wilson, 1985; Tashakkori & Teddlie, 2003).

This research hypothesized that the various reform initiatives implemented in the early to mid 1990s would have impacts on school funding. Following the determination of the specific years of significant fiscal policy changes touching on education, the research was

then followed by assembling a database on education funding issues including financial reports and current per-pupil expenditures. After an examination of available education expenditures and funding policies, patterns in the ten Canadian provinces were analyzed to provide insight on school finance equity and adequacy which was obviously a challenge facing a number of provinces and school boards in Canada.

Creswell (1998) has stated that case study research designs are applicable when the researcher has identified a case with clear boundaries for example (time and space), contextual material to draw data from, a wide array of information that produces an in-depth picture and ability to gather information and data from multiple sources. This research attempted to explore funding equity and adequacy and gather insight from the experiences of those closely related to education finance matters in these provinces. This multiple case study approach involves individuals or settings to develop data that can be cross-compared (Cohen, Manion & Morrison, 2007; Creswell, 1998). This study is a multi-site study because it compares the experiences in ten provincial education systems and endeavors to draw on the experiences and perspectives of stakeholders across the ten provinces.

### **Triangulation**

This mixed-methods study investigates the distribution of fiscal horizontal equity as well as exploring perceptions on finance adequacy in the K-12 public education system in the Canadian provinces between 1996 and 2006. A triangulated mixed-methods design was used in which different but complementary data was collected on the same topic (Creswell & Plano Clark, 2007). In this study, quantitative statistical analysis was used to complement qualitative research findings. The qualitative data gave greater depth while quantitative data gave greater breadth to the study, resulting in more accurate inferences. Concurrent with data collection and analysis, semi-structured interviews as well as document content analysis were

used to explore educational fiscal equity and adequacy in the ten provinces. Tashakkori and Teddlie (2003) citing two studies (Brewer & Hunter, 1989; Tashakkori & Teddlie, 1998), underscored the importance of keeping in mind the fundamental principle of mixed method research: that mixed method research should be done in such a way as to complement the strengths and overcome the weaknesses of either one of the single methodologies. The reason for collecting both quantitative and qualitative data in this research was to integrate the strengths of both forms of data.

In order to determine internal validity and inference quality, data triangulation and sampling procedures were utilized in the study. The results from both primary and secondary data sources were analyzed to synthesize the various stakeholder perspectives in order to draw out lessons for funding equity and adequacy across the provinces. Furthermore, the quantitative and qualitative aspects of the study were merged to help build a comprehensive understanding of the phenomena under study that neither the qualitative nor the quantitative approach alone could do. However, this study was heavily oriented towards the qualitative approach, with the quantitative analysis being primarily useful for providing the numerical data that was necessary for the second phase of the analysis. This provided a more informed view of the study than neither one of the approaches alone would have done.



### **Purpose of Exploratory Design**

The purpose of this study's sequential design was to explore ideas and views on the issues of school finance equity and adequacy. The purpose of the qualitative phase was to explore fiscal equity and adequacy in school funding, thereby developing a conceptual framework of ideas that would be complemented by the quantitative phase. Morse (1991) posited that one reason for selecting such a sequential exploratory design would be to determine the distribution of a phenomenon (in this study finance equity and adequacy) within a chosen population (i.e. the ten provinces). In this study, a sequential exploratory design was helpful not only in quantitatively exploring school finance equity but also in expounding on the qualitative findings from the study (which formed the bulk of adequacy analysis).

The study entailed two phases. The first phase was a qualitative exploration of finance equity and adequacy by collecting, analyzing and making conclusions about both primary and secondary data from both semi-structured interviews as well as from document analysis. The second quantitative phase following the qualitative phase and was aimed at complementing and comparing the qualitative findings. In the quantitative phase, per-pupil expenditures across the provinces and responses from interviewees were analyzed.

### **Data Collection**

The data used in this study were qualitative and quantitative in nature. Much of the quantitative data came from budgets and financial reports from provincial education and finance ministries. Per-pupil expenditure data were readily available from Statistics Canada. In order to make the expenditures generally comparable across the provinces, the data used were from 2005-06 the most recent available fiscal year. These data were adjusted by Statistics Canada to account for the differing school years across the provinces, differing

accounting systems as well as differing educational costs and student needs (education price index). Using this adjusted data allowed for the fairest comparisons across the provinces.

Since both secondary and primary data were major sources of information for the study, various data collection strategies were used. Primary data collection entailed semi-structured telephone and/or online interviews with school board administrators, school superintendents, school finance officials, ministry of education and/or finance officials, social policy think tank officials as well as those whose work related to education finance. The participants were interviewed on various aspects of their provinces' and/or schools'/school boards' funding systems, their strategies for addressing equity and adequacy as well as their perspectives as experts on school funding. The interview questions were open-ended and aligned as much as possible for comparison purposes with those used for public schools in the ten provinces. The text of the interview questions can be found in Appendix C All participants were afforded the opportunity to review their interview transcripts for clarity purposes.

School finance reports, documents, mission statements and legislation were also analyzed as well as literature pertinent to school finance and education departments' fiscal policies. This formed the bulk of secondary data sources and indeed one of the main sources of qualitative data.

### **Sampling Procedures**

After determining the number of potential interviewees, purposive sampling was used to select individuals to be interviewed. Kemper, Stringfield and Teddlie (2003) define purposive samples as “non-probability samples... in which the researcher uses some criterion or purpose to replace the principle of cancelled random error” (p. 279). Thus, a researcher uses particular knowledge or expertise about a specific group to select subjects who represent

a certain population (Berg, 2004). Cohen, Manion and Morrison (2007) citing Ball (1990) observed that, “purposive sampling is used in order to access knowledgeable people. . . about a particular issue maybe by virtue of their profession, role, power, access to network or expertise” (p. 115).

In this research, the sample entailed some variations in settings and people to enrich the variables and to get varied perspectives on school finance equity and adequacy across the provinces. The study used both opportunistic and snow balling purposive sampling techniques. Kemper et al. (2003) observe that “opportunistic purposive sampling technique involves taking advantage of the circumstances and events as they arise while snow-ball sampling technique involves using informants to identify cases that would be useful in the study” (p. 283). Besides asking the interviewees to respond to the interview questions, some of interviewees took advantage of the last interview question (that had asked them for any other comment about the study) to recommend other sources of information and other potential interviewees.

### **Primary and Secondary Instrumentation**

The study used both semi-structured descriptive interviews (primary instrumentation) and literature content analyses (secondary instrumentation) for investigation. Commenting on the instrumentation processes in research, Merriam (1998) supports the practice of multiple sources of instrumentation including interviews, observations and content analysis, to better validate research findings. Participation in the interviews was strictly voluntary and participants’ consent was sought in the invitation letter. The confidentiality of the participants was guaranteed and the participants were given the opportunity to ask any questions concerning the study. These interviews were crucial in demonstrating the various

understandings and perceptions of education finance equity and adequacy held by stakeholders across Canada.

### **Qualitative Data Analysis**

A sequential mixed-method data analysis approach using exploratory design was undertaken to analyze finance equity and adequacy in this study. A sequential exploratory design is a two-phase research approach that starts with qualitative analysis and is then followed by the second phase, quantitative (Bergman, 2008). Exploratory design is used in order to build foundations for general ideas and tentative theory, which can then be explored more rigorously at a later stage (Grinnel & Williams, 1990; Onwuegbuzie & Teddlie, 2003; Tashakkori & Teddlie, 1998). This design was employed to collect, compare and analyze the perceptions and attitudes of participants with regards to fiscal equity and adequacy in the ten provinces.

