Tipping the Tower of PISA: Cross-national Learning as a Strategy to Inform Leaders about Diverse Students and Achievement in the Global Neighborhood

Author: Maureen O'Reilly Hughes

BOSTON COLLEGE

Lynch School of Education

Department of Teacher Education, Special Education, and Curriculum and Instruction

TIPPING THE TOWER OF PISA: CROSS-NATIONAL LEARNING AS A STRATEGY TO INFORM LEADERS ABOUT DIVERSE STUDENTS AND ACHIEVEMENT IN THE GLOBAL NEIGHBORHOOD

Dissertation
By

MAUREEN O'REILLY HUGHES

submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

May 2013

ABSTRACT

Tipping the Tower of PISA: Cross-National Learning as a Strategy to Inform Leaders about Diverse Students and Achievement in the Global Neighborhood

Maureen Hughes, Author

Audrey A. Friedman, Dissertation Chair

Despite the inherent obstacles posed by increasingly diverse student populations, school leaders worldwide are under mounting pressure to raise student achievement. This study utilizes hierarchical linear modeling (HLM) to investigate the relationship between principal priorities and student achievement in reading literacy on the Programme for International Student Assessment (PISA) in sixty-four jurisdictions worldwide. Disaggregating the sixty-four systems into three performance levels, the research aims to equip principals across the global landscape with insights into current performance patterns of diverse learners and the leadership behaviors that associate with student achievement. The diverse groups of interest include boys, immigrants, language learners, socio-economically disadvantaged students, and rural pupils. Three conditions of effective leadership organize the priorities of investigation: defining a mission, managing instruction, and developing a climate (Hallinger & Murphy, 1985).

The results reveal that across performance levels, diverse learners are underachieving but specific subgroups are faring better than others in some jurisdictions. Commonalities emerge from these jurisdictions and set a roadmap for interpreting the achievement of diverse learners worldwide. The leadership priorities that most

frequently associate with student achievement when controlling for background factors vary across systems and across performance levels. The priorities under 'defining the school mission' are most frequently statistically significantly associated to student achievement in promising systems and the priorities under 'managing the instructional programming' and 'developing school climate' are most frequent among high-performers. Overall, however, the associations are weak and ultimately open the possibility of a fourth condition of effective leadership: establishing a community connection.

ACKNOWLEDGEMENT

I would like to extend my sincere thanks to my dissertation chair, Dr. Audrey Friedman, and my readers, Drs. Patrick Proctor and Lauri Johnson. Dr. Friedman's selfless commitment to students has been an inspiration over the past few years. Her actions remind me of the simple but essential truth: superior teaching derives from more than knowledge − it requires meaningful connections with students. Dr. Proctor's open door policy has led to impromptu tutoring in statistics, an independent study project, and countless hours of advice, for which I am grateful. Dr. Johnson's research agenda includes leadership and diversity, shaping some of the initial decisions of this dissertation and the direction of my future research. I am indebted to each of you.

I'd also like to acknowledge Dr. Andy Hargreaves, Dr. Henry Braun, and Principal Gerald Yung. As a dear colleague and friend, Dr. Hargreaves' passion for educational leadership, willingness to be challenged, and eagerness to guide served as a compass in this dissertation, and so to him, I am beholden. The statistical support of Dr. Braun's was foundational in developing chapter 3. Gerald Yung, my principalship mentor, welcomed me into his school and answered copious questions as I gained administration certification and began the journey of this dissertation.

Finally, a warm thank you goes to my Mum. A teacher and principal herself, she has been a lifelong model and mentor through my own professional career. She was the first to notice and nurture my passion for diversity, and her exceptional modeling over the years has been quintessential in my career: always focus on what is best for the child.

DEDICATION

To the people in my life who always encourage me to fly:

My parents, who, over thirty years ago, moved our family overseas, thus exposing me to the beauty of new cultures and languages

and

My husband, through engaging discussions and ongoing support, has been present throughout this dissertation journey.

I dedicate this study to you three.

TABLE OF CONTENTS

LIST OF TABLES AND GRAPHS

TABLES

GRAPHS

LIST OF FIGURES

1 TIPPING THE TOWER OF PISA

Student populations around the world continue to diversify. Monoculture schools are increasingly transforming into miniature United Nations, rich with linguistic, religious, ethnic, and racial diversity. Simultaneously, school leaders worldwide are under increasing pressure to raise student achievement (Leithwood, 2010), but how can principals continue to elevate academic performance when students' backgrounds are becoming more varied? Leaders must increasingly look beyond their communities, counties, and even countries, to understand the background skills and knowledge of new students. It is from this global perspective that a renewed urgency emerges to explore the worldwide educational landscape, gaining deeper insights into the leadership under which diverse students achieve.

International datasets are one tool to explore the worldwide educational landscape. While principals historically focus their attention on their own school and district scores, there is increasing interest to refine practices by learning from systems in other context and even across international borders (Crow, 2007). The Organization for Economic Cooperation and Development's (OECD) Programme for International Student Assessment (PISA) is one dataset that can provide leaders with such a context. PISA is a tri-annual assessment that monitors fifteen-year-olds' academic performance in reading, mathematics, and science literacy. The assessment, which ranks participating jurisdictions (countries and systems within nations) based on the achievement of their students, continues to gain international prestige.

Top-ranked nations are increasingly becoming national laboratories for researchers and educators around the world. For instance, after Finland ranked 1st on PISA 2003 and 2006, hundreds of visitors studied its educational system. In reaction to this, Finnish entrepreneurs created services such as 'Educvisits' that provide tours of teacher-training units, schools, and administration centers to foreigners for 800 euro per person (Educvisits, 2007). A marketplace for similar educational tours is already emerging in Shanghai, China, after it claimed 1st place on PISA in 2009.

Beyond overall rankings, tipping over the tower of PISA and looking within and across participating jurisdictions (where diverse students are performing on or above par with mainstream peers) could provide new insights into the relationship between school leaders and the achievement of diverse learners. Disaggregating PISA 2009 data by gender, for example, reveals Colombia ranks 1st for the narrowest girl/boy achievement gap (with a five-point statistical difference at $\alpha \leq 0.05$) while Shanghai, China falls to 34th place, with a forty-point difference between genders (OECD, 2010b). Disaggregating by students' socio-economic backgrounds again shifts national rankings. Thus, there are insights to be gained by exploring which systems lead when it comes to the performance of their diverse students. The leadership priorities of principals within and across these systems could potentially refine our understanding of who and how we should lead schools.

Understanding the priorities of school leaders in systems where diverse populations are achieving on par or above mainstream peers is increasingly important. According to Johnson, Møller, Pashiardis, Vedøy, and Savvides (2011), school leaders of

diverse populations have to find a balance between honoring students' culture and emphasizing learning and achievement. Darling-Hammond (2010/2011) argues that the quest for access to equitable education for all children is a critical requirement in the twenty-first century. With Global Trends 2025 predicting a steady increase in diversity across the world and the U.S. Census Bureau reporting racial and ethnic minorities will surpass 50 percent of the total population in the United States over the next twenty years, it is timely that we explore the leadership priorities under which diverse students excel and further inform principals on how to lead within the global neighborhood (U.S. Census Bureau, 2004).

Purpose of Study

This study uses PISA 2009 data to investigate the relationship between school leaders and the achievement of diverse students. In particular, it explores diverse students' reading and writing achievement, defined on PISA as reading literacy performance. Reading and writing competency are widely recognized as necessary skills for full and productive participation in twenty-first century societies across the world. UNESCO's (2006) *Education for All Global Monitoring Report* highlights its importance:

> The nature and social function of literacy has changed dramatically: from a means of understanding religious precepts and selecting military recruits to an essential building block of information processing and worker productivity; from a specialized tool of merchants, administrators and professionals to a vital instrument for cultural intercourse and global commerce; and from a way of

> enforcing legal contracts and determining voter rights to a basis for linking individuals and families to public institutions and international networks. Literacy today has become essential. (p. 212)

Despite literacy's critical place as a foundational skill, illiteracy persists worldwide. Over the past decade, illiteracy rates declined by 5 percent (from 25 to 20 percent) but due to population growth, the actual number of illiterate children and adults in the world has remained the same (UNICEF, 2007). Furthermore, over 900 million people worldwide can recognize and understand the alphabet but have not attained the literacy fluency necessary to understand simple reading passages and writing skills. The PISA assessment is one tool available to monitor reading literacy performance of diverse fifteen-year-olds worldwide. Comparing reading literacy performance across jurisdictions will provide a meaningful glimpse into the skillset and preparation of today's emerging adults.

While many scholars define effective leaders as those who raise student outcomes (Wilkinson, 2008; Fullan, 2001), there is no consensus as to the exact priorities of principals that ensure the improved achievement of students. Furthermore, while the achievement of diverse students is gaining increasing attention across the international research community (Niesche & Keddie, 2011; Lumby & Coleman, 2010; Lumby & Morrison, 2010), even fewer studies identify the priorities of school leaders most associated with the improved achievement of *diverse* learners. It is unclear if effective leadership aiming to raise the achievement of mainstream students is sufficient to ensure significant, sustainable, widespread gains in the achievement of *diverse* pupils.

Johnson, Møller, Ottesen, Pashiardis, Savvides, and Vedøy (2010) are some of the few who connect effective leadership specifically to diverse learners. They argue that leaders "who are deemed successful because of increased student achievement must also be evaluated in light of their ability to respond to the needs and perspectives of students and their families from diverse racial, ethnic, and religious groups" (p. 2). Few other prominent scholars articulate such a clear connection between the achievement of specific student populations and the responsibilities of school leaders. Exploring the priorities of principals with a focus on identifying how they impact the achievement of diverse students will generate greater understanding into this void. The global breadth of nations included within PISA 2009 will provide a rich foundation to explore such a relationship. The patterns identified by this study serve as preliminary results. Further research will be necessary to discover conclusive solutions regarding leadership priorities that associate with increased achievement of diverse students.

Research Questions

Two research questions guide this dissertation:

- Which diversity indicators (gender, immigrant status, home language, socio-economic status, and geographic location) predict reading literacy achievement in PISA 2009 jurisdictions when controlling for all other diversity indicators?
- Which leadership priorities have an association with student reading literacy outcomes when controlling for diversity indicators at the school and student levels in PISA 2009 jurisdictions?

Defining and Characterizing Diversity using PISA 2009

The student and school questionnaire that accompany the PISA assessment determine which subpopulations are identified as 'diverse' in this study. These questionnaires ask students and principals to self-identify on a variety of factors. The five *diversity indicators* of focus in this study derive from these questions. They include gender, immigrant status, home language, ESCS (socio-economic status), and geographic location. One specific subpopulation is the group of interest in each indicator and will be described in full in chapter 3; they are:

- *Boys:* While there are international concerns around girls' access and retention in school, boys globally have a pattern of underperforming in reading achievement. "Lower reading proficiency among boys has become a major concern in many education systems" (OECD, 2010d, p. 16). Since this study focuses on reading literacy performance, this dissertation identifies boys as the subpopulation of interest.
- *Socio-economically disadvantaged*: Students from low socio-economic backgrounds chronically underperform in school (Rothstein, 2013). Achievement gaps between these learners and their middle and upper class peers are evident around the world and thus are a subpopulation of interest in this study.
- *Immigrants*: Population shifts continue to alter the student demographics in schools worldwide and the achievement patterns of these learners are closely observed. OECD (2010d) reports "learning outcomes among students from an

immigrant background are the subject of much scrutiny" (p. 62). These students are a subpopulation of interest in this study.

- *Language learners:* Scholars carefully monitor the performance of students who speak multiple languages. OECD (2010d) reports "students who speak a different language at home than the [mainstream language in society] face considerable challenges in reading and other aspects of education" (p. 62). These learners are a subpopulation of interest in this study.
- *Rural pupils:* The achievement of students in rural areas is an issue worldwide. The "location of a community in which a school is located is strongly related to student performance" (OECD, 2010d, p. 62). According to Washington Kids Count "rural children face more problems, perform worse in school and have less support and resources than urban children" (as cited in William, 2005, p. 1). These students form a subpopulation of interest in this dissertation.

Other populations, including some historically oppressed groups, ethnic minorities, and indigenous populations do not receive direct focus in this study since they are not identifiers collected on the PISA questionnaire. Students from these subgroups are, however, included within the five groups of interest when they self-identify as belonging to one of these populations.

While the United Nations Educational, Scientific and Cultural Organization (UNESCO) argues that most countries in the twenty-first century endorse the principle of equal opportunities in education, inequalities associated with a child's wealth, gender, language or geographic location continue to point to the ongoing educational

marginalization of these students. "Marginalization in education is a form of acute and persistent disadvantage rooted in underlying social inequalities. It represents a stark example of clearly remediable injustice" (UNESCO, 2006, p. 135).

In her book *The Flat World and Education*, Linda Darling-Hammond writes "Globalization is changing everything about how we work, how we communicate and, ultimately, how we live" (2010, p. 3). As the speed increases in which international inequities are brought into the world's spotlight, it is imperative to react accordingly by denouncing injustices and finding immediate but thoughtful solutions. This dissertation uses two terms to draw attention to the increasing interconnectedness of the world and the shared ownership and social responsibility we, as one people, have for addressing these inequalities:

- *Global neighborhood*: This originates from the 1995 Commission on Global Governance report, entitled "Our Global Neighborhood," which suggests nations around the world are becoming increasingly interdependent. In this study, the term emphasizes the interconnectedness of education systems in the twenty-first century.
- *Educational landscape*: This term describes the richly diverse and increasingly complex nature of schooling and education worldwide.

Research Setting

The Programme for International Student Assessment (PISA) provides a useful backdrop to explore the leadership practices under which diverse students succeed. In

2009, students across sixty-five jurisdictions participated in the assessment (see shaded in locations on Figure 1.3.1.).

Figure 1.3.1. PISA 2009 participation

The 2009 participating systems (countries, provinces or regions) collectively represent 87 percent of the global economy. The continental breakdown is as follows: Africa (one participating system), Asia (fifteen participating systems), Europe (thirty-five participating systems), North America (five participating systems), South America (six participating systems), and Oceania (two participating systems). While this is a wide continental distribution, there remain notable pockets of underrepresentation, particularly in African and South East Asian nations. According to the Population Bureau, Africa and Asia have the highest population density (Nations, 2012). Neglecting these populations in comparison studies will have increasing ramifications as the global neighborhood continues to grow more interconnected. Perhaps in future years the knowledge available in the PISA dataset will broaden its scope to account for these missing performers.

Significance of the Problem

There is an international epidemic of underperformance across the global neighborhood: diverse students disproportionately continue to underperform in comparison to their mainstream peers (Leithwood, 2010). Despite this reality, research identifying the leadership practices that *do* raise the achievement of diverse subpopulations is inconclusive.

As country populations continue to diversify, it is increasingly imperative that we understand how best to lead schools with diverse students (Rayner, 2009). Classrooms housing student populations of multiple native tongues, or learners with different cultural traditions will continue to redefine understandings of effective schooling. Identifying the priorities of leadership that reduce the gap in achievement between learners with varying backgrounds is critical to the future well-being of all nations.

Organization of the Chapters

This chapter outlines the purpose, research questions, and design within a broader educational and sociological understanding of leadership and diverse student achievement. Chapter 2 examines what the current research says about the achievement of diverse learners and the leadership priorities that associate with diverse student achievement. Chapter 3 details the study's research design and methodology. The PISA 2009 dataset is reviewed in detail in this chapter. The questionnaires are explored and a rationale for the research design is disclosed. Chapter 4 presents the analyses and results. The formulas and equations are presented followed by the detailed findings and a

descriptive summary of the analysis. Chapter 5 provides cross-national interpretations and then widens to consider how these findings are useful for school leaders worldwide. Chapter 6 concludes with implications for the fields of leadership and diversity in education.

2 CROSSING THE GLOBAL NEIGHBORHOOD

Multiple international comparative studies showcase systems that achieve "significant, sustained and widespread gains in student outcomes" (Tucker, 2011; OECD, 2010d; McKinsey & Company, 2009; OECD, 2009b), but few studies unpack these outcomes to document the leadership most effective in producing significant, sustainable, widespread gains in the achievement of *diverse* students. This chapter contributes to this void by examining and merging the literature around student achievement and effective leadership. It does this first by exploring the current research on boys, immigrants, language learners, socio-economically disadvantaged, and rural pupils by building upon the widely recognized truth that "school leadership directly influences the effectiveness of teachers and the achievement outcomes of students" (OECD, 2009a, p. 191) and by investigating international perspectives of effective leadership, to identify which priorities of school leaders associate with the achievement of diverse students.

Organizational Framework

Three distinct frameworks organize this review: geographic, conditional, and performance. Collectively, these frameworks offer multiple perspectives that aim to "assist readers in understanding the whole body of available research on [diverse student achievement and effective leaders]" (Rhoades, 2011, p. 353). Each is detailed below.

Geographic

A geographic framework details global trends. Lubienski (2007) suggests a geographic framework can offer "an advantage in analyzing data, not only in that it sets data within context, but it allows researchers . . . to discern unanticipated patterns in the data that might not be apparent using traditional statistical approaches" (p. 54). In part one, this framework illustrates the amount of current discussion worldwide focused on diverse students' achievement. A numerical bar, color-coded from zero to fifty, indicates the percent of discussion in each location. Further clarification on this framework is provided in part 1 of the review. Five heat maps are presented within the geographic framework to depict the varying patterns in the literature regarding *who* and *how much* is being said about each diverse population.

Conditions of Effective Leadership

Hallinger and Murphy's (1985) three conditions of effective leadership organize the fourteen priorities on PISA's Index of School Principal's Leadership. The conditions, commonly referred to as Hallinger's Model of Instructional Leadership, derive from their Principal Instructional Management Rating Scale (PIMRS) and includes: defining the school mission, managing the instructional programming, and developing the school climate. To be an effective leader, a principal must balance all three of these responsibilities.

- *Defining school mission:* A leader who effectively defines a school mission has a clear vision of the core school goals. Such an individual can use "concise and simple statements that communicate broad themes" (Stemler, Bebell, &

Sonnabend, 2011, p 383). The core goals outlined in their mission support all decisions. Hallinger and Murphy (1987) describe such a leader as one with the ability to "lead the staff in developing school-wide goals and [the ability to] communicate them to the entire school community" (p. 57). A leader with a clear vision who is able to articulate school goals establishes a shared sense of purpose among their staff, students and the community.

- *Managing instructional programming:* A principal who is an effective manager of instruction connects students, teachers, the curriculum, and the learning-teaching processes (Gumuseli, 1996). Hallinger and Murphy (1987) agree, describing effective instructional managers as more than simply supervisors and evaluators of curriculum. They suggest an effective instructional manager is "capable of analyzing another's teaching" and proficient in tracking student performance (p. 55). Distinguishing these priorities from those under the previous condition is the focus on instruction and curriculum.
- *Developing school climate:* A school climate builds upon the relationships within a learning environment. Hallinger and Murphy (1985) include four descriptive points under the umbrellas of developing school learning climate: protects instructional time, provides incentives for teachers and learning, promotes professional development, and maintains visibility. Two years later, the researchers emphasized that an effective leader directly and indirectly shapes the learning culture in the school by establishing "norms and attitudes" (Hallinger & Murphy, 1987, p. 57-58).

These three conditions serve as the framework for investigating what the research says about the fourteen leadership priorities explored in this dissertation. In part 2 of this review, the alignment between each priority and the conditional framework is presented.

Cross-National Performance Framework

A three level, cross-national performance framework interlaces the entire literature review. The framework derives from OECD's 2010 rankings of overall reading achievement on PISA 2009 and includes *high-performers* (systems that scored above 500 on the PISA 2009 assessment), *middle-performers* (systems with performance rankings between 425 and 500 on PISA 2009), and *promising-performers* (systems that scored below 425 on the assessment) (see Figure 2.0.1). As detailed by Kay Cheng Soh (2012), investigating performance patterns on PISA 2009 using the original rankings systems can result in small but substantive differences because of biases in a ranking scale. Instead, she advocates that a "more meaningful way to interpret [PISA results] is to cluster them into groups" (p. 83). Thus, the cross-national performance framework will assist in reducing biases and ensure distributive representation from across the PISA ranking system. The same framework resurfaces in chapter 5 to interpret the results from this study.

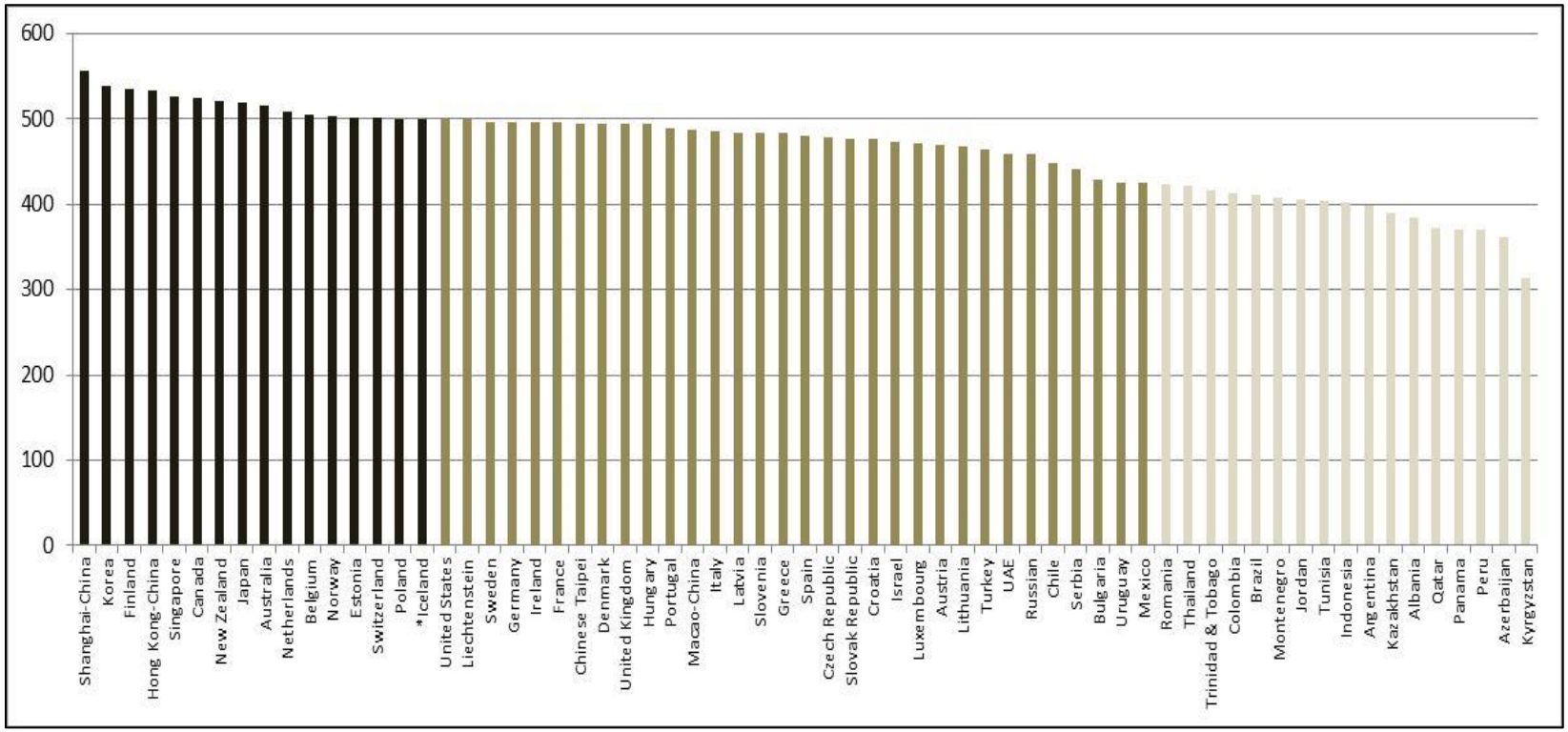

Figure 2.0.1. Cross-national performance framework, PISA 2009

* Performance level impacted by standardized rounding technique

Organizing Approach

Hemingway and Brereton (2009) suggest that a review should be clear, transparent, and replicable. To adhere to this vision and to inform the reader of the body of literature examined for this synthesis, I disclose the organizing approach informing this review.

Two separate sections (part 1 and part 2) organize the synthesis. Part 1 of the literature review explores what the research says about diverse students' achievement. It reveals precisely the amount of current research in each jurisdiction that focuses on diverse students' achievement, and the main themes within and across the discussions. Part 2 of the review investigates what the current research says about the priorities of school leaders. It examines the conversation around the fourteen leadership priorities of interest in this study. Notably, in both parts of the review, the topics introduced could have full-fledged literature reviews. The purpose of this review therefore is to focus specifically on *current* conversational trends. This is to affirm Lathers' (1991) call that a "review is gate keeping, policing and productive rather than merely mirroring" what is already part of the public arena (p. 2). Throughout the chapter, citations are introduced for readers interested in larger reviews that cover both past and present ideas. The themes in present day conversations set the stage for forward thinking and generate new approaches to address chronic underachievement.

The data collected in both reviews comes from three sources: Education Research Complete, ERIC, and JSTOR. The descriptors entered into each search engine varied slightly to account for linguistic differences across the jurisdictions but the most frequent

for the first review include: 'achievement,' 'reading,' 'boy,' 'gender,' 'immigrant,' 'language learner' 'socio-economic,' 'disadvantaged,' and 'rural.' In the second review: 'principal,' 'leader,' 'leadership,' 'headmaster,' 'priorities,' 'goals,' 'mission,' 'instructional programming,' 'learning climate,' and 'learning culture' are the frequent descriptors (see Appendix I, Table 2.0.1). In instances when a jurisdiction is within a country (e.g. Shanghai), the country name is also included in the search.

The majority of the articles in the syntheses (approximately 90 percent) are from peer-reviewed journals. Beyond this search, select reports and documents such as the Organization for Economic Cooperation and Development (OECD) publications and books are included. These publications are frequently cited throughout the examined articles and are therefore valuable for this review. Extra efforts to identify large-scale studies that are relevant to the scope of this dissertation were also undertaken. Literature published between 2000 and 2013 is the major focus in this review. This thirteen-year period narrows the discussion to explore recurring patterns and emerging trends most relevant in the first part of the twenty-first century. There are exceptions to this self-imposed boundary, generally in the case of pioneering works, which have been included under the premise they will provide valuable background or significantly contribute to the shaping of the discussion during this period, and are thus essential to form a complete picture for the reader.

Ultimately, the synthesis includes articles that: (i) are qualitative and quantitative with primary or secondary empirical data analysis; (ii) focus on the achievement of

diverse groups; and (iii) addressed some aspect of the influences or effects of leadership and multi-marginalized populations in a school setting.

Review Limitations

Three limitations in this literature review merit immediate disclosure: representation, database biases, and questionnaires. Representation from across the global research community is a priority in this review. The publications in the field of educational leadership are, however, lopsided. Wealthy, industrialized, and Westernized nations are overrepresented while developing nations are marginalized, in part due to historical patterns. Until the 1970s, the theoretical traditions of the United States largely dominated published literature. Alternative paradigms emerged in the 1980s and 1990s from other Anglo nations throughout Western Europe, Canada, Australia, and New Zealand (Chapman, Sackney, & Aspin, 1999).

Literature about the actions and behaviors of leaders in schools in Asia − particularly Southern Asia − are still today largely isolated, contained within specific journal collections of comparative studies. Asian exceptions are nations considered high-performers such as Shanghai and Singapore, both of which performed very well on PISA 2009 and are frequently showcased within top-tier journals. Publications discussing leadership in African nations are also almost always separated (Jackson, 2004). Countless authors of comparative studies acknowledge these limitations, disclosing statements such as "we recognize our review on school leadership literature is predominantly Westernized" (Jacobson & Bezzina, 2008, p. 82) but few acknowledge the

perpetual marginalization this places on nations consistently left out of discussions. Even fewer admit that omitting this knowledge is a loss for the research community.

To account for this limitation, this review prioritizes geographical representation from across the educational landscape. It makes every attempt to give developing countries − particularly in Africa and Southeast Asia − as much voice as larger nations, progressive countries, and those perceived as being international powerhouses, such as China, the United Kingdom, and the United States. The jurisdictions that participated in PISA are presented within the chapter; systems that did not participate are not explored in this study but are discussed in the future research agenda at the end of this dissertation. This recognition responds to Chapman, Sackney, and Aspin (1999), who call for a "more international approach to education [which] requires that the diversity of views and approaches be addressed" (p. 75). In acknowledging this premise, I join the small pocket of scholars worldwide who are calling for a better-rounded sample of views and voices that can lead to a fair understanding of the problem.

The second limitation in this review is database bias. As mentioned above, the three databases used in this review are Education Research Complete, ERIC, and JSTOR. All three are robust search engines, which collectively house over 3,000 journals. They each aim to include publications from both peer-reviewed and non-reviewed journals worldwide. Articles in multiple languages surface in searches conducted across the databases. However, all three databases are housed in, and maintained, by United States providers. It is therefore conceivable that these databases contain a disproportionate number of publications from North America and from Anglophone nations in comparison

with other regions of the world. This representation (or misrepresentation) is important to note and may skew the results for the heat maps in section one of the review. Expanding the review to include databases from other regions is an important next step to ensuring a full picture is present.

The final limitation in this review derives from the PISA questionnaires themselves. The leadership priorities and student populations examined in this review are limited by the questions asked on the questionnaire. The advantage of this limitation is it allows the review to examine the data most relevant to this study, but the disadvantage is the questions may not include all the necessary parts to form a complete picture of the relationship between leaders and diverse students. For instance, beyond the five subgroups of interest, the achievement of other diverse populations, such as ethnic and religious minorities contribute to the grandness of the underperformance epidemic worldwide, but are not highlighted in this review since they are outside the scope of the PISA dataset. Furthermore, some students are a member of more than one diverse group, such as immigrants who also speak a home dialect different then the PISA testing language. These students could be included under both the category 'immigrant' and 'language learner.' Given this limitation, these learners are represented in multiple groups. A next step to resolving this issue would be to repeat the analysis using a dataset that has clearer student background categories so that the literature review could provide greater distinctions. The leadership priorities examined in this study derive from the school questionnaire and are limited to the fourteen priorities asked on the questionnaire.

This limitation could have profound impacts on this study and will be explored at the end of part 2.

Part 1. Tracing the Underachievement Epidemic Worldwide

Researchers document the underachievement of diverse students worldwide (Bruner, 2008; Auernheimer, 2005; Guisbond & Neill, 2004; Rimers, 2004; Rothstein, 2004; Rakocevic & Miljevic, 2003; Noguera, 2002). Children born into the lowest class, those who speak a language different from the mainstream population, and those who are immigrants are underperforming in schools across the world. This part of the review scans the research in participating PISA 2009 jurisdictions to investigate *why* these students are underperforming. Understanding who is speaking (about boys, immigrants, language learners, socio-economically disadvantaged, and rural students), and what they are saying, will flesh out what is understood and what remains unresolved regarding each population.

Recent OECD publications justify the importance of exploring the achievement of each of these diverse groups. OECD (2010a; 2010d) compares achievement in the PISA 2000 and 2009 assessments and reveals gaps and changes over time. The achievement gaps are cited below, as the research from each population is considered. While OECD uses different definitions and scales to identify diverse students, their results establish an initial justification for investigating achievement patterns of diverse learners worldwide. Furthermore, their findings contribute to this study's goal of identifying how schools worldwide can further the achievement patterns of diverse learners.

This review utilizes both quantity and quality metrics. First, heat maps depict the quantity of current discussion within each jurisdiction targeting the diverse students' reading literacy achievement. Peer-reviewed publications, national reports, and NGO documents are the sources for this analysis. As discussed earlier, the color-coding metric illustrates the amount of research: the darker the color, the more the research on any specific population. The color range is from 0 publications to 50 or more. Separate heat maps are constructed for each diverse group, accentuating the varying amounts of conversation within the jurisdictions targeting each population.

Second, a quality metric spotlights conversational themes within the discussions. Themes illustrate commonalities across multiple jurisdictions, either within one performance level or across many. Themes were not predetermined; rather, they emerged from scanning the current research and sorting studies into "look alike, feel alike" groups (Lincoln & Guba, 1985, p. 347). On average, three themes emerge under each diverse group but the conversations that unfold are distinct. A summary at the end of this section offers cross commentary.

Boys' Performance Worldwide

OECD (2010d) reports, "in every one of the sixty-five countries and economies that participated in PISA 2009, girls have significantly higher average reading scores than boys" (p. 16). Despite this reality, only 60 percent of the jurisdictions that participated in PISA 2009 show evidence that they are currently discussing boys' underperformance in literacy (see Figure 2.2.1). This percentage is the lowest of all the diverse groups, revealing that boys' underperformance is receiving the *least* attention worldwide.