Research dealing with designing mixed methods study involves a number of steps. These include deciding whether to use an explicit theoretical lens, identifying the data collection procedures, and identifying data analysis and integration procedures (Creswell, 1999; Greene & Caracelli, 1997; Morgan, 1998; Tashakkori & Teddlie, 1998). These steps occur more or less sequentially, with one step informing and influencing the others.

The term theoretical lens refers to the philosophical basis, or paradigm, (e.g., positivism, constructivism, feminism) that underlies a researcher's study and subsequent methodological choices (Crotty, 1998). This study is heavily inclined towards a pragmatist/constructivist lens. According to (Tashakkori & Teddlie, 2003), pragmatism is the best paradigm for mixed methods design. This study fits within this philosophical lens because it draws on many ideas including using pragmatism, diverse approaches and valuing both objective as well as subjective knowledge. The second step involves deciding how data collection will be

implemented and prioritized. Implementation refers to the order in which the quantitative and qualitative data are collected, concurrently or sequentially whereas priority refers to the weight given to the two types of data, equal or unequal (Creswell et al., 2002; Morgan, 1998). Weighting deals with the priority given to either quantitative or qualitative data as one form of data will support the other.

In this study, the qualitative aspect is given more weight, with quantitative analysis being used to complement the qualitative analysis. In this study sequential exploratory design was used in the data collection while more emphasis was placed on the qualitative data. Creswell (2003) posits that “when qualitative data are gathered first, the intent is to explore the topic with the participants” (p. 206). This was crucial in getting the views of the interviewees’ about finance equity and adequacy over the period under study. Lastly, a decision had to be made concerning points of data analysis and integration. The mixing stage deals with integrating the data. This study used an embedding technique in which case quantitative data provides a supporting base or information for qualitative data. In this study, the mixing occurred in the research questions, data collection and data analysis stages. In mixed methods studies, data analysis and integration may occur by analyzing the data separately, by transforming them or by connecting the analyses in some way (Caracelli & Green, 1993; Onwuegbuzie & Teddlie, 2003; Tashakkori & Teddlie, 1998). This study analyzed qualitative and quantitative data separately, then compared the two sets of data and used the quantitative data to complement the qualitative analyses.

With the data gathered, organized and managed in descriptive Microsoft Word and Excel documents, using Tashakkori and Teddlie’s (2003) framework the analysis of quantitative results built on those gleaned from the qualitative analysis. Following the interviews, the audio-taped readings were transcribed and field notes analyzed. Concepts,

phrases and themes that connected phenomena under investigation or suggested patterns emerging from the analysis were then analyzed. Combining transcribed data with preliminary analysis from secondary data sources increased the efficiency of data analysis to complement the sequential exploratory design as used in the study. After examining the qualitative data from the interviews and document analysis, per-pupil expenditure data were then gathered and analyzed for statistical measures of horizontal equity.

Data coding was an important element in the study. The function of qualitative coding was to identify all the instances when finance equity or adequacy issues were apparent. The goal of this strategy was to develop an in-depth understanding of finance equity and adequacy by identifying key themes to help generate some understanding of these phenomena. Integration of qualitative and quantitative data in this study occurred within three areas: 1) research questions—both qualitative and quantitative research questions were asked; 2) data collection—per-pupil expenditures (quantitative) and financial reports as well as semi-structured interviews; and 3) data analysis/interpretation—examining the quantitative and qualitative results for specific findings.

Document data were analyzed to compile information with regards to education fiscal policies across the provinces and to infer the impact of these policies on funding equity and adequacy. Once all the data for the provinces were analyzed, the data were triangulated to identify commonalities and differences across the provinces. In interpreting the data, the research attempted to identify common themes in education finance equity and adequacy by reviewing the data collected from both documents and semi-structured interviews.

### **Quantitative Data Analysis**

Using Berne and Stiefel's (1984) framework for guiding equity analysis in school finance, quantitative analysis choices had to be made. First was the choice of equity for whom. Horizontal equity as applied to education finance from the students' perspective was the focus of this study. The second decision in the framework deals with what measures would represent the object that should be equitably distributed. Current per-pupil expenditure data, adjusted for regional differences in educational costs and student needs, was selected because data was readily available from Statistics Canada. This was followed by calculations of the various measures of horizontal equity as discussed below. The third decision in Berne and Stiefel's framework entails what equity principle(s) would be the focus of the study. Horizontal equity, vertical equity and wealth neutrality were the principles highlighted. Horizontal equity was chosen for the purpose of the study.

The quantitative analyses are intended to provide a better understanding of any apparent changes in horizontal equity and adequacy with the implementation of the funding mechanisms starting in the early 1990s. To investigate one of the primary objectives of the funding mechanisms which was to promote greater equity in the allocation of resources, a major focus of the quantitative analyses was to investigate whether differential access to financial resources for students across the provinces existed and if there were any apparent changes over the ten-year period.

### **Conclusions on Design Methodology**

This study could not have been conducted exclusively within either qualitative or quantitative paradigms. The mixed method design allowed the quantitative data to

supplement the qualitative data and hence enrich the researcher's understanding and analysis of the issues under study.

While there are several benefits of mixed-methods designs as earlier discussed, several limitations and challenges were apparent in this study. The analyzing, coding and integrating of data was a complex process. Data analyses in this study entailed a thematic analysis of qualitative data followed by quantitative analysis to complement the qualitative findings in an attempt to explore school finance equity and adequacy. This study employed simple descriptive and statistical measures as part of horizontal equity analyses. Due to the small sample size (ten provinces) and fifteen interviews, the study relied mainly on manual data analysis. Besides the sample size, manual data analysis technique was the method of choice for the study due to the high reliance on secondary data which required a thorough reading of the texts to maximize the meanings derived.



## **CHAPTER FOUR**

### **FINDINGS AND DISCUSSION**

This chapter details the key findings from both the qualitative and quantitative analyses of data. This section is organized to align with the research questions proposed in Chapter One. These questions were developed to explore and elicit information regarding school finance equity and adequacy in Canada's public education system from 1996-2006.

#### **Researcher as Instrument**

In considering the questions posed in the study, the researcher brought to the research various perspectives. Additionally, the researcher considered his personal experiences, which included the experiences and reflections from his home country of Kenya about the various initiatives taken and the challenges faced by the Kenyan government in funding a public system of education. A Bachelor of Education degree specializing in economics coupled with several years of work experience as a teacher further informed the researcher's personal perspective. These personal experiences of the researcher were crucial elements in this research. As explained by Guba and Lincoln (1998), "an individual's values have pride of place; they are seen as ineluctable in shaping inquiry outcomes" (p. 214).

In the qualitative data analysis, the researcher considered categories, themes, and emergent patterns. The language of both public documents and interview responses had meanings both spoken and unspoken concerning finance equity and adequacy. From the observation and reflection on the public documents and interview responses, the researcher was able to build what Marshall and Rossman (2006) call "a theoretical rationale and conceptual framework" (p. 31). The documents selected and reviewed were chosen with the belief that they could provide insights into funding equity and adequacy issues across the

provinces. Whereas some of the literature sources cover the period prior to 1996, the literature used placed emphasis on the period between 1996 and 2006.

### **Data Interpretation and Analysis**

The study found that across Canada, themes affecting finance equity and adequacy hinged on policy, legislation and equal educational opportunity aspirations. However, the politics of school choice played a prominent role in the funding of public schools in some jurisdictions, especially Ontario and Alberta. These themes form the main focus of discussions in Chapter Five.

### **Emergent Themes**

To obtain funding perspectives from various stakeholders across the provinces, the study conducted an in-depth document analysis of education funding across the provinces complemented by semi-structured interviews with a purposively selected sample of respondents across Canada. A discussion of the various themes concerning fiscal education equity and adequacy emerging from the study follows.

#### ***Education Finance Equity and Adequacy Policies***

Since educational policies are provincially mandated in Canada, this study endeavored to examine those policies with regards to funding equity and adequacy, individually across the provinces. The adequacy of funding was largely determined by the funding inputs necessary for educational programming to ensure students achieve at a desired level. The findings from both interviews and document analysis lead the researcher to conclude that there were mixed views as to whether Canada's public K-12 education system was equitably and adequately funded.

### ***Provincial Comparisons***

Issues related to school finance equity and adequacy are pervasive phenomena in Canada's education system. As previously mentioned, all provincial governments have established and implemented policies in attempts to address equity and adequacy concerns in school funding. The desire to keep pace with the rest of the provinces has been the force fueling some of education funding policy decisions not only among the provinces but also within various school boards.

The comparisons among provinces take many forms but the most influential factors include the percentage of total government revenue allocated to education, total per-pupil spending, pupil-teacher ratios, average salaries of teachers, property wealth per pupil, local and state tax rates, and school choice among others. Study participant Lorna commended Alberta's experience by observing that:

The Alberta funding model is probably the best Canadian example for providing equity to all families. The more the choice and flexibility, the greater the incentives for improvement and effective provision of services to all users of education. Provision of a voucher or non-refundable tax credit should be the way to go.

The parameters and comparisons change over time and so do their comparisons with such benchmarks as national or regional averages. Comparisons are used to make inferences and decisions about setting the levels of school finance and about the factors used in province-wide funding formulae to distribute funds. Hence, the subsequent review as well as evaluation of the efficacy of the funding systems are, to some extent, influenced by these comparisons. The literature examined emphasized the importance of these comparative indicators and how critical such indicators were in influencing the funding decision-making processes. A Council of Ministers of Education Canada report (CMEC, 1998) observed that forces such as inter-provincial and international mobility, coupled with efforts to equalize educational opportunities, have produced pressures for increased standardization of schools

across the country. However, due to the differing funding mechanisms, the impacts of these policies in ensuring equity and addressing adequacy can differ considerably. Moreover, due to differing funding and evaluation benchmarks, the concepts of equity and adequacy differ across the provinces; however, trends across Canada do favor full and centralized provincial funding of education as a means of mitigating fiscal disparities.

### ***Sovereignty Issues***

Another observation among the provinces in regards to equity and adequacy is the issue of sovereignty for school boards and/or provinces. At the provincial level, there is increased debate on the pros and cons of having federal control of education through the establishment of a federal department of education.

The issue of school board autonomy is also one of prominent debate. Lam (1998) states that most provincial governments lack trust in educators' and school boards' abilities to effectively manage their finances. Consequently, provincial legislation has increased the powers of ministers of education with respect to a variety of areas, most notable of which are related to school finance matters. Study participant Albert refers to this as "centralized funding that does not adjust to local needs". There is an apparent perception among school administrators that there is excessive government control over funding issues, with some administrators pointing to prescriptive funding formulae that leave no flexibility for most administrators to effectively run their schools.

Levin (2005), commenting on the politics of school board autonomy observes, that "you cannot provide school boards with local autonomy in making decisions about priorities and also impose limits on how much they can spend. These tensions remain in schools in Manitoba and across Canada" (p. 139). This conflict creates the need for a balanced approach on the part of provincial ministries of education. Whereas most school personnel felt that not

enough money was being spent on education, other stakeholders voiced a somewhat mixed view on this issue with some pointing to the need for increased efficiency in the running of schools. However, there was unanimous agreement that funding should be geared towards ensuring equity and adequacy for all students.

### ***Educational Opportunity***

In accordance with the literature, participants expressed the need to link funding with the improvement of educational opportunity. Most of the interviewees felt that if equity and adequacy policies were not rigorously pursued, many schools and students were likely to be most disadvantaged. Study participant Elizabeth observed that

cuts to funding led to a large loss of program. . . the results were the loss of full-time school librarians in elementary schools, a decline from 90 to 42 elementary ESL [English as a second language] teachers, the abandonment of an EA [educational assistant] in every junior high school. Funding for ESL students was provided only for the first three years as compared to 7 years of funding prior to 1998.

Most of the personnel working directly in schools and school boards felt that not enough money was being spent on education while the majority of those concerned with policies laid much blame on inefficiency and inflexible funding formulae. As study participant James noted:

The introduction of a new funding formula in 1997 addressed one problem – inequality in funding – but in the process created a new one – inequity in funding. If you start from the premise that one of the goals of public education is to equalize opportunity, equity and equality are two different things. The funding formula recognized the existence of this distinction, but did not back it up with adequate funding.

In a similar vein, participant Maryanne pointed out that “there is far too much variability in how education is funded across the provinces” and recommends that, “we should be moving to more variable mechanisms for parents to use in educating their children”. These remarks point to the observations from the economic literature touching on achieving efficiency and effectiveness in economic systems (Barrera-Osario, 2003)).

Realistically, there may be situations whereby some goals of education finance may have to be sacrificed in order for others to be realized. For example, the pursuit of equity may implicitly lead to a compromise on efficiency and vice versa. Equity generally is believed to be served through more centralized systems that standardize offerings and expected outcomes.

This effect of more centralized systems is evident in the increasing role of states in the funding of education (Evans, Murray, & Schwab, 1999). On the other hand, economists have argued that efficiency is best achieved through decentralization and market liberalization. Applied to education, the idea is that in a less centralized system, market forces allow individuals to consume the optimal quantity and quality of education (Tiebout, 1956; 1961).

### ***Political Opportunism***

Similarly worthy is an increased desire from most parties to separate politics from the funding of school systems. Political expediency and opportunism have been used to influence provincial funding policies. According to study respondents, such occurrences are not that uncommon across most provinces. Especially cited by a number of respondents was the Ontario example of gaining political leverage vis-à-vis the discriminatory funding of Catholic schools. Studies have shown how the Ontario politicians have played the political card as a campaign gimmick (Gidney, 1999).

In Manitoba the role of politics is most profound with regards to the debate on school tax policies. Generally speaking, all provincial education funding systems are influenced by politics in one way or another. As earlier pointed out, it is the opinion of this researcher that politics take its rightful place in education funding in order to ensure equity and adequacy for all students regardless of the political orientations of their locales and constituents.

### ***School Choice and System Comparisons***

The politics of school choice played a prominent role in the funding of public schools in some jurisdictions, especially Ontario and Alberta. Survey participant William talking about the desire to increase school choice suggested that

Governments should offer school choice opportunities (vouchers, charter schools, etc) for parents who pay taxes but do not avail themselves of the regular publicly-funded school systems. This is particularly true for low-income families who could benefit from school choices that would help their children find schools to meet individual needs not always met in government schools.