Among those who *are* discussing boys' underperformance, researchers in Canada, Great Britain, and Finland dominate. Twenty or more publications emerge from the current literature in each of these jurisdictions focused on boys' underachievement in literacy. There is less, but still some, discussion around boys' achievement in China, the United States, Sweden, and Australia (see lighter shading on the heat map). Each of these systems has at least fifteen publications in the current literature focused on boys' performance. As indicated by the color white on the map, in Albania, Bulgaria, Czech Republic, Hungary, Japan, Kazakhstan, Kyrgyzstan, Luxembourg, Macao, Panama, and Peru there are no current publications that emerge in this review featuring boys' underachievement (also shaded white are the jurisdictions that did not participate in PISA 2009.)

Figure 2.2.1. Heat map of discussion on boys' literacy achievement in the PISA 2009 jurisdictions

The results on the heat map echo other researcher's findings. Booth, Elliott-Johns, and Bruce (n.d.) state, "there has been a great deal of assessment, research and critical examination of the issue of boys' literacy attainment, in Canada, the United

Kingdom, Australia, and New Zealand, and there is growing awareness in the United States" (p. 2). Despite its recognition in these locations, the overall lack of worldwide discussion around boys' underachievement is curious. Martino (2008) accurately notes "policy and research-based literature identifies boys' underachievement and specifically their engagement with literacy, as both a Canadian and an international problem" (p. 1). However, as the heat map reveals, many jurisdictions have yet to focus on boys' literacy in their research discussions. The silence could be due to a number of factors, including a strong international attention devoted to girls' education (retention and science and math performance) (UNICEF, 2009).

Current Trends in Discussions of Boys' Underachievement

Because of the limited number of jurisdictions focusing on boys' literacy underachievement, I dubbed this group the 'silent' underachievers. Among those discussing boys' underperformance, three conversational themes emerge. Researchers are raising awareness, investigating causes of literacy underperformance, and seeking solutions to address the gap. Each of these themes is visible in *current* research and is unpacked below. For a comprehensive review of research on boys' education longitudinally, see Booth, Elliott-Johns, and Bruce (n.d.) or Martino (2008).

Awareness

Researchers who are talking about boys are tracking their performance. Most scholars argue boys are underperforming, but others claim boys' performance is adequate. In high-performing Finland, Lehto, Scheinin, Kupiainen, and Hautamaki (2001) write "girls outperformed boys regardless of the comprehension measure" (p. 12).

The same conclusion resonates from researchers in middle-performing Croatia, and promising-performing Trinidad and Tobago. Kolić-Vehovec and Bajšanski (2006) say "girls had better results than boys on text comprehension, all measures of comprehension monitoring, as well as on [a] strategic reading questionnaire" (p. 439) and Smith, Smith, Gilmore, and Jameson (2012) remark "girls outperformed boys in reading" (p. 202) while examining students' reading ability. In each of these examples, and across the majority of studies, achievement patterns of males are justified by comparing them to girls. Furthermore, in almost all cases, researchers compare same-age peers' reading performance. No studies emerge from this synthesis that focus specifically on boys' literacy performance in multi-grade classrooms or, that reorganize boys' results by subgroups of boys; such research would provide a useful next step in understanding why boys are underperforming.

Boys' literacy performance is distinct from their achievements in other disciplines (Pelletier, 2000). Studies consistently target reading and writing results, while other subject areas, such as math and science, are less often discussed. From middle-performing Ireland for example, Murphy (2010) states "the underachievement of boys appears to be even more marked in the language and literacy curriculum area" (p. 407). This is understandable since boys' achievement is considerably better in these subjects.

Assessment scores and achievement patterns are evidence of boys' challenges with literacy. Watson and Kehler's (2012) research in high-performing Canada, as well as Calvin, Fernandes, Smith, Visscher, and Deary's (2010) work in Great Britain highlight the argument that test scores are evidence that boys are underperforming. Watson and

Kehler (2012) argue the results from national exams in Ontario suggest boys are not performing as well as girls on literacy measures. "Girls outperform boys on high-stake literacy tests such as the Ontario Secondary School Literacy Test, [and] the National Assessment of Education Progress" (p. 43). Calvin et al. (2010) contribute further evidence, detailing exactly how wide the gap is between boys and girls on verbal assessments. They find girls' scored 26 percent of a standard deviation higher than boys on a verbal assessment conducted in Great Britain. Emphasizing the size of the gap is important since it acknowledges the extent of the problem. As Calvin et al. (2010) attests, the problem is serious.

Underperformance spans all school levels and appears to be more complex than simply poor assessment scores (Eriksson, Marschik, Tulviste, Almgren, Pérez, Pereira, Wehberg, Marjanovič-Umek, Gayraud, Kovacevic & Gallego, 2012; Lau & Ping, 2010; Millimet & Husain, 2009). Eriksson et al. (2012) considers pre-literacy skills of children in Sweden. While the gap they find is subtle, they ultimately report it is sufficient to raise awareness about boys' skills. "Girls are slightly ahead of boys in early communicative gestures, in productive vocabulary, and in combining words" (2012, p. 326). Millimet and Husain (2009) add to these findings while considering literacy ability's in elementary school. They conduct longitudinal studies in the United States and report "boys lag behind girls in reading at the start of kindergarten and at the end of third grade" (p. 38). In Hong Kong, Lau and Ping (2010) consider the daily practices of boys and girls in junior high school. They compare verbal and figural skills by gender and conclude "girls in the junior high grades excelled boys in verbal flexibility, figural

fluency, figural flexibility, figural uniqueness, and figural unusualness" (p. 194). In each context, the issue is deeper than students' performance on single tests. Rather, consistent behaviors over time are documented as being subpar with boys lagging behind female peers.

Researchers are concerned with the emerging patterns. In high-performing New Zealand, Eley (2001) writes "the differing achievement levels of boys and girls in New Zealand schools [are] a cause for concern. This is especially true in the area of literacy, where the greatest differences in the achievement of boys and girls are occurring" (p.147). In Australia, there is increasing uneasiness around boys' underperformance in literacy, mainly due to pressure outside of education. "Media sources are quick to express moral panic about boys' educational failure, and a call for 'equity for boys' has replaced the earlier focus on girls' issues in policy reform agendas" (Vickers, 2005, p. 46). Vickers (2005) reports a shift as the focus in research moves away from girls and increasingly on boys. It is very likely that other systems worldwide may be undergoing a similar change and thus, in time, conversations around boys' performance will increase. In middle-performing Great Britain, the same concern is noted. Francis (2006) writes, "the moral panic concerning 'boys' underachievement' is well established in the UK" (p. 187). Younger and Warrington (2007) add, "issues of gender equity in English secondary schools over the last decade have been dominated by a concern with the 'under-achievement' of boys" (p. 219).

Interestingly, there is a smaller, but insistent group arguing that boys overall are not underperforming. Sadowski (2010), Martino (2008), Alloway (2007), and White

(2007) support this belief. From high-performing Canada, White (2007) argues boys are performing fine in literacy activities. She uses data from the reading component of the Ontario Secondary School Test to argue that "gender accounted for less than one per cent of variance in reading achievement" and ultimately concludes, "the notion of under-achievement of boys' reading performance has been greatly overstated" (p. 554). Alloway agrees arguing for a "which boys, which girls" approach after reviewing data in Australia. The "swathe of populist discourse centering on boys and on literacy [could] drive a potentially divisive education agenda" since disaggregating test data reveals boys are indeed performing well (p. 582).

Sadowski (2010) and Martino (2008) both claim statements such as 'boys are underachieving' are too general since not all boys perform poorly. From the United States, Sadowski (2010) says that there are patterns in location, income levels, and racial and ethnic composition of boys that are actually impacting performance, not simply being male. Martino (2008) presents the same argument using data from Canada. He states "not all boys are underachieving, nor are all girls out-performing boys" (2008, p. 1). He argues that boys are always considered as one, homogenous group, when instead, there are unique differences between different types of boys that must be considered.

Causes

Researchers who believe boys *are* underperforming are perplexed as to why this is the case. Many researchers argue boys' underachievement is due to a developmental delay; others say it is a lack of effort or interest. Still others consider external factors −

including the presence of girls and the feminization of schools as the cause behind boys' poor performance. Evidence of each of these causes is expanded upon below.

Boys underperform in literacy because they are developmentally delayed. Marjanovič-Umek, Fekonja-Peklaj, and Podlesek (2012), Fredriksson, Holzer, McCluskey-Cavin, and Taube (2009), Papadopoulos, Spanoudis, and Kendeou (2009), Yiwen, Xingming, Xiaoming, Jinming, and Hoff (2008), Treiman, Levin, and Kessler (2007) and Baucal, Pavlovic-Babic, and Willms (2006) provide a comprehensive review of this position. Yiwen et al.'s (2008) work in high-performing China and Fredriksson et al.'s (2009) study in middle-performing Sweden clearly spell out the message. "Girls language development [is] more advanced than boys," writes Yiwen et al. (p. 145). "Girls are [just] better readers than boys" Fredriksson concludes (p. 4). The delay is why boys are underperforming; they simply need more time to mature. Some researchers provide specific examples to illustrate this same point. Baucal et al. (2006) in middle-performing Serbia, writes that for the majority of boys "the transition from learning-to-read to reading-to-learn" is difficult (p. 539). The lag is due to boys' letter recognition skills, according to Treiman et al. (2007) in Israel. They report that girls at ages five and six know more letter names than boys. Marjanovič-Umek et al. (2012) suggests the delay manifests itself in the simpler stories boys write. They report that in Slovenia, "girls told stories using a greater number of words" (p. 18). Notably, it is also possible that boys prefer verbalizing elaborate stories rather than writing them. Not all current studies agree with developmental delay being the cause for boys' literacy underachievement.

Papadopoulos et al. (2009), for example, conduct research in Greece and conclude there is no "support for gender differences in phonological abilities" (p. 127).

Boys either lack motivation or do not exert enough effort (Van de Gaer, Pustiens, Van Damme, & De Munter, 2009; Freudenthaler, Spinath, & Neubauer, 2008; Merisuo-Storm, 2006; Malmberg & Trempala, 1997). In Finland, Merisuo-Storm (2006) attributes boys' underperformance to the fact that "girls were significantly more skillful writers than the boys" at $p = 0.002$ (p. 117) and in Belgium, Van de Gaer et al. (2009) report "a decline in the effort for language and the attitude toward learning tasks was steeper for boys than for girls" (p. 373). It is anxiety and performance-avoidance, say Freudenthaler et al. (2008) in Austria, with which Malmberg and Trempala (1997) would agree. Working in Poland, they write "girls expressed a higher level of probability for success in education than boys" and that may contribute to boys' poorer literacy performance (p. 231). Basaran and Ates (2009) and Mata (2011) report it is not attitude or motivation. Basaran and Ates (2009) finds that in Turkey "girls have higher level positive attitudes towards reading than boys" (p. 73) and Mata (2011) concludes, "boys' and girls' motivational profiles are not markedly different" in her study in Portugal (p. 272).

Disinterest in reading and writing is causing underperformance. Lehto, Scheinin, Kupiainen, and Hautamäki (2001) write "the majority of boys [in Finland] did not experience school as positively" as girls (p. 99). Results from OECD (2010d) state that in middle-performing Lichtenstein, for example, "fewer than forty percent of boys said that they read for enjoyment" (2010d, p. 70) and Smith, Smith, Gilmore, and Jameson (2012) found girls in Lichtenstein "showed higher levels of reading enjoyment" (p. 202).

Other researchers examined boys' interest in writing and most also report boys are less interested than girls. In the UAE, for instance, Almazoui (2010) looked at the differences between boys' and girls' creative writing and concluded, "girls let their personal experiences and feelings intrude; boys, however, showed domination and aggrandizement of self" (p. 13). The researcher argues teachers need to "rethink writing instruction and reevaluate their effectiveness based on the writing needs of each gender" (p. 13).

External factors, not the boys themselves, may be causing underperformance. From middle-performing Latvia, for example, Geske and Ozola (2009) find that "school environment has a great impact on boys reading literacy" (p. 38). Other researchers look within schools, such as Timmerman (2011), who explores whether the feminization of the teaching force is having a negative impact on boys' achievement in the Netherlands. He writes, "The feminization of education is supposed to have a negative impact on boys' achievement, causing educational as well as behavioral problems" (p. 457). Carrington and McPhee (2008) of Great Britain also comment on this as a possibility. "It is commonly assumed that the gender gap in achievement stems from the dearth of male role models in teaching, especially at primary level" (p. 109). But Raymond, Tse, Lam, and Loh (2010) investigated if bringing more male teachers in the field would make a difference in Hong Kong, and found "no support for the proposal that boys learn to read better when taught by men teachers" (p. 754). In fact, they report that both "boys and girls learned better when taught by women" (p. 754). Sokal (2010) agrees based on her research in promising-performing Thailand. She notes "viewing reading as feminine is

not at the root of gender differences in reading achievement" (p. 44). Instead, she considers other external factures, including one's culture.

Solutions

Whatever the causes of boys' underperformance, solutions are essential. Exactly what will eliminate the performance gap is unknown, but almost all of the current solutions are calling for a boys-only spotlight. Schools use approaches that cater to girls' strengths; to improve boys' literacy, the solutions must be 'boy focused' (Mitchell, Murphy, & Peters, 2008). It is, in the perspective of Weaver-Higbtower (2003), time schools focus on tactics that work for boys.

Boys-only classrooms are one consideration. Greig (2011) from Canada and Warrington and Younger (2001) from Great Britain both examine these as a possible solution. "Sex groupings may offer more advantages for girls than for boys" say Warrington and Younger (2001) but they argue that "the potential of the system will only be fully realized when it is explicitly recognized that girls and boys do respond differently, in certain contexts, to different teaching-learning styles" (p. 339). Greig (2011) is weary of same-sex classrooms as a solution for Canada. He finds "potential difficulties and consequences that arise when boy-only settings are implemented in schools as a way to address the educational needs of boys" (p. 127). Instead, he argues, there is a "need for today's educators to move beyond outdated, simplistic approaches, in order to help boys not only achieve academically but, more broadly, to lead more fulfilling and just lives" (p. 127).

Resources that cater to boys may improve their performance. From high-performing Canada, Watson and Kehler (2012) call for more boy-friendly strategies in the classroom. They argue boys' engagement and achievement can be improved through "gender-specific and explicitly boy-friendly instructional practices that cater to boys' innate strengths and interests" (p. 29). They comment on numerous boy-friendly instructional habits discussed in the Ontario Ministry of Education's *Me Read? No Way! A Practical Guide to Improving Boys' Literacy Skills*, including letting boys talk, choosing relevant literature, and using technology. From middle-performing Germany, Möβle, Kleimann, Rehbein, and Pfeiffer (2010) offer an interesting deduction. They look at the impact of boy-performance games and conclude, "boys who gender-specifically are better equipped with electronic media devices, who partially have extensive media usage times and who strongly prefer violent media content, are at the risk of showing poor school performance" (p. 699).

Revising teachers' instructional habits to align more closely with the priorities of boys may make a difference in their achievement patterns. The skills of boys need to be acknowledged and appreciated (King, Gurian, & Stevens, 2010). The researchers note that teachers need to choose books with action, adventure, crime, sports cars, hunting, guns, and fighting if they aim to improve the performance of boys. They also recognize that boys enjoy non-fiction options, for example, the *Guinness Book of Records*. Sadowski's (2010) work in Canada leads to a similar finding. She advocates that teachers need to intentionally select stories and topics of interest to boys. Using comics and sports-themed books will get boys excited about reading, and will ultimately improve

their performance. In the United States, Sax (2007) offers the claim that instructional habits are inhibiting movement, which negatively impacts boys. He calls on teachers to reflect on their instructional styles and find ways to get boys up and active during lessons.

In conclusion, while just over half of the jurisdictions are discussing the performance of boys in current literature, those who are conversing are contributing to the increasing knowledge across the educational landscape. They are raising awareness about the problem, which may get more researchers interested in monitoring boys' literacy performance. Researchers are considering various practices and behaviors which could be impacting boys, both within classrooms and outside of schools. Perhaps most importantly, they are investigating better solutions. While still in its early stages of development, ideas around boys' underperformance are germinating across systems worldwide. This suggests that researchers are taking the underperformance patterns seriously and making intentional efforts to address them. The results from this study will be compared to these suggested solutions and may eventually contribute to identifying better answers to support boys' literacy development.

Immigrants' Performance Worldwide

OECD (2010d) reports that "students without an immigrant background now outperform other [students with an immigrant background] by an average of 43 score points" (p. 62). The report states that across OECD jurisdictions "the relative performance of students with an immigrant background did not change between 2000 and

2009" (p. 62). Seventy-seven percent of the examined systems in this review are currently discussing the achievement of their immigrant populations (see Figure 2.2.2).

Figure 2.2.2. Heat map discussion spotlighting immigrant achievement in the PISA 2009 Jurisdictions

Researchers in the United States, Canada, the United Kingdom, and Israel dominate discussions on immigrant achievement. More than forty current publications from each of these jurisdictions focus on immigrant underperformance. Immigrant achievement is also a popular topic in research from Italy, Spain, Finland and Ireland. There are at least twenty current publications targeting immigrant achievement in these jurisdictions. There is some discussion found in eight to ten publications in Germany, Sweden, Portugal, Luxembourg, Japan, France, Austria, Australia, Netherlands, Liechtenstein, Hong Kong, Denmark, Thailand, Singapore, Belgium, Turkey, and Greece. On the other hand, there is no evidence in the current publications from Albania, Bulgaria, Czech Republic, Kazakhstan, Macao, Panama, Croatia, Indonesia, Jordan, Lithuania, Serbia and Montenegro, Latvia, Slovakia, and China of discussion focused on immigrant achievement (as indicated by the color white on the map). The lack of

discussion around immigrant performance in some of these systems could be due to the fact they do not have high numbers of immigrants, which will be explored further in Chapter 5. Jurisdictions that did not participate in PISA 2009 are also shaded white.

The dark coloring in North America and the concentrated color in Western Europe on the heat map reflect worldwide mobility trends (Passel, 2011; Luciak, 2004a; Luciak 2004b). In the United States, for example, immigrant populations are transforming demographics. Passel (2011) reports currently, "immigrant youth . . . account for one-fourth of the nation's 75 million children. By 2050 they are projected to make up one-third of more than 100 million U.S. children" (p. 19). In Canada, immigration is also gaining attention. Young and Grogan (2008) report immigration patterns are carefully monitored and in some regions, schools now serve higher immigrant populations than native born Canadians. On the other side of the Atlantic, the creation of the European Union has increased mobility (2004). "Europe's migrant population in 2005 exceeded that of North America by almost 50 percent" (Herrera, 2012, p. 1). With new populations, come new challenges. Understandably, the effects of all this mobility impacts what is happening in local schools worldwide and is a popular topic in the current research.

Current Trends in Discussions of Immigrants' Underachievement

Conversations around immigrants' underachievement are as diverse as the populations being discussed. Some systems have numerous researchers studying immigrants' underachievement as they seek to adjust to new populations; other systems are well adjusted to immigrant populations and have more refined direction in their

literacy contributions. Collectively, researchers raise awareness, investigate mobility patterns, recognize challenges, and layout recommendations to resolve the gaps inhibiting immigrant success. Each of these trends is expounded below. (Note: language issues are briefly highlighted in this section, but they are intentionally brief since they are covered in detail in the next section.) As with previous trends in this review, this discussion reflects *current* patterns; for a full comprehensive review on research around immigrant achievement in the United States, see Bajaj (2009) and in Europe, see Luciak (2004a).

Awareness

Discussion on immigrants' achievement ranges in maturity. In some systems, there is a long history of being a destination country. In others, it is a newer phenomenon. Zhu and Leung (2011) note Chinese immigrants' performance "has always been a concern to the public as well as the government in Hong Kong" (p. 471). Muwanguzi and Musambira (2012) offer a similar perspective from the United States; they write America has a long history of absorbing "more immigrants per year than any other nation" (p. 6). Hailing from all continents and many countries, the jurisdiction has a long trail of research detailing these populations. On the other hand, in Germany, the UK and Ireland, large waves of immigrants are bringing new challenges. "Persistently high unemployment among immigrants is one of the most urgent problems facing European Union countries today (Kogan, 2006, p. 697). While experiences with immigrants are different in seasoned and novice receiving systems, collectively, immigrant achievement has become one of the greatest concerns for countries worldwide.

Performance patterns are overwhelmingly negative. Both immigrants and refugees have lower achievement trends than their mainstream peers. In Denmark, Andersen, and Thomsen (2011) report "immigrant students on average perform worse in lower secondary school than native Danish students" (p. 27), and from the UK, Stevenson and Willott (2007) document refugee underperformance. They cite "interrupted education, experience of trauma, concerns about status and English language difficulties" as attributing to underperformance (p. 671). The same concern resonates from research in the United States, despite its long history with immigrant populations. "Nearly a quarter of schoolchildren in the United States are immigrants . . . a substantial percentage of these children, especially those from Latin America, are falling behind in school" (Haskins & Tienda, 2011, p. 1).

Language proficiency is central to many conversations about literacy achievement. Rangvid (2010), Fredriksson, Eklund, and Taube (2009), and Tembe (2008) highlight concern for the literacy skills of immigrants who do not speak the mainstream language. Investigating literacy development of immigrant and non-immigrant girls in the Netherlands, Tembe (2008) reports "the contrast…is substantial when it comes to literacy development" (p. 41). Fredriksson et al. (2009) reach a similar conclusion for both boys and girls, regarding reading achievement in Swedish municipalities. They report Swedish students have, on average, higher reading scores than immigrants "who participated in Swedish as a second language" (p. 17). Rangvid (2010) compares literacy performance across groups and over time in Denmark. She finds that "second-generation students from Lebanon and Pakistan increase their reading

scores substantially compared with the first generation, while there is no improvement for students from Turkey" (p. 269).

Other academic disciplines are also included in discussions on immigrant achievement. Simms (2012), Zhu and Leung (2011), and Suet-ling (2009) describe underperformance of immigrant students in math and science. Zhu and Leung (2011) consider the math achievement of mainland, Chinese immigrant students in high-performing Hong Kong. Their results show "first-generation immigrant students' performance had obvious retrogression compared to native students in the past years" (p. 471). Suet-ling (2009) goes further, arguing immigrants in Hong Kong struggle in more than just math. In same-age comparisons, he found "immigrants' children [are] at a disadvantaged position in reading, and science" as well (p. 405). Immigrants in the United States are also underperforming, according to Simms (2012). She writes "students who had been in the United States since at least their preschool years had lower math achievement than non-immigrants when they began kindergarten" (p. 72).

Similar to the literature on boys' performance, there is a group of researchers who challenge the claim that immigrants are underperforming. They do this by showcasing immigrants who are achieving higher than their mainstream peers. This research is mostly in high-performing Asian systems but is also visible in middle-performing United States. Kang (2012), Costa (2010), and Gao (2009) illustrate this side of the argument from their work in high-performing Singapore and China. They describe immigrant groups that are 'beating the odds.' Kang (2012) describes such learners as "multilingual students with great adaptability to various local situations" (p. 165). Costa (2010) reports

on a similar outcome from his ethnographic work. He refers to model immigrants as "designer immigrant(s), that is, immigrant(s) who possesses high-level skills and global goals and interests" (p. 217). "Even in the face of overwhelming forces, [designer immigrants] are able to exercise agency and to do so in ways complementary to prevailing ideologies which subsequently bolstered learning" (2010, p. 217). In both instances, the 'Asian Global' students (Kang, 2012) performed on par or better than their native peers. In the United States, a similar discussion emerges around 'model minorities' but researchers are more critical. Asian students often "demonstrate a high academic profile" Wing (2007) reports. When combined with respectful behavior these students are widely recognized as 'model minorities.' This can be misleading, Wing (2007) argues. Wallitt (2008) would agree. Studying Cambodian refugee students in New York City he found that because these students are generally well behaved, quiet and self-disciplined, they are often perceived as the 'model minority' but in reality "these children from refugee families are often overlooked" (p. 3). This results in a lack of supports and, over time, their performance declines.

Mobility

Researchers worldwide are tracking immigrant movement and, as populations shift, redefining understandings of 'immigrant.' For decades, emigration and immigration patterns were predictable. Mobility trends affected some countries and not others. Today, patterns are less predictable, with more systems impacted by effects of changing populations. For schools, the struggle centers around understanding the educational backgrounds and best strategies to seamlessly assimilate new populations

into their country, or, how to restructure systems in lieu of diminishing populations. Passel (2011), Chartelard (2010), Luciak (2004), Norton and Leung (2002) document this change. From middle-performing Great Britain, Norton and Leung (2002) define current immigrant learners as "students from diverse social and ethnic backgrounds" (p. 93), recognizing that most new arrivals have different languages, skillsets, and expectations. Luciak (2004) agrees as a result of documenting the population shifts in the European Union. The same realities emerge in Passel's and Chartelard's work, despite very different contexts and populations. Passel (2011) monitors the movement of migrants entering the United States. As waves of immigrants travel through Mexico and northward into the United States, the researcher details the tensions and challenges they confront once in America. Chartelard (2010) details similar adjustments for refugees entering Jordan. The newcomers have to adapt to new ways of life, cultures, and schooling.

The Turkish emerge as the group most discussed in current literature. While conversation around immigration in the United States is considerable (with a focus on Central American immigrants), and the movement of Indonesians, Chinese, and Indians is highly monitored in Asia, it is the Turkish immigrants who are receiving the greatest attention in current discussions. (Polish immigrants are second.) Yaman, Mesman, IJzendoorn, Bakermans-Kranenburg, and Linting (2010) report there are 370,000 Turkish immigrants in the high-performing Netherlands, making them the largest immigrant group in their system. Söhn and Özcan (2006) find that middle-performing Germany is the "country with the largest number of Turkish immigrants in Europe" (p. 101) and Crul

(2008) writes that Turkish immigrants are the most mobile of all immigrant groups in Europe. The reputation that accompanies the highly mobile Turkish immigrants is less than desirable. Van der Veen and Meijnen (2002) report that Turkish immigrant parents of fifteen-year-olds are less authoritative in their parenting practices than what is normal of Dutch parents and Daglar, Melhuish, and Barnes (2011) report that Turkish immigrant children "had more externalizing problems, internalizing problems and emotional deregulation and less social competence than migrant and non-migrant children" (p. 261). These generalizations shape perceptions about Turkish language learners and could escalate into societal tensions. This is already emerging in Greece. Danielidou and Horvath (2006) report that increasingly, Greeks are unwilling to "cohabit with Turkish immigrants" (p. 405).

Mobility is impacting local languages and societies. From high-performing Canada, Prasad (2012) identifies how an influx of immigrants in the Francophone community is changing their society. The researcher notes that four out of five immigrants in Canada speak a first language other than English or French and argues, "immigration is increasingly transforming Francophone minority communities" (p. 190). Already a minority, the increased linguistic diversity in the francophone community threatens the fragile French dominance. Similar linguistic tensions are seen in the United States, a country without an official language. Smith-Davis (2004) reveals that currently, in the U.S., Spanish, Vietnamese, Hmong, Cantonese, Cambodian, Korean, Laotian, and Navajo comprise 85 percent of the linguistic diversity in public schools. In both large North American systems, diversity is shifting the linguistic landscape. Smaller systems

are also experiencing change. In middle-performing Ireland, for example, the fusion of languages is bringing changes as well, this time in the domain of social networking. "Unlike other European countries" Byrne et al. (2010) reports, "migration patterns to Ireland are diverse in terms of the national groups concerned [which] is likely to reduce the capacity of immigrant communities to build up extended social networks" (p. 273). The research within this trend traces recent patterns and shifts over time.

Challenges

Researchers across multiple systems emphasize that immigrant students are disadvantaged in their new country due to extra burdens. Discussions on language and school effects are common in this trend, but unfair and unjust treatment is also a major theme. Policies, laws, and poverty also emerge as obstacles for immigrant populations.

Language fluency is a major barrier to achievement for many immigrants. In high-performing Australia, for example, Sainsbury and Renzaho (2011) report "families immigrating to Australia face many challenges integrating into the educational system, including language barriers" (p. 291). In the Netherlands, Vallen, Van Steensel, and Kurvers (2011) report that children from immigrant families generally start primary school at a disadvantage and that early literacy development for immigrant students is impacted by their home language situation. To overcome such challenges, Ender and Straßl (2009) from middle-performing Germany, say "[language] mastery is required if [immigrants] are to participate equally in academic contexts" (p. 184).

Prior schooling also affects immigrant success. Colding, Hummelgaard, and Husted (2010) state "inadequate Danish language proficiency of immigrants, parents and

their children is an important reason for high dropout rates…" but they also conclude "inadequate educational preparedness from grade school" impacts immigrant achievement (p. 684). Dahlstedt and Bevelander (2010) agree based on their research in middle-performing Sweden. They find "foreign-born individuals have a higher probability of employment with a vocational and host country education as opposed to a general and home country education" (p. 158) because educational preparation in some home countries is not valued as highly as host education. For many immigrants, this means, in their new country they have to take jobs doing work below their skillset. Even years later, some of these immigrants will still be in inferior positions than they would have had they remained in their country of origin. Van Tubergen and Wierenga (2011) suggest that language barriers prevent some immigrants from acquiring the same level work in their new country but their children may not face the same problem. They examine Turkish and Moroccan immigrants' second language proficiency in multilingual Belgium (Dutch, French, and bilingual Dutch-French regions) and conclude "both Dutch and French skills are higher among those who migrated at a younger age, who have been living in Belgium for a longer time period, who have received more education (particularly education in Belgium), and who live in regions with fewer co-ethnics" (p. 1039). For those who arrive later in life, the lower prestige associated with their home education can be a burden. Receiving schools often assume students have gaps in their learning, lower quality training, or have lower expectations. While systems are all different, they are not always worse; sometimes, the value between systems simply misaligns.

Another challenge for immigrants is discrimination. Societal discrimination is often grounded in schools, according to Soon-Won (2010) and Støren and Wiers-Jenssen (2010). In high-performing South Korea, Soon-Won (2010) writes, "immigrants are subjected to discrimination and excluded from ethnocentric Korean society, and abused in terms of universal human rights" (p. 287). Such an issue is also noted in high-performing Finland, although some populations have a harder time than others. Støren and Wiers-Jenssen (2010) report discrimination is worse for some immigrants than others because of societal understandings. They disclose that "different forms of discrimination against non-Western immigrants exist" and influence success (p. 29). Race may be more of a factor than origin, especially in Italy. Gobbo (2011) states racism is a major concern for immigrants. Love and Varghese (2012) agree. They write that in Italy "historic racialized identity construction is currently excluding immigrants from Italian national identity" (p. 1). So it appears that some immigrant groups receive better treatment than others, and appearance more than background, may impact initial acceptance or rejection from a new country.

Discrimination is also an issue *within* classrooms and schools, according to Byrne, McGinnity, Smyth, and Darmody (2010), Kivirauma, Klemelä, and Rinne (2006), and Lesar, Čuk, and Peček (2006). From high-performing Finland, Kivirauma et al. (2006) report a disproportionate number of immigrant students end up in special education classrooms:

> Children from immigrant families account for less than one out of ten students in general education, but in classroom-based special education they represent nearly

> 14 percent, and in part-time special education as much as one-quarter (25 percent). (p. 117)

While in middle-performing Ireland and promising-performing Slovenia, the concern is less about placement and more about daily interactions in classrooms. Byrne et al. (2010) reflect on the participation of immigrant students in Irish schools. They report that while immigrant students "have equality of presence" in classrooms, they are not "securing equality of participation or achievement" (p. 271). Immigrant students are ensured an educational placement in Ireland but beyond that, the supports that they receive and the attention from teachers vary across the system. School attendance does not guarantee equal access to education argues Lesar et al. (2006). They find in Slovenian classrooms that "teachers treat children from ethnic minority groups in an assimilative rather than inclusive way" when examining the interactions between teachers and Romani children from the former Yugoslavia (p. 77). To promote inclusion in new receiving countries will require changes to the culture, politics, and daily practices; without the necessary shifts, the educational gains of immigrants will continue to be inferior to mainstream students.

The policies, laws, and reforms around immigration and education may also be a challenge. Arphattananon (2012), Ersanilli (2012), and Ribeiro, Almeida, Fernandes-Jesus, Neves, Ferreira, and Menezes (2012) summarize the major points from this perspective. Arphattananon (2012) expresses dissatisfaction over national policies in promising-performing Thailand. He argues current education policy falls short of helping immigrant students.

> Thai government does not have a policy to promote or to persuade migrant parents to bring their children to school. A policy to follow up on children of migrants who drop out also does not exist. Additionally, school practices and curricula do not match the circumstances of the children (p. 1).