Due to the fact that K-12 education entails a large financial outlay, most of which comes from governments, school finance systems are highly likely to be susceptible to political whims and pressures. Numerous groups are interested in school finance issues, including school boards, administrators, teachers, parents, and taxpayers, among others. Each group monitors potential changes in the distribution of funds in an effort to influence the allocation of available revenues. Furthermore, due to increased changes in the demographics of Canadian society, the environment in which school finance decisions are being made is changing.

An important factor driving this change is immigration and the consequent embrace of heterogeneity and multiculturalism. Different approaches to this demographic restructuring have and will continue to have implications for school finance.

Another issue of interest to policymakers and educators with regard to funding equity and adequacy is how provincial funding systems compare across jurisdictions. Educational stakeholders recognize that different provinces have different objectives, based in part on different educational priorities. These comparisons may become particularly important in light of the increased role of the CMEC in propagating the ideals of a pan-Canadian

education system as well as the increased federal government interest in the public education system as demonstrated in various discussions regarding goals for *Learn Canada*, 2020.

### ***Decision Making and Collaborative Processes***

There is a strong working relationship between policymakers at the federal level such as Statistics Canada and the CMEC while university-based policy centers are an increasing source of information that play an important role in researching school funding issues. Provincial policy documents are increasingly linked to research findings and as Davies (1999) points out, evidence-based decision making is growing in importance. This development is most likely to enhance consultative educational policy processes. Social policy think tanks (e. g., Fraser Institute, Atlantic Institute for Market Studies, Canadian Center for Policy Alternatives, C. D. Howe institute, Caledonian Institute) also continue to speak out publicly with the hope of influencing school funding policies across the country.

From studying the data gathered for this study, it was interesting to note the role of value judgment in decision making and implementation processes. School finance policies are not always rational decisions. Decisions are based primarily on the examination of fiscal confines while implementation is largely driven by available provincial revenues and the political machinations associated with the distribution of scarce resources. Decisions are often impacted as a result of the articulations of competing interest groups of certain values.

The study participants interviewed indicated that typically only a few individuals in any given province or school board are involved in decision making about school funding and they are enormously influenced by provincial ministries of education and/or finance. Young et al. (2007) observe that, “for most political issues, there is no straightforward, pre-defined decision making process” (p. 83). Decisions taken by provincial ministries of finance



are extremely influential and have significant influence with respect to the area of policy-making.

Lastly, one observation from the review of various documents highlighting comparisons between Canada and the United States is worthy of mention. The American experience has greatly influenced funding issues in most parts of Canada but one main difference between the two is that, unlike what has happened in the United States, the fight for finance equity and adequacy in the Canadian public schools has not been as influenced by litigation and court decisions. Since the *Serrano versus Priest* court decision of 1971 in which the California's Supreme Court determined that the state's funding formula was discriminatory and violated the Californian Constitution, school finance litigation has been ubiquitous across the United States. Such court litigation have significantly influenced school finance equity and adequacy policies across the United States, albeit with differing levels of success. However, in comparison the Canadian Constitution has had an impact on policy decisions across the provinces, in some cases affecting funding equity and adequacy decisions.

### **Issues and Concerns**

The financing of public K-12 education in Canada is perceived as contentious. School administrators regularly voice their concerns about the insufficiency/inadequacy of school funding. Parents are continually articulating their concerns about the quality of education as a result of school funding formulae. Policy analysts are forever honing those funding formulae to align them with the changing demands of the education system. Meanwhile, the federal and provincial governments are concerned with mounting budget deficits as a result of global economic challenges.

Obviously these developments do not bode well for the fate of Canadian students in the public K-12 education system, a system reliant on public policy measures. Public education in Canada remains a provincial exclusivity with each province responding to its own demands.

### ***School/School Board Level Inequities and Inadequacies***

School level inequities were not the only problems mentioned in the literature and in the various responses from interview participants. Participants in this study were also concerned about the distribution of inequities at the school level, especially among grade levels and specific programs. A concern voiced by participants was that there were considerable grade level differentials for per-pupil expenditures, differences in funding rural versus urban schools, and expenditures related to bussing/transportation in some areas. Several participants felt that funding should be more focused on students rather than educational activities. Citing the Ontario government's experience, the education minister has explained and indeed touted the need for student focused funding in the past, stating that:

In addition to defining and protecting classroom spending for the first time, this new fair approach to funding will ensure that each and every student will have the same opportunity to acquire the skills and expertise they need to compete and succeed, now and in the 21st century. (Ministry of Education and Training, 1998, p. 1)

It appears that this student-focused approach to funding was meant to ensure that student and teachers are the primary funding priorities. The above-cited report emphasized the need to increase efficiency by minimizing administrative wastage which was seen to be highly prevalent in previous funding mechanisms. Some student and school programs had greater financial requirements and/or expenditures than others. For example, isolated rural communities might need more funding for transporting students to and from school than would students in schools in small urban areas with an evenly spread population. Similarly, science-focused curriculum may in general require more funding than would arts programs.

Study participant Dorothy alluding to the inequities in her provinces commented that, “some school boards, usually larger urban boards, had more money than smaller or rural boards and Catholic school boards did not receive the same funding as their regular public counterparts”.

These examples suggest that equal distribution of funding does not equate to adequacy and/or equity of funding. In most school finance literature reviewed, this problem was addressed by linking funding to student performance as well as focusing on the vertical equity of educational funding. For example, “in most of Canada, the approach to additional funding for Aboriginal students is changing to focus on improving outcomes rather than counting the number of aboriginal students” (Levin, 2005, p. 138).

### ***Declining School Populations***

Declining student enrollments, especially in rural Canada, are major concerns for schools with regards to funding. In some cases the funding formulae have been labeled too prescriptively student-focused (Mackenzie, 2007). These strictly student-focused funding prescriptions may be falsely perceived as positive especially where there are uneven enrollment levels. As study participant Margaret pointed out, “student withdrawal from the school is followed by a reduction in funding, but this does not necessarily lead to corresponding drop in operation costs”. It would obviously require many withdrawals from the school to merit any significant reductions in the costs of running the schools. The same views are shared by Robert who commented that “there needs to be a restructuring of the funding formula to make a much more realistic and sophisticated distinction between fixed and variable costs, so that enrolment growth is less of a windfall and enrolment declines are less of a financial disasters”.

The challenge of declining student enrollments point to the need for funding policies that include additional funding for small schools. This reality has been captured in some provincial jurisdictions especially in Ontario and Alberta, two provinces characterized by varied demographics. Furthermore, supplemental funding can be directed specifically at the school level as small schools tend to sometimes be obscured within large boards. Allocation formulae should be sufficient to meaningfully offset the financial challenges faced by small schools.

However, funding formulae based upon a continuum of need, rather than arbitrary school-size classifications, may be deemed more efficient in mitigating the myriad of financial challenges faced as a result of low student enrollment. The issues affecting finance equity and adequacy that were common across the provincial jurisdictions included declining enrollments, regional education prices indices, the cost of school personnel, busing, the rural-urban divide and the need for funding to keep pace with inflation. Moreover, common adequacy themes across most provinces centered around content standards, assessment systems, performance benchmarks with some system of rewards and penalties and in all provinces, the emphasis on professional development for teachers

### **Equity and Adequacy Funding Policies**

To help offset the cost of educational programs in a bid to compensate for socio-economic variables, most provincial education ministries provide additional funds to lessen the effect disparities. These include categorical considerations in the funding formulae as mentioned earlier.

### ***Supplementary Sources of School Funding***

The interviewees in this study indicated that supplementary sources of revenue for schools and school boards were highly entrenched in their provinces' education systems.

Both the literature and interviewees cited inadequate funding resulting from government cuts as the main reason for schools seeking supplementary funding (People for Education, 2003; 2005; Tymko, 1996).

Hajnal and Walker (1998) observed that the funding of school programs and activities using non-traditional sources is on the increase. A survey by Statistics Canada revealed that between 1997 and 2006 approximately 43% of Canadian households incurred educational expenses in covering increasing tuition costs, supplies and a variety of school activities (CMEC, 2007). The need to offer extra-curricular activities as well as the fear of lagging behind the “digital divide” were major concerns articulated by interviewees as well as in the literature reviewed. Although some positive outcomes can be derived from fund-raising, research participants expressed concern with the increasing commercialism in the schools emanating mainly from fund-raising activities. The literature reviewed expressed caution in formulating policies to regulate the various practices in schools.

### **Evolution of Emphasis on Equity and Adequacy Issues**

It can be deciphered from the analyses of the documents that school funding research has evolved from a discussion and analysis of horizontal equity to an emphasis on vertical equity with the current focus being that of finance adequacy. Notably, the review of documents revealed that the language used in education finance across the provinces has taken on different perspectives over time. As study participant Harvey commented:

The current funding formula in is not flexible enough to meet local needs. At one time, it was necessary to restrict funding and spending to “silos” as boards often “borrowed from Peter to pay Paul” (i.e., took funding from program and capital budgets to pay for collective bargaining agreements). However, if proper accountability measures are to be put in place, schools and boards should be given some flexibility in how they spend their funding.

Prior to the decade under study, the understanding of finance equity and adequacy were blurred within the whole school finance discourse. The 1990s brought a shift in funding and retrospectively, equity and adequacy started moving towards student focused funding: the crux of adequacy movement. Provincial finance policies continued to focus on ensuring high student performance, supporting quality of teaching as well as positive outcomes, driven primarily by accountability requirements. This shift has had significant ramifications for educational opportunity and various related issues. Over the same period of time, education reforms across the provinces started shifting more towards an increased desire to provide equal educational opportunity to all students. The officials interviewed helped to elaborate on the issues concerning equity and adequacy in the provinces from administrative, government and social policy perspectives.

### **The Politics of Education Funding**

Education funding issues have been used by politicians for political leverage. Indeed, documents revealed that some provincial governments have come to power by capitalizing on the flaws of school funding policies of their opponents. The discriminatory funding of Catholic schools in Ontario is one example, although there are vestiges of political influences across most provincial jurisdictions. Levin (2005) points to the dominating role played by interest groups in influencing education politics across much of Canada.

### **Further Reflections on Qualitative Analysis**

As is the case in most countries, education in Canada is a labour intensive industry with staff salaries and benefits comprising the biggest component of education budgets. While there are costs associated with facilities, transportation, technology and other

programming issues, the greatest impact on the adequacy of educational programming is linked to staffing, an inputs dimension.

One obvious impact on educational finance equity and adequacy is the implementation of full provincial-funding as has been the trend in several provinces including Alberta, Ontario, Newfoundland and Labrador, New Brunswick and Prince Edward Island. Full provincial funding may impact positively on educational funding equity and adequacy variedly as it benefits students regardless of their socio-economic backgrounds. Jennifer, another study participant, welcomed the provincial initiative of full funding, commenting that:

Moving to full provincial funding eliminated the disadvantages suffered by students from the coastal communities whose families were dependent on the fishing industry. The collapse of the fishing industry in the early 1990s had devastating effects on the ability of most communities to finance education. With the previous funding formulae dependent on local taxes, it was evident that educational standards of communities dependent on the fishing industry would be compromised.

The same views were shared by Gregory who attributed reductions in income as a result of falling commodity markets. This has eroded the tax bases of most school boards in the province and the limited ability to generate enough capital for school boards. Similarly, Paquette (2004) attributed the tribulations of Saskatchewan's agricultural industry (which comprises around 10 percent of the government's GDP) as having serious impact on education funding in that province. Lawton (1996) stated that, like most other provinces, "Alberta adopted full provincial funding primarily in order to solve the equity problem" (p.101). The effects of full provincial funding were perceived by most of the interviewees to have impacted finance equity and adequacy especially as it affects school districts with low socio-economic backing. The general impression seems to be that low socio-economic regions, rural school districts and sparsely populated regions saw an improvement in their budgets as a result of full provincial funding initiatives.

### **Conclusion on Qualitative Analysis**

The documents reviewed for this study were both provincial and federal reports, policy publications, and school/school board reports. The intention of this review was to untangle the many different views on finance equity and adequacy. The varied sources of data provided a comparative perspective on school funding equity and adequacy. However, this study did not fully exhaust all the possible data sources. It is hardly possible to access and include all the relevant sources of data in a single study of this nature. The data collected from these sources proved to be significantly important in revealing measures addressing finance equity and adequacy in the public education system of the ten Canadian provinces.

The documents revealed that across Canada equity and adequacy issues were primary concerns for most stakeholders in education. Secondly, the documents also revealed that finance equity and adequacy concerns have significantly evolved since the early period of Confederation in 1867. Following the signing of *British North America Act, 1867*, the primary equity concern centered on religious differences between Protestant and the Catholic minorities. Indeed, “Canada’s schools have at different points in their history, been required to acknowledge and accommodate differences” (Young et al., 2007, p. 32). However, over time this has evolved to embracing many other fiscal equity and adequacy issues such as special needs students, sparsity of population, and fiscal capacity to mention just a few.

Accordingly, the understanding and interpretation of fiscal education equity and adequacy has been changing from the understating of the first wave as pointed out by Berne and Stiefel (1984) to the current emphasis on student/classroom funding initiatives. However, an issue of increasing concern taking shape over the decade under study has been the emphasis on education fiscal adequacy. According to funding policy documents reviewed and the various responses from interviewees, there were dramatic changes to funding



frameworks starting in the mid-1990s. During that period, issues of student performance, school accountability, effectiveness and efficiency as well as greater public scrutiny of the public education systems resulted in an increased pressure on the whole issue of funding K-12 education in Canada.

### **Horizontal Equity Findings**

This study explored finance adequacy and equity in K-12 education in Canada's provinces. The research used the established statistical procedures to determine the extent of horizontal equity for the years 1996-2006. In this section, the findings and interpretations of statistical measures used to determine fairness as well as perceptions on adequacy are presented. The intent of horizontal equity analyses is to compare the data for the ten-year period in a bid to determine if the trend in the provinces has been towards a more or less equitable funding allocation and thus further complement explorations on adequacy. The measures of univariate dispersion that were used in this study addressed the question of horizontal finance equity in the ten Canadian provinces. They included some of the most commonly known measures of horizontal equity as used in education finance: mean, median and range. The statistic dispersion measures used include the variance, standard deviation, co-efficiency of variation and the McLoone Index. For the purpose of equity analysis, the principle of horizontal equity states that students who are alike should receive equal share of resources. The following section reports the results of the horizontal equity analyses.