Ersanilli (2012) compares integration policies in Germany, France, and the Netherlands that aim to bring immigrant and native populations together. They focus specifically on Turkish immigrants and ultimately argue none are sufficient. "The effect of integration policies is modest at best" at promoting authentic integration of Turkish immigrants (p. 338). Ribeiro et al. (2012) have a similar dislike for policies in middle-performing Portugal. They argue that current laws are not aiding Angolan and Brazilian migrants. "A huge gap between educational policy and the real life of schools partly explains the (dis)empowerment of [immigrant] youth" (p. 207).

The educational systems themselves create additional challenges for achievement. In Germany, for instance, there is increasing hostility regarding the tracking and structure of the system. Auernheimer (2005) calls the system "dysfunctional for an immigration society" (p. 75) and states it is "failing to meet the pedagogical challenges posed by emigration and immigration" (p. 75). Söhn and Özcan (2006) agree, claiming Germany "fails to provide adequate language training for children who speak non-native mother languages and shows a strong tendency to reproduce social inequality" (p. 101).

It is easy to blame policies, according to Brinch, Bratsberg, and Raaum (2012) and Tunger, Mar-Molinero, Paffey, Vigers, and Barłog (2010) but these simply mask the true issues. Tunger et al. (2010) argue the realities within the system are inhibiting

immigrant success. They search for a more holistic, socio-cultural approach to integration by contrasting the language learning provisions and government requirements for immigrants in Wales, Spain, and Switzerland. Brinch et al. (2012) spotlight the National Norwegian School Reform, arguing it unintentionally has positively impacted the educational attainment of immigrant youth. They report "the immigrant transition rate from compulsory schooling to completion of the first year of upper secondary education improved significantly" under the reform and call for more untargeted educational reforms since they can have a large effect on the education of immigrant students (p. 447).

Historic, demographic, and sociolinguistic factors that surround policies create immigrant challenges. Antecol, Cobb-Clark, and Trejo (2003) compare the United States immigrant policies to those in Australia and Canada and report the latter two systems have policies that "seek to increase the number of immigrants admitted on the basis of employment-related skills" (p. 192). This elevates the educational background and socio-economic status of incoming immigrants in a society and thus the immigrant children in a school, but researchers conclude the United States policy is not the issue. "The comparatively low overall skill level of U.S. immigrants may have more to do with geographic and historical ties to Mexico than with the fact that skill-based admissions are less important in the United States than in Australia and Canada" (p. 192). Smagulova (2008) also challenges current policies, this time in promising-performing Kazakhstan. He notes that the current national policy, which seeks to support Kazakh and Russians, suggests attitudes and interpretations of the policy are the issue, not the actual policy.

Home environment can also cause challenges, according to researchers considering the effects of poverty on immigrant populations. In Switzerland, Meunier (2011) argues students' home economic conditions "explain around one quarter of the achievement gap between Swiss and first-generation immigrants" (p. 16), as conditions in most immigrant homes are more disadvantaged than in mainstream homes. If true, this is alarming for low socio-economic, high immigrant populated communities, such as the United States, where Borjas (2011) reports "nearly half of immigrant children are being raised in households that receive some type of public assistance, compared with roughly one-third of native children" (p. 247).

Recommendations

Researchers detail advice on how systems can improve the achievement of immigrants. The most frequent recommendation is to improve their linguistic fluency in the language of instruction, but scholars offer varying recommendations on how this should be done. From middle-performing Germany, Marx, and Stanat (2012) suggest monitoring oral proficiency to determine reading comprehension. Interestingly, it is not uncommon for strategies in the current discussion to conflict with each other. For instance, in middle-performing Greece, Magos and Politi (2008) promote creative lessons and role-playing as a tool to aid immigrants in gaining confidence and language fluency faster than traditional techniques. They write, "role-play helps learners, especially immigrants, to practice the new language in real-life communicative situations, to enrich their vocabulary and to develop new skills and attitudes" (p. 96). On the other hand, in high-performing Finland, Tonne, and Phil (2012) advocate for literature-based literacy

education, suggesting it "may reduce possible negative effects of low socio-economic status and linguistic minority background on reading engagement in the language of instruction" (p. 183). These suggestions reveal the range of current ideas in the field to support language instruction for immigrants.

Many researchers narrow their recommendations to focus on *specific* immigrant populations. Dali (2012), Chow (2007), and Liebkind, Jasinskaja-Lahti, and Solheim (2004), offer recommendations from high-performing systems that target specific immigrant groups. In high-performing Canada, Dali (2012) looks specifically at Russian-speaking immigrants and Chow (2007) considers immigrants from Hong Kong. Dali (2012) argues that the leisure reading practices of Russian immigrants are an advantage that can be useful to develop English reading skills and Chow (2007) emphasizes how important it is for Hong Kong immigrants to feel a sense of belonging in Canada, in order to be successful. In high-performing Finland, Liebkind et al. (2004) investigate how Vietnamese youth are adjusting to Finnish schools. They conclude that to raise these learners' achievement, schools must increase parental support and address discrimination in Finish schools. Jordan and Singh (2011) identify strategies for Sikh, a new and increasing immigrant population, in Ireland. They believe that to gain acceptance in mainstream society and to improve their performance in school will require "keeping [Sikh] traditions alive, using improvisation, erasing markers of difference and downplaying racism" (p. 407). Alzaroo and Hung (2003) are one research team out of many in the current discussion that focus on Palestinians in promising-performing Jordan. They argue education offers strategy, incentive, and identity to Palestinian children and

families. Since the needs and backgrounds of immigrants vary worldwide, the strategies and recommendations offered in the literature are also distinct. One type of solution may work with one population but not with another. Some populations want opportunities to keep their cultural practices alive and will find comfort in activities that affirm this personal identity. Others will reject these options preferring supports that aim to help them assimilate into the new culture. These differences exist even within immigrant populations from the same background. Age factors also impact how best to support specific populations.

Researchers call on schools to rethink their strategies. Community *matters*, according to Díez, Gatt, and Racionero (2011), Sunder and Uddin (2007), and Kanan (2006). From middle-performing Spain, Díez et al. (2011) report that for schools to decrease immigrant dropout, they must engage with immigrant communities "in more active, decisive, and intellectual ways" (p. 184). Schools cannot simply fold these students into a learning community without first intentionally reaching out to recognize their backgrounds and the value they add to the new school community. Sunder and Uddin (2007) call for schools in Great Britain to rethink how they are supporting Pakistani children. They argue that if immigrant performance patterns between groups remain unbalanced for long periods of time, this can create chronic underperforming. In their work, they find Bangladeshi students are "improving at a faster rate" than Pakistanis in Great Britain (p. 43). They attribute their success to the fact that the schools serving the Bangladeshi students are more responsive to parents and the needs of the community and call on schools serving the Pakistani families to spend more time with their

immigrant populations so they can implement better supports. In systems with high concentrations of immigrants, schools need to embrace opportunities that promote tolerance and cross national sharing, according to Kanan (2006). Working in Qatar, he details how a school with a large immigrant population is improving its culture by promoting sharing and communication about different nationalities.

Segregation within systems and communities need to dissolve. Researchers notice that some systems, due to parent choice or school zoning, are becoming predominantly immigrant schools and others are filled with mainstream students. This is problematic and harmful to the linguistic gains and long-term achievement of immigrants. Van Houtte and Stevens (2010) detail the effect of segregation in high-performing Belgium. The researchers reports "immigrant students in high concentration schools tend to aspire to finish high school and move on to higher education slightly more than those attending medium concentration schools (20-50 percent immigrant students)" (p. 209). Researchers call on schools to vigilantly monitor enrollment across their system for a balance between immigrant and native populations. Similarly, an immigrant student living in a residentially segregated neighborhood is growing up under different conditions than an immigrant who is not. Bygren and Szulkin (2011), Borjas (2011) and Meunier (2011) present recommendations on how these realities impact immigrant students in high, middle, and promising systems. Investigating residential segregation in high-performing Sweden, Bygren and Szulkin (2011) write

> Immigrant children who grow up in neighborhoods with many young coethnics who have limited educational resources, obtain relatively low average grades

> from compulsory school, and on average, do not attain the same levels of education as do immigrant children who grow up elsewhere. (p. 1305)

Intentional practices in schools that mix immigrant students with mainstream learners can make up for a lack of interaction outside of school.

In summary, the research on immigrant underperformance is more comprehensive than the conversations on boys' underachievement. Immigrants are viewed as a heterogeneous population with distinct backgrounds that impact their assimilation and success in their new country. Scholars recognize immigrant populations as multilayered with different skillsets and backgrounds. They identify challenges unique to specific groups as well as some that are common for all immigrant learners. 'Recommendations' surface as the final theme in this section, not 'solutions' because more studies call on systems to select the best remedies from existing solutions, rather than offer new answers to improve immigrant performance.

Language Learners' Performance Worldwide

OECD (2010d) reports students who are both immigrants and speak a different language at home score, on average, "thirty-five points lower than students without an immigrant background, after accounting for socio-economic background" (p. 54). While OECD's definition of language learner differs from identifiers in this study, their results reveal a gap between native speakers and non-native speakers. Language learners, as defined in this study, include the widest range of populations (aboriginal, ethnic minorities, migrants, refugees, asylums, and generational immigrants who speak a different home language than the language of instruction in school).

In the current literature, 88 percent of the jurisdictions that participated in PISA 2009 are discussing the achievement of language learners, so there is more focus on this population than on the previous two subgroups (see Figure 2.2.3). A substantial number of publications, however, focus on English language learning and English as a foreign language. Unless English is the language of instruction in these jurisdictions, these conversations are not included in this review, since they do not align to the focus of this study. Research spotlighting best practices for teaching mainstream students reading and writing are also not included since they are beyond the scope of this study. Instead, this section exclusively showcases current research discussing students who speak a different home language than the main language of instruction in their school (the language of the PISA assessment).

Dominating discussion on language learners' performance is the United Kingdom, Israel, the United States, Spain, South Korea, Ireland, and Germany. In each of these jurisdictions, twenty or more publications emerge from the current literature spotlighting language learners' underperformance. Language learners' achievement is also a focus in discussions in Sweden, Serbia, Montenegro, Portugal, Peru, New Zealand, Mexico, Luxembourg, Latvia, Japan, Hungary, France, China, Canada, Bulgaria, Austria, Australia, and Argentina. In each of these locations there are ten or more publications spotlighting language performance (see lighter shaded countries on the heat map). On the other hand, discussions around language learners' performance are not prominent in the current discussions in Chile, Czech Republic, Greece, Panama, Qatar, Russia, Tunisia,

and Turkey (as indicated by the color white on the map). Jurisdictions that did not participate in PISA 2009 are also shaded white and are not highlighted in this review.

Figure 2.2.3. Heat map of discussion on language learners' achievement in PISA 2009

The extensive dark coloring on the heat map reflects the wide range of populations included in discussions around language learners' underperformance. Many European researchers showcase ethnic minority students who are language learners. The Roma (the largest ethnic minority population in Europe), for example, are "faced with serious problems in education, because they do not know the language of the majority" (Cvjetićanin & Živanović, 2012, p. 53). American studies predominantly document the chronic underperformance of indigenous and immigrant learners who speak a different home language than that of the mainstream society (Calderón, Slavin, & Sánchez, 2011; Sakellariou, 2008). "The educational achievement of indigenous people in Peru, as well as in the other Latin American countries with significant indigenous minorities, has been lagging behind the Spanish-speaking population" (2008, p. 371) and Calderón et al. (2011) recognize "wide and persistent achievement disparities between [10.6 percent of

United States students in K-12 public schools who are language learners] and English-proficient students" (p. 103).

In Asia, particularly in the South East, scholars express concern over the performance of migrant and refugee students (Uchikoshi & Marinova-Todd, 2012; Lee, 2011; Oh, 2008). Thailand, for example, is "a prominent receiving country for refugees and asylum seekers" (2011, p. 811); the system has had a continuous "flow of refugees since the mid-1980s" (2008, p. 589). Newcomers arrive with a range of linguistic backgrounds and many have had extended periods of interrupted schooling. These challenges are particularly pronounced among the 142,000 refugees living in nine camps along the Thai-Burmese border (2008).

Current Trends in Discussions of Language Learners Underachievement

Apprehension and distress are more prominent tones among the current research in this group than in previous discussions. Some researchers are embittered by the chronic underperformance of Aboriginal and ethnic minority populations while others are increasingly disillusioned by the performance of second and third generation immigrants. The April 2000 *Report of the Auditor General of Canada* states "the progress in closing the education gap for Indian students living on reserves has been unacceptably slow" (as cited in Stewart, 2006, p. 1004). In one Ontario board with a high concentration of First Nation students, an administrator described it like this

> Our board's Aboriginal students comprised 40 percent of enrollment. Many of them had been deprived of their own heritage language and also excluded from the majority language of English. . . We have kids that grunt. (Hargreaves, Braun,

Hughes, Chapman, Gurn, Lam, Lee, Morton, Sallis, Steiner & Welch, 2012, p. 188)

Despite lamentation, the copious researchers who have dedicated their lives to bettering the educational outcomes of language learners with few victories persist forward. The heightened concern among these scholars is heard in the four trends that emerge from the current research: persistence, power, policies, and solutions. For a full comprehensive review of language learners achievement over time, see Craven, Bodkin-Andrews, and Mooney (2012) (indigenous education); McCarthy and Vickers (2012) (refugee and immigrant education).

Persistence

The underperformance of language learners is tireless. Descriptors distinguish this theme from 'awareness' used in previous sections. Terms such as "chronic academic underachievement" "inequitable chances" and "on-going risk" are used to describe the dismal conditions that are too frequently realities for language learners (Benzies, 2011; Tadoada, Kidd, & Tonks, 2010; Espinosa, 2005). Researchers inevitably document continuous, sustained effects. The 'deteriorating conditions for refugees in Thailand,' the 'historic oppression of Buraku in Japan,' and 'the generational poverty of Aboriginals in Canada' are examples of the poor conditions language learners endure worldwide and are documented in the current literature (Benzies, Tough, Edwards, Mychasiuk, & Donnelly, 2011; Gordon, 2006; Lee, 2011). While researchers in this group advocate for different populations, collectively, they argue the underperformance of language learners is long overdue.

Researchers recognize the educational disparities between language learners and mainstream peers by considering their achievement on national assessments. In middle-performing Serbia, Baucal, Pavlovic-Babic, and Willms (2006) reports that Roma children score 130 points below average on national tests. Academic gaps are not a new issue; rather they have persisted for decades. This means that multiple generations of Roma lack basic math and language literacy skills. The same pattern is visible among the travelers in middle-performing Ireland. The travelers are a mobile group who speak Gammon (or Shelta). They have a lengthy history of underperforming, compared to their peers (Nugent, 2010). For decades, the travelers have had "the lowest rate of educational attainment of any group" in Ireland, with 47.5 percent of traveler children scoring in the bottom tenth percentile for their age group on the national assessment (Department of Education & Science, 2010, n.p.). The mobility of this population means most traveling children attend multiple schools. It is not uncommon for these youngsters to forge large periods of schooling while their community is relocating.

In the United States, generational underperformance among Alaskan indigenous children and Hispanic children are widely documented. Akiba, Chiu, Zhuang, and Eastman-Mueller (2008) investigate data on the National Assessment of Educational Progress (NAEP), and report Alaskan indigenous language learners continue to obtain lower reading and mathematics scores than their English speaking white and Asian/Pacific Islanders peers. Hispanic underperformance is also documented in the United States. The National Center for Education Statistics (NCES) is just one report that documents Hispanic students are underperforming in comparison to their white

peers. Grogger and Trejo (2002) find that most Mexican-American students who are second or third-generation have better English fluency than Spanish, but academic gains appear to plateau or even decline. Furthermore, with the passing of each generation, these learners access fewer resources from their community of origin (Callahan, Wilkinson, & Muller, 2008). While their English fluency advances, the achievement gap continues.

Despite persistent performance differences, ethnic minority language learners are increasing worldwide. Hattie (2003) argues that over the past twenty-five years the Maori and Pacific Islanders in high-performing New Zealand have steadily increased while their performance in school has consistently declined. Efforts to improve their educational attainment have emerged but have not had the necessary impact on Aboriginal achievement. Similarly, the Aboriginal (or First Nation) students in high-performing Canada have a long history of underperformance. The Inuits in Nunavut are particularly interesting since they comprise the majority of people in the province. In 2006, 84 percent of people identified as Inuit (24,640 of 29,325 residents) with young Inuits comprising the largest proportion in the system (Nunavut Tunngabik, 2010). Rasmussen (2011) details how for over the past forty years these language learners have underperformed compared to mainstream students in the jurisdiction.

Power

There are linguistic and cultural tug-of-wars between mainstream and language learners. Language giants − English, French, and Spanish − are threatening the maintenance of heritage language among language learners. Finnish linguist Tove

Skutnabb-Kangas (2000), for example, argues English is 'killing off' low powerful languages, such as ethnic indigenous languages, and putting others in danger as schools opt out of language support programs that value children's home language. The same call for more heritage language support is hear from researchers in high-performing Canada. Prasad (2012) explains

> The federal government only guaranteed support for immigrants to acquire one of Canada's official languages − English or French − rather than both languages. As a result, culturally and linguistically diverse immigrants have little support both to maintain their first language and to access Canada's official linguistic duality. (p. 194)

By not offering language learners an opportunity to develop linguistic skills in their native language, their achievement in the second language is stunted. Cummins (2001) and Oller and Eilers (2001) are some of the numerous researchers who describe how cross-language transfer furthers the learning of bilingual students. Limiting heritage language development, through educational programming, also indirectly strips students of their prior linguistic identity, a contentious practice (Skutnabb-Kangas, 2000).

Language tensions are not unique to high-performing systems, similar issues emerge in Uruguay and Peru, only now the language giant is Spanish instead of English. Spanish fluency is perceived as a symbol status in these two systems, while Portuguese and Quechua are disempowered. According to Waltermire (2012), the government in middle-performing Uruguay strictly prohibited individuals to use Portuguese, forcing immigrant families living near the Uruguayan-Brazilian border to hide their linguistic

identity for decades. While the law has now eased, the stigma attached to speaking Portuguese lingers. Portuguese still "lacks the prestige of Spanish" in public domains, and it is viewed as a status symbol of those who speak it outside of the home (p. 509). In promising-performing Peru, according to Lewis (2009) approximately 60 million of the 329 million speakers of Spanish are second language learners, a large number of whom speak Quechua as a first language. Since the language within mainstream society is Spanish, Quechua students are schooled in Spanish. It is, therefore, the language of opportunity and mobility. Godenzzi (2009) writes Quechua is increasingly associated with the economic and educational disadvantaged since employment opportunities are limited for individuals who only speak Quechua (as cited in Kalt, 2012). Such perceptions empower the Spanish 'giant' while deflating the value for Quechua. Spanish fluency is necessary to acquire professional employment and the same opportunities are not available for Quechua speakers. Thus, the language is disempowered.

A language giant can also threaten a dominant mainstream language. This is most noted in literature from South East Asia. In promising-performing Thailand, for instance, English is a threat to refugee assimilation. Non-governmental Organization (NGO) refugee schools offer English-only education for refugees instead of Thai, the language of mainstream society. Lee (2011) argues this is a disservice.

> Despite the fact that learning English language has become a critical resource of gaining power, prestige, status and socio-economic mobility in this age of globalization, we cannot rule out the need to teach a local language for urban refugees in countries where they resettle. (p. 811)

Power struggles also create cultural clashes, which contribute to sustained underachievement (Ames, 2012; Nunavut Tunngabik, 2010; Seale, Shellenberger, & Spence, 2006; Power, 2005). In Canada and the United States, a lack of respect for Aboriginal culture is omnipresent. "Inuit perceive this inequality and many parents and community members are consequently reluctant to support an education system that in many ways is incongruous with our culture, identity and way of life" (2010 p. 12). The power of the dominant culture is overbearing, causing distrust between Aboriginal families and local schools. In order to improve this relationship, both cultures must have equal respect within the schools. Powers (2005) illustrates the same cultural tension in schools in the United States.

> At school, many American Indian students must negotiate unfamiliar discipline, instruction and evaluation methods, rules for forming interpersonal relationships, and curricula that diverge from those promoted by their family, tribe, and community. (p. 338)

The power struggle between the giant mainstream culture and American Indian's home culture are distinct. The tensions from this disconnect increase as a student matures, which may explain the widening gap that develops between forth and tenth grade (2005). Older students are acutely aware of this tension. After struggling to thrive within both cultures, they frequently reject the mainstream culture because it lacks respect for their home Native American values. Societal problems, including alcoholism and abuse, are abundant within these Aboriginal and Native American communities. Researchers continuously recognize how a lack of respect for minority languages and cultures fuel

dysfunctional patterns (Seale, Shellenberger, & Spence, 2006). When children's language and culture are excluded from school, their very identity is disregarded. This has a negative effect on their educational performance (Ames, 2012). In promising-performing Peru, Ames (2012) argues that Quechua students' transition to primary school is critical to their long-term success. When teachers make intentional efforts to diffuse power struggles between the school's language and culture with those that the indigenous child brings into the classroom, the students have a more successful integration into the public school system. When these power tug-of-wars are disregarded by the teachers and left unspoken, Quechua students have an ongoing experience where they are forced to make sense of the difference between their home and school life, a taxing responsibility for a small child.

Policy

There are numerous researchers reviewing the policies around language learners, with the majority advocating for new regulations. In middle-performing Turkey, for example, until 1991 Turkish Law No. 2820 section 81 denied the complete existence of Kurds, the largest ethnic and linguistic minority group in the country. "It is forbidden to claim that there exists minorities in Turkey. It is forbidden to protect or develop non-Turkish cultures and languages" (as cited in Taylor & Skutnabb-Kangas, 2009). While this law has since dissolved, Kurds continue to underperform compared to their mainstream peers and have limited opportunities to be educated in their native language (CIA, 2007). The profound impact of laws that strip people of their cultural and linguistic rights leave deep wounds that may take generations to heal. Furthermore,

while laws now recognize Kurds, the laws do too little to compensate for the cruel realities of the past. Greater language protection and cultural appreciation between the two populations is urgently needed to improve this relationship.

Political pressures and larger agendas often are prioritized over supports for language learners. In promising-performing Azerbaijan, for example, researchers recognize that the society intends to support language learners, but beyond lipservice, there is little evidence. Rust (2008) examines minority education policies in promising-performing Azerbaijan and report schools aspire to provide indigenous ethnic minority students "with a sense of cultural identity and equity" (p. 5). Such visions are written into school documents, and faculty and staff are open to these ideas, but the practices in schools emphasize mainstream culture and language. Political agendas are prioritized. Schools are under pressured to focus on developing "nationalism and cultural homogenization" at the expense of supporting the cultural and linguistic backgrounds of language learners (p. 5).

In middle-performing Bulgaria, Van der Anker (2007) and Fay and Davcheva (2005) are also suspicious of how political agendas marginalize actions that could lead to authentic improvements for language learners. Van der Anker (2007) investigates interculturalization and states "neither the implementation of the Durban agenda nor the protection of minority rights" is sufficient to support minority students when other policies take precedents and have more support (p. 287). So, in all three of these systems − Turkey, Azerbaijan and Bulgaria − researchers are recognizing that discriminatory and disrespectful policies are contributing to hostility between majority and minority

populations. Negative relationships lead to tension interactions and poor results; for these systems to improve, the majority population has to empower the linguistic and cultural rights of the minority population.

Policies that are not directed towards language learners also come under attack by researchers investigating underachievement. In the United States, No Child Left Behind is one such policy. Wright (2007) describes that English language learners "lack the language abilities to take tests as native English speakers, [but] are nonetheless required to take the exams" (p. 2). Their participation is, in theory, to ensure their progress is accounted for. It is difficult to ascertain whether a language barrier is playing a role in comprehension. "The expectation that all [language learners] should be performing at grade level after one year of learning…is totally without empirical foundation" blasts Cummins (2011, p. 143). Students who do not have fluency skills in the mainstream language become frustrated by such exams. "The option of testing students in their native language is considered as a solution but states do not administer them because of impracticality" (2007, p. 2). The lack of motivation to ensure native language testing options are available is irresponsible and may be an indication of a deeper disregard and commitment to language learners.

There are a few researchers who are less pessimistic regarding policies that support language learners. In Canada, for example, Fallon and Rublik (2011) review the 2006 language policy implemented in Quebec that made English as a second language compulsory in grades one and two in all francophone primary schools across the Province. They cautiously report the policy recognizes "the need for system-wide

adoption of measures aiming at functional bilingualism for every young Quebecer" as well as the "need of Quebec francophone to preserve and improve their own language while protecting and nurturing the francophone character of the society" (2011, p. 102). The researchers are quick to add that their findings are tentative and that further research is needed to ensure the language policy continues to protect and promote French as the official language. Their cautious optimism suggests the policy may be an improvement on previous ones. A similar message resonates from Ó'Laoire (2012) who reviews the language-in-education policy (LEP) in regards to the Irish language. The researcher identifies the daunting task of protecting the Irish language, since it is a first official language of only three to five percent of the population. Irish language maintenance is contingent upon strong policies that uphold it as a priority and protect it against the powerful English language giant. Improved policies over the last generation have brought some revival to Irish, with Irish-medium schooling options emerging across the country and weekend language immersion workshops (Harris, 2009). Policies have empowered Irish and given it a closer status to English, though time will tell if such actions are sufficient to equalize the tensions in this system. Hence, while Quebec is making room for English within schools as a means to foster bilingualism, Ireland is promoting Irish-only immersions programming. This difference signals the different relationships English has in the two systems. In Quebec, French is the mainstream language, while in Ireland, English is still the language of power.

Solutions

Researchers are eager to improve the achievement patterns of language learners but recognize that two layers of transformations are necessary: in-school and societal change.

Instructional programming is the most frequent in-school change recognized by researchers. Some programming is better than others, although researchers do not agree which is best (Short, Fidelman, & Louguit, 2012; Paciotto, 2010; Hornberger, 2006). Hornberger (2006) advocates for bilingual instruction. Based on work in New Zealand and Peru, she writes "the biliterate use of indigenous children's own or heritage language as medium of instruction alongside the dominant language" leads to greater understanding and deeper learning than when the mainstream language is the only linguistic tool (p. 277). Paciotto (2010) adds that there must also be a value for developing heritage language skills. She argues that language maintenance programs which allow students to continue learning their home language while learning academic knowledge through the mainstream language, is a strong model. Paciotto (2010) builds her argument by showcasing the Rarámuri community in Mexico. The literacy skills of language learners in this community increased when Indigenous-language maintenance programs were added that aimed to simultaneously develop both L1 and L2 schools (2010). Double literacy instruction led to double the learning. Other researchers support sheltered language programs, where teachers use the mainstream language to teach grade level content and build academic skills (Short et al., 2012). Monitoring middle and high school English learners in the United States, Short et al. (2012) argue that sheltered

models offer better supports for writing and oral language development because students are still learning the same concepts as their mainstream peers while building English fluency.

Some scholars argue it is less about which language is used and more about the actual programming. Mainstream schools too frequently teach isolated skills through direct instruction, followed by independent or group work. This style does not align with the strong oral tradition of storytelling in some indigenous communities, argues Neugebauer and Currie-Rubin (2009). If instruction shifts to align more closely to the patterns of learning to which indigenous students are accustomed, they will do better in school. Dockrell, Stuart, and King (2010) and Ballantyne, Sanderman, and Levy (2008) offer alternative perspectives. Docktrell et al. (2010) suggest that interventions need to start earlier to improve language learners' performance. They find young language learners in England need extensive talking time in preschool to build "vocabulary, oral comprehension and sentence repetition skills" (p. 497). So, for language learners who are in the country at ages three, four, and five, efforts to get them into strong preschool programs will have a positive effect on their educational outcomes. Ballantyne et al. (2008) review all types of instructional programming and note, among their findings, that too frequently programming disregards the knowledge language learners bring into school. To improve achievement, programming must be flexible enough to build upon the prior skillsets of language learners.

School programming also needs to be more flexible, according to researchers seeking ways to improve the achievement of language learners. Language learners all

gain fluency at different speeds, yet the current schooling structure offers two options for students not learning at the speed of the current academic schedule: retention or summer school. Both options are seen as penalties to most students. Short and Fitzsimmons (2007) provide an alternative solution. They recommend schools extend the school year or day schedule to include nights and weekend options. If students had more options to practice their language skills without feeling they were being punished, it could yield the flexibility these learners need.

Societal changes are also vital to improving the achievement of language learners. The relationship between language learners and mainstream society must improve. Correa (2011) writes, "as long as heritage language learners hold negative linguistic attitudes about their own language variety, they are unable and unprepared to learn successfully" (p. 308). Negative attitudes develop from animosity, discrimination, and inferiority. Students must feel their language and culture is accepted in mainstream society (Chavez-Reyes, 2010). The context surrounding schools impacts the experience language learners have in school. Language learners notice when the signage in their community completely disregards their native tongue. To improve achievement, tolerance and acceptance needs to replace hostility or disrespect within societies. Biases and stereotypes must be broken down so that language learners feel they are valuable members of mainstream society. Tensions between these two realities must be dissolved if schools aim to improve the achievement patterns of diverse learners.

Equitable opportunities within mainstream society to live and practice the values and traditions important to language learners are essential parts of a sustainable solution.

This must first include increasing the representation and communication between mainstream and language learning communities. Nunavut Tunngabik (2010) writes

> Today, avenues are scarce for parent and community participation in decision-making about what our children will be taught in school, what values will be enforced, what teaching methods will be used, and what qualifies as teachable knowledge and skills…in addition to preserving staggering educational deficits that in turn correspond with social and economic inequity between Inuit and Canadians as a whole. (p. 10-11)

Equity is not equality in systems with decades of inferiority. Creating equality will require a substantial investment from the mainstream community to uplift the living conditions and opportunities available to language learners. Where severe poverty and addiction is pervasive, programs and jobs that align with the values of the local community must be developed to move these populations forward. Such societal issues have to be addressed through mutual respect and deep investment if the relationship between distinct populations is going to improve.

The literature review describing the performance of language learners is bleak. The perpetual staleness of underperformance, the lack of cultural tolerance, and the linguistic power struggles are ongoing issues; time is needed to heal some of the injustices that have lingered for decades. But the interest of researchers to document and identify the underperformance of language learners generates a strong, collective voice. Efforts to involve governments on enforcing policies that support language learners (while chastising actions that inhibit them) are signs that these individuals are getting

more support. Greater change, both within and outside of schools, is needed to truly improve the learning of language learners.

Socio-Economically Disadvantaged Performance Worldwide

OECD (2010b, 2010d) reports a strong association between socio-economic background and reading performance. In fact, among OECD countries, 14 percent of variation in reading performance can be explained by a students' socio-economic background (p. 48). Ninety-two percent of the jurisdictions that participated in PISA 2009 are currently discussing the achievement of low socio-economic students (see Figure 2.2.4), making this population the most widely conversed about of the five groups explored in this study.

Researchers in the United States, Canada, United Kingdom, China, Mexico, and Australia currently dominate discussions on the performance of socio-economically disadvantaged students. In each of these countries, more than twenty current studies focus on these learners. Other systems, including Israel, Spain, South Korea, Ireland, Germany, Portugal, Japan, France, Taiwan, Switzerland, Netherlands, Hong Kong, Singapore, Finland, Brazil, Turkey, Greece, and Chile are, to a lesser degree, also discussing low income students. In each of these locations, fifteen or more current studies spotlight language performance (see lighter shaded colors countries on the heat map). Only five of the PISA 2009 jurisdictions are not discussing socio-economically disadvantaged students in the current literature: Azerbaijan, Slovenia, Uruguay, Austria, and Latvia (as indicated by the color white on the map). As with previous maps,

jurisdictions that did not participate in PISA 2009 are also shaded white and are not discussed in this review.

Figure 2.2.4. Heat map of discussion on socio-economically disadvantaged students in PISA 2009

The coloring on the heat map accentuates the prevalence of research targeting socio-economically disadvantaged learners. The United Nations Department of Economic and Social Affairs (2009) estimates that 1.4 billion people worldwide live on less than $1.25 each day. The highest rates of poverty are in Asia, the Pacific, and Sub-Saharan Africa. In promising-performing Tunisia, for example, overall literacy rates among young people are 94 percent (fifteen to twenty-four year olds) but disaggregating the same student population by socio-economic status reveals about two-thirds of poorer people have lower skills or are illiterate (World Bank, 1996). But in all regions, worldwide poverty is an issue. In high-performing Canada, in 2005, 10.8 percent of people fell under the nations low income cut-off point (LICOs) measurement (Ligaya, 2007). Marginalized populations are most vulnerable to poverty and carefully tracked by researchers. In middle-performing Bulgaria, for example, 80 percent of the Roma live on

less than $4.30 per day and the Papuans in the Eastern island of Papua in Indonesia have a long history of high poverty (UNICEF, 2010a).

Current Trends in Discussions of Socio-economically Disadvantaged Students

Three themes interlace discussions on the achievement of socio-economically disadvantaged students: acknowledgement, causes and effects, and solutions. Researchers worldwide are discussing the performance of socio-economically disadvantaged students and making claims as to why they are underachieving. The most frequently cited effects of low achievement are also explored in this section. Each theme illustrates a current focus in the literature regarding these learners across the sixty-five jurisdictions. For a comprehensive review of research on social class and achievement in the United States, see Lareau (2003).

Acknowledgement

There is wide spread acknowledgment that students from disadvantaged backgrounds are overrepresented among low achievers. Smyth (2012), Oshio, Sano, and Kobayashi (2010), and Patel (2010) study the relationship between socio-economic status and achievement in high-performing systems. All three separately document low socio-economic students' underperformance. In high-performing New Zealand, Patel (2010) states students with "low socio-economic status are over-represented in the low achieving category" (p. 51) and in Japan, Oshio et al. (2010) remark "children from poor families tend to have lower educational attainment" (p. 81). Smyth (2012) details the chronic underperformance of poor students in Australia as the "intensification of social stratification, as the already 'disadvantaged' miss out yet again in education" (p. 153).

Researchers repeatedly link this association to specific subjects. Literacy underachievement has the most attention in current literature. "There is a statistically meaningful difference between students' reading comprehension and their socio-economic status" says Yilmaz in middle-performing Turkey (2011, p. 3). Verhoeven and Vermeer (2006) examine family economic well being in the Netherlands and conclude that "students' socio-economic status is a strong predictor of their reading literacy skills" (p. 951). Curdt-Christiansen (2009) describes that among Singaporean low socio-economic students, "children [are frequently] identified as having reading difficulties when they enter primary school" (p. 69). Math and science underachievement receive some attention but remain secondary to literacy. Chen, Crocket, Namikawa, Zilimu, and Lee (2007) and Lubienski (2007) are some of the numerous researchers who consider the relationship between socio-economic status and math performance. Lubienski (2007) considers disparities in math achievement in the United States and ultimately concludes, "low socio-economic status students…do not achieve the same results as other students" (p. 54). Conducting research in Taiwan, Chen et al. (2007) report "there is a large mathematics achievement gap among high SES and low SES and minority students in eighth grade" (p. 553). Mere, Reiska, and Smith (2006) use TIMSS data to explore students from disadvantaged backgrounds performance in science. Ultimately, these researchers conclude, there is a "strong association between student SES and science achievement" (p. 517).

There are generational patterns and long term effects of underachievement. Performance trends across generations are cyclical. In New Zealand, Marie, Fergusson

and Boden (2008) report that the Maori were "exposed to significantly ($p \leq 0.05$) greater levels of socio-economic disadvantage in childhood" and now, their children have "generally lower educational achievement outcomes when compared to non-Maori" (p. 183). The same results emerge from Driessen and Dekker's (2008) work in the Netherlands. They compare generational attainment and report "the under-performance of children with under-educated parents" leads to repeated achievement gaps (p. 449). According to other researchers, performance gaps do not just sustain over time, they worsen. In high-performing Canada, Caro, McDonald, and Willms (2009) write "the [socio-economic] gap remains fairly stable from the age of seven to eleven years and widens at an increasing rate from the age of eleven to the age of fifteen years" (p. 558). Yang, Rosen, and Gustafsson (2011) reach a similar conclusion after inspecting reading achievement in Sweden between 1991 and 2001. "Educational inequality in Sweden has increased over time" (p. 197). The widening gaps may extend across all Nordic countries, according to Turmo's (2005) longitudinal research. There is a

> Relatively strong dependency on SES background in the Nordic countries [with a] gap in reading, mathematical and scientific literacy between high and low SES students . . . the gap will most likely become larger over time. (p. 155)

Studies that track the impact of low socio-economic status across generations offer important insights to understanding underachievement patterns. If home environment has a profound impact on reading literacy performance, it makes sense that children growing up in the lower classes, whose parents also grew up socio-economically disadvantaged,

are at-risk for low performance. They likely have the same number of books and exposure to literacy and communication patterns as their parents did as children.

A few scholars are hesitant to connect low socio-economic status to underachievement. Grieshaber, Shield, Luke, and Macdonald (2012) explain how such a deficiency can actually mask deeper issues:

> . . . recent refinements of the broad terms of social class or socio-economic status have questioned the established links between social class and achievement. . . it remains difficult to move beyond deficit and mismatch models of explaining and understanding the underperformance of children from lower socio-economic groups. (p. 113)

Schleicher (2009) is also cautious of models that assume socio-economic status explains low achievement, noting that "poor performance in school does not automatically follow from a disadvantaged socio-economic background" (p. 251). He uses PISA data from Japan, Korea, Finland and Canada to identify 'shared features' that can also generate underperformance. Zuzovsky (2010) provides an example of how SES class can mask the underachievement of some Arabic students in Israel, arguing that diglossia is the main cause of the low reading attainment between Hebrew and Arabic speaking students, not low SES. Both languages are used in Israeli society but one has greater power over the other, reflecting the achievement patterns of students, which the researcher reports "although decreased, remained large" (2010, p. 153).

Causes and Effects

In-class, in-school, and out-of-school differences are possible causes of chronic underperformance. Is it because of in-classroom differences, such as the teaching and learning? Is it because of the quantity and quality of resources in a school? Or, is it because of external factors such as a student's family situation? Researchers explore all of these possibilities in the current literature.

Limited exposure to high quality teaching and learning has a profound impact on the achievement of low income students. "Bad teachers can cost pupils up to half a grade…[while] the best 24 percent of teachers add around half a GCSE [General Certificate of Secondary Education] grade to pupils' overall results" say researchers at Briston University (*Education*, 2009, p. 2). "Even taking prior pupil ability into account, student performance differed depending on the teacher" (2009, p. 2). What constitutes 'good' and 'bad' teaching for socio-economically disadvantaged students is part of these conversations. In Turkey, Aydeniz and Kaya (2012) report excessive fact memorization and regurgitation on end-of-unit exams as poor teaching that impacts learners' attitudes and eagerness to excel in school. Katsikas and Therianos (2006) agree. In Greece, they refer to such learning as 'education of non-learning.' The general consensus across the research is that this is indeed 'bad' teaching. 'Good' teaching, or meaningful learning, comprises "collaborative pedagogy aiming to make students active learners and critical pedagogy aiming to empower students to become critical thinkers" (Efstathiou, 2009, p. 383). Disadvantaged students who also attend classrooms where teachers heavily rely on lecture and rote learning are likely to underperform.

The amount of time devoted to learning also impacts the achievement of socio-economically disadvantaged students. The National Center on Time and Learning (NCTL) argues that until the variable of 'time' is considered, progress towards narrowing the achievement gap will remain elusive (as cited in Gabrieli & Goldstein, 2008). Students in classrooms with highly interruptive schedules have less time to engage in meaningful learning. For instance, secondary schools where students switch subjects every forty-five or fifty minutes are not always beneficial for students who come from disadvantaged backgrounds. Georges and Pallas (2010) consider the math improvements of low income students after a summer program: when teachers maximized longer blocks of time dedicated to "developing analytical and reasoning skills" (p. 274) there was a positive effect on overall learning. Without uninterrupted blocks of time, low socio-economic students often only acquire the basic competency. Middle and upper class students who have opportunities outside of class to return to concepts or to ask parents for further explanation are advantaged. Low income students may not have these out-of-school supports and thus, their understanding is inhibited. The tension between time and content emerges from discussions on curriculum as well. "The teaching load mandated by the new curriculum is too [full] for students to master the content within the limited class hours" Wang (2011) argues. He warns packed lessons lead to "shallow literacy and numeracy foundations" (p. 90). Deciding what should be added and subtracted from curricula is important. Low socio-economic students do not usually have access to tutors to offer them the chance to learn more deeply about a subject in which they are

interested. So, what they learn in class is as far as their knowledge on some subjects will permit.

In-school resources and realities also influence the achievement of disadvantaged students. When low income students are in schools without a library or without laboratory equipment, their achievement is impacted. In Argentina, Tuñón, and Halperin (2010) report access to resources differ across socio-economic levels. "Children and adolescents at the same educational level have unequal access to resources based on their socio-economic status" (p. 1). Similarly, when human resources in a school are less accessible to lower class students, their achievement is negatively affected. For example, OECD (2009c) reports low socio-economic students in the United States, Turkey, Slovenia, and Israel often have larger student-staff ratios. This means they experience fewer one-on-one interactions with teachers, which can negatively impact achievement.

The conditions and intake patterns of schools also influence academic growth trajectories of low income students. Students attending schools with poor conditions or minimal expectations and are socio-economically disadvantaged usually have poorer achievement patterns than their peers in other schools. In Brazil, Thiago, Gouvêa, Backx, and Viana (2012) describe a relationship between the performance of low socio-economic status students and the educational infrastructure available in their municipality. They argue the conditions are poorer in places that have high proportions of disadvantaged students. Student intake patterns are also consequential. When socio-economically disadvantaged students attend schools with mostly other low income peers, they will not perform as well as when they attend schools with middle and upper socio-

economic students. In Spain, Lizasoain, Joaristi, Lukas, and Santiago (2007) investigate the achievement of students from low SES backgrounds attending schools with other students from low SES backgrounds compared to those attending schools with high SES students. They report that students with low SES who "attended high SES schools obtain the best academic achievement results" (p. 2). Systems with class segregation within the same neighborhood or community foster achievement stratification and the disadvantaged students lose out.

Tracking structures within schools emerge as a critical issue that repeatedly disadvantage poorer students (Greger & Holubová, 2010; Caro, Lenkeit, Lehmann, & Schwippert, 2009; Crul & Schneider, 2009). Researchers raise issue with vocational and academic paths. The most frequent discussions emerge from Germany. Caro et al.'s (2009) work is one of many investigating the role of academic achievement in Germany. In particular, they examine the selection process and find that "higher SES students are more likely to obtain a college track recommendation" while other students are more likely to be in lower academic or vocational tracks (p. 183). But Germany is certainly not the only place where tracking is a concern. Muijs and Dunne (2010), for example, argue SES is a determinant of school placement in England. Using data from the National Public Database, they conclude "over and above the effect of attainment . . . pupils from higher socio-economic status backgrounds are more likely to be assigned to higher sets and less likely to be assigned to lower sets" (p. 391). Kivirauma, Klemelä, and Rinne (2006) raise another important point regarding school tracking. They note that lower SES children are much more likely to be placed in lower sections or special education groups

than their middle and high class peers in Finland. The proportion of high SES students in general education is twice that of high SES students in special education.

Continually, researchers connect the achievement patterns of socio-economically disadvantaged students to their out-of-school environment. Decoding skills, vocabulary development, and reading fluency all begin in the home (Robins, Treiman, Rosales, & Otake, 2012). Since home environments vary across social class groups, children's initial literacy exposure also differs. Middle class children, according to Storch and Whitehurst (2001), log between 1,000 to 1,700 hours with picture books before they enter first grade, compared to only thirty-five hours for an average child from a lower-income family. This leads to profoundly different learning foundations. Lower class families who own fewer books spend less time with print text, whereas middle and upper class families who own large numbers of books spend more time engaging with print.

As a child grows, their motivation to read and value literacy is shaped by their family's interactions with print. Researchers in promising-performing Peru write "the family context strongly influences to what extent pupils believe that reading is an important activity for their personal and academic development" (Silva, Verhoeven & Lleuwe, 2011, p. 963). Literacy-play also contributes to different learning. Robins, Treiman, Rosales and Otake (2012) report socio-economically disadvantaged families in the United States "focus more on alphabetic order" than of comprehension when engaging in literacy play with their children (p. 2039). These interactions lead to less developed phonological awareness skills among these learners, ultimately impacting reading development. Lundberg, Larsman, and Strid reach the same conclusion,

reporting "a clear SES-effect" between children's phonological skills and their home stimulation (2012, p. 305). The home environment argument extends beyond early years. These starting realities also impact reading achievement in upper grades (Guthrie & Wigfield, 2000).

Health challenges, to which low socio-economic students are more susceptible, are also recognized in the literature. In middle-performing the United States, Basch (2011) details the prevalence of vision problems in high minority areas. He argues that low income-children are less likely to have diagnosed eye conditions than upper income children and these have an adverse effect on academic achievement. Students' "sensory perceptions, cognition and school connectedness" are impacted by vision issues and contribute to poor achievement (p. 599). Oral health also impacts academic performance, according to Seirawan, Faust, and Mulligan (2012). "Students with toothaches were almost four times more likely to have a low grade point average" (p. 1729). Poor oral hygiene leads to higher absentee rates and more concentration challenges, which impacts the achievement of low socio-economic students. "Oral health status is associated with performance independent of absence of pain" (p. 1900) according to Jackson, Vann, Kotch, Pahel, and Lee (2011) who report improving the oral health of disadvantaged students may be a way to narrow the achievement gap. Even the perception of being unhealthy can impact the achievement patterns of low socio-economic students (Florin, Shults, & Stettler, 2011). While examining the achievement patterns of students who are medically defined as overweight and those who perceive themselves to be overweight, Florin et al. (2011) adjusted for demographics, depression, television, video game use,

and physical activity and found "the perception of overweight was a more significant determinant of academic performance compared to medically defined obesity" (p. 663). Students who come from disadvantaged backgrounds and perceive themselves as being overweight are at higher risk of lower school performance.

The major effect of chronic underperformance is school dropout. There is considerable concern for dropout rates worldwide (Wu, 2012; Yi, Zhang, Luo, Shi, Mo, Chen, Brinton, & Rozelle, 2012; Xiao, 2001). "In many peoples' minds the state of dropping out of school is a closely guarded secret," Xiao (2001) reports from China (p. 50). The researcher, along with Yi et. al. (2012) and others, fear dropout rates in poor regions may be underestimated. Xiao (2001) writes:

> There was a great discrepancy between the actual dropout rate and what the school authorities had told us…we calculated that there should have been an eighteen percent dropout rate [in this town]. Actually this should be even *higher*, because there is a number of students who were repeating grades (even first graders) …we could therefore say that the dropout rate is more than eighteen percent. The figure given by the school authorities was 7.3 percent. (p. 50)

Conjuring dropout numbers is not unique to China. Archer (2003) writes, "the truth is that the misreporting of dropout and graduation statistics is a national phenomenon" in the United States (p. 2). The high number of researchers in this literature review who discuss dropout rates suggest it is an international problem.

Dropout rates appear to spike at different ages but frequently align to the emergence of fees. In middle-performing Russia, for example, as early as preschool,

low-income children are increasingly absent. Oberemko (2006) claims this is, in part, due to fees. While in previous decades preschool was free, parents are now required to pay at least a portion of the costs. Post-Soviet systems, such as Kyrgyzstan, point to the same fee-based issue in low preschool attendance (Tiuliundieva, 2006). In Britain, the concern is emerging during nursery school years. As prices for nursery school increase, attendance among children from socio-economically struggling families decreases. Gaunt (2012) reports "more than six in ten nurseries have seen a drop in the numbers of children attending their setting during the past year" (p. 6).

Fees also emerge as a possible explanation for high dropout rates in secondary school. Secondary education in promising-performing Jordan is fee based and according to UNICEF (2010c) "in 2007, almost 30 percent [of students] did not enroll in secondary school at all" (p. 17). The two main reasons for not enrolling were financially based: the fees associated with attending and mounting pressure to contribute to the family income (2010c). Ziyatdinova (2001) acknowledges dropout rates are an increasing problem in education in Russia and Gjermeni, Van Hook, Gjipali, Xhillari, Lungu, and Hazizi (2008) state fees place added pressure on disadvantaged students in Albania. They report that in a high number of cases when the student came from a poor family they drop out of school to work on the street. Their financial contributions, while small, were a necessary supplement to the family income in many instances. High dropout rates are impacting the performance of socio-economically disadvantaged students across all performance levels simply because many learners are not attending school. If not attending, students are not acquiring the knowledge being presented in lessons.

Solutions

Researchers are keen to find solutions to increase the achievement of socio-economically disadvantaged students. Eight in-school solutions are currently at the center of these discussions. They include: improving classroom instruction, reallocating time, retraining teachers, adding resources, redistributing student populations, delaying tracking, addressing special issues in schools, and rethinking the academic calendar. Out-of-school factors are also under consideration. In particular: reforming local and national policies, building stronger relationships with the community, and tightening parent-school partnerships. Scholars who are contributing to the conversation of low income students' achievement worldwide believe that by reforming or transforming these aspects of schooling and society, the academic growth of students from disadvantaged backgrounds will improve.

There are in-school realities that could be reformed to enhance the achievement of socio-economically diverse learners. Improving instruction is well noted in these discussions. In middle-performing Taiwan, for example, Chen and Crockett (2012) argue teachers working with low SES students should substitute practices that encourage understanding instead of rote learning. They report that instruction in classrooms with high SES students is "more formative" and describe the teachers as "pressing for understanding" while in schools catering to predominantly low SES students, learners are "pressed for rote understanding" (p. 553). The same change is needed in classrooms serving students from both high and low social classes. Sztajn (2003) details the subtle differences in how teachers instruct and pose questions to students from different socio-

economic backgrounds. "While children from upper socio-economic backgrounds experience problem solving, those from lower socio-economic backgrounds undergo rote learning" (p. 53). These researchers call for instructional change so that teachers learn how to provide learning opportunities for *all* children that foster high thinking skills.

Time reallocation in schools with low socio-economic students may also lead to improvements in the achievement of diverse learners. In Estonia, Mere, Reiska, and Smith (2006) call on teachers and schools serving low income students to spend less time on factual understanding and increase the amount of time dedicated to conceptual and reasoning skills. If classroom time is redistributed to increase the amount of focus dedicated to higher order thinking skills, student achievement scores will improve. Schools need uninterrupted learning blocks where teachers work with socio-economically disadvantaged students to build upon their basic knowledge. The focus during these learning blocks must remain dedicated to higher level learning skills. Students need the ability to understand, challenge, critique, and interpret all types of text. Using these blocks to review or teach basic skills through rote activity is detrimental to the academic growth of disadvantaged students. Schleicher and Stewart (2008) press that it is increasingly essential for low income students to be exposed to teaching that emphasizes meaningful learning. "The labor market demand for routine cognitive competencies − the kinds of skills that are easy to teach and test − has declined rapidly over recent decades" (p. 47). To increase the skillset of socio-economically disadvantaged learners and ultimately their long-term opportunities, students need to master higher level thinking skills.

Teachers require more training to improve the achievement of diverse learners. From Ireland, Kennedy (2009) argues it is not a question of desire; it is a question of capability. Teachers are willing to shift their instructional style but need explicit instruction on how their actions can be altered to narrow the gap. Teachers need to attend tutorials and trainings where they are taught what it means to have a "dual emphasis on both the cognitive and affective dimensions of literacy development" in their teaching (p. 1). Additional professional learning is also needed to provide teachers with new ways for their students to practice and refine their skills while they are focused on giving disadvantaged students extra support. In France, Wilson, Dehaene, Dubois, and Fayol (2009) suggest "adaptive games may contribute to reducing the socio-economic gap in math achievement" (p. 224). This also requires training so teachers know how to implement games that increase engagement and active learning. Professional development aimed at furthering teachers' learning on balanced instruction is necessary if teaching and learning are expected to change.

Educators need more resources to improve the achievement of socio-economically disadvantaged children. Tuñón and Halperin (2010) argue that the number of resources available to teachers working with low income students is insufficient. To improve the performance of disadvantaged students, teachers need access to equal if not *more* resources than those available for middle and upper class students. Teachers need access to books, technology, manipulatives, and current research to engage students with learning and aid them in becoming proficient with skills to which they are not introduced at home. While upper and middle class students worldwide are increasingly gaining

access to computers, iPads and smart phones at home, lower class students still have limited access outside of Internet cafés or public libraries. Describing two poor schools in Mexico, Kim, Hagashi, Carillo, Gonzales, Makany, Lee, and Garate (2011) write the "schools seriously lack educational and technology resources" (p. 467). Providing opportunities for low class students to use technology at school to retrieve information, sift through searches, and create professional documents are skills needed in higher education and the work place.

School populations need to be mixed if the gap between low and high socio-economic students' is going to narrow. Low income students too frequently attend schools with like-socio-economic peers, which by itself can have long-term effects on achievement. "The socio-economic mix of the children's final early childhood education center also had a bearing on their competency levels five years later" (Marie, Fergusson, & Boden, 2008, p. 183). School zoning laws and parent choice options should be reconsidered so that schools do not become too lopsided catering to one socio-economic class. In Ireland, Smyth and McCoy (2009) note that parent choice has a profound impact on the student populations attending schools within the same town. Halfway around the world in Colombia, the experiences within two schools in the same town are just as dramatic. Angrist, Bettinger, Bloom, King, and Kremer (2002) discover that the vocabulary exposure, emphasis on learning, and expectations between two schools in the same town are profoundly different. Disadvantaged students attending a predominantly middle and upper class school had exposure to higher tiered vocabulary words, a learning environment that values academic progress, and high expectations. At the other school,

which had a high concentration of socio-economically disadvantaged students, the same environment did not emerge. For lower class students who come from homes and communities where education is not prioritized, attending a school with an atmosphere that promotes learning and education has the potential to increase their educational achievement.

Socio-economically disadvantaged students also gain social capital from attending mixed class schools. In the high-performing Netherlands, Denessen, Driessen, and Bakk (2010) consider how classroom heterogeneity, in terms of socio-economic status of students, impacts achievement. They find "students in mixed schools and classrooms perform somewhat better on achievement tests and have more positive intergroup attitudes" (p. 79). Friendships between social classes are more likely to form in mixed schools than in schools segregated by class. In the middle-performing United States, Flashman (2012) recognizes that without forced integration, high-performing students are more likely to "extend ties to other high-achieving students…while low-achieving students are more likely to extend ties to other low-achieving students" (p. 61). Intentional programming that brings these students into the same classes furthers the likelihood that students from different backgrounds will become friends, which can have a positive impact on disadvantaged students' academic growth. Such relationships can spur study groups or discussion about higher education and long-term goals.

Tracking structures within schools also need to be reconsidered if such systems strive to improve the performance of students in the lowest social class. According to OECD (2012a) "early student selection has a negative impact on students assigned to

lower tracks and exacerbates inequalities, without raising average performance" (p. 2). Delaying tracking until (at least) upper secondary school offers all students a strong comprehensive education, especially valuable for lower class students. Bedard and Dhuey (2006) suggest the type, time, and duration of tracking play an important role in explaining student outcomes. With socio-economically disadvantaged students overrepresented in lower testing tracks, which start as early as age ten and eleven (in Germany) or at twelve and thirteen (in China and Mexico), it is a sign that these structures need to be revised to provide all learners a chance to master educational skills before selection begins.

Space limitations in schools also could be tweaked to further advantage students from low class backgrounds. Smyth and McInerney (2012) suggest adding new social spaces in schools for students to connect and socialize as a way to reengage disadvantaged youth in Australia. The space will provide them with a new environment within the school "in which they can become powerful 'active agents' in reforming an educational identity for themselves" (p. 187). Blondal and Adalbjarnardottir (2012) may agree, as such a space could reengage their low socio-economic students in Iceland. These researchers discovered that "male students from lower-SES backgrounds were generally more disengaged" in school (p. 85). As students progressed to the last year of compulsory school, their disengagement increased. To improve the performance of these students, space available in schools should be restructured to include new study rooms, socialization spaces, and creative environments to get these students excited about being in school.

The academic calendar also emerges as a possible structural issue that needs attention. This topic is most active among United States researchers, such as Graves (2011) and Huebner (2010). Year-round schooling, which aims to lower students learning loss during the summer months, is controversial and more research is needed. Graves (2011) examines how socio-economically disadvantaged students who attend year-round schooling perform on national tests in California and concludes it is not a solution for improving the achievement of low income students. She reports the structure has "negative and significant results" on achievement (p. 1281). Huebner (2010) is less sure, recognizing that while economically disadvantaged students learn about as much as their peers during the school year, they lose more during the summer months. She suspects year-round schooling could be a viable alternative but recognizes "the research is inconclusive … results are mixed and many studies were poorly designed" (p. 83).

Out-of-school changes are also recognized to dissolve the gap between high and low socio-economic students; in-school solutions are insufficient on their own (James, Brammer, Connolly, Fertig, James, & Jones, 2011; Berliner, 2009). Schools are under too much pressure to improve disadvantaged students' achievement. Parents, communities, and citizens outside of schools must also be held accountable if the achievement gap between the wealthy and the poor is to disappear. Reforming local and national policies so that they provide greater supports for families in poverty is one societal change that could have a profound impact on student learning. In the United States, for example, Berliner (2009) writes "much of the achievement gap that is the focus of educational policy in the U.S. is caused by OSF [out-of-school-factors]" (p. 18).

In UNICEF's (2010a) *The Children Left Behind,* which ranks the world's wealthiest nations, the United States scored second to last (twenty-three out of twenty-four) in health and distribution of material (as cited in Mitchell, 2011). Low SES students in the United States have poorer health and less access to materials than middle and upper class students in all but one of the wealthiest systems worldwide. The National Center for Children in Poverty reports that 20 percent of American children are in poverty and 41 percent of children reside in low-income housing (Wright, Chau, & Aratani, 2010). Better national and local supports to get families out of poverty and provide more equitable health and access to material are desperately needed if this system aims to narrow its achievement gap between social classes.

The relationships between communities and schools must strengthen if the academic performance of students from disadvantaged backgrounds is to improve. Ngai, Ngai, Cheung, and To (2008) examine the effects of community on low-income families in Hong Kong. They identify how community support, activity, and involvement have a positive effect on "young people with economic disadvantage" (p. 399). When relationships are positive, schools are often the hub of the community. Events, meetings, and local activities are usually held in the school and are open long hours each day. This means community members are physically in the school frequently and see the culture of the school through student work and classroom pictures. These subtle informal moments can lead to greater awareness of the quality of learning in the school and the general environment it offers children. When community members are proud of their schools and see them as successful, they support school budgets and programming.

Neighborhood involvement impacts student preparation. In areas with quality daycare options, health clinics, and family assistance programs, low income families have greater access to services that will better their situation and the preparation of their children for school. Doyla, McEntee, and McNamara (2012) recognize that neighborhoods without these services are at a disadvantage and need more help to reduce the achievement gap. "School readiness interventions should target all children living in disadvantaged communities as each child may be at risk of poor school readiness" (p. 133). The access and conditions within preschools profoundly impact the skillset and readiness of children entering a school. Neighborhood services therefore play an important role in preparing a child for learning.

The partnership between schools and families also needs to strengthen. "The school-family partnership is an important link in the educational process" (Hafizi & Papa, 2012, p. 38). Effective partnerships are built on strong community and trust. A student living in a homeless shelter, on the street, or in a shared home is experiencing an out-of-school culture that is very different than most middle and upper class students. Similarly, a child living in a home with no electricity or where food is scarce has a different perspective than one without these challenges. Parents must feel comfortable sharing this information with schools and, in return, schools need to be sensitive and aware of how to provide greater support for these families. MacKenzie and Chamberlain (2008) review how Australian schools are changing to provide these at-risk families with greater support. "Schools are better at facilitating family reconciliation and assisting students to remain in schools. Nowadays, schools and community agencies work more

cooperatively than in the past" (p. 20). Systems need to be set up to support (or at least provide information for) families with difficult home situations. Free meal programs, clothing drives, and parent networks can make a noticable difference in the lives of socio-economically struggling families. Aid in finding employment and housing are also assets that can further a child's ability to learn in school, as their home environment improves.

Assisting families to create stability at home, despite demanding work schedules, can be helpful for students (Täht & Mills, 2012; Barnett, Gareis, Sabattini, & Carter, 2010; Defries, 2010). Parents worldwide juggle work and family obligations. In many low SES families this can mean "long hours, a lack of control over schedules, and unsupervised after school time [for their children]" (2010, p. 606). Working multiple jobs and picking up extra shifts can translate to constant change for children as they shuffle between childcare providers and relatives or have revolving bed and meal time schedules. In disadvantaged, single-parent homes, scheduling can be even more taxing on children. Older siblings are often called upon to watch younger children − attending to cooking, feeding, and supervising. These realities are starkly different than those in middle and upper class homes. Täht and Mills (2012) report that effective parents with non-standardized schedules who work evenings, nights or weekends in the Netherlands "engage in tag-team parenting" to ensure that one parent is always present (p. 1054). In Great Britain, Defries (2010) discusses ultra-flexible work schedules that allow parents to be with young children. For lower class parents who do not have work flexibility, after school programs that permit students to stay late to finish homework and be supervised are ideal when no other options are feasible. Any assistance schools can provide for

families to establish stability in a students' home life can further their learning in the classroom.

Strong school-parent partnerships also enhance students' learning at home. From Poland, Szumski, and Karwowski (2008) argue that parental engagement is often overlooked and it can be a useful strategy to improve achievement. "Parental engagement mediated the positive effects of SES and placement in regular and integrative schools on school achievement" (p. 1615). Advising parents on how to establish a literacy-rich home, a homework routine, and a quiet space for students, can make a difference in achievement. Involving parents in the learning process, by having "precise, coherent, and continuous" conversations regarding their child's progress, are important to improving the performance of disadvantaged students (Musti-Rao & Cartledge, 2004). Inviting caregivers into the classroom combined with regular phone calls and home visits (to praise students when they meaningfully add to the learning community), can empower a parent and improve their participation in the schooling of their child. These relationships tend to be strong in primary school, but decline as students ascend the educational ladder. Keeping the partnership strong through secondary school is essential to reducing high dropout rates among these learners. Especially as content becomes more challenging, it is important for parents to feel they can still support students learning at home. Offering free adult courses where parents can be exposed to the same content as their adolescences can aid in this process.

Finally, the values and priorities of socio-economically disadvantaged students' do not always align to those of the school. Burger (2011) explores the relationship

between families' social and cultural background and student cognitive competencies in Switzerland and reports "social and cultural background variables were related significantly to children's competence" (p. 875). Educators need to listen to parents and understand their dreams and aspirations for their children. Working with parents to align their values and visions to what is happening in school is an important step to a solid relationship. In the Netherlands, El Moussaoui, and Braster (2011) report that Moroccan mothers with less formal education emphasized "moral, social and religious values" while middle and highly educated mothers "valued scholastic development" (p. 370). This changed the skillset that students brought to school and explained why middle and upper class Moroccan parents placed a priority on monitoring their children's academic performance while the lower class parents wanted to know their children were learning to play fair, to follow rules, and to make decisions. Understanding these differences can allow schools to adjust their support for students while also working with parents to explain the schools intentions.

The literature on socio-economically disadvantaged students' achievement is comprehensive. Researchers worldwide offer effective solutions that build on best practices from previous literature. These researchers are less disillusioned about the performance gap and more confident that with the right interventions, these students can − and will − perform better.

Rural Students' Performance Worldwide

OECD (2010d) compares reading literacy results of students based on school size and location. They report "in most countries, students in cities perform better than those in rural areas" (p. 56). While OECD considers multiple indicators when making this claim (including socio-economic status), their findings suggest there may be rural achievement gaps worldwide. Across the current research, there is evidence that scholars in 75 percent of the participating jurisdictions are discussing the achievement of rural students (see Figure 2.2.5).

Studies from Canada, South Korea, and Mexico dominate current conversations among the researchers discussing rural underperformance. Twenty or more publications emerge from the current literature in each of these jurisdictions spotlighting rural learners. Rural achievement is also a topic being discussed, to a lesser degree, in the United States, United Kingdom, China, Australia, Russia, Spain, Ireland, Germany, Japan, Brazil, Sweden, Colombia, and the Czech Republic. In each of these locations, there are approximately ten publications in the current literature on rural performance (see lighter shaded countries on the heat map). This differs from Israel, France, Hong Kong, Singapore, Bulgaria, United Arab Emirates, Lichtenstein, Italy, Croatia, Slovakia, Luxembourg, Belgium, Qatar, Uruguay, Slovenia, and Azerbaijan where there is no evidence in the current research on the achievement of rural students (as indicated by the color white on the map). Understandably, some of these systems do not have rural areas, such as Singapore, which likely explains their void. Again, jurisdictions that did not participate in PISA 2009 are also shaded white.

Figure 2.2.5. Heat map of discussion on rural students' achievement in PISA 2009 jurisdictions

Many of the darker colored systems on the heat map are also geographically large. This makes sense since large countries often have a wider population spread, simply because there is more space in which to live. Russia, China, and Canada are three such jurisdictions that devote considerable attention to rural education in current discussions. China and Russia both have large rural populations (World Bank, 2011b). In China, 49 percent of people live in the rural countryside and in Russia, 26 percent of people reside in remote areas. Canada also has a notably high rural population at 19 percent (2011). Investigating discussions on rural achievement within and across these large systems, as well as in smaller jurisdictions with remote populations, provide reasonable insights into current realities around rural education.