#### ***Mean***

The mean is a measure of central tendency, within the context of education finance; it represents the average amount of funding per student among all the provinces for a given year. The mean for the ten provinces increased from \$5,984.1 in 1996-97 to \$9,309.3 in 2005-06 representing an increase of 45.2%. The results of the means are presented in Table 1

(See Appendix B). The average percentage increase of the means for the ten provinces is 43.4% for the ten year period with Nova Scotia having the highest percentage change and British Columbia having the lowest. There was a constant increment in the mean per-pupil expenditure from fiscal year 1996-97 to 2005-06, indicating that each province is expanding the per-student level of funding. While the mean in itself does not serve as an indicator of equity, it does provide a meaningful context for a discussion of approximation of equity during these years. The values of the mean should be regarded with caution since they are highly susceptible to outliers.

### ***Median***

The median is also a measure of central tendency that can be used to compare funding and hence infer the level of funding across the provinces for each year. The median value of the distribution is a useful measure of central tendency in that it reduces the effect of outliers. These differences between the mean and the median suggest that the distribution is negatively skewed. The differences for the mean for the first five years is \$1,577 while that for the last five years is \$1,767; indicating increased per-pupil funding over the last five years. Although the median is not by itself a measure of horizontal equity, it is useful for approximation purposes and is also a component of the McLoone index.

### ***Range***

The range measured the difference between the highest and lowest per-pupil expenditures for the provinces between 1996 and 2006. The provinces were ranged from highest to lowest based on per-pupil expenditure. The results of the ranges for the period are presented in Table 3 (See Appendix B). In this study, the range fluctuated from a high of \$2,537 to a low of \$1,441 thus suggesting a varied level of horizontal equity over the ten-year period. The provinces were ranged from highest to lowest based on per-pupil

expenditure. The results of the ranges for the period are presented in Table 2 (See Appendix B). The ranges for the ten years indicate a difference of approximately \$1,900 with Prince Edward Island having the highest occurrence among the lowest spending provinces while Alberta had the highest occurrences among the highest spending provinces. An observation worth noting is that all the lowest per-pupil spending provinces over the span of study are in the Atlantic region while Alberta eclipsed Ontario as the top spending province for the last seven years of the ten-year period of the study. A small range indicates greater equity of the distribution of funding across the provinces.

### ***Variance***

The variance is defined as the average of the squared deviations from the mean for each value within the distribution. It measures the degree to which the data is dispersed about the mean. In this study, the variance ranged from a low of 320, 534.5 in 1999/00 to a high of 14, 242, 252 .9 in 2004/05. The results of the variance for the period are presented in Table 3. Over the study period, the variance indicates a consistent trend thus suggesting constant inequity. A higher variance indicates a greater degree of inequity while a smaller variance reveals a more equitable distribution.

### ***Standard Deviation***

The standard deviation is calculated by taking the square root of the variance of distribution. The standard deviation is always positive; it can only equal zero when all observations in the distribution are identical. As with variance, the standard deviation decreases as the distribution becomes more equitable. In this study the standard deviation ranged from 491.4 to 7270.1. An advantage with standard deviation is that it incorporates all data points in the distribution. This makes the standard deviation a relatively stable measure.

However, it is important to note that the standard deviation assumes a normal distribution curve.

### ***Coefficient of Variation***

The coefficient of variation test was used to determine the statistical measure of the percentage of deviation of per-pupil expenditures from the mean. This calculation was done to determine specifically if the standard deviation changed over the ten-year period of study. Perfect equity would be indicated by a calculation equal zero. The coefficient of variation for this study has varied somewhat over the time span from 95.9% 2001-02 to 5.85% in 2003-04. The mean per-pupil expenditure for the corresponding years is \$7,340.1 and \$8,391.7, respectively. The coefficient of variation was determined by the standard deviation of the per-pupil expenditure for the unit of analysis divided by the mean of all units. The coefficients of variation for the ten years are recorded in Table 4 (See Appendix B).

It is apparent from the coefficient of variation that Canada has experienced deteriorating horizontal equity over the past ten years. Research literature usually considers a distribution within 10% of the average to be equitable but also points out that standard coefficient variation are value judgments (Odden, 2003). A lower coefficient of variation indicates greater equity. The coefficient of variation for the ten years was outside this distribution which indicates great variations from the mean. However, this statistical measure is heavily influenced by population distributions and should hence be interpreted with caution.

The coefficient of variation remained fairly consistent over the period of study. In addition, the consistency of the McLoone index which hovered around 0.22 indicates that levels of equity did not improve in terms of per-pupil expenditures.

### ***McLoone Index***

This measure is the ratio of the total per-pupil expenditure for all units below the median to that which would be required if all the units below the median were receiving the median per-pupil expenditure. The McLoone indices for per-pupil expenditures examined in this study revealed an almost constant index averaging 0.2 (see Table 5 in Appendix B). These results indicate that it would require on average 80% more spending to bring the bottom half of lower spending provinces to the median level. The results of these indices suggest similar observation as those of the coefficient of variation. Odden and Picus (1992) contend that although a standard has not been set, a value of about 0.9 is desirable. The results from this study are far from this figure, hence implying greater inequity. Minimal variations in the indices would demonstrate equity among the provinces.

### **Summary**

These analyses reported the statistical results of some of the most common measures of horizontal equity. The results demonstrate that Canada's public K-12 school finance has been inconsistent with regards to horizontal fiscal equity. There were increases in the range, mean, McLoone index, variance and standard deviation. Although in the initial five years the inequities seem less dispersed, the last five years showed greater increases in the dispersion, indicating increasing inequity. These outcomes provide evidence that, other things held constant, the gap between the highest and lowest spending provinces widened between 1996 and 2006.

### **Conclusions and Implications**

Overall, the methods used and data analyzed in this study were sufficient enough to facilitate a focused analysis of the funding equity and adequacy across the ten provinces for

the decade under study. Gaining an understanding of how horizontally equitable the funding is across the provinces is a step towards an approximation of funding equity and to some extent funding adequacy. This knowledge can act as an impetus for policy development by various stakeholders. The qualitative data derived from the analysis of the interviews and documents coupled with the quantitative horizontal analyses, including the analyses of per-pupil expenditures, indicate that funding equity and adequacy across the provinces varied considerably over the ten year period.

From the document analyses and respondent interviews, it is apparent that the funding policies and models will have to evolve in accordance with the changing times in order to accommodate the increasing demands of the school system. Just what specific nature the models will take and how this will impact on equity and adequacy may demand further lines of investigation. However, research points to full provincial funding and increasing resource centralization as a sort of convergence across the provinces. Indeed, centrally controlled systems tend to yield comprehensively uniform school systems (Brown, 1992).

Coupled with the centralization and funding debates is the issue of school choice. These possibilities could have greater impact on school funding and are certain to impact on equity and adequacy. A pan-Canadian education model as being promulgated by CMEC, though still in the developmental stages, might offer a different perspective if it were to be realized. Just what shape it would take is still uncertain. An inter-provincial comparison reveals that Alberta has made important strides in matters of funding and school choice and some provinces have aligned their funding policies alongside Alberta's. Several issues are confirmed in this study: the funding of public education systems continues to require greater improvements; full provincial funding is deemed to enhance equity and ensure adequacy

while centralized funding is deemed to have merit in controlling costs as well as achieving equity.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND IMPLICATIONS**

This chapter provides a summary of the research including a synopsis of the major themes, and the various issues and concerns identified in the study. A number of recommendations and their implications are also put forth for consideration.