Current Trends in Discussions of Rural Underachievement

The juxtaposition of rural and urban achievement is at the center of this discussion. Three themes organize the conversations in the literature: acknowledgment, challenges, and solutions, but underlying each is a strong belief that rural education is

distinct. While it suffers from some of the same stresses as suburban and urban systems, it also has a unique host of problems that are only relevant to its particular context. Until solutions encompass both rural issues and traditional educational challenges, rural education specialists believe the achievement in remote settings will remain inferior. For a comprehensive review of research on rural performance, see Stelmach (2011).

Acknowledgement

Achievement in rural schools is subpar to those in other locations. Researchers around the globe are acknowledging this performance gap, often situating their discussion within a comparative framework. From high-performing Australia, Young (1998) reports "the location of the school has a significant effect upon student achievement, with students attending rural schools not performing as well as students from urban schools" (p. 386). Rao, Sun, Zhou, and Zhang (2012) reach a similar conclusion in China. They note that despite the same curriculum and teaching time, "student achievements vary significantly between city and rural schools" (p. 66). And in the middle-performing United States, D'Agostino and Borman (1998) look specifically at early rural learners and report "students in rural first-grade cohort schools learned at significantly slower rates in reading and math relative to their urban peers" (p. 401).

There are also differences *within* rural education. Rural and remote education is not necessarily synonymous. Cartwright and Allen (2002) compare urban and rural students in high-performing Canada and conclude "students from urban schools in Canada performed significantly better in reading than students from rural schools" (p. 6). They report the widest gaps in the most remote locations (the provinces of Newfoundland

and Labrador, Prince Edward Island, New Brunswick, and Alberta), suggesting that geographical isolation can further compound the challenges of rural education. The same finding emerges from literature in Australia. Panizzon and Pegg (2007) replicate Young's (1998) comparison of rural and urban achievement and report "large gaps emerge in student achievement between remote, rural, and metropolitan schools" (p. 17). Other within-rural differences are gender related. In high-performing Iceland, Steinthorsdottir and Sriraman (2008) note that even within rural communities, there are achievement differences. While reanalyzing PISA 2003 data they find rural differences between boys and girls in math achievement. Alvarado (2006) spotlights the limited educational options for Andean females in the Peruvian countryside. Looking at past generations, the researcher describes the "oppressive patriarchal cycle their mothers and female relatives endured," illustrating how different their experience was than that of boys in rural locations (p. 1).

Rural education may be in a state of decline, citing societal changes and economic downturn as key causes. Tiuliundieva (2006), for instance, writes nostalgically about the decline of preschool attendance in promising-performing Kyrgyzstan. "In the rural areas of the country, as a whole, the coefficient of children's accommodation by permanent preschool institutions stands at [just] 3.8" (p. 72). The researcher compares this to almost universal preschool accommodations under previous Soviet rule. In Trinidad and Tobago, George (1999; 2006) believes increased globalization is impacting rural achievement negatively. Investigating science education, the researcher finds some similarities between world-views in the science curriculum and those in the village,

arguing this requires teachers and students to "function in two worlds − the traditional one and the world of science" (1999, p. 77). Such a reality is increasingly putting pressure on rural educators to explain local and global beliefs.

Changing economies are also contributing to the decline. According to Cho, Lee, Lee, Kim, Lee, Hong, and Kim (2009) while some parts of Korea have had significant economic improvements, this is not the case in most rural areas, leading to deteriorating remote education. The researchers report that poor rural Koreans are "largely dissatisfied with their economic status, living conditions, and life in general" (p. 223). Downman (2012) also believes economic patterns are impacting rural education in promising-performing Thailand. The researcher reports that parents in Nan, Thailand, increasingly have to leave the community to find work. As a result, child-headed households are becoming common. This has "resulted in an escalation of youth-based violence and have local authorities seeking urgent solutions" as rural attendance and performance is dropping (p. 53).

Challenges

Specific rural-only challenges attribute to inferior achievement. Some researchers identify multiple factors that derail rural success. In high-performing Taiwan, Shan-Hua, Hsuan-Fu, and Cheng-Cheng (2012) say that despite best efforts, there are numerous challenges that work against rural schools. "Most of the features created by the schools [will] not last due to the un-stabilization and away of teachers, short of financial support, and lack of favor from community" (p. 5). Corbett (2005)

agrees, and describes a wide range of issues plaguing rural education in Canada. He reports:

> In addition to the mismatch between rural/working class homes and school, which has been well established by educational sociologists, additional factors such as rising tuition costs, the centralization of educational and other services in rural areas, the high cost of living, and the expansion of low-wage, low-skilled work in the expanding rural service economy may help to explain continuing high dropout rates and low post-secondary participation rates in rural communities. (p. 52)

The same web of issues is also noted in research on rural education in Peru. "Rural schools are usually geographically dispersed and socially isolated, frequently under-funded and receive very limited professional support" (Alsop, Ames, Arroyo, & Dippo, 2010, p. 636). All three studies paint a dismal picture of the current state of rural education.

Other scholars highlight specific rural-only challenges (Secer & Yelken, 2009; Silova, Johnson, & Heyneman, 2007). In promising-performing Turkey, Secer & Yelken (2009) detail the challenges that come with rural transportation in Gulnar, a district in Mersin Province. They state that while "transportation provides rural area students same opportunity for education and school access like in cities…transportation in education has some problems" (p. 24). Most rural students have extra-long bus rides before and after school, and escalating fuel prices place heavy burdens on school finances. In Azerbaijan, Silova et al. (2007) admit the pace of developing schools in rural areas has been a challenge. While "a solid infrastructure for educational provision and

administration was established" the researchers add "development lagged in the rural and mountainous regions" (p. 159). Such a challenge is not uncommon in remote locations. Before construction can even begin, terrain often has to be cleared and roads built to transport supplies before school construction can begin. In Serbia, mobility is an issue. Most recently, rural families are moving towards the cities in Serbia; in 2009, rural enrollment overall declined significantly (UNICEF, 2010d). As a result, each year municipalities have to reexamine school enrollment numbers and make tough decisions about which schools to keep open and which to close, affecting routines for students and staff.

In-school disparities are also a point of tension in current literature on rural education. Material and human resources are frequently inequitable with those found in suburban and urban locations. From middle-performing the United States, Fluharty and Scaggs (2007) argue that rural communities have fewer financial resources. "Current federal funding policy inadvertently, but significantly, disadvantages the areas served by rural" schools (p. 21). Funding schemes that force rural areas to compete against one another or set arbitrary requirements that result in rural ineligibility impact school resources. Funding needs to take into consideration the distinct costs of rural education (such as fuel costs) to ensure the teaching and learning supplies in remote locations are not impacted by such oversights. In some systems, rural school conditions are not expected to meet the same standards as urban locations. In Peru, for example, Alsop, Ames, Arroyo, and Dippo (2010) report "many schools lack even basic facilities such as running water and sanitation…rural teachers often sleep in their classrooms or stay in

temporary accommodations in the community during the week" (p. 636). Other studies report crumbling heating systems or broken windows, resulting in students and staff wearing coats, hats, and mittens all day. Others offer insufficient desks and ill-fitting chairs. It appears that rural schools are 'out of sight, out of mind' in many systems, enabling problems to go unfixed or unresolved for longer periods of time than in other locations.

Human resources, such as highly qualified teachers, are also an issue. From middle-performing Greece, Saiti (2005) writes, "the recruitment of the teaching staff has attracted concerns in the development and the effectiveness of the rural education in Greece" (p. 32). Monk (2007) acknowledges a similar concern in the United States. "Rural teacher turnover is often high, and hiring can be difficult …rural schools have a below-average share of highly trained teachers" (p. 155). These researchers believe low compensation and high isolation are key challenges to attract and retain quality teachers in remote areas. When human resources within a school are stretched, poor programming can become the norm. There is evidence of this in China and Ireland. Rao, Sun, Zhou, and Zhang (2012) describe how the quality of preschool programming in some rural areas of China is resulting in poor attendance and low achievement. "Children who merely 'sat in' Grade 1 classes or had no preschool experience did not perform as well as students attending developmentally appropriate classrooms with effective programming" (p. 66). Similarly, in middle-performing Ireland, McGettigan and Gray (2012) report that, "due to a paucity of preschool provision in rural areas, attendance was mainly on a sessional basis with a small number having full weekly attendance and others no preschool

experience" (p. 15). These realities exemplify that while rural students may be attending preschool programs, they are not necessarily exposed to the same learning as peers attending early learning centers with age appropriate instruction.

Out-of-school challenges impact rural achievement patterns. Researchers repeatedly acknowledge how employment limitations in rural areas and high poverty are chronic concerns. In promising-performing Indonesia, Hsin (2007) identifies the misalignment between school and local work: schools prioritize academics while rural employers seek physical laborers. Schooling does not necessarily prepare rural students for this employment, so the motivation to stay in school once a student has the physical ability to work is limited. Hsin (2007) writes a "parents' education, household income, and rural residency are important predictors of children's labor and schooling time" (p. 1297). Shan-Hua, Hsuan-Fu, and Cheng-Cheng (2012) argue that this perpetual cycle has stigmatized parents and students in "remote and rural schools as labors [with] relatively lower social and economic status in the Taiwanese society" (p. 49).

In the countryside of Mexico, farms are the major employer but are also highly unpredictable (Haenn, 2004). Poor soil, severe weather, or blight can easily wipe out an entire season of crops, leaving a family or a community hungry and poor. In other seasons there are plenty of crops and attractive pay to lure some students from school. When rural students do not want to be laborers or farmers they are often forced to move to find work. For rural youth in high-performers Belgium and the Netherlands, Thissen, Droogleever, Strijker, and Haartsen (2010) state the key question is "should I stay or should I leave my home region?" (p. 428). This challenge adds to the ongoing migration

patterns worldwide. In Kazakhstan, Eshpanova, and Nysanbaev document "intense migration from the countryside to the cities" (2006, p. 75) and in Switzerland, Smit and Humpert (2012) note, "rural areas in the alpine regions suffer from dwindling student numbers" as youth leave for work or for the cities (p. 1152).

Generational poverty is a large challenge in rural education. In Mexico, Bruma, Chamberlin, Lewis, and Ceballos (2007) recognize the widespread manifestation of poverty. In homes, families have "dirt floors, a lack of access to piped water, one-room dwellings, unavailability of milk and eggs" (p. 37). Students in such poverty are not assured their basic needs will be met, raising questions like: will there be any food tonight? Will there be clean water? Will I be able to sleep tonight? These basic needs are common concerns for children from this background. Such environments often leave little quiet space for homework, making it challenging for some of these students to complete assignments outside of school hours. In the United States, Viadero (2000) notes that while roads have improved, homes have replaced trailers, and a Dairy Queen has come to rural Wolfe County Kentucky, poverty has not changed. Local job options have actually declined due to the closing of a recent coal plant, increasing the number of families with both parents out of work. These economic strains are obviously difficult for families. Living circumstances become less predictable, tension at home becomes more common, and pressures on students to obtain jobs to contribute to the family income intensify.

Solutions

Researchers are eager to find solutions to improve rural achievement. Some are disillusioned with current and past solutions, complaining many are removed from rural contexts. In Canada, Wallin (2008) argues that general reforms can be unhelpful for rural schools. "School reform efforts have a tendency to essentialize schooling across contexts, which provides many challenges to rural school divisions when they do not reflect local purposes, interests and/or capacities" (p. 566). Kostin (2006) is concerned with the lack of reforms exclusively addressing local issues in middle-performing Russia, and calls on the educational systems in Russia to develop regional strategies for improvement stating, "there is an inadequate understanding of regional needs and therefore large reforms can overlook what is needed in rural areas" (p. 63). Reforms that align to rural contexts, however, are better received and more effective. In Colombia, for example, Rodríguez, Sánchez, and Armenta (2010) inspect the Rural Education Project (PER) and conclude "we find positive and significant effects on measures of efficiency (dropout, passing, and failure rates) and quality in the schools where PER (rural education project) was implemented" (p. 415).

Smaller, personalized solutions are more consistently considered successful in all three performance levels. In high-performing South Korea, Hee-Yung and Hye-Yoon (2010) investigate the impact of digital textbooks in rural areas. They discover students using the digital textbooks "scored significantly higher" than students in the printed textbook groups (p. 257). Smit and Humpert (2012) examine how differentiation can be a powerful tool in rural classrooms in Switzerland. They are pleased with their results,

finding differentiation can "help improve the teaching culture by allowing instructors to better adapt to heterogeneous student groups" (p. 1152). In middle-performing Portugal, Ferreira (2009) reviews a transportation program in the most isolated parishes of the municipality and concludes the impact from the program extends beyond educational gains to have wider community advances. In promising-performing Jordan, Middlestadt, Grieser, Hernandez, Tubaishat, Sanchack, Southwell, and Schwartz (2001) consider the impact of a curriculum on water conservation. Again, the tailored study yields positive results. "Students who were exposed to the new curriculum demonstrated a higher level of knowledge about water conservation and performed recommended behaviors more often than students in the control group" (p. 32). Students were more eager to participate and interested in the subject since it directly related to their local context than abstract topics which have little connection to their daily life. These four successes, each with unique populations, illustrate precise interventions that are yielding gains in student outcome. The challenge is how to build on these gains in such a way that learning continues to increase over time.

Interestingly, community is center stage in evidence of successful solutions. Kovác (2012) reports how one community in Hungary is "remarkably vibrant with strong intra-community" and has been able to overcome their lack of resources in their local schools with these healthy infrastructures. In Latvia, Katane (2006) reports on how a rural community commitment to their local school fosters life-long learning. "The modern rural school has become an inwardly inclusive environment. It has become a formal and non-formal educational environment for pre-school children, pupils and their

families, educators, the whole rural community in the context of life-long and wide-long learning" (p. 27). In Great Britain, Bagley and Hillyard (2011) perhaps say it clearest when they report "local schools are at the heart of many rural communities" (p. 37).

Community is also at the forefront of solutions where specific populations overcome rural challenges. Ruzicka (2012), for example, reports on how Roma communities in rural Czech Republic were minimally affected by post-socialist transformations. He credits this to their unique social and historical conditions, arguing they "helped shelter [these] rural communities" (p. 81). Suárez Pazos, DePalma, and Membiela (2012) interview former students of unitary rural schools in Spain, reporting that despite the strikingly difficult conditions, "students tended to relate these hardships with a strong sense of nostalgia, focusing on the sense of community that they experienced" (p. 1018). The reoccurring link to 'community' in discussions on effective solutions suggests it may be the critical component to reversing chronic underperformance in rural locations.

Beyond these solutions, researchers note many unresolved problems in rural education. In Argentina, Amado and Borzone (2012) investigate 'activity systems' as a learning tool in a rural community but find that the language in the texts was too 'foreign' for many of the rural students to understand and were thus unable to fully participate in the intervention. Jubani, Lama, and Gjokutaj (2012) also hit an unexpected challenge while investigating rural students' reading skills. They theorize that their intervention was unsuccessful because current quality indicators are too low and that rural students are not gaining the literacy proficiencies required to read at the level of their non-rural peers.

They call for new strategies and techniques to improve the quality of reading in rural schools, especially for boys. In China, Xie (2011) also seeks new solutions for rural education. While "inter-provincial rural education disparities and educational equality have significantly improved" the researcher argues, "the convergence rate on inter-provincial disparities of education equality is declining" (p. 714). New provincial and central government supports are needed to address this change. Kantabutra and Tang (2006) are also perplexed with their results in Thailand. They seek solutions to keep rural schools open and improve efficiency, arguing that reforms in rural education must "expand school size while reducing class size" (p. 355). Addressing the ongoing challenges of rural education is necessary to improve learning in remote areas.

The literature on rural underperformance spells out the unique challenges of isolation, remoteness, and population shifts that are distinct to rural education. Researchers recognize how increased communication with suburban and urban locations could improve rural schooling but may also open new challenges and issues. Scholars examining rural education report distinct solutions that are personalized to specific contexts; these fare better than large reforms aimed at improving every rural school within a system. This personalization is a theme throughout current literature and offers insights into the complexities of rural education, which appear to exacerbate even further in the most desolate locations.

Summary

The first part of this review presents a one time snap-shot of what the current research says about the performance of boys, immigrants, language learners, socio-economically disadvantaged students, and rural pupils. While some students belong to more than one group, exploring each diversity strand in isolation offers richer insights into the amount of attention and ideas circulating about each population. Building on the themes within each strand, this summary looks across the five groups to identify commonalities that impact all diverse learners. Four intersecting themes surfaced from this analysis:

The achievement patterns of diverse learners are being monitored in current research. Some groups receive more attention than others. Socio-economically disadvantaged students are most frequently monitored in current research discussions, followed by language learners. In over 80 percent of the jurisdictions, there is current evidence suggesting these populations are being discussed. Between 70-79 percent of jurisdictions are discussing immigrant and rural learners' achievement. On the other hand, only 60 percent of jurisdictions focus on boys' underperformance. While the amount of conversation varies within systems, in over half of the jurisdictions there is at least some exchange around the achievement of diverse populations.

The conversational themes of 'awareness,' 'persistence,' and 'acknowledgement' allude to ongoing monitoring. 'Awareness' emerges as the first theme in current conversations about boys and immigrants. Boys' underperformance is a particular focus within Anglophone systems, while discussions on immigrant underperformance span a

wider radius, including contributions from both novice and veteran receiving countries. The issue of 'persistence' first emerges from the literature on language learners while the theme of 'acknowledgement' centers upon socio-economically disadvantaged and rural learners. Both of these exemplify a similar commitment to monitoring performance of marginalized populations. In the case of language learners, researchers have diligently tracked patterns for generations and are dispirited by the lack of improvement. Researchers monitoring the achievement patterns of socio-economically disadvantaged and rural learners are less disenchanted and more confident that they have identified in-school and out-of-school solutions to narrow performance gaps. Though these three themes share subtle differences, they all have an ongoing interest in tracking performance patterns.

The obstacles and barriers associated with underachievement are identifiable. Researchers worldwide want to understand *why* diverse learners are underperforming. Scholars are moving beyond the actual students to identify social, community, and school behaviors that have a negative impact on achievement. They pinpoint disengagement in class, lack of linguistic fluency, cultural intolerance, poverty, and unequal resources as contributors to the perpetual underperformance of distinct populations. These factors emerge under the themes 'causes,' 'causes and effects,' 'power struggle,' and 'challenges.' Researchers across the strands contribute both speculations and documented evidence of negative factors. They identify correlations, (such as if a socio-economically disadvantaged student attends a school with predominantly lower class peers, they will not perform as well as a disadvantaged student in a school with mostly

high and middle class peers), as well as tensions, (such as the clashes that persist between ethnic minority and mainstream cultures). Researchers acknowledge unresolved barriers such as recognition of essential fluency but disagree on which teaching methods are best for hastening this process. Detecting obstacles is an initial step to resolving the perpetual underachievement. Researchers are making headway as to why these patterns are occurring worldwide.

Efforts to resolve achievement gaps are underway but there is more work to be done. Researchers are discussing how to improve the performance of diverse learners across the five strands. They scrutinize teaching and learning within classrooms to determine how it can improve instruction; they look at the relationships between schools and families − as well as the partnerships between schools and communities − and offer recommendations as to what needs to be reformed. Scholars also present detailed arguments calling on societies to further support diverse learners and on families to embrace intentional behaviors that boost student learning at home. Offering incentives for businesses to open in rural areas or increasing the participation of ethnic minorities in decision-making processes can increase job prospects and relationships between majority and minority populations. Similarly, modeling reading at home, playing literacy based games with children, and staying involved in students' schooling experiences can further their motivation and value for education.

The themes 'solutions' and 'recommendations' exemplify the answers researchers currently support, but there is much work still to be done. Some strands offer deep insights and mature ideas while others are still in their infancy. Improving the

achievement patterns of socio-economically disadvantaged students, for example, is well developed and includes multilevel solutions while the research around boys' education is currently inconclusive.

Despite best efforts, student underperformance continues to persist worldwide. In fact, more questions than solutions arise from this review: will selecting different texts for boys or specific instructional programming for language learners suffice to increase performance? Are building out-of-school relationships with socio-economically disadvantaged families − or forming partnerships between urban and rural schools − enough to transform the learning for these populations? Researchers repeatedly acknowledge underachievement patterns as multifaceted and complex. Most acknowledge compound interventions are likely needed to overcome perpetual gaps. But what if these subpopulations still underperform even after implementing societal and in-class interventions? The second half of this review builds on these lingering questions by delving deeper into the sixty-five jurisdictions to consider if the behaviors and priorities of school leaders can impact the achievement of diverse learners.

Part 2. Identifying the Priorities of Effective Leadership

There is increasing interest among researchers to identify the leadership behaviors most effective in diverse contexts (Niesche & Keddie, 2011; Eagly & Chin, 2010; Johnson, Møller, Ottesen, Pashiardis, Savvides, & Vedøy, 2010; Rayner, 2009; Chiu & Walker, 2007; Lumby, 2006; Brown, 2004; Madsen & Mabokela, 2002). One way to learn more about effective behaviors may be to examine the priorities of principals in diverse settings for patterns associated with increased student achievement. While a

teacher can influence a student's learning for one year, a principal who remains in a school at least three to four years has the potential to influence a child's achievement for multiple years, ultimately shaping an entire primary or secondary educational experience. Beyond classroom teachers, "school leadership has a central role in addressing issues of diversity and equity" (2011, p. 65). Madsen and Mabokela (2002) report that leadership and diversity are invariably interconnected as schools move from monocultural, non-diverse contexts to those containing ethnically diverse, multilingual, and economically disadvantaged children. If principals indeed do impact achievement, urgent progress on how their actions and behaviors can improve the literacy performance of boys, immigrants, language learners, socio-economically disadvantaged, and rural students is long overdue.

This section (part 2) of the literature review details perceptions of effective leadership across the sixty-five jurisdictions. While researchers concur that effective leaders impact student achievement (Leithwood, 2010; Marzano, Waters, & McNulty 2005), there is less agreement over which behaviors are central to impacting *diverse* student achievement. This synthesis contributes to this void by showcasing current research on effective leadership in diverse contexts. Specifically, it examines what studies say about the fourteen leadership priorities of interest on PISA's Index of School Principal's Leadership. The fourteen priorities organize into three conditions of effective leadership: defining school mission, managing the instructional programming, and developing a school climate (Hallinger & Murphy, 1985). These conditions serve as the framework to explore the current literature.

Notably, there are less data on effective leadership priorities in diverse contexts than on successful leadership in general. To compensate for this, both sets of research are considered within a three-step process. First, the PISA priorities that fit under each specific condition of effective leadership are identified. OECD publications that describe each priority are drawn upon in this subsection to illustrate the close alignment between priorities and specific conditions. Then, the general data on effective leadership is scanned to confirm if the condition is considered essential in current literature. This step is brief but important, since the selected framework, while very reputable in research, is over twenty years old (Hallinger, 2010; Leithwood, Day, Sammons, Hopkins, & Harris, 2006; Hallinger, 2003). It is therefore important that the conditions are flexible enough to withstand the evolving demands and responsibilities of school leaders in the twenty-first century. Finally, research that explicitly discusses effective leadership within diverse contexts is reviewed to identify what scholars are saying about the three conditions, in schools with minority populations.

This three-step process provides a solid structure to explore the fourteen priorities in this study as well as contributes to the larger agenda of this dissertation: to inspect if 'effective leadership' and 'effective leadership for diversity' are congruent. Studies that emerge in the synthesis but do not align to the fourteen priorities of interest will be considered at the end of this review.

Defining the School Mission

Schleicher (2012) states "setting goals for student performance, measuring progress against those goals and making adjustments in the school programing to

improve performance" are aspects of effective leadership (p. 19). Four of the priorities on PISA's Index of School Principal's Leadership examine a principal's efforts around setting goals, vision, and mission:

- I use student performance results to develop the school's educational goals;
- I make sure that the professional development activities of teachers are in accordance with the teaching goals of the school;
- I ensure that teachers work according to the school's educational goals; and
- I check to see whether classroom activities are in keeping with our educational goals. (OECD, 2009d)

Each of these priorities (referred to from this point forward as *performance, PD, school goals,* and *class activities*) naturally fit under Hallinger and Murphy's (1985) first condition of effective leadership: defining the school mission. Effective leaders are individuals that "have a clear vision of what the school is trying to accomplish" and the skills to "lead the staff in developing school-wide goals" which interlace all school activities (Hallinger & Murphy, 1987, p. 57). A headmaster who is able to develop and articulate school goals will promote accountability and foster instructional improvement.

A clear link between school goals and the decision-making and learning in classrooms is visible in the PISA priorities *performance, PD, school goals,* and *class activities*. The priority *performance* evaluates a principal's focus on student achievement when establishing goals. "Developing school leaders," according to OECD means "acknowledging their pivotal role in improving school and student performance" (as cited in Schleicher, 2012, p. 12). Effective leaders establish school goals that are driven by

students' needs. Student performance results are one important indicator of the quality of learning and teaching in a school and are at the center of effective leaders' goal setting decisions. Understanding academic weaknesses and identifying learning gaps are critical to developing school goals aimed at improving academic achievement.

The priority *PD* evaluates principals' dedication to ensuring professional development aligns with the goals of their school. Most educators worldwide who attend PD are dissatisfied with the experience and report it is "ineffective and does not meet their needs" (OECD, 2009a, p. 48). OECD (2009a) argues that teachers' needs should align with the wider goals of a school and successful school leaders "ensure that the development opportunities available are effective and meet teachers' needs" (p. 48). Diligent and ongoing focus to align professional development to school goals is at the core of improving student achievement, since for many teachers professional development is the main source for ongoing learning.

The priorities *school goals* and *class activities* examine how closely a principal monitor's their teachers' preparation, teaching and learning and ongoing development to ensure all actions align to the school goals. According to OECD (2009f), guiding teachers on how to set goals and measure progress is key to ensuring work adheres to the school vision. Effective leaders collaborate with staff to establish goals and devote ongoing time to meaningful conversations on how to align all aspects of professional work. During all stages of lesson planning (including preparation, instruction, and evaluation), the vision of the school should resonate. This means that teachers should be

able to explain school goals with ease and identify how the learning activities in their classrooms align to these overarching objectives. In effective systems, leaders

> Set ambitious goals for students and are clear about what students should be able to do, and then prepare their teachers and provide them with the tools to establish what content and instruction they need to provide. (Schleicher, 2012, p. 11)

An effective leader ensures teachers are prepared and ready to integrate school goals into classroom activities on a consistent basis and in a meaningful way.

These four PISA priorities − *performance, PD, school goals,* and *class activities* − focus on the relationship between leaders and school goals. How individuals create, monitor, and maintain an educational mission, the vision for a school, and their goals to improve achievement, are what distinguish effective leaders from average leaders. These actions are at the center of Hallinger and Murphy's (1985) first condition of effective leadership.

Verifying the Condition

Across the general literature on effective leadership in the twenty-first century 'defining the school mission' emerges as an essential priority to raise student achievement. Successful principals have clear, well-defined visions, and ambitious (yet attainable) school goals (Sanzo, Myran, & Clayton, 2011; Muijs, Ainscow, Dyson, Raffo, Goldrick, Keer, Lennie, & Miles, 2010; McCollum & Kajs, 2009; Lalas & Valle, 2007). While differences emerge regarding which goals are most effective in raising student achievement and how they should be created, researchers agree that excellent leaders can

clearly communicate and describe their school goals (Perez, Uline, Johnson, James-ward, & Basom, 2011). Effective leaders in both centralized and decentralized systems consistently model their vision by how they lead (Valentine & Prater, 2011). This research affirms that defining the school mission is a critical component to effective leadership in the twenty-first century. The assurance verifies the four PISA priorities within this condition are relevant and worthy of further exploration. For a more comprehensive review of research around how school leaders define a school mission, see Hallinger and Heck (2002).

Effective Leadership for Diversity

In literary discussions of effective leadership in diverse contexts, defining the school mission is described in a very precise way. Effective leaders in diverse settings develop a school mission that is built upon their moral and ethical responsibilities, empowers diverse populations, and targets increasing achievement. Leadership is framed by a moral and ethical compass. Their vision is focused by a clear commitment to diverse students and driven by a mission to improve the achievement of their diverse learners. Distinguishing effective leaders in diverse contexts from general leaders is a relentless dedication to social justice, which resonates in their priorities and actions. A headmaster's behavior around defining the school mission is one outlet in which the achievement of diverse learners could increase worldwide. Three themes emerge from the literary discussion on how leaders in diverse schools define a school mission: moral and ethical, empowerment, and increased achievement. Each is detailed below.

Moral and Ethical

Effective leaders in diverse schools believe it is their moral and ethical obligation to improve the achievement of minority populations. Beck and Murphy (1994) acknowledge ethics and school leadership has, until recently, had limited attention. As schools continue to become more diverse, pluralism is gaining increasing attention. In high-performing Canada, Shields (2004) writes, effective leaders in diverse settings understand their moral and ethical responsibilities. They recognize their leadership duties include ensuring all learners have the best possible educational opportunities and they build this into the school vision. Leaders scrutinize their beliefs and actions to identify biases or injustices and hold staff accountable to the same standard (Begley, 2006; Fullan, 2003). Gooden (2012) argues that deficit thinking or (color blindness strategies) are no longer sufficient. Instead, effective leaders must "promote acceptance and respect for diversity and a commitment to human rights" (Harvey, Paolucci-Whitcomb, & Comerford, 2005, p. 30). Leaders in diverse contexts achieve this by clearly stating in their school vision the importance of respect and tolerance towards their specific minority populations. If school visions are so general that educational goals can be fulfilled without accounting for their specific minority populations, leaders rewrite them.

Leaders driven by a moral and ethical compass understand their responsibility to support all students. In high-performing Australia, Gurr, Drysdale, and Mulford (2007) state leaders who are successful in diverse environments have clearly articulated values, beliefs and vision. Garrett-Staib and Maninger (2011) in the middle-performing United States add, "educational leaders have a responsibility to act ethically because they are

responsible for assuring the well-being of the students" (p. 23). What distinguishes leaders in diverse environments from effective leaders in general is a relentless push to focus on goals that prioritize diverse students. This does not mean mainstream students are disregarded, but rather lateral recognition of both populations drive the goals of the school. How leaders can ensure high achievement of marginalized populations is debated. In some systems, school missions are constructed around a moral value of social inclusion. For example, in middle-performing England, Leo and Barton (2006) state "leaders are reconciling their commitment to moral values of inclusion and diversity" (p. 167). In other systems, exclusion is viewed as more ethical. In some schools in high-performing Canada, leaders report separating diverse learners and establishing targeted interventions can sometimes yield greater focus and resources, which ultimately speed up the time it takes to narrow the gap between diverse and mainstream learners (Hargreaves et al., 2012).

Ethical and moral decision-making is central in diverse systems. In high-performing China, a key feature of the traditional but popular Confucian-based approach is morality in action and self-cultivation. Johnson, Møller, Jacobson, and Wong (2008) describe this as "clear leadership direction in decision-making and effective implementation from subordinates" (p. 418). In hard-to-staff rural China, effective leaders set goals to raise student achievement and to curb dropout rates. They adhere to the required principles of communist education, but set a school vision that connects the needs of their community with the aim of high academic achievement. When urban teachers are appointed to remote locations in China, principals work with them to

understand the needs of the local community. Effective rural leaders in this system make conscious decisions to assist newcomers to understand and appreciate the rural surroundings.

Moral and ethical intuition is not necessarily an innate behavior but it can develop with experience. Billot (2007) reports that leaders in high-performing New Zealand, develop a 'no-fear' attitude over time. Such leaders reject normative constructions of leadership and exhibit "a form of agency developed through self-identity and experience" that monitors for injustices (p. 257). This attitude is built on confidence and experience. As effective leaders begin to notice underperformance trends among their diverse learners, they become increasingly dedicated to overturning them. This obsession resonates in their school goals. They commit to authentic diversity teaching: diversity is not actively promoted. Rather, an underlying, year-round theme is inserted into all educational activities within the school to foster critical thinking and social justice in students and staff. They reevaluate assumptions around diversity and question tendencies to celebrate it in superficial ways. Militello and Berger (2010) describe this as a leader who values superior personal virtues, self-discipline, and selflessness.

Moral and ethical leadership for diverse contexts should be taught, according to researchers in middle-performing Greece (Georgiadis & Apolstolos, 2008). They argue leaders must be "prepared to recognize, reflect on, and appreciate differences and diversity, tolerance and plurality" if they intend to authentically succeed in schools with diverse populations (p. 225). Increased professional preparation for school leaders that focuses on issues of racism and social justice can improve a principal's ethical and moral

stance. Rude, Paolucci-Whitcomb, and Comerford (2005) agree, based on research in rural schools in the United States. The researchers write

> The landscape of rural America is changing. As growing numbers of refugees and immigrants and other peoples of color have chosen to make their homes in previously and predominantly 'white' rural schools and communities, the "world out there" in a global sense has become the "world right here," with extremely complex ethical ambiguity. Many of the ethical beliefs of these new neighbors are group-based. These beliefs are not focused on individual identity and rights. Recognizing that differences exist in ethical belief systems is one critical step for professionals, learning how to negotiate among them is quite another. (p. 27)

Principals need to know what they believe and understand the values of their staff and school community. Since perspectives may differ, they need to have tools to navigate this space. Once a common mission exists, principals need to know how to define and maintain school goals that fit within this vision. Effective leaders in diverse contexts explicitly integrate improving the performance of diverse learners into their visions. Many leaders will also need support to understand what to look for in lessons, and what to offer in professional development sessions, so that the vision infiltrates all aspects of their school.

Empowerment

Effective leaders empower diverse learners by ensuring clear, consistent messaging. School principals make sure their actions, and those of their teachers, align to the school goals. Since the school goals detail a strong commitment to empowering

students with the educational knowledge to succeed, the learners hear a consistent message. In the high-performing Netherlands, Bron and Thijs (2011) report "principals who develop a school-specific vision and approach to citizenship education, cultural diversity, and human rights education can support their diverse students" (p. 123). This is because a vision with such clear messaging serves to ensure everyone in the school is aiming to improve the performance of diverse students. School lessons and learning now can (and should) address issues of intolerance or injustice that emerge from the curriculum or social setting. Young and Grogan (2008) report that in Canada "cultural and linguistic diversity is considered one of the most important issues facing school leaders" (p. 303). School leaders throughout Canada empower their minority students by promoting the two-part mission that is adapted within this national context: a value for cultural integrity and a promotion of national pride (Shields, 2002). This mission permits leaders to encourage actions and behaviors that applaud biculturalism, which is essential to empower immigrant and language learners in their system.

Effective leaders use various tools to ensure the school vision empowers diverse learners. Buy-in is considered foundational to this success (Robinson & Jeremiah, 2011; Gurr, Drysdale & Mulford, 2007). In the United States, Robinson and Jeremiah investigate a turnaround school in Chicago and report involving teachers in establishing the vision is an important part of the journey. "The vision of the school fully resonated with the school's lead teacher's orientation to education. The mission of the school provided academic training in a culturally relevant environment while balancing social skills with content knowledge" (p. 316). In their perspective, including teachers in the

initial development of the vision was critical to success. Effective leaders work with staff to create and refine a school vision collectively. The vision holds diverse learners at the center and teachers are eager and motivated to ensure their lessons align to the needs of these students. In Australia, Gurr et al. (2007) suggest it is less about creating the vision together, and more about ensuring teachers are empowered by the vision. They write: "principals exert an influence on student outcomes through a focus on teaching and learning driven by their own values and vision [and] an agreed school vision" (p. 21). Regardless of how the vision is created, the commonality has the same purpose: to ensure all behaviors in school promote a consistent message of respect and high expectations, along with dedicated support for diverse learners' success. Teachers who feel empowered by the vision are willing and interested in implementing it in their classroom.

Despite their efforts and successes, effective leaders admit intolerance and racism percolates around them. In Great Britain, for example, Colemana and Campbell-Stephen (2009) discover many minority principals themselves report racism as an issue in their educational system. These realities must be resolved before the system can make authentic advancements around improving the achievement of diverse students. In-school injustices also go unnoticed too frequently. Dickar (2008) states that some educators belonging to the majority population are "unaware of their relationship to the culture of power because they experience it as natural and common sense" (p. 115). It is from this unconscious state that individuals can "impose their assumptions as logical and objective, thus ignoring other ways of knowing and reproducing hierarchies of power that privilege their perspectives and their voices" (2008, p. 116). Such realities are

disempowering. Regardless of minority or majority status, school principals must be aware of advantages and privileges that accompany some populations − and not others − and ensure their teachers are equipped with the same skills to successfully identify, and disable, such injustices. To do this, they must be comfortable talking about diversity (rather than retreating from these conversations) when they arise in their school or classrooms. If school principals model how the school vision and goals can be an anchor in such conversations, they have the ability to turn biases and injustices into valuable learning opportunities that empower diverse learners.

Increase Achievement

The visions and goals in diverse contexts directly commit to raising achievement. Effective leaders make sure this resonates in classroom activities. In middle-performing France, Mauny (2008) examines the challenges teachers have in classes to align their work to school goals. She writes that while it is "presumed that a schools vision and goals are in line with each other" the unique realities in each classroom result in individual practices that sometimes align and other times do not (p. 80). In promising-performing Montenegro, according to Backovic (2001) principals' opportunities to ensure classroom activities are aligning to school goals are increasing. While the Constitution of Montenegro proscribes Montenegrin as the official language, it also supports Serbian, Bosnian, Albanian, and Croatian languages. This means that school leaders are able to define mission statements recognizing the needs of linguistic minorities, such as the Bosnian Serbs and Croatian nationals, who are recognized as an integral part of a unified educational system. Ensuring that the classroom teaching uses the languages of most

minorities in Montenegro enables greater understanding and higher achievement among these diverse students.

Increased attention and support for diverse learners are at the forefront of successful systems. In high-performing Singapore, for example, the current Education Minister, Tharman Shanmugaratnam, warns school leaders to avoid distractions leading to short-term gains and instead urges principals to "stay close to our vision and values," which align and provide a well-rounded education for *all* students (as cited in Yong, 2006, p. 2). This permits effective leaders in Singapore to encourage teachers to support low performers rather than push onward with the brightest pupils. Such a vision is important since disadvantaged students in Singapore are more frequently struggling learners. When the school vision and principal are supporting these individuals, teachers are under less pressure to leave them behind, and instead, are encouraged and expected to support these students to learn the necessary material. This extra support can make a significant difference in leveling the playing field between upper and lower class students in this system.

Strategies to improve the achievement of diverse learners are embedded in professional development (PD) activities. Eun (2011) argues that professional development is the most effective way to improve the classroom teaching and ultimately student performance. This is particularly true in diverse contexts, since PD can be an opportunity to expand teachers' capabilities to meet the needs of diverse learners. The National Staff Development Council (2011) defines professional development as a "comprehensive, sustained, and intensive approach to improving teachers' and principals'

effectiveness in raising student achievement" (p. 1). Bishop, Berryman, Wearmouth, Peter, and Clapham (2012) detail how schools in New Zealand have used professional development programming to support Maori achievement. They report that when a strong vision guides PD sessions and a school has wide ownership over the school goals, principals "will continue to be able to improve Maori achievement levels until they reach that of their non-Maori peers" (p. 694).

The three themes − moral and ethical, empowerment, and increased achievement – each are detailed in the research in a distinct way. While effective leaders in all contexts are defining the school mission, leaders working in diverse settings are more astute about, and committed to, visions and goals that advantage the performance of their diverse learners. In essence, effective leaders in diverse settings raise diverse learners' performance by their deep commitment to equity over equality. Administrators are finding it possible to develop a school vision and goals that allow for extra support for chronically underperforming students, regardless if minority populations are the majority group or comprise a smaller subset.

Managing the Instructional Programming

Instructional management is one of the most important aspects of effective leadership (OECD, 2009f). In fact, four of the questions on its PISA Index of School Principal's Leadership examine leaders' efforts around instruction and programming:

- I take exam results into account in decisions regarding curriculum development;

- I ensure that there is clarity concerning the responsibility for coordinating the curriculum;
- I observe instruction in classrooms; and
- I monitor student work. (OECD, 2009d)

These priorities (referred to from this point forward as *exam results, curriculum, observe,* and *monitor*) fit under Hallinger and Murphy's (1985) second condition of effective leadership: managing the instructional programming. The researchers state effective leaders "should pay equal, if not greater attention to…coordinating the curriculum and monitoring student progress" (Hallinger & Murphy, 1987, p. 55). This includes ensuring that all students receive appropriate instruction to closely monitor student progress while "helping teachers improve classroom instruction, [and] developing, coordinating and implementing curriculum" (1987, p. 55).

The association between the curriculum, instruction, and teaching and learning is emphasized in the PISA priorities *exam results, curriculum, observe,* and *monitor*. The PISA priority *exam results* reveals a principal's commitment to improving student performance. OECD (2009f) states "data-wise school leadership is important" and effective leaders are individuals "with the skills to monitor progress and interpret and use data to plan and design appropriate improvement strategies" (p. 15). Leaders with these skills who repeatedly monitor their students' exam results can modify the curriculum to increase student outcomes. Understanding student achievement scores are essential when reviewing or developing curriculum. Knowing what students are able to do, as well as the weaknesses and gaps in their learning, provide principals with the necessary data to

improve instructional programming. Michael Fullan (2013) perhaps said it best while reflecting on Ontario's success earlier this year:

> They [visitors] can go into almost any school in the province and they will find consistency of good practice. When they ask teachers or principals to explain what they are doing and why, they get specific and widely shared answers. Educators can point to particular actions and show the link to student learning. They know where each and every student is on the learning journey. (p. 3)

Consistent practices within and across schools is at the center of managing instructional programming effectively. School leaders and teachers have the professional competency to connect theory and practice to classroom instruction that moves each student in the entire system forward.

The priority *curriculum* reveals a principal's value for structured, coherent curriculum planning. "Schools that have a great say in curriculum decision-making demonstrate higher student performance" (OECD, 2009f, p. 14). Principals who are involved in making curriculum decisions are able to have greater influence on the direction of learning in their school. This is essential to ensuring the curriculum is meeting the needs of students. Furthermore, leaders who place curriculum coherency high on their agenda ensure the content in their school is relevant.

The final two priorities *observe* and *monitor* evaluate a principals' commitment to teaching and learning. *Observe* studies how committed a principal is to being in classrooms, watching the delivery of instruction. *Monitor* considers how much priority a principal places on looking at students' classroom work. Principals with the

competencies to recognize high quality instruction and student learning and who stay current on teaching and learning, according to OECD (2009f), reap educational gains by prioritizing these two activities. "[Principals] need to keep up with developments in teaching and learning in order to supervise continuing improvement in teacher and student outcomes" (p. 17). Leaders who effectively manage instructional programming spend time in classrooms to gauge instructional and learning qualities. They use their skillset to build on and develop the instructional tools of their classroom teachers and carefully monitor changes in student work to ensure growth.

These four PISA priorities (*exam results, curriculum, observe,* and *monitor*) investigate the relationship between leadership and instruction. At the very core of this investigation is a focus on how individuals manage curricula, teaching, and learning. This is of particular importance since headmasters are increasingly overwhelmed or disenchanted with being in the position of the head of the school (Pont, Nusche, & Moorman, 2008). In England, for example "61 percent of head teachers described their work-life balance as poor or very poor" and attribute it to long working hours and limited delegation skills (p. 77). In Ireland, a shortage of qualified leadership candidates is attributed to the lack of engagement principals have with the teaching and learning in their school (O'Sullivan & West-Burnham, 2011). The second condition of Hallinger and Murphy's (1985) framework explores principals' relationship with instructional programming and encompasses the four priorities of interest.

Verifying the Condition

General literature on effective leadership in the twenty-first century affirms that 'managing instructional programming' is necessary to raise student achievement (Klar, 2012; Sofo, Fitzgerald, & Jawas, 2012; Fancera, & Bliss, 2011; Fletcher, Greenwood, Grimley, & Parkhill, 2011). Principals who effectively manage instructional programing guarantee a rigorous curriculum and high quality teaching through supervision or actual engagement in classrooms (Goldring, Xiu, Murphy, Porter, Elliot & Caron, 2009; Shirley & MacDonald, 2009). While influence on developing curriculum varies across countries, effective principals are repeatedly described as 'curriculum experts.' In systems without a national curriculum, such as the United States, principals often have some say in developing their curriculum, as vertical teams that include principals, teachers and specialists are frequently involved in curricula decisions. This does not guarantee effectiveness; how a leader supervises and directly monitors implementation is most important (Andrew & Soder, 1987). In systems where national curricula are prescribed and mandated, as is the case in Germany, Scotland, China, and England, leaders have limited involvement in creating the curriculum, but still have rich knowledge of what is required and are masters at personalizing delivery to meet the needs of their students (Canning, Li, McGlynn, & Pilz, 2012). Canning et al. (2012) consider differences between prescribed and enacted curriculums. They report that in Germany, some schools "clearly decided that they could partly neglect topics" (p. 138); in China, teachers skipped aspects they felt ill-prepared to teach; and in Scotland teachers tended to emphasize specific aspects more than others. School leaders are not naive to these

decisions and in fact, in some systems they are the driver of modifications. Those who are curriculum experts assist teachers to master instructional delivery around the material that is essential for students.

Effective leaders in systems with and without national curriculums closely monitor the teaching and learning in classrooms. They are in and out of classrooms, engaging with students, and guiding teachers to always improve their practice. In some cases, effective leaders connect instruction to learning workshops (Reardon, 2011; Duncan, 2010) or establish professional learning communities (PLCs) centered on improving classroom instruction (Huggins, Scheurich, & Morgan, 2011). Some researchers recognize leaders who examine multiple dependent measures to monitor student progress (Knoeppel & Rinehart, 2010) or highlight assessment results as a key element to elevate student achievement (Anderson, Leithwood, & Strauss, 2010; Robinson, Lloyd, & Rowe, 2008). Data also emerge as a viable tool to monitor progress (Fletcher, Greenwood, Grimley, & Parkhill, 2011; Datnow, Park, & Wohlstetter, 2007). Irrespective of the tools leaders use, their students are at the front of their mind when making decisions about curriculum, teaching, and learning. Australian Geoff Southworth (2003) and others (Reardon, 2011; Aitken, 2009) describe such educators as "learning-centred leaders" since they have students' needs at the front of all teaching and learning decisions (p. 1). This drives principals' efforts to become curriculum experts with the capacity to hold meaningful conversations around curriculum and model grade appropriate lessons. For a more comprehensive review of general research around how school leaders manage instructional programming, see Jefferies (2000).

Effective Leadership for Diversity

The research on effective leadership in diverse contexts describes 'managing the school curriculum' similarly to how researchers discuss effective leadership in mainstream contexts. There is, however, closer attention in this literature to scanning teaching, learning, and curriculum for evidence of negative effects and for monitoring the achievement patterns of diverse learners. Effective leaders in schools with diverse populations carefully monitor achievement gaps both during the school year and across subsequent years, due to academic loss over the summer (Georges & Pallas, 2010). They are sensitive to subtle messaging in the curriculum and to instructional styles that may have a negative effect on diverse learners. Equally so, they are aware of how the same messaging is affirming stereotypes among mainstream learners and seek to remove them from instruction.

Three trends emerge from the current discussions on managing the instructional programming in diverse schools: responsibility, curriculum expertise, and accountability. Leaders who understand their responsibilities, who have curriculum proficiency, and who carefully inspect student data are managing instructional programming in such a way that will positively impact the achievement of their diverse learners. Each of these themes is therefore explored.

Responsibility

Effective leaders in diverse settings understand what is expected of them regarding managing the instructional programming in their school. While few researchers contest that leaders are expected to set rigorous standards aimed at providing

all students with quality learning opportunities, what this means varies worldwide. In high-performing Singapore, Prime Minister Lee's 2004 initiative "Teach Less Learn More" calls on school leaders to support innovation and diverse instruction that can be tailored to students' individual needs (as cited in Ng, 2008, p. 1). It recognizes that students from disadvantaged backgrounds may need more exposure to material in order to achieve at the same level as mainstream peers and calls on principals to guide teachers on scaffolding the curriculum. In the middle-performing United States, effective curriculum management is less about how *much* is taught, and more about *how* it is managed. Building upon Ladson-Billings (1994) "culturally relevant pedagogy," Johnson (2007) argues effective principals in diverse settings employ culturally responsive leadership. "Culturally responsive leadership practices are those that help to empower diverse groups of parents and make the school curriculum more multicultural" (p. 50). So, effective leaders in diverse contexts in the United States function in the role of public intellectuals, curriculum innovators, and social activists. They support teaching practices which incorporate students' cultures and aim to empower children to identify biases and stereotypes (Gooden, 2010). Their responsibility is to equip staff with the tools to connect learning to students' background and adjust lessons so they are culturally appropriate for all learners.

Effective leaders in diverse contexts hold themselves accountable for ensuring that at-risk learners receive superior instruction. At the individual classroom level, this includes ensuring instructional methods maximize the amount of exposure diverse learners have to material and their opportunities for application. For example, in high-

performing Taiwan, Chen, and Crockett (2012) acknowledge that rote learning is pervasive in classrooms with socio-economically disadvantaged populations. Effective Taiwanese leaders recognize this as problematic and work with their teachers to introduce more problem solving and application based learning. At the school level, however, there is less agreement around the best practices to ensure consistent superior instruction in all classrooms. Effective leaders agree this is ideal for diverse learners. When high quality instruction permeates, diverse students are advantaged by consistent, outstanding teaching, which maximizes their learning potential across years. In Hungary, Baráth (2006) explains how school leaders are increasingly encouraging teachers to collaborate, including encouraging teachers to observe and critique each other as well as team-teach so they can get a better sense of what students are learning in other levels, and use this to drive their own instruction.

Similarly, in high-performing Ontario, Canada, distributive approaches where principals select model teachers who are connecting with diverse students and making significant academic gains to serve as mentors for the rest of the staff. These 'instructional agents' coach staff and offer an open door policy where teachers can visit and observe in the mentors classroom (Fullan & Knight, 2011) while in the middle-performing United States, Gooden (2010) says principals should model their understanding of effective instruction and how they navigate the space between culture and pedagogy. Demonstrating sample lessons during staff meetings and going into classrooms to co-teach can lead to high quality instruction across an entire school.

Managing instructional programming in diverse contexts also includes taking responsibility for learning beyond one's school. This includes access to learning material at home and instruction in feeder schools. Effective leaders recognize their poorer learners often live in homes with fewer books and narrower verbal interactions than diverse learners. They understand that learning material in immigrant homes may not align to those at schools and may result in students feeling split between two worlds. Effective leaders in diverse contexts, therefore, seek out programs that increase the amount of resources they have available for diverse learners to use at home. In one system in Canada, for example, leaders acquired a grant to provide students with laptops they can check out and bring home to write papers or play educational games (Hargreaves et al., 2012, p. 188)

For transient students, continuity across a whole system is essential for high achievement. Principals recognize that to support all students' seamless transitions between schools, it is important to be familiar with the instructional practices in feeder schools. In Hong Kong, Adamson, Tak-Shing, Yu, Kin-Sang, Hau-Fai, and Wai-Lun (2010) report that if secondary school principals across an entire system do not have similar instructional styles or views on reforms, challenges emerge. In high-performing Belgium, Agirdag (2009) promotes pluralistic instruction that applauds and welcomes students of varied backgrounds. Such an instructional approach can transcend the unique realities within schools by establishing a common understanding of what it means to applaud diverse learners' strengths and backgrounds across an entire system.

Curriculum Expertise

Effective leaders in diverse schools have a comprehensive understanding of the school curriculum that maximizes their ability to make changes, establish curriculum responsibilities among teachers, and detect biases in textbooks. In middle-performing Turkey, Can (2007) writes "school administrators are expected to have better knowledge about the latest curriculum" than anyone else in the school (p. 228). This is because a leader is the curriculum expert. A leader needs a deep knowledge of the breadth and depth of content. When the curriculum is prescribed, effective leaders use whatever autonomy they have to personalize requirements to support the needs of their diverse learners.

In Hong Kong, Adamson, Tak-Shing, Yu, Kin-Sang, Hau-Fai, and Wai-Lun (2010) explain, "curriculum design should incorporate a high degree of flexibility and a low degree of prescription so as to allow schools to take account of their own particular characteristics" (p. 111). Effective leaders are in tune with their unique population and use this understanding to align their curriculum with the needs of their students. This means that principals have the ability to personalize learning to account for the needs of language learners and recognize these will likely be different than the needs of immigrant learners who do not speak a different language than that used in the school's instruction.

What distinguishes an effective instructional leader in a diverse setting from an average principal is the ability to identify where, how, and why the curriculum needs to be shifted to accommodate diverse learners. This type of leader can recognize gaps in students' work, identify the concepts with which they are struggling, and assist teachers

to modify teaching to support these learners. To do this, effective leaders engage in regular conversations with teachers about the curriculum. They ensure staff understand vertical and horizontal curriculum mapping and have a clear sense of what is expected in their classrooms to accommodate particular learners. In multiethnic schools, this can mean assisting teachers with developing lessons that address the unique weaknesses and strengths of multiple diverse populations at one time. In Great Britain, Cunningham (2006) highlights concerns about the relevance of the national curriculum for pupils from ethnic minority backgrounds. Leaders need to guide teachers in how to adopt lessons to "embrace the needs of an increasingly diverse pupil population" (p. 79). This includes adaptions for immigrant students with no English skills, those with minimal English proficiency, and students with high functioning English fluency but no academic vocabulary, while also meeting the needs of mainstream students. Once a principal is certain teachers understand the curriculum, they encourage teachers to be pedagogical leaders. According to Chew and Andrews (2010) Australian and Singaporean principals provide educators with space and time to have meaningful conversations about teaching and the "responsibility to make decisions about [lessons] and ensure it aligns with the structures and processes" of the curriculum (p. 59). This transfer of leadership is important since it empowers teachers to drive their own decision-making in the classroom.

Effective leaders in diverse contexts applaud lessons that build upon the curriculum in a meaningful, culturally appropriate way. In high-performing Canada, Sensoy, Sanghera, Parmar, Parhar, Nosyk and Anderson (2010) call on principals to

guide teachers away from the 'zoo approach' to multiculturalism. They describe this as "the dance, dress and dining, or heroes and holidays or taco Tuesday approaches to diversity" (p. 1). Such flashy lessons are not a meaningful way to deliver culturally appropriate activities. In the United States, Banks (1989) agrees, noting that multicultural education is more than a once a year Dr. Martin Luther King Jr. celebration. Effective leaders work with teachers to understand the difference between authentic approaches to diversity and superficial ones that perpetuate stereotypes.

Principals also diligently monitor the curriculum and school material for biases. In middle-performer Lithuania, Birgelytė, Stanaitis, and Gerulaitis (2012) write that principals must "ensure the development of values of citizenship and national identity" by selecting ethically and morally sound textbooks (p. 159). Malceva-Zamkovaja, Müürsepp, and Muldma (2012) echo the same message in high-performing Estonia. They state textbooks support "the formation of children's socio-cultural identity" (p. 113). They compare Estonian textbooks to those in Finland, Latvia, and the Czech Republic and conclude "there are countries which textbooks include the texts tending to support the formation of national identity only . . .[and] countries with textbooks that pay attention [to] the values of cultural diversity and formation of empathy towards other cultures" (p. 113). The latter is most ideal for schools. Even within these texts, however, principals should be mindful of subtle messaging and covert learning that accompanies resources and material. Effective leaders explain to teachers and students what biases are, and why it is important to find and remove them. Instructing staff and students how

to detect prejudices is further beneficial as it enables them to identify injustices in their own lives.

Accountability

Effective leaders in diverse contexts prioritize high achievement. They understand diverse students are underperforming worldwide and diligently track the progress of their at-risk students. This includes collecting and monitoring class work as well as carefully observing student performance on tests and projects. In middle-performing Chile, Turra-Díaz (2012) reports the Ministry's programming provides schools with "little if any consideration to the Mapuche culture" (p. 81). The researcher writes, "educational communities in intercultural indigenous contexts have yet to design curricula … that incorporate the culture of indigenous-Mapuche students in their learning processes" (p. 81). Effective Chilean principals have to monitor their indigenous students' performance attentively so these learners are not lost in the system. In promising-performer Kyrgyzstan, it is the Kyrgyz and Uzbeks children who need careful monitoring. The ethnic violence that broke out in the southern region in 2010 between these two groups has affected their attendance and learning. Effective principals understand they are accountable for both groups of students regardless of their personal beliefs about the situation. They work with teachers to interlace activities and lessons that build tolerance and increase the safety of these children in their schools (UNICEF, 2010a).

Principals employ high accountability in their schools and throughout the system. Collective responsibility breaks down the traditional view that teachers all do their own

thing (Elmore, 2004). In schools where a principal builds collective responsibility, all staff monitor at-risk students and track their achievement patterns. This means all adults in the school are identifying which students need more supports and what interventions to offer them. Finnish researchers Itkoen and Jahnukainen (2007) argue that high teacher accountability is related to high achievement among diverse students. Cross-staff accountability means all adults are taking ownership for the achievement of all students. Accountability, however, does not always taper off at the school level. In high-performing Canada, for instance, Stewart (2006) acknowledges there is more work to be done to develop system wide accountability in the Canadian system. The researcher writes "the Crown's jurisdictional obligations to provide educational services have not led to similar educational opportunities or attainment achievement for First Nation students" (p. 998). Canadian schools with First Nation students, therefore, need to push for more than cross-staff accountability − they need to position themselves so they can demand greater system-wide accountability, leading to fairer resources so their staff has all possible supports available to support marginalized learners.

The three themes (responsibility, curriculum expertise and accountability) that emerge from the research on effective leadership in diverse contexts stress the relentless focus effective headmasters have on diverse learners when thinking about curriculum, teaching, and learning. Their focus is primarily within their school as they consider how instruction is prepared, delivered, and executed. They also, however, have a wider understanding of resources outside their school as well as in feeder schools. Effective leaders delve into curriculums to look for biases and seek out ways to personalize

required material to meet the needs of diverse learners. Once again, effective leaders in diverse settings raise diverse learners' performance by valuing equity over equality. They use curriculum, teaching, and learning as ways to offer different supports to diverse learners to help them perform on par with their peers.

Developing the School Learning Climate

The final six priorities on PISA's Index of School Principal's Leadership examine principals' efforts around creating a school culture. They include:

- I take over lessons when teachers are unexpectedly absent;
- I pay attention to disruptive behavior in classrooms;
- I give teachers suggestions as to how they can improve their teaching;
- I take the initiative to discuss matters when a teacher has a problem in his/her classroom;
- I inform teachers about possibilities for updating their knowledge and skills; and
- I solve problems together when a teacher brings up a classroom issue (OECD, 2009d).

Each of these (referred to from this point forward as *take over lessons, behavior, suggestions, teacher problems, update, and class problems*), align with the vision of Hallinger and Murphy's (1975) third condition of effective leadership: developing the school climate. Leaders who successfully develop a school climate set the "norms and attitudes of the staff and students that influence learning in the school" (Hallinger & Murphy, 1987, p. 57-58). A leader who is developing an effective school climate

maintains high visibility and has exceptional communication skills. Such an individual protects instructional time in classrooms and seeks out high-quality development programs that can have a positive impact on lifelong learning.

The relationship between school culture, communication, and environment is central in the PISA priorities *take over lessons, behavior, suggestions, teacher problems, update, and class problems*. The priority *take over lessons* addresses a principal's commitment to continuous learning. Systems adhere to different protocols when a teacher is unexpectedly absent and the resources or time to schedule an appropriate substitute is not available. In some systems, students are sent to other classrooms for the day; other systems have students attend an extended study hall or allow leisurely free time. In cases where principals strongly value learning without disruption, a leader may opt to step in for the absent teacher and conduct the class him or herself. Interestingly, only one-fourth of students in OECD countries attend schools where principals frequently take over lessons when a teacher is absent (OECD, 2012b).

The priorities *behavior, teacher problems,* and *class problems* aim to investigate a principal's commitment to addressing disruptions in classrooms. Effective principals worldwide are "vigilant about disruptive student behavior in classrooms" (OECD, 2009a, p. 194). Disruptive behavior reduces the quality of instruction and amount of time focused on learning in classrooms. Principals who value a high quality climate for learning seek to minimize distractive behaviors in their school. They may do this by removing distracting students from class, being highly present within these classrooms, or working with staff to set up behavioral plans to support students who are misbehaving.

Some leaders initiate discussion with the classroom teacher, while others work collaboratively to address problems. In both cases, principals are aiming to ensure a high quality learning climate within all classrooms in their school. Leaders who "solve problems with teachers when there are challenges to learning in a particular classroom," are most frequently recognized by teachers as effective (2009a, p. 194). Leaders who prioritize actions that diminish disruptions maintain a high value for classroom cultures that are conducive to learning.

The priorities *suggest* and *update* monitor a school leader's eagerness to support lifelong learning among classroom teachers. Leaders interested in developing a school climate where staff is committed to regularly refining their skills "make frequent suggestions to teachers on how to improve instruction in classrooms" (OECD, 2009a, p. 194). Using formal coaching and/or informal mentoring, such leaders watch instruction, engage in classroom activities, and communicate with teachers regularly about their instructional strengths and areas needing improvement. Their interactions with teachers go beyond formal observations since they are more interested in fostering ongoing dialogue with teachers under the premise 'we can all continuously improve.' One of the ways these leaders promote continuous improvement is by staying attuned to professional opportunities that offer personal or staff growth. Encouraging teachers to gain expertise beyond those available within their school can further enrich the learning and growth within a system.

These six PISA priorities (*take over lessons, behavior, suggestions, teacher problems, update, and class problems*) measure a leader's focus on school culture.

Ackerman and Maslin-Astrowski (2002) acknowledge the challenges principals have with establishing a culture; they write, "time, space and communication patterns are integral parts of the messy world of school leadership" (p. 11). While interpretations of the ideal climate and how to create it differs worldwide, effective headmasters across jurisdictions develop a school climate for learning. This is at the center of Hallinger and Murphy's (1985) third condition of effective leadership.

Verifying the Condition

In twenty-first century literature on effective leadership 'developing a school climate' is repeatedly identified as necessary to raise student achievement (Deenmamode, 2011; Millward & Timperley, 2010; Ngcobo, 2010; Leithwood & Mascall, 2008; Dimmock, & Walker, 2000). Systems worldwide define effective cultures as ones where everyone is dedicated to school improvement or achievement (Brockmeier, Green, Nobles, & Tsemunhu, 2012). But different understandings of what is required to foster such an effective culture can be heard in current literature. Little's (1982) pioneering work around culture called for leaders to embrace collaboration and professional learning communities and these aspects are still strongly supported in current research (Livesay, Moore, Stankay, Waters, Waff, & Gentile, 2005; West, Ainscow, & Stanford, 2005). Some newer suggestions have also emerged in the literature, including offering incentives such as reducing class size or merit-based pay (Burch, Theoharis, & Rauscher, 2010) and increased teacher collaboration and accountability (Brown, Finch, & MacGregor, 2012; Wilhelm, 2010; Feeney, 2009; Leithwood & Mascall, 2008). While these ideas have had mixed reviews within the scholarly community, researchers investigating systems with

varying levels of autonomy recognize effective leaders as ones who personalize their school culture to complement the needs of their school.

Effective leaders serve as intermediaries between the outside world and classroom environments. Principals are constantly filtering external criticism and comments from parents and colleagues that have the potential to detract from learning. Policies and mandates are implemented as required, but leaders must be sensitive to external changes that interfere with teaching and learning. Elmore (2000) writes effective principals protect their staff from external forces that interfere with the focus of the school. Mulford (2003) agrees, suggesting "school leaders can be a major influence on school-level factors as well as help buffer against the excesses of the mounting and sometimes contradictory external pressure" (p. 2). A principal's ability to filter unnecessary distractions is key to keeping a culture positive and learning focused. For a more comprehensive review of general research around how school leaders develop a learning culture, see Mulford (2003).

Effective Leadership for Diversity

A school learning climate is the basis for success in a diverse context. Dimmock and Walker (2005) observe that, "culture is the glue that binds people together" and also distinguishes people from one another (p. 8). The glue in a multiethnic environment is safety and respect. Effective leaders prioritize students' safety and foster a culture of respect. Regardless of the location, these two priorities appear to be central in the current literature on effective leadership in diverse contexts. Environments that are safe and respectful ensure all students have an opportunity to learn and grow. Three trends

emerge from the conversations around how effective leaders in diverse schools develop a school climate: environment, relationships, and status. Leaders who exert ongoing effort to establish a tone for learning, develop relationships with teachers and build connections with students, and recognize their personal status positively impact the achievement of their diverse learners. Each trend is described below.

Environment

Effective leaders establish a school tone. McCray, Wright, and Beachum (2004) note that, "it is the school principal who sets the tone of the school culture" (p. 111). Beyond this acknowledgment, however, researchers are unsure of what tone is best. In high-performing Shanghai, leaders aiming to improve the achievement of minority learners foster a school environment of acceptance and a culture that honors both Putonghua and minority languages. Efforts to improve the achievement of language minorities are tightly bound to linguistic power struggles and complications within society (Zhou, Siu, & Xin, 2009). The '2010 Chinese Outline for Medium and Long-term Development and Reform of Education' highlights the "need to overcome educational disparity and the importance of respect for diversity and individual needs" (as cited in OECD, 2011a, p. 4). This outline provides Chinese leaders with greater opportunities to promote language acceptance, equity, and individuality in their schools. In Germany, a school environment of acceptance is also applauded but it is less about overcoming disparities and more about creating global citizens who are able to interact with people from different cultures and backgrounds. Incetas (2011) details how

principals who establish an environment of mutual respect in their school are making the school more conducive for diverse learners to succeed alongside their mainstream peers.