The funding of education to ensure equity and adequacy in the public education system remains one of the major goals of policymakers, school administrators and governments. From the findings of this research, it is evident that concerns over educational fiscal equity and adequacy date back to the Canada Constitution Act of 1867. These concepts are rooted in the ideals of egalitarianism, a principle of “equal rights and opportunity for all” (Allen, 1990, p. 375). Although veiled in religion, the Constitutional Act allowed Protestant and Catholic minorities to have schools of their own in a bid to allow equal access to resources for all. As a result of variations in resource endowment a serious commitment to finance equity started taking shape at the turn of the 20th century.

#### **Summary**

Following the educational restructuring of the early 1990s, the research hypothesized that these changes would have ramifications on the funding picture across Canada. This study attempted to narrow the broad topic of school finance to two aspects, equity and adequacy which are areas of great concern in school finance discourse. The study revealed that within the public school systems across Canada, policies on school finance equity and adequacy are quite prevalent.

The study was premised on the understanding that among other roles, educational policy should be aimed at intervening in situations where disparities exist and should thus facilitate improvements to better serve the goal of equal opportunity. In this regard,



provincial education departments have designed funding formulae in an effort to equitably and adequately distribute finances across school boards as evidenced by the findings in Chapter Four. These formulae are under constant review to ensure they address the ever changing landscape of education finance.

The concern for the distribution of financial resources has pre-occupied education stakeholders for a long time. School finance equity and adequacy has taken its rightful place in school funding policies and these concerns are heavily entrenched in the provinces' funding formulae. The changes in educational finance landscape across Canada have necessitated the designing of funding formulae to address equity and adequacy concerns. This study attempted to explore the perceptions of funding adequacy as well as conduct statistical analyses of horizontal equity in school finance in Canada's ten provinces. Document and statistical analyses as well as semi-structured interviews provided the data necessary to address the various research questions posed in Chapter One.

### ***Results of the Statistical Analyses***

The general observation from the statistical measures of horizontal equity indicates that there is increasing deterioration of equity among the provinces. The measures of horizontal equity which included the coefficient of variation, variance, the McLoone index, standard deviation as well as statistical approximations of equity (i.e., the mean and median) all show increasing disparities. This concurs with the findings in the literature. For example, in an analysis of provincial trends, Lawton (1996) concluded that:

Nationally, equity seems to have slipped in recent years, if quality of education is measured in terms of the number of dollars spent per child. That is, the gap between the highest and lowest spending provinces has increased. As well, the gap between the highest and lowest spending school boards within several provinces also seems to have increased, even, while, in others new systems of centralized financing are aimed at reducing variation. (p. 180)

With regards to the adequacy of funding it appears that the provinces are allocating predictable levels of funding to their public education systems. Judging by student performance criteria, Canada's 15-year olds ranked third, fourth and seventh in science, reading and mathematics respectively (OECD, 2006). However, this study is keen to point out that no direct causal relationship between funding and student performance was made. It is obvious to this researcher that money does make a difference; however, the extent of that difference is up for debate and perhaps a subject for future research. Moreover, adequacy of funding is an individual value judgment and highly subjective. Whether the \$44 billion spent on education Canada in 2005-06 is adequate may well be left up to the opinions of education stakeholders.

The general conclusion, however, from this research is that while the trends towards equity seemed to deteriorate over the ten years under study, from a student performance perspective, Canada's public education system appears to be sufficiently funded. One might therefore suggest that a shift in the emphasis from equity to an emphasis on adequacy is bearing positive fruits, though the extent of this success varies from one province to another as exemplified by differences in performances measures across the provinces in test scores. However, further research on this may be necessary.

### **Educational Finance Equity and Adequacy for Canada in the 21st Century**

Educators and policymakers in Canada continue to face the monumental task of funding education to meet the requirements of equity and adequacy. Even though it seems to be a recurring debate, equity and adequacy of funding will likely continue to be in the forefront of each province's agenda at least for the foreseeable future. Futuristic approaches to school funding with possibilities of increased school choice will likely emerge as a

common approach as most provinces grapple with funding dilemmas and related issues such as school choice policies.

The demographic landscape across Canada is changing rapidly; competition for federal and provincial resources is stiff and educational funding will continue feeling this pressure. Results of continued public school funding reforms and the adoption of equitable and adequate educational funding standards will continue to have far reaching ramifications to the costs of providing equitable and adequate education. Judging by the extent of governments' commitment to education, investing in the education of Canada's next generation is deemed to be fiscally prudent. Although fiscal equity may be the first approximation of equal educational opportunity, stakeholders need to continue to focus attention not only on the fiscal side of the equation but also on educational opportunity. Complex systems require complex approaches in solving their challenges and stakeholders may need to broaden and fine tune the funding frameworks to include greater emphases on attaining adequate and equitable funding.

In most provincial jurisdictions, numerous benchmark mandates with increased accountability parameters are on the rise and are becoming more publicized daily. This shift is changing the focus from an emphasis on educational input (equity) to demonstrated proficiency in outputs through performance in proficiency standards (adequacy). Proficiency standards like the Third International Assessment of Mathematics and Sciences (TIMMS), the School Achievement Indicators' Program (SAIP) and participation in international rankings like the OECD's Program for International Student Assessment (PISA) are becoming more widespread and ever adding to the challenges of improving student academic achievement.

As mentioned previously, this study takes the stance that more money does not necessarily mean better education and hence better student academic achievement. However, effective school finance systems are certainly a part of that equation with respect to the big picture of school reform. Just increasing per-pupil expenditures is no panacea to the challenges facing education finance systems. Nation and province-wide accountability measures mainly in form of student performance should take more prominence as a gauge to expenditure effectiveness.

### **Future Challenges**

Research has shown that changes in educational finance systems and attitudes towards education spending are greatly influenced by the age structure of a populace. In Canada as in most countries, as the population pyramid becomes skewed towards the older bracket, public education funding for K-12 education system is likely to face stiff competition emanating from the health care system. The older generation, who are unlikely to have children in the K-12 school system, may be unwilling to support more funding allocations to education but instead would prefer increased funding to health care which has a direct benefit to them. Levin (2005) has alluded to this increased conflict of interest and pressure for education funding across the provinces.

Although evidence from the literature and other studies indicate that the majority of Canadians would be willing to pay more taxes to finance quality education, the extent of which is subject to debate and might be possible grist for future research. With the federal and provincial governments faced with increasing budgetary deficits, there is very little doubt that the funding of K-12 education funding will face stiff competition from various social services especially the health care system in the years ahead.

### **School Choice**

The pressure to open schools to market systems is apparent in much of Canada, especially in Alberta and Ontario. If this becomes the way of the future, and this is highly debatable, we may see quite a transformation in the way K-12 education is funded in the country. This may entail redefining the concept of public education and school accountability with some significant impact on finance equity and adequacy.

Furthermore, the expansion of school choice elicits a variety of debates and questions about school funding as well as impacting on other social services financed by our provincial and federal governments. Canadian society is becoming more complex and so is the need to devise funding mechanisms to address funding equity and adequacy concerns.

### **Future Research and Implications**

The interviews conducted plus the literature examined in this study offer valuable insights on finance equity and adequacy across Canada's public school system. However, there is a need to further explore the link between the actual educational needs of the school systems and educational resources available to meet these needs. Coupled with resources for education, effectiveness and efficiency in school funding, public attitudes towards school funding, increased collaboration in funding for excellent school systems and long range planning are essential in the design and implementation of funding systems. There is a need for further investigation into the reasons behind the growing gap between provinces. As Young et al. (2007) mention, "inequalities in schooling are not accidental" (p. 17). It is important to investigate whether there are any justifications for those apparent disparities.