In other systems, effective leaders are described as those who promote an environment of learning or caring. With chronic underperformance pervasive in urban schools in the United States, Ramalho, Garza, and Merchant (2010) report that principals working with students in low-income predominantly Hispanic neighborhoods keep their focus on teaching and learning. The leaders view themselves as learners and promote an excitement for learning throughout the school. Such an environment can increase the amount of questions and curiosity of students and ultimately knowledge. In high-performing Norway, Vedøy and Møller (2007) report that effective principals in diverse settings were firmly committed to "a caring approach [with] a focus on possibilities and respect, not on deficits" (p. 20). Principals in this system who promoted a positive atmosphere and generated curiosity were viewed as effective. They spent less time pointing out differences and more time finding commonalities across students of different backgrounds.

Selecting a school tone depends on context and student population. Principals are expected to lead "multiethnic, multiracial schools effectively, without marginalizing or alienating important parts of the diverse school community" (Woodrum, 2002, n.p.). Before deciding how to adjust a school environment, leaders need to "understand school culture and demonstrate cultural competence" (p. 15). They must understand the current values within a school and the expectations and wishes of parents and the community. Society and local expectations also contribute to the shaping of a school tone. Dimmock

and Walker (2005) describe how the tone in Asian and Western schools differs. This is because the "Asian dragons and tiger nations" have different cultural values and norms that are shaping expectations in schools. Effective leaders understand the "pulse in their communities and society and align this to the direction they want the school to move" (2005, p. 91). In middle-performing Ireland, O'Sullivan and West-Burnham (2011) detail how the crash of the Celtic tiger, the disgracing of the Catholic Church, and the opening of the European Union is reshaping the educational environment in Irish schools. Effective principals in diverse schools within this newly multicultural society are building strong community leadership. Community leadership is shared leadership that ensures greater voice to the different populations within a local community as a way to establish a school tone of acceptance for all.

Relationships

Strong relationships with teachers and students are essential to a healthy school culture. Darling-Hammond, LaPointe, Meyerson, Orr, and Cohen (2007) writes effective leaders spend the necessary time to build individual relationships with staff. This is because effective leaders understand that mutual respect and trust are essential to long lasting partnerships. Investigating relationships between colleagues in diverse schools in middle-performing Chile, Tapia-Gutiérrez, Mansilla-Sepúlveda, Becerra-Peña, and Saavedra-Muñoz (2011) reach a similar conclusion. They report school leaders dedicated considerable time to building trust with staff and students and acknowledged ongoing appreciation for diversity. To develop a positive school culture in this system meant developing relationships with all players in schools. Communication is critical in a

system where diversity is respected. In middle-performing England, Lumby (2005) writes:

> People are different along a number of dimensions and they may need to be treated differently. Their differences should be celebrated and harnessed in positive ways to benefit the organization and the individual. The organizational culture should be equally comfortable for all. (p. 35)

Effective leaders tailor their communication to suit each individual. They want teachers to feel comfortable coming forward to speak with them and for their communication with staff to be clear and culturally appropriate. According to the TALIS results, school leaders in Brazil who emphasize strong communication were better problem solvers since they have an established relationship with their staff (as cited in OECD, 2009a). Brazilian leaders working in diverse contexts are able to offer suggestions and address pedagogical issues impacting diverse learners' achievement more easily in schools where there is a strong principal-teacher relationship. In Finland, leaders use established communication channels with teachers to move learning in classrooms forward and to support the needs of struggling students. Leaders who engage their teachers in debate and encourage them to take educational risks can increase the learning of their students (Mulford, 2003).

At the center of strong principal-teacher relationships is a focus on protecting teaching and learning time. In Great Britain, headmasters handle conflicts, tensions, and dilemmas while at the same time oversee business-as-usual at their institution (Gunter, 2006). When intolerances, biases, or cultural conflicts arise in a classroom, an effective

leader clears their schedule and prioritizes the issue. From Kyrgyzstan, DeYoung, Reeves, and Valyayeva (2006) describe effective leaders as individuals who keep "the order and morale of the teaching cadre intact" and spend significant amounts of time finding new revenue sources and keeping business-as-usual moving at schools so teachers can successfully teach in classrooms (p. 202). In both systems, researchers recognize that teachers in diverse contexts need to focus on offering the best possible instruction to students. Principals make sure the resources are available and the school is functioning properly so that teachers can keep their attention on in-classroom learning.

Effective leaders in diverse systems recognize the importance of developing individual relationships with students. Effective leaders know the names of their students, understand their backgrounds, and are interested in their home cultures. Instead of asking teachers about students, principals themselves reach out to build relationships with students. Kirk and Durant (2010) call this 'celebrating diversity' and 'identifying teachable moments.' Principals show interest in students' home language, ask about siblings, and chat with students about their hobbies during informal interactions with children at the playground, in the hallways, and in school parking lots. Leaders who make an effort to build relationships with students, understand their culture, and promote culturally responsive teaching can transform a school into a responsive environment that supports minority students (Gardiner & Enomoto, 2006).

Principals in diverse contexts also value academic discussions and ways to empower student leadership. Effective leaders visit classrooms often and sit with students. They ask students what they are learning, listen to how students explain their

assignments, and express interest in helping struggling learners. Çınkır and Çetin (2010) argue that in Turkey, principals cannot leave relationship building to teachers alone. They note, "principals should possess knowledge, skills and attitudes in maintaining sound and harmonious interpersonal relationship" with all in-school players (p. 354). In schools with large Mennonite concentrations in Ontario, Canada, Hargreaves et al. (2012) detail how principals spent time in classrooms working with students and ensuring lessons blended their home and school values in a meaningful way. McCollum and Rene (2011) suggest that leaders can empower diverse students by selecting them to be student leaders. Increasing communication between administrators and students can promote a collective spirit and improve student motivation to attend and do well in school.

There is considerable focus on discipline in discussions of principal-student relationships. Rappaport and Minahan (2013) suggest strong relationships can reduce behavioral issues. They report building positive relationships with students with challenging behavior can be an intervention for "anxiety-related and oppositional behavioral" issues (p. 18). Stepping away from disciplinarian models where students only interact with principals when they are in trouble, can be more effective with students who come from diverse backgrounds. Anderson (2008) examines principals' role and effectiveness in Mexico, Brazil, Argentina, and Chile, and reports that when a principal was more focused on discipline than on academics and evaluation, test scores went down.

> There is a negative association between school outcomes and the principal focusing on discipline…this negative association may indicate that some principals are spending too much time on crisis management. (2008, p. 56)

In the United States, Hershfeldt, Sechrest, Pell, Rosenberg, Bradshaw, and Leaf (2009) argue that disciplinary procedures are inconsistent. They say principals must "identify cultural inconsistencies in disciplinary practices, and develop and maintain culturally responsive practices that facilitate improvements in student behavior" (p. 2). Effective leaders search out teachable moments and opportunities to hold difficult conversations with staff and students to 'battle biases' that ultimately lead to productive learning around injustices (Hawley, Woodrum, Burgess, & Rhodes, 2009; Bradley, 2007). Effective leaders "model the type of professional practice and behavior" they want adults and students to use and model the same behavior in their interactions (Jacobson, 2008, p. 6). Jacobson (2008) writes "you can't ask people to do things you're not willing to do yourself. . . I think leading by example has made all the difference" (p. 10). Leading by example is critical to transforming a school culture. Principals who resolve disciplinary issues by using respectful tones and fair procedures set a foundation for a culture of tolerance.

A principal-student relationship also needs a foundation of trust. Sergiovanni (2005) writes "leaders should be trustworthy; without trust, leaders lose credibility" (p. 90). This is especially important with pupils who perceive their principal to be fair are more likely to build a positive relationship with him/her. According to Tapia-Gutierrez, Mansilla-Sepúlveda, Becerra-Peña, and Saavedra-Muñoz (2001), principal-student relationships are key to Chile's success. Working in Araucaía region, the researchers found that high school principals who prioritized building trust with students were most successful. Despite working in extremely vulnerable social environments, leaders used

fair, calm language when working through challenging situations. Their actions and behaviors consistently acknowledged and valued diversity, which was evident to both students and teachers. For students coming from disruptive backgrounds, consistency and follow-through are important attributes which principals want to uphold and model with their actions and words.

Status

Regardless of linguistic background, ethnicity, and skin tone, effective leaders understand their personal status and seize it as an opportunity. There is considerable amount of work within the field of leadership and diversity suggesting school leaders with 'insider status' are most effective in diverse schools (Brown & Beckett, 2007). Insider status includes sharing the same racial background, immigrant status, or socio-economic upbringing as ones diverse learners. The most research within this subsection surfaces around sharing the same visible traits. Brown and Beckett (2007), for example, consider the relationship between black principals and black students in the United States. They write "black principals understand the predominantly disadvantaged African American students and families they serve and communicate well with them" (p. 7) while the same has not held true for white principals, at least historically. Kern (1975) historic piece states

> The problem of bettering relations between white administrators and African-Americans students is primarily one of interpersonal relations. That is, by understanding the feelings and attitudes of African-Americans students, the administrator can learn to work more effectively with them. (p. 33)

Interpersonal relationships are still considered in recent literature, with scholars advocating for more diversity among school personnel as a way to improve communication between diverse students and adults. In England, Lumby (2005) writes "a diverse staff is better placed to prepare learners to learn and work in an increasingly diverse society and an increasingly diverse local, national and global workplace (p. 37). In the United States, Alire (2001) elegantly compares the homogeneity of school leadership to crayons. "A Crayola box full of yellow crayons is not a good box of crayons even if the yellow is the most beautiful color" (p. 95).

Other researchers argue it is less about how the leader and staff appear and more about how comfortable individuals are interacting with people from varied backgrounds. Effective leaders understand the advantages and disadvantages that come with their personal status and are comfortable discussing these with staff and students. Similarly, "if there are no African American students, Latino, Native American or Asian American students enrolled in their school [leaders] can find it difficult" to engage in conversations about race (Gay, 2000, p. 55). But Gay (2000) insists regardless of the amount of visible diversity, school leaders have an obligation to foster a school culture that promotes understanding and acceptance of diversity. This means they need to feel comfortable engaging in conversations with children and helping them make sense of, and appreciate, differences. Hughes (2011) describes how one principal in Ontario, Canada, engaged with a non-Muslim primary school girl who came to school one day wearing a hijab. She describes the leaders' behavior as a responsive diversity practice

> One day [a student] came to school in this pink hijab. She wanted to wear it. . . I just said, 'you look beautiful . . .and, you know, if you're happy wearing it, that's terrific.' She tried it out for about a week and decided it was itchy. And I said, 'but Allah knows you're just a little girl and he's not going to hold it against you and it doesn't matter if you're God or Allah or Buddha they're not up there trying to get us down here. Okay. He loves you so you just do what makes you happy and as long as you're good in your heart, it doesn't matter whether you're wearing the hijab or not. (p. 23)

Nieto (2000) describes this type of interaction as a multicultural success. The students in the school looked to the principal to see her reaction and instead of chastising or embarrassing the girl, she acknowledged her positively. In a multicultural environment, all aspects of schooling are infused with teaching tolerance. McCray, Wright, and Beachum (2004) also believe leaders who applaud multicultural and multiethnic differences can develop an inclusive culture. They report such a culture "allows people to live and work together in a culturally diverse society and creates a culturally pluralistic society" (p. 114). A school leader's comfort with his or her background and sincere appreciation for people of different ethnic and cultural backgrounds impacts their success for developing a positive culture in a diverse school. McAllister and Jordan-Irvine (2000) suggest principals who are at ease discussing cultural values can seize this as an opportunity to build greater acceptance among their staff and across the school no matter how much diversity is found in their school. Notably, some researchers fear that too much focus on culture and diversity could have a negative impact on learning in diverse

schools (Chavez, 1995; Ravitch, 1990). They argue that schools with diverse populations, in particular, need all their energy focused on supporting students and increasing reading, writing, and math scores.

The trends of environment, relationships, and status emerge from the research on effective leadership in diverse contexts and reveal how diverse learners shape the environment in which their students learn and teachers instruct. The interactions between people are central to fostering a culture of tolerance and a leader's own actions should consistently model the behavior he/she expect of others in the school. Effective leaders value the opinions and diverse backgrounds of their students. They are comfortable with their own race, ethnicity, and background and use this as a starting place to help others understand the advantages and disadvantages that come with holding minority or majority status within their society. Empowering minority learners to succeed whatever their status may be is central to building equity in a school culture. Effective leaders use culture as a space to develop the ideal environment for their diverse learners to thrive emotionally, socially, and academically.

Establishing Community Connections

While the fourteen leadership priorities explored on PISA easily fit under Hallinger and Murphy's (1975) three conditions of effective leadership, making it an ideal framework for this analysis, there is additional literature on effective leadership in diverse contexts that does not fit under any of these conditions. This begs the question: do the three conditions of effective leadership encapsulate all the necessary priorities of effective leadership *for diversity*? Susan Moore Johnson would argue they do not. She

writes “leadership looks different− and is different − depending on whether it is experienced in a legislature, on a battlefield, or at a rally, on a factory floor, or in a school district” (1996, p. 14). If context matters, the conditions of effective leadership in remote locations or in schools with large concentrations of second language learners may differ than those in mainstream locations.

Returning to the literature that does not fit under the three conditions of effective leadership reveals that indeed, one additional pattern emerges: effective leaders in diverse contexts prioritize *community connections* (Riley, 2009; Riehl, 2008). Community connections are intentional practices that value and emphasize the interconnectedness between schools and families, communities, and the global neighborhood. These connections build partnerships within and across out-of-school players including parents, local organizations, national corporations, and international networks (Hughes, 2012). Community connections are concerned with mediating *between* families and organizations to ensure productive on-going engagement. At the same time, they are about structuring teaching and learning within each classroom to intentionally prepare students to be local, as well as global citizens, who are equipped to move through and reside in multiple cultures, and have fluency in more than one skillset as well as the capacity to apply their educational training to varied domains (2012).

Interestingly, OECD also recognizes community connections as important under what it calls ‘leadership beyond school walls.’ They write:

> Leaders of the most successful schools in challenging circumstances are typically known to, engage with and trusted by both parents and the wider community.

> They seek to improve achievement and well-being for children and young people by involving businesses, sports clubs, faith-based groups and community organizations. (as cited in Schleicher, 2012, p. 13)

Leadership beyond school walls also includes connecting with a community. "A leader's collaboration with other schools and with the local community can help to improve problem-solving through intensified processes of interaction, communication and collective leading" (2012, p. 20). It is curious that OECD recognizes this but does not include questions under leadership management on the PISA questionnaire asking principals to disclose how they prioritize actions and behaviors beyond their school. The lack of questions concerning this relationship suggests they may not believe it is a necessary condition for effective leadership.

Verifying the Condition

There is evidence in general literature suggesting effective leaders establish a strong link to the community (Harth, 2010; Hargreaves, Halász, & Pont, 2008; Fullan, 2001). Fullan (2001) suggests effective leaders strengthen ties between school personnel and communities; Hargreaves et al. (2008) concurs. They state that school leaders need both an in-school and out-of-school presence in order to understand and impact the environment that influences their own work with students. Leaders with strong ties to the community are able to build trust between the school, parents, and wider society. Partnering with local businesses, sports clubs, and faith-based groups can strengthen relationships and ultimately improve the well-being and achievement of students.

Other scholars argue entrepreneurial leadership establishes community connections (Hentschke, 2009; Leadership Improvement for Student Achievement, 2009). "Schools are more like businesses and their leaders are more like business leaders − for better or worse" remarks Hentschke (2009, p. 149). The researcher believes that because of this, entrepreneurial leadership is gaining increasing recognition. Entrepreneurial leaders have a strong connection with local businesses and companies and look to their models for inspiration. They develop innovative solutions and seek out the necessary social and financial capital to turn their vision into a reality (Hentschke, 2009). Throughout this process their inspiration and protocols closely align with those of successful business models.

Effective principals bring an international perspective to their school that will ensure *all* students have exposure to the global neighborhood (Goddard, 2010; Jacobs, 2010). Goddard (2010) refers to this as 'leadership of glocality.' He calls on principals to intimately connect learning to both the local community and the global realities beyond the school. Technology is one tool which can ensure all students have exposure to the global neighborhood. In some systems, advantaged students would spend summers on vacations in other countries or attending camp while less privilege leaders would stay in their local neighborhood. While both experiences offer learning opportunities, the child who remains in their neighborhood is not experiencing the global learning that the other student obtains (Harth, 2010; Jacobs, 2010). Leaders who recognize this can build into their curriculum authentic learning opportunities where all students learn globally. Videos, images, and websites are essential tools that are increasingly available to schools

worldwide. Effective principals seek ways to use these tools in their schools to level the playing field for all students. Selecting curriculum and promoting activities that encourage authentic learning about governments, cultures, and experiences in different places in the world will enhance learning for all students.

The presence of establishing community connections within general literature on effective leadership suggests that Hallinger and Murphy's (1985) framework may need to be revised to include establishing community connections. This idea will be examined further in chapter 5.

Effective Leadership for Diversity

Successful principals in diverse contexts prioritize out-of-school connections. Connecting with students, the community, and the global society are priorities for leaders who aim to raise the achievement of their diverse learners (Hughes, 2012). Building strong out-of-school relationships further support in-school learning as well as establish greater opportunities for learning to be extended into homes and the community. Principals do this by connecting with parents about how to establish the most conducive environment at home to support their learner. They do this in the community by building partnerships that lead to strong ties with local businesses and companies, and through the larger global neighborhood by building a school website, connect via Skype with students and teachers in other countries, and enriching learning through videos and images from around the world. Pont, Nusche, and Moorman (2008) write

> In rural areas, school leaders have traditionally stood among the most important leaders in their community. While it may be argued that urbanisation,

> immigration and school size have weakened school-community ties, these and other pressures on family structures have at the same time contributed to make the community responsibilities of school leaders even more important today. (p. 22)

Effective leaders in diverse contexts are sensitive to the historical, political, cultural, and societal setting in which their school is situated and recognize how these realities impact their leadership. This is because schools exist in communities that have local understandings, expectations and realities, and communities exist within states, provinces and/or regions, nations, continents and a world that further shapes their existence.

Three themes emerge from the literature suggesting effective leaders in diverse contexts prioritize community connections: demographics, politics and law, and social movement. Each is detailed below.

Demographics

Population shifts within a community impact effective leadership in diverse contexts. Thompson (2004) details how the blending of two distinct populations demands specific actions and behaviors from school leaders. In Germany, the collapse of the Berlin Wall transformed the educational practices of old East Berlin (2004). With this moment came a new vision and new expectations in schools. The ideologies from East and West Germany began to unify as the populations from both backgrounds began coexisting. School leaders had to redefine their school vision, alter instructional methods, and reinvent school culture but at the same time, the transformation demanded school leaders to reach out to families and the local community to support culture shock (Shaw, 2004). The values and beliefs of East Germany were, in many peoples'

perspective, brushed aside as Western philosophies dominated the reunification (2004). School principals who reached out to parents and took the time to explain how shifting philosophies were impacting the teaching and learning in schools were most successful. Their actions furthered trust during a time parents felt vulnerable; their knowledge filled in gaps and clarified misunderstandings. Such efforts, along with in-school supports, bring comfort and clarity to a school community in transition (Sanders & Harvey, 2002).

Tensions between populations also impact effective leadership in diverse contexts. The ongoing strain in Canada between Aboriginal and mainstream Canadians illustrates this point (Hargreaves et al., 2012; Sonneborn, 2007). It is well documented that native populations continue to feel marginalized in Canada (Mihesuah & Wilson, 2004; Deloria & Wildcat, 2001). The trauma, disrespect, and challenges that have persisted in this system for centuries, as these two populations attempt to coexist, has had a profound impact on understandings of leadership. Effective leaders are individuals who reach beyond their schools to build connections with tribal leaders, listen to Aboriginal values, and bring meetings onto reserves instead of holding them at schools (Hargreaves et al., 2012). They show respect to tribal chiefs, their traditions, and partner with tribal groups to fight injustices and improve living conditions. The historical tensions within these contexts makes establishing community connections the most important condition for effective leadership: without strong links to tribal communities, in-school actions aiming to further the achievement of these students are futile since attendance will be low, dropouts will be high, and support for local education nonexistent.

Fluctuating populations also impact school leaders and their relationship with their community. In Japan, for example, declining birth rates are affecting the incoming enrollment in schools (Forgach, 2006). Particularly in rural areas, these declines are resulting in schools merging or closing. Effective leadership in schools that are merging or in the process of closing requires different roles and responsibilities than what was expected prior to this reality (2006). On the other hand, the emergence of the European Union and its borderless entity has increased the flow of immigration in some parts of Europe, resulting in overcrowding in public schools. In France, the immigrant population has jumped over the past decade and in 2010 was reported at 5.1 million, 11.1 percent of the total population (Vasileva, 2011). These population changes have brought overcrowding and resource challenges to schools but they also have resulted in greater demands of principals to be present to work with parents, attend community events, and model respect for all people. A principal sets the tone not only in the school but for the community on how immigrant populations will be treated. Their actions are important for both immigrant families as well as for mainstream parents adjusting to this new population.

Politics and Law

Politics and law have a profound impact on effective leadership in diverse contexts. Government shifts can alter the purpose and outcome of schooling and laws can convert what is taught and to whom it is taught within schools. Effective principals within systems going through these transformations refine their priorities to align with the needs of their changing environment. In Latvia, for example, independence from Russia

in 1991 resulted in a full transformation of the political structure in the new republic. This had a profound impact on schools as the government aimed to shift towards a European model (Zogla, 2006). Principals suddenly had to reeducate themselves and embrace "decentralized leadership and flattened hierarchical relationships" (2006, p. 133). Zogla (2006) provides a compelling description of this transition.

> Our orientation had to turn from Russia to Europe, from Russian as the language in use to English as the universal language, from socialism to a market economy, from almost centralized governance to decentralization, from authoritarianism to democratic freedom, from ideological control over education to internal innovation and professional autonomy from a Soviet-centered world to globalization. (p. 134-135)

This transition required school leaders to introduce new textbooks and new ideologies but it also demanded new internal and external relationships. Some students and families wanted to self-identify as Latvians, rejecting all lingering associations with Russia, while others wanted to remain in Latvia but hold onto their Russian identity. Effective leaders reached out to families and their community to assist in building this bicultural space for both populations to exist harmoniously. Until the external community was able to embrace this, it would be difficult to reinforce harmony within their schools. At the same time, they themselves were sorting out their own personal identities.

There is also evidence of principals who reject political norms and are considered more effective for it. The headmaster at Humanitarian School in Moscow is one of these exceptions. Levy (2011) describes the philosophy of Russian principal Vasiliy

Georgievich Bogin, who, despite working in a system with a historical tradition for memorization and drill, encourages his pupils to challenge him and to think critically. "Anyone who thinks that 2 + 2 = 4 is an idiot" (p. 1). Bogin's leadership looks different from other Russian schools because he prioritizes local values over national understandings. He believes "schools belong to parents and children" and parents seek out and select Humanitarian because they want a critical discovery education for their children (2011, p. 1). Bogin's resistance to the historical tradition around effective leadership is why his school community considers him effective.

Litigation has also had a heavy impact on effective leadership. When courts in the United States declared separate public schools for black and white students unconstitutional in 1954, it led to a chain of decisions that required school leaders to rethink their actions and behaviors. Leaders of integrated schools faced massive resistance. Drone (2006) reviews documents of interviews with school leaders in systems with voluntary desegregation. She writes:

> The principals found that it is important to meet with parents, students, and staff before the beginning of the new school desegregation because parental involvement is essential to the success of school desegregation. . . Moreover, successful principals were highly visible and accessible to students, staff, parents, and the community throughout the period of implementation of the desegregation program. (p. 414)

Prioritizing out-of-school relationships with both families and the wider community were considered essential components of effective leadership during this legal transformation.

More recent litigation that commenced in California under the name proposition 227, and has henceforth spread to several states across the country, has impacted the teaching and learning school leaders can support in their classrooms. Proposition 227 effectively ended bilingual education as a suitable instructional strategy for second language learners. Necochea and Cline (2000) details how principals' reactions had an effect on what happened in their school. "Principals control information, resources, symbolic rewards and incentives, which enable them to become 'gatekeepers'… school leaders create the ambience necessary for ELLs rights to thrive" (p. 321). Leaders who found time in their schedule to prioritize meeting with English language learners parents (and explain what resources would be available in the system to support students and how the law would impact the community) were creating a different community response than in those who did not reach out to their community.

Social Movement

Social movement also redefines effective leadership. In Ireland, grievances of non-Catholic parents led to the emergence of Educate Together Schools. Immigrant families who refused to baptize their children were not permitted enrollment in the national schools; they collectively began to establish their own multi-denominational system (Kitching, 2010). As the abuse scandals in the Catholic Church heightened, non-immigrant Irish families also began selecting the Educate Together system. As of 2012, the system included sixty-five schools nationwide. Effective leaders in this system recognize that their community is more heterogeneous than the national schools and that strong communication between the school and family is essential. They seek to offer

inclusive programming where all students and families feel respected and valued. While principals in the national system continue to utilize organizational leadership, effective leaders in Educate Together are increasingly valuing community leadership. Community leadership is shared leadership and is built on a foundation of trust. Leaders build trust with parents and model their own personal beliefs to achieve open communication with families. Leaders' actions and behaviors are a model for their teachers as well as the wider Irish community as they work through this transformational period (2010).

TALI schools in Israel also emerged from a social movement. Established in 1976, TALI schools align with the Jewish Conservative Movement and provide an alternative to the Hebrew-secular, Hebrew-non-secular (Jewish Orthodox) and Arabic-secular, Arabic-religious (Muslim or Christian) schools. They do this by offering an alternative form of Jewish education that recognizes traditions and culture by connecting students to their heritage and promoting religious pluralism in the Jewish State. Because of the deeply divided lives within the fabric of Israeli society, TALI principals prioritize family-school relationships and building community relations (Schechter Institute, 2009). Their relationship with families extends beyond students who are currently enrolled to also connect families of graduates and future prospective students. Vertical relationship building can ultimately transform communities as they build a network of likeminded members within the society.

Across the themes of demographics, politics and law, and social movement, researchers describe how leaders in diverse contexts react to the specific needs of their school and community due to external events. It makes sense that during periods of

transition or crisis, school principals are called upon not only to lead local schools but also to support families and communities. This responsibility places considerable demands on leaders. They must rethink their priorities and shift their behavior to reflect the supports needed within their schools as well as the leadership needed beyond the school doors. Local, national, and world changes impact the lives of students when outside of school. Effective leaders recognize this and develop partnerships with families and the local community to ensure not only their students' safety and respect, but also that they are acquiring the necessary tools to make sense of and develop into full contributing members of society.

Summary

The second half of the literature review organizes the fourteen leadership priorities of interest in this study under three conditions: defining the school mission, managing the instructional programming, and developing the school climate. It scans general research on effective leadership to confirm the timelessness of each condition and then focuses on research that looks exclusively at successful practices in diverse contexts. There is evidence supporting all three conditions of effective leadership in current discussions and conversational trends that emerge from what researchers are saying in diverse contexts.

One additional condition − establishing community connections − emerges from the research on effective leadership in diverse contexts suggesting effective leadership and effective leadership for diversity may not be congruent. Evidence also emerges from general literature on effective leadership supporting community connections. Hallinger

and Murphy's (1985) framework may need to be revised to include this additional condition in the twenty-first century and will be explored further in Chapter 5. While OECD also acknowledges the importance of out-of-school relationships, it does not include any questions on the PISA school questionnaire to investigate this condition. This omission raises a concern, which may be a limitation in the results from this study.

Three cross-cutting themes surface and merit acknowledgement from the literature on effective leadership in diverse contexts:

Effective leaders focus on diverse populations first and foremost. While literature on general effective leadership often uses coined phrases, such as "support the needs of all learners" or "effective for diverse students," it falls short of identifying the specific actions of principals that impact diverse learners. Research on effective leadership in diverse contexts focuses on marginalized and at-risk populations. These studies target the relationship between leadership and diverse learners. This is an important distinction. The vague reference to diversity populations within the general literature may mean leaders who rely on these studies are not receiving the depth of knowledge necessary to truly have a positive impact on their diverse learners' achievement. At the same time, the limited amount of research focused exclusively on how school leaders are impacting diverse learners is also of concern. It means there is less focus on this relationship, yet schools are increasingly becoming diverse. Goddard and Hart (2007) admit that school leaders have had "varying degrees of success" in adapting to a pluralistic society (p. 8). This could be due to the lack of focus on these populations in general leadership studies.

Effective leaders proselytize diversity. There is evidence across the conditions that effective leaders in diverse contexts aim to spread their views and remove barriers that might be inhibiting diverse learners' achievement. Under 'defining the school mission,' effective leaders have a strong moral and ethical obligation to support diverse learners, and they seek out ways to fold this into the school goals and vision. They are 'on watch' for biases and prejudices while 'managing the instructional programming' and work with teachers and students to also recognize and remove such context from school learning. Effective leaders' actions and behaviors, while 'developing the school climate,' are strongly focused on proselytizing diversity. They seek to foster a tone of tolerance and engage with all school players in discussions about acceptance and respect. This same commitment drives leaders to go beyond their schools to build relationships with families and the community. Improving the achievement of diverse learners is contingent on improving in and out-of-school conditions as well as ensuring the highest quality of teaching and learning in classrooms.

Effective leadership changes over time. As schools develop and societies change, what is required of a school leader also evolves. This makes sense given the historical trends within educational leadership. In the 1970s, a wave of nations popularized effective principals as ones that directly influence a school's capacity to implement reforms (Rutter, Maughan, Mortimore, & Ouston, 1979; Brookover, Wchweitzer, Schneider, Beady, Flood, & Wisebaker, 1978). By the 1980s, the context around many systems shifted and, increasingly, effective school leaders were viewed as individuals who measured student outcomes (Duke, 1987). In the 1990s, nations such as United

States, Canada, UK, Netherlands, Australia, New Zealand, Indonesia, Thailand, and Hong Kong debated over decentralization, school based management, and school choice, again shifting understandings of effective leadership. This half of the review examines understandings of effective leadership in the twenty-first century. The perspectives and understandings presented under each condition reflect the values and realities in societies today.

Conclusion

The findings from both parts of this review reveal there is much work to be done to improve the achievement of diverse learners and to better prepare leaders worldwide to support these specific learners. In part 1, the review describes who is talking about each diverse group and what the current themes are in discussions about their achievement. These results set a foundation to build upon past research and find new, innovative ways to support diverse learners. In 1999, Will Kymlikca claimed "multiculturalists have won the day," suggesting that a new notion and commitment to social justice was on the horizon (p. 113). Yet, fourteen years later, the results in this review suggest there is still more work to be done. In part 2 of this review, the fourteen priorities that will be examined in this study are presented and the current literature describing the relationship between leaders and students is examined. The results reveal that general discussions on effective school leadership do not guarantee effectiveness in diverse context because they often offer vague insights into the unique relationship between leaders and diverse learners. The three conditions of effective leadership along with the new condition that emerges from the literature may be initial building blocks for principals worldwide, but

more research is needed to understand if all four are essential conditions in the twenty-first century.

Developing Effective Leadership for Diversity

The results from this literature review depict the work still ahead of us in developing the road to effective leadership for diversity. As we look down that road and across the increasingly shrinking global landscape, we must intensify our commitment to improving the achievement of diverse learners and hold steady our interest in understanding the actions of school leaders that have a positive impact on diverse learners. This review offers some insights, but to understand the deep, multilayered relationship will require greater explicit research bridging leaders to diverse learners. Alma Harris (2002) reports that 8-15 percent of the attainment differences between schools is accounted for by what they do, not their intake variation. How can we, as school leaders, tweak our actions to ensure every drop of that percentage is having a positive impact on achievement? There is much still to learn as we move further down the road to understanding effective leadership in diverse contexts.

3 METHODOLOGY

This chapter describes the methods, data, and variables from PISA 2009 used to meet the research objectives of this study. Five sections organize the chapter. The first section begins by restating the research questions and then provides an overview of the study's methodology. A brief description of the anticipated procedures to analyze each research question is included in this first section. The second section highlights the rationale for the quantitative approach as well as the secondary analysis, which is supported by research. Section three presents a summary of the PISA 2009 dataset and describes the variables of interest in this study. A detailed description of the quantitative analysis procedures are presented in section four and finally, the chapter concludes by discussing the limitations of the methodology.

The sections collectively set the foundation to investigate which priorities of school leaders have a statistically significant association with student achievement when controlling for diversity factors on the PISA 2009 dataset. The design of the PISA dataset is reasonable for exploring this relationship because it asks students to self-identify on a variety of demographic indicators while school leaders (or designees) report how they prioritize specific activities. There are, however, notable methodological challenges associated with measuring the effect of a factor as complex as school leadership (and an outcome variable that is equally multilayered). Each challenge and resolution is presented in this chapter as the statistical model is disclosed.