Two measures of horizontal equity not included in this study were the Gini coefficient which examines equity index among scores residing below a distribution's median and the reverse Verstegen index which examines equity among scores residing above

a distribution's median. Using these additional measures within the context of achievement equity may offer the possibility of developing a better perspective of horizontal equity measures across the provinces. Moreover, this study has examined equity and adequacy in isolation from other educational inputs. An examination of equity and adequacy comparing variations in other educational inputs such as teachers and facilities would offer another perspective in better understanding finance equity and adequacy in Canada's public education system.

### **Conclusions**

Although the horizontal equity analysis shows an increase in disparities, there are reasons to hope that education finance reforms will have an impact across the provinces with regards to school finance equity and adequacy. It is therefore important for governments to continue reviewing funding policies in order meet the challenges of funding school systems. The results from the analysis of this study suggest that policy initiatives to address both equity and adequacy concerns should be further developed and even expanded. In particular, funding improvement targeting poor and/or low performing schools and school boards can be a useful approach to help mediate funding disparities. Similarly, educational funding policies should target disadvantaged schools and school boards by providing special additional resources.

Left on their own, provincial governments especially those traditionally deemed as *have-not* provinces (mostly Atlantic, Quebec and Manitoba), will struggle to keep pace with those deemed as *have* provinces (mostly Alberta, British Columbia and Ontario) provinces thus leading to the fear of socioeconomic stratification as articulated by Skrla, Scheurich, Garcia and Nolly (2004). Therefore, as mentioned earlier, this study proffers that if Canada is

to reduce inter-provincial disparities, the role of the federal government in education especially with regards to funding will be both crucial and significant.

Due to increasing the relegation of equity and a continued emphasis on adequacy, a plethora of new issues that will shape the funding policies across the provinces are likely to surface. Questions related to how educational inputs, processes and outputs will be measured will require considerable attention. In addition, new paradigms reflecting changes to funding policies are envisioned. As mentioned earlier, the improvement of educational achievement and performance standards for students should be among the provinces' primary objectives in establishing the standard of adequacy in public school funding.

The apparent discrepancies on the adequacy of funding by various stakeholders demonstrate that if adequacy of funding is to be realized, economic production models of efficiency, productivity and effective utilization of resources as suggested by Duncombe and Yinger (1997; 1999), Duncombe, Ruggerio and Yinger (1996), and Reschovsky and Imazeki (2001) are paramount. Finally, policymakers should be proactive in establishing periodic reviews and evaluations on the effects of adequacy of funding to account for varying circumstances and different strategies set up to keep pace with the changes and ever-increasing demands of education funding.

Determining the equity and adequacy of funding of Canada's K-12 public education system will therefore continue to be challenged by the need for designing more dynamic, responsive and flexible funding formulae as well as implementing policies that adhere to the effective and efficient use of educational resources.

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## Appendix A

### Provincial and Territory Education Funding by Source and by Province, 2002

Province	Locally levied property tax - % of total	Provincially levied property tax - % of total	Total portion of school tax raised from property tax - % of total	Provincial general revenue contribution to educational costs - % of total	Total provincial share of education costs - % of total
British Columbia	0.0	28.0	28.0	72.0	100.0
Alberta	0.0	36.0	36.0	64.0	100.0
Saskatchewan	58.0	0.0	58.0	42.0	42.0
Manitoba*	33.3	13.3	34.9	60.6	73.7
Ontario	0.0	38.8	38.8	61.2	100.0
Quebec	21.8	0.0	21.8	78.2	78.2
New Brunswick	0.0	0.0	0.0	100.0	100.0
Prince Edward Island	0.0	0.0	0.0	100.0	100.0
Nova Scotia	0.0	16.9	16.9	83.1	83.1
Newfoundland	0.0	0.0	0.0	100.0	100.0

\* Note Re Manitoba: The combined local and provincially levied property tax total is reduced by 11.5 to reflect the application of a property tax credit for a net total of 34.9%. The combined figures for total property tax and provincial general revenues do not add up to 100%. This is because 4.5% of school division revenues come from non-provincial sources such as the federal government and first nations' bands.

**Source:** Saskatchewan Department of Education. Minister's Working Group on Education Finance, 2002.

## Appendix B

### Statistical Summary

Table 1: **Mean**

YEAR	MEAN
1996/97	5984.1
1997/98	6343.2
1998/99	6515.4
1999/00	6804.2
2000/01	7030.4
2001/02	7580.1
2002/03	7980.0
2003/04	8391.7
2004/05	8727.6
2005/06	8393.9

Table 2: **Median**

YEAR	PROVINCES	MEDIAN
1996/97	SK and AL	6169.0
1997/98	SK and NB	6402.5
1998/99	SK and NB	6478.5
1999/00	AL and NB	6999.5
2000/01	QC and ON	7746.0
2001/02	NS and ON	7709.0
2002/03	ON and SK	8036.0
2003/04	BC and QC	8547.0
2004/05	QC and SK	8890.5
2005/06	QC and BC	9476.0

Table 3: **Range**

YEAR	PROVINCES	Range
1996/97	BC and NB	2537
1997/98	ON and P.E.I	2036
1998/99	ON and P.E.I	1918
1999/00	BC and P.E.I	1867
2000/01	MN and NL	1713
2001/02	MN and P.E.I	1593
2002/03	AL and P.E.I	1492
2003/04	AL and P.E.I	1441
2004/05	AL and P.E.I	1943
2005/06	AL and P.E.I	2638

**Table 4: Variance**

YEAR	Variance
1996/97	771627.7
1997/98	402053.1
1998/99	302534.52
1999/00	882891.8
2000/01	798.3
2001/02	7270.1
2002/03	550.2
2003/04	491.4
2004/05	3771.5
2005/06	1153.4

**Table 5: Standard Deviation**

YEAR	Standard Deviation
1996/97	878.4
1997/98	634
1998/99	550
1999/00	939.6
2000/01	637357.6
2001/02	528611.0
2002/03	302686
2003/04	241449
2004/05	142242
2005/06	133034

**Table 6: Coefficient of Variation**

YEAR	Coefficient of Variation
1996/97	0.147
1997/98	0.0999
1998/99	0.144
1999/00	0.081
2000/01	0.114
2001/02	0.959
2002/03	0.0689
2003/04	0.0585
2004/05	0.0432
2005/06	0.1374

## **Appendix C**

### **Interview Questions**

1. What are some of the measures put in place for achieving funding equity and adequacy in the public K-12 education system in your province (or across Canada)?
2. What are some of the most persistent problems faced by your province (or across Canada) in its bid to achieve finance equity and adequacy in the public K-12 education system?
3. What are some of the measures/changes you would recommend that can be used to achieve finance equity and adequacy for students in Canada's K-12 public school system?
4. Canada's public K-12 education system has seen a lot of changes to the funding frameworks over the last ten years. How are the current funding formulas meeting the challenges of finance equity and adequacy?
5. Given some provincial variations in the funding formulas which mechanisms do you find more effective in ensuring finance equity and adequacy?
6. What are some of the flaws in public education funding as pertains to equity and adequacy in your province (or across Canada) particularly when compared to other provinces seen/deemed as having a more equitable/adequate funding?
7. Do you have any further comments/suggestions/observations as regards to the subject of education finance equity and adequacy in your province or across Canada?