Overview of Methodology

This study uses quantitative analysis to investigate two research questions:

- Which diversity indicators (gender, immigrant status, home language, socio-economic status, and geographic location) predict reading literacy achievement in PISA 2009 jurisdictions when controlling for all other diversity indicators?
- Which leadership priorities have an association with student reading literacy outcomes when controlling for diversity indicators at the school and student levels in PISA 2009 jurisdictions?

A step-by-step multilevel modeling process that accounts for the clustering of students within schools unfolds to answer these research questions. Separate models are constructed for each PISA 2009 system and are discussed in detail in section four of this chapter; each process begins with an unconditional model. Then, student background variables are entered in phase 1 to investigate the effect of each diversity indicator on achievement. In phase 2, the school leadership variables are added into the model while controlling for both student and school factors.

Both explanatory and predictor variables are utilized in this study. The explanatory variables include the five student background factors and are entered at level 1. The predictor variables are the fourteen school leadership priorities, added at level 2. These aim to investigate how much priority school leaders devote to specific activities. Both types of variables are discussed in detail later in this chapter.

Rationale for Hierarchical Linear Models and Secondary Analysis

There are many different quantitative tools to answer research questions, including General Linear Models (GLM) and Hierarchical Linear Models (HLM) (Bryk & Raudenbursh, 1992). Selecting the appropriate tool depends upon the research questions of interest (Connelly, 2007). In the social sciences, and specifically within educational research, the natural groupings in data structures are often hierarchical: students are learners within classes and classes are units within schools. PISA assumes this natural grouping is occurring and refers to it as 'nesting' (OECD, 2010a). Thus, it is likely that students participating in PISA who share the same class or school have more similar characteristics than learners who are in different classes or schools. It is therefore important to use a tool in this study that accounts for this nesting.

Hierarchical Linear Models (HLM) is such a tool (Bryk & Raudenbush, 1992). HLM, also known as multilevel models (Goldstein, 1995), has gained increasing popularity as the tool "most appropriate and effective when variables tend to be nested within other variables" (Newman, Newman, & Salzman, 2010, p. 1). This is because multilevel models control for nesting effects and their standard errors are more accurate than other tools. Ignoring nesting effects could lead to a Type I error (Bickel, 2007).

HLM also controls for variability at different levels. It allows for a school effect (a level 2 variable) such as school leadership to interact with a student effect (a level 1 variable) such as learners' literacy achievement and produce appropriate error terms. Using HLM, the "mean achievement and the relationship between the individual level predictors and the outcome measures can vary randomly across groups" (Chapman, 2011,

p. 141). This is essential since this study seeks to investigate achievement within and across multiple groups. For the purpose of this study then, HLM is a reasonable tool.

Secondary Analysis

According to Glass (1976) secondary analysis is the "re-analysis of data for the purpose of answering new questions with old data" (p. 3). The PISA data were originally collected to examine students' academic performance as they near the end of compulsory education. In this study, the same dataset is re-examined to investigate where there are differences in achievement when controlling for diversity indicators and to understand how leadership priorities affect the achievement of students worldwide.

Despite a long history in the social sciences (Cherlin, 1991), secondary analyses of large-scale datasets continue to be underexplored (NCES, 2010). While there are some drawbacks to secondary analysis, such as data-quality deficiencies, the advantages (the level of observation and the availability of data, for example) outweigh the challenges (Miller, 1982). Secondary analyses of large-scale datasets such as PISA offer a wealth of opportunity to researchers aiming to answer questions comparing within or across country patterns since they offer a comprehensive database. Secondary analyses can also provide researchers with an opportunity to ask historical questions and make comparative inquiries to explore change overtime (Frankford-Nachmias & Nachmias, 1996; Brooks-Gunn, Elder, & Phelps, 1991). Beyond being cost-effective, since sampling can be expensive (Hofferth, 2005), secondary analysis also provides valuable opportunities for replication and longitudinal design.

The quality of a secondary analysis is heavily dependent on the construction and collection procedures. In the case of PISA, OECD (2010a) seeks to provide significant disclosure on their procedures. They write

> The PISA assessment establishes standard data collection requirements that are common to all PISA participants. Test instruments include the same test items in all participating countries, and data collection procedures are applied in a common and consistent way amongst all participants to help ensure data quality. (Chapter 10, p. 1)

OECD intentionally discloses such information to assure researchers of the validity of their database. Turner and Adams (2007) conclude the creation, validation, and administration of the PISA dataset was well developed, making it a quality dataset for further exploration. In this particular study, PISA is viewed as a reasonable dataset to investigate the achievement of diverse learners since it includes both student scores as well as their self-responses on a variety of background questions. This, along with the school questionnaire responses, allows researchers to look within participating systems for a richer understanding of how the priorities of principals can aid in addressing the underachievement epidemic.

PISA International Database

The Programme for International Student Assessment (PISA) is a test administered to fifteen-year-olds every three years by the Organization for Economic Cooperation and Development (OECD). The assessment monitors students' academic performance as they near the end of compulsory education by measuring the skills and

competencies students have acquired as well as how they apply their learning to real-world situations. Participation is open to both OECD member countries as well as non-member nations. Systems within nations (such as provinces or states) who have the financial and human resources are also able to participate. In this study, all participating countries and systems are referred to as 'jurisdictions' or 'systems' for clarity.

The PISA assessment is a paper and pencil test that lasts approximately two hours. In 2009, the full assessment included 131 reading items that collectively represent 270 minutes of testing time, 34 math items (90 minutes of testing) and 53 science items (90 minutes of testing) (OECD, 2010a, p. 28). All students answer a portion of these questions instead of completing all the possible questions on PISA. This testing style, known as "incomplete or rotated booklet design" is intentional because the entire assessment is too large for any one student to complete in a reasonable time limit (Willm & Smith, 2005, p. 14). Smaller test booklets that include a sampling of questions from each subject are distributed and students are randomly assigned. The questions comprise a mixture of multiple-choice questions (50 percent), closed or short response questions (20 percent) and open construction responses (30 percent) in reading, mathematics and science literacy. The multiple-choice questions are organized into units, based on a written passage, problem or a graphic. Beyond the regular testing booklets, there is a *Une Heure Booklet*, referred to as the UN Booklet. The UN Booklet is a special one-hour booklet created for schools catering to students with special needs. It contains half the number of items as the other books and includes 50 percent reading, 25 percent math, and 25 percent science questions.

Reading Literacy

This dissertation defines achievement by students' reading literacy performance on PISA 2009. Reading literacy is one of the three tested subjects on the PISA assessment and the major domain of the 2009 assessment. OECD (2009g) defines reading literacy as "an individual's capacity to understand, use and reflect on and engage with written texts, in order to achieve one's goals, to develop one's knowledge, and potential, and to participate in society" (p. 23). OECD intentionally uses the term 'reading literacy' over 'reading' because, they argue, the latter is often "understood to be simply decoding or even reading aloud" while PISA intends to measure "a wide range of cognitive competencies, from basic decoding to knowledge of worlds, grammar and larger linguistic and textual structures and features" (2009g, p. 23).

Literacy skills are well recognized as essential for individual and societal growth worldwide (Calkins, 1997). Individual gains from acquiring literacy skills emerge at a young age, as literate children are able to access print to play games or engage with stories. Throughout adolescence and into adulthood, these skills become increasingly essential to gain knowledge and access information. Simon (1996) argues that the ability to read knowledge, on its own, is insufficient for individual gains in the twenty-first century. "The meaning of knowledge has shifted from being able to remember information to being able to find and use it" (p. 21). Individuals today must acquire the ability to reflect, connect, and compare a wide range of texts across multiple disciplines and within varying domains if they intend to fully participate in societies worldwide

(Smith, Mikulecky, Kibby, & Dreher, 2000). According to OECD (2009g), without literacy skills there is

> Little hope of fully participating in increasingly complex societies where individuals are required to take on additional responsibilities for different aspects of their life: from planning their careers, to nurturing and guiding their children, to navigating health-care systems, to assuming more responsibility for their financial future. (p. 21)

Societal growth also depends on the literacy of a population. When a society's population is highly literate, it has greater human capital. Human capital is the collective capacity of all individuals within an economy and is key to fostering innovation and national growth. A highly literate society is one with abundant human capital; the majority of citizens have the ability to critically think, reflect, and use knowledge in meaningful ways that ultimately generate economic growth.

Since literacy is recognized as an essential skill for individual and societal growth across the educational landscape, it is reasonable to investigate literacy scores on PISA 2009 as a way to measure student achievement. The conceptual framework for the reading literacy section of the assessment includes: a wide variety of reading activities, a range of text materials, and an opportunity to demonstrate cognitive skills. Each is briefly detailed here:

- *Contexts or purposes of reading:* The range of contexts includes four categories; personal (texts around personal interests, informal communication or connections); public (text highlighting activities and concerns of the greater

society); educational (texts designed to teach or instruct); occupational (texts aiming to accomplish an immediate task); and situational (text linked to specific contexts or uses) (OECD, 2009g). While there is admittedly overlap between these categories, collectively they aim to provide students with multiple ways of demonstrating their reading literacy skills.

- *Text materials:* Text materials on PISA are varied and include both continuous and non-continuous texts. Continuous texts are "sentences organized into paragraphs," such as narratives, expositions, or arguments (OECD, 2009g, p. 30). On PISA 2009, 60 percent of texts are continuous. Non-continuous texts are documents that include small units of continuous text, such as graphs, forms, and lists. These comprise 30 percent of the texts on PISA 2009. The remaining 10 percent of questions use a combination of the two text types.
- *Cognitive skills:* Students demonstrate their reading skills through their ability to access and retrieve, integrate and interpret, and reflect and evaluate. Skills in accessing and retrieving information are monitored by one's ability to find, select, and collect information in a text. Processing and internal understanding skills are monitored through how a student integrates and interprets text and one's ability to reflect and evaluate is considered by how they draw upon knowledge, ideas, and values external to text.

(For a full description, see *PISA 2009, Assessment Framework: Key Competencies in Reading, Mathematics and Science,* pp. 23-43). The framework establishes the platform to measure a student's ability to understand, write, reflect, and ultimately draw from their

own experiences to interpret (OECD, 2009g). The wide scope of reading and writing options within this framework is considered advantageous. It permits students with differing strengths a chance to demonstrate their knowledge. Some students find specific contexts more interesting to read and therefore perform better on those tasks; others find continuous or non-continuous texts easier to understand and reflect upon. Having a wide range of contexts and texts is also important given the diverse backgrounds of participants. Some systems may emphasize different literacy skills in their educational programming. The wide range of literacy activities will result in a more meaningful representation of each population.

Questionnaires

All schools and students who participate in the PISA assessment receive a background questionnaire. Each questionnaire takes approximately thirty minutes to complete. The questionnaires have evolved over the past cycles but consistently aim to examine school practices and students' attitudes as well as learning strategies across the three domains. In 2009, PISA's school background questionnaire consisted of seventy-nine questions and was filled in by the school principal (or a designee). It included inquiries around the following areas: school structure and organization, school management and staffing, school resources, admission processes and accountability, reading instruction within the school, and career guidance opportunities (OECD, 2009d). The student background questionnaire in 2009 consisted of twenty-seven inquiries. The following items were included on this questionnaire: students' personal backgrounds, learning habits, attitudes towards reading, engagement in school, and motivation (2009e).

Translation and Verification Process

Selecting test material and translation processes are top priorities of OECD since the assessment is administered across multiple contexts and cultures. Ensuring the assessment instruments provide "reliable and fully comparable information" begins with an open period where all participating systems can submit suggested questions (either in their home language or English) for the assessment (OECD, 2012c, p. 82). This process for the 2009 assessment began in Frankfurt in August of 2006 when test developers called for submissions. Thirty items were submitted and each was considered by a consortium test development team, which included developers at ACER in Australia, aSPe at the University of Liege, Belgium, ILS at University of Oslo, Norway, DIPF in Germany and NIER in Japan. The teams themselves were also permitted to submit items for consideration. Items judged "worthy of pursuing" were translated into French and English (if not submitted in those languages) and a lengthy selection process succeeded. This included two phases of scrutiny by local teams, sample testing with small groups of students, and pilot testing with larger student populations (see 2012c, p. 33 for specific details).

Once items are selected, the French and English versions are sent to all participating systems for translation. Each system is responsible for translating all test items into their national languages while retaining the highest degree of semantic equivalence. All students are tested in the language of instruction used at their school; some multilingual jurisdictions also have to create test instruments in additional languages. Stubbe (2011) notes while there is notable suspicion about language

translations across all large scale tests, OECD attempts to reduce such anxieties by providing full disclosure of its translation and verification processes. A double translation method is detailed by OECD for countries to follow. It includes two separate, independent translations from both the English and French versions and reconciliation by a third, objective party (2012c). "If a single source language is used, its lexical and syntactic features, stylistic conventions and the typical patterns it uses to organize ideas within the sentence will have a greater impact on the target language versions than desirable" (as cited in OECD, 2012c, p. 83). This process seeks to reduce cultural characteristics of any single language. OECD (2012c) does, however, recognize that both French and English share an Indo-European origin but insist "they represent relatively different sets of cultural traditions, and are both spoken in several countries with different geographic locations, traditions, social structures and cultures" (p. 83).

Jurisdictions with the same languages are encouraged to develop a common version and then adjust for national adaptions as needed. In 2009, Chinese and Spanish speaking systems (with the exception of Peru and Argentina) collaborated on the initial work and then finalized their own separate test instruments. The final distinction was to "ensure that the material used spellings and vocabulary that were most commonly used in the [jurisdiction] (but did not change meaning)" (OECD, 2010a, p. 16). Such efforts reduce cross-country differences due to translation effects between systems that share a common language.

In total, 101 national versions were created, covering forty-five languages: Albanian, Arabic, Azeri, Bahasa Indonesia, Basque, Bulgarian, Cantonese, Catalan,

Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, Galician, German, Greek, Hebrew, Hungarian, Icelandic, Irish, Italian, Japanese, Korean, Kyrgyz, Latvian, Lithuanian, Mandarin, Norwegian (Bokmal and Nynorsk), Polish, Portuguese, Romanian, Russian, Serb Ekavian, Serb Yekavian, Slovak, Slovene, Spanish, Swedish, Thai, Turkish, Uzbek, and Valencian (OECD, 2012d). In eighty-three of these, an international verification process was conducted (an outside, independent group of experts were appointed and trained to verify the national version against the English and French originals). In cases where the instruments were to be used on less than 10 percent of any target population (minority languages) international verification was not conducted.

Samples and Exclusions

PISA was first administered in 2000 and as of 2013, it has completed four cycles. While the first and second cycle included only forty-three and forty-one jurisdictions, respectively, participation increased in the third and fourth cycle (see Appendix I, Table 3.3.1). In 2003, forty-one jurisdictions participated, in 2006, fifty-seven jurisdictions joined the assessment and in the most recent testing cycle, 2009, sixty-five participated. These sixty-five systems are the focus for this review. Approximately 480,707 students participated in PISA 2009, representing 26 million fifteen-year-olds worldwide. OECD (2011a) describes the population as

> Students who are aged between 15 years 3 months and 16 years 2 months at the time of assessment and who have completed at least 6 years of formal schooling, regardless of the type of institution in which they are enrolled and of whether they are in full-time or part-time education, whether they attend academic or

vocational programs, and whether they attend public or private schools or foreign schools within the country. (p. 7).

Notably, this estimate is 10,000 higher than that reported by OECD in 2010 because it includes the new, merged UAE dataset. Dubai was one of the ten additional jurisdictions administered the PISA 2009 assessment in 2010. Dubai's results have been collapsed into the UAE results in this study. The other additional jurisdictions (referred to as PISA +) are not included. They could be explored in future studies. Table 3.3.2 (see Appendix I) reveals the original sixty-five jurisdictions that participated and the weighted number of schools and students sampled (with Dubai's results included in the UAE results).

A priority of OECD is for PISA to be as inclusive as possible. Thus, no participating jurisdictions can exclude more than 5 percent of the target population. At the school level, exclusions can be granted for geographical inaccessibility or when less than 2.5 percent of a school population is part of the nationally desired target population (e.g. schools exclusively for the blind). Systems can also petition for a limited number of minority language schools to be excluded if they require special translation services. These exceptions are granted when it is determined a population will not affect the overall representation. At the student level, exclusions can include learners with an intellectual disability, limited language proficiency, or with a functional disability. Students cannot be excluded due to behavioral issues or for lack of motivation. If a jurisdiction breaches these regulations its data can still be reported but it is tagged as having broken a requirement. Five systems that participated in PISA 2009 had exclusion rates higher than 5 percent, Denmark, Luxembourg, Canada, Norway, and the United

States (OECD, 2009b, p. 176). Thus, the sample coverage in these systems is below 95 percent of the national desired target population.

OECD also permits 0.5 percent of exclusions to be *a priori,* essentially, exclusions for practical reasons. In cases where exclusions exceed 0.5 percent, OECD discloses the exact composition of students missing from any sample. In 2009, the following systems asked and were granted the right to exclude more than 0.5 percent of students *a priori:*

- "Canada excluded 1.1 percent of its population from Territories and Aboriginal reserves;
- France excluded 1.7 percent of its students in its *territoires d'outre-mer* and other institutions;
- Indonesia excluded 4.7 percent of its students from four provinces because of security reasons;
- Kyrgyzstan excluded 2.3 percent of its population in remote, inaccessible schools; and
- Serbia excluded 2 percent of its students taught in Serbian in Kosovo." (OECD, 2009h, p. 121)

Weights, Standard Errors, and Plausible Values

The sampling design and imputation methods are unique aspects of the PISA dataset and merit discussion. PISA data are not collected through a random sample of all fifteen-year-olds within participating jurisdictions. Rather, a two-step sampling design is

used: first, schools are sampled and then students within those selected schools are sampled. The design is fundamentally a sample of a sample. This increases the likelihood of inflated standard errors of population estimates. If not taken into consideration, standard errors could be underestimated and non-significant results could be considered significant (OECD, 2010a).

Weights: Survey weights are added to the dataset since the data is not collected using simple-random sampling techniques. Survey weights are formulas that adjust for sampling error and make valid estimates and inferences of a population. In this case, the weights account for biases in the selection process for schools and students. Sampling weights are not the same for all students in a given country because some systems over-sample to collect extra data for separate national purposes or under-sample due to financial costs or practical considerations (OECD, 2009). School size fluctuations and non-response schools can also lead to under-representation of specific student populations and thus weighted adjustments are needed.

Weights are also applied to all levels of analysis in this study to avoid bias in population parameter estimates (OECD, 2009i). Weights are added at the school level to compute the frequencies of leadership priorities and at the student level to ensure an equal probability of selection for the HLM analyses. Student weights also adjust for non-response participants. In the few instances where weights of individual students are "more than four times the median weight of students from the same sampling stratum [PISA trims these scores] to be equal to four times the median weight" of the sample group (OECD, 2010a, p. 7). Accurate student weights will produce likelihood estimates

that will be used as the predictor variables to measure students' reading literacy performance.

Standard errors: PISA's two stage sampling technique means that students enrolled in the same school are more likely to be selected to participate in PISA. Schoolmates are also more likely to have common characteristics (curricula, teachers, et cetera) than they are with students attending different schools. A simple random sample of 5,000 students is therefore more likely to span a population than a study with a sample size of one hundred schools with fifty students each (two stage sampling technique). This is known as *design effect*. Three factors influence the design effect: the population parameter that needs to be estimated, the sampling design of the country, and the variables involved in the analysis. To adjust for these, standard errors are estimated using replicate computations.

Plausible values: Student performance on the PISA assessment is not reported through one total score. Rather, it is acknowledged through five plausible values. Wu and Adams (2002) write "plausible values are a representation of the range of abilities that a student might reasonably have" (as cited in OECD, 2009i, p. 99). PISA generates five "likely proficiencies for students that attained each score" (OECD, 2012d, p. 140). These are created using the Rasch Model. The Rasch Model links how difficult an item is to a student's ability. It then computes the probability that a student succeeds on an item. This model creates a scale on which every item on PISA and all students are located, and then it takes all of this into consideration to make predictions. Once a separate analysis for each plausible value is collected, an average of the parameter

estimates for the separate analyses and standard errors are calculated. Ultimately, student performance is reported through these values. When calculating plausible values, to avoid underestimating slope variability, intercept terms are specified as random and all other variables are estimated as fixed. These methodical issues are important considerations that affect the way the dataset can be analyzed.

Variables and Measures

Variable selection directly relates to the quality and value of a study's results (Little, Lindenberger, & Nesselroade, 1999). Raudenbush and Bryk (2002) agree, suggesting that researchers can either select predictors of interest prior to looking at data, or let the data drive which variables are examined. In this study, the variables of interest are selected based on the question of interest prior to examining the data. The full set of variables employed in this analysis include: an outcome variable (student literacy performance); multiple explanatory variables (student and school level background characteristics); and multiple predictor variables (leadership priorities). Each is described below.

Outcome Variable

The outcome variable is students' literacy performance on PISA 2009 (see Appendix I, Table 3.3.3). The range of possible scores on the assessment is from 0 to 1,000. Reading literacy scores on PISA are standardized scores with a mean of 500 and standard deviation of 100.

Students receive a single composite reading literacy score which is reported on a proficiency scale. PISA uses the term *proficiency scale* instead of *performance scale* to report achievement in an effort to emphasize their interest in measuring competency level as opposed to achievement on one specific assessment. The PISA 2009 scale categorizes students' proficiency into six levels:

Level 1b (a score less than or equal to 262.04);

Level 1b (a score greater than 262.04 and less than or equal to 334.75);

Level 1a (a score greater than 334.75 and less than or equal to 407.47);

Level 2 (a score greater than 407.47 and less than or equal to 480.18);

Level 3 (a score greater than 480.18 and less than or equal to 552.89);

Level 4 (a score greater than 552.89 and less than or equal to 625.61);

Level 5 (a score greater than 625.61 and less than or equal to 698.32);

Level 6 (a score greater than 698.32). (NCES, 2009, p. 11)

Background Variables

Two background variables are of interest in this study: student and school background characteristics (see Appendix I, Table 3.3.4). Student characteristics are referred to in this study as *diversity indicators* and are controlled for at the student and school level. The student background characteristics are: gender, SES, immigrant status, and home language. Students self-identify on each of these and thus, each participant will have a distinct value for these variables. One other school background characteristic of interest in this study, which is reported by each school, is geographical location. This

is also accounted for and is the fifth diversity indicator. Each diversity indicator is described below.

Gender

Across all PISA 2009 participating countries, girls have higher reading performance scores than boys; boys are the population of focus. The gender gap varies across jurisdictions with boys underperforming, on average, by over fifty points in some systems and less than twenty-five points in others (OECD, 2010b). Gender coding is based on students' answers to Q4 of the student questionnaire. Girls are coded 0 and boys are coded 1.

Socio-Economic Status

An association between socio-economic background and reading performance is visible in PISA 2009 achievement patterns. While no specific question on the student or school questionnaire directly asks individuals to disclose their socio-economic status, OECD combines three variables (highest parental education, highest parental occupation, and number of home possessions including books) to form a new variable called the index of economic, social, and cultural status (ESCS). PISA standardized ESCS so it has a mean of zero and a standard deviation of one across all OECD countries combined. Ehmke and Siegle (2005) demonstrated how the ESCS is a valid and inclusive index for measuring socio-economic background. This study therefore uses the ESCS index to monitor the relationship between socio-economic status and reading literacy achievement. Large numbers on the scale will indicate that literacy achievement is highly impacted by socio-economic status and small numbers will indicate that

achievement is minimally impacted by socio-economic status. The ESCS scores were obtained by OECD using the following formula:

$$ESCS = \frac{\beta_1 HISEI' + \beta_2 PARED' + \beta_3 HOMEPOS'}{\varepsilon_f}$$

Where β_1, β_2 and β_3 are OECD factor loads; HISEI', PARED' and HOMEPOS' are standardized variables and ε_f is the eigenvalue of the first principal component. (OECD, 2009i)

Immigrant Status

A performance gap exists between students with and without an immigrant background. Students with an immigrant background scored on average thirty-two points lower than their non-immigrant peers on PISA 2009 (OECD, 2010b). OECD defines 'immigrant student' as a learner born outside the country in which the assessment was conducted, or a learner with parents who were born outside the country. In this study, only students who are born outside the country will be labeled as immigrants, using student questionnaire Q17 01. All non-immigrant students are coded as 0 and immigrant students have the value 1.

Home Language

A student who speaks a language at home that is different than the one PISA is administered in tends to perform poorer than native language peers (OECD, 2010b). This can include both native and immigrants students who speak a different home language than that of the test. Students self-identify as speaking a different language at home than the one on the PISA assessment on Q19 of the student questionnaire. Students who speak

a different language at home are coded 1 and students who speak the mainstream language (language of the test) are coded 0.

Geographical Location

The last background variable, *geographical location*, is a school level variable and has no within-school variation. It will therefore be the same value for all students in any particular school. According to OECD, students in large communities or densely populated areas often perform better than students in isolated locations (2010b). PISA categorizes communities into five groups: (i) a village, hamlets or rural areas (fewer than 3,000 people); (ii) small town (3,000-15,000 people); (iii) town (15,000-100,000 people); (iv) city (100,000 to 1 million people); and (v) large city (over 1 million people) (OECD, 2010b). Only jurisdictions that self-identify as having participants from locations of 3,000 or fewer are examined for this variable. The results come from the school questionnaire, Q4. Students in locations of less than 3,000 people are coded 1 and students in all other locations are coded 0.

Leadership Priorities

The second question in this dissertation investigates if specific leadership priorities have a positive effect on reading literacy outcomes, when controlling for diversity factors (see Appendix I, Table 3.3.5). To explore school background factors, referred to as *leadership priorities,* school leaders self-report how much time they spend on fourteen activities (Q26 of the school questionnaire). OECD selected the fourteen priorities from its Index of School Principal's Leadership. Question 26 reads:

Indicate the frequency of the following activities and behaviors in your school during the last school year:

- I make sure that the professional development activities of teachers are in accordance with the teaching goals of the school.
- I ensure that teachers work according to the school's educational goals.
- I observe instruction in classrooms.
- I use student performance results to develop the school's educational goals.
- I give teachers suggestions as to how they can improve their teaching.
- When a teacher has problems in his/her classroom, I take the initiative to discuss matters.
- I monitor students' work.
- I inform teachers about possibilities for updating their knowledge and skills.
- I check to see whether classroom activities are in keeping with our educational goals.
- I take exam results into account in decision regarding curriculum development
- I ensure that there is clarity concerning the responsibility for coordinating the curriculum.
- When a teacher brings up a classroom problem, we solve the problem together.
- I pay attention to disruptive behavior in classrooms.
- I take over lessons from teachers who are unexpectedly absent. (OECD, 2009d).

For each item, principals select a response on a four-point scale: *never, seldom, quite often,* or *very often.* The five point liker scale will be examined in detail in chapter 4 under data preparation.

Analytic Plan

There are three parts to the analytic plan in this dissertation: an unconditional model, phase 1 and phase 2 (see Appendix I, Table 3.3.6). Separate regression equations are created for all jurisdictions in each step of this modeling process. The unconditional model reveals the extent to which student literacy achievement varied within and between schools in all participating countries. This serves as a baseline for the next two phases. In phase 1, the effect of being diverse (five student background variables of interest) is investigated. In phase 2, while controlling for background variables at the student and school level, school leadership priorities are added to each model. Each step of this process is detailed below.

Unconditional Model

The first step to solving both research questions is to create an unconditional, or null, model. This model is similar to a one-way ANOVA with random-effects since there are no predictors, only a random school effect. The unconditional model provides a preliminary decomposition of score variance (Ma & Klinger, 2000). The results will address the extent to which student literacy achievement varied within and between schools in all participating jurisdictions.

The unconditional ICC will also be calculated from this model. The ICC represents the amount of variance that exists between schools within each jurisdiction (Appendix I, Table 3.3.7). It is reasonable to proceed if there is sufficient variability between schools within the jurisdictions of interest. In this case, the threshold for proceeding will be 15 percent variability. All jurisdictions that meet the requirements of the unconditional model will automatically proceed to the phase 1 and phase 2 (conditional models). Models that do not meet this threshold will be examined further before proceeding. Also, from the unconditional model, the reliability of each group's mean as an estimate of its true population mean can be examined. The residual ICC will be calculated once explanatory variables are added into phase 1 and 2 models. This will determine the percentage of variability explained at level 2, and reveals how much is explained at level 1.

Phase 1 (Student level model)

The phase 1 model investigates the relationship between student level variables. To do this, the student background variables (diversity indicators) are entered sequentially: gender, immigrant status, home language, SES, and then geographical location. This model explores the effect of being male, the effect of being an immigrant, the effect of speaking a different language at home, the effect of limited family wealth (SES), and the effect of living in a rural location in relation to student reading literacy performance (see Appendix I, Table 3.3.8). The aim of this process is to identify which diversity factors have significant and non-significant associations to reading achievement, at $p \leq 0.05$ for each jurisdiction. Systems are ultimately reorganized into two groups:

jurisdictions with and without significant gaps for each diversity factor. Both statistical and substantial significance will be discussed in chapter 5. The phase 1 analysis will partition the total variance in the achievement outcomes between student populations. Understanding how much total variability exists between students is important because the achievement of specific populations may be influenced by school leadership indicators. This will be explained further in the next chapter analysis.

Phase 2 (School level model)

Phase 2 explores the association between the fourteen leadership priorities and student achievement. Controlling for all the diversity indicators, the leadership priorities are entered sequentially into the model using PISA's questionnaire order:

- I make sure that the professional development activities of teachers are in accordance with the teaching goals of the school.
- I ensure that teachers work according to the school's educational goals.
- I observe instruction in classrooms.
- I use student performance results to develop the school's educational goals.
- I give teachers suggestions as to how they can improve their teaching.
- When a teacher has problems in his/her classroom, I take the initiative to discuss matters.
- I monitor students' work.
- I inform teachers about possibilities for updating their knowledge and skills.

- I check to see whether classroom activities are in keeping with our educational goals.
- I take exam results into account in decision regarding curriculum development
- I ensure that there is clarity concerning the responsibility for coordinating the curriculum.
- When a teacher brings up a classroom problem, we solve the problem together.
- I pay attention to disruptive behavior in classrooms.
- I take over lessons from teachers who are unexpectedly absent. (OECD, 2009d)

Models are again created for all sixty-five jurisdictions. The results from each model will reveal which of the fourteen leadership priorities have a significant association with achievement while controlling for the diversity indicators. Table 3.3.9 (see Appendix I) sketches what this process will look like for each jurisdiction. Results from the full HLM model will be compared once each specific country model is explored, accounting for the variance within schools and between students. Patterns in leadership priorities across the educational landscape as well as within high, middle, and promising systems will be highlighted in relationship to the models from phase 1. The analysis and results from this study will be presented in chapter 4 and interpretations will follow in chapter 5.

4 ANALYSIS AND RESULTS

This chapter presents the data preparation, model building, and results from this study. It begins with an overview of the cleaning process used to prepare the dataset. This includes details on the transformation and recoding processes used to prepare the data for analysis. The second subsection highlights the formulas and equations for each level in the model building process. SPSS and HLM are the two software programs used to conduct these analyses. The final section of this chapter reveals the results and a summary of the findings. This includes both descriptive and inferential statistics and sets the foundation for the discussion in chapter 5.

Preparing the Dataset

Prior to running analysis, the dataset needed to be cleaned and prepared. This included identifying and handling ordinal variables, checking for multicollinearity, dealing with missing data, and addressing centering issues. Details on these decision-making processes are below.

Ordinal Variables

One of the first issues in cleaning this dataset was to decide how to handle the ordinal variables. Ordinal variables rank data in terms of degree but the intervals between points are not necessarily the same. The fourteen leadership priorities that are examined at level 2 in this study are ordinal variables. Principals used a four-point likert-scale to respond to each statement. The scale ranking is 1 (never) to 4 (very often), but it is unclear if the intervals between the four points are equal. DeVellis (2003) is one of

many scholars who argues it is problematic to just assume ordinal variables can be treated as continuous variables. So, prior to analysis it was important to explore how best to deal with these variables.

Two preferred methods surface as possible solutions for preparing the ordinal variables in this study: a data reduction technique and variable transformations. The data reduction technique considered in this study was principal component analysis (PCA). PCA identifies highly coordinated variables so they can be collapsed into fewer variables. While the method reduces the number of independent variables, it also scales them. A principal component analysis (PCA) was run across the leadership priorities data for all jurisdictions and then a separate PCA was run using the data from each individual system.

The results, however, were problematic. The overall PCA analysis revealed three distinct factors, while the PCA analyses in individual jurisdictions resulted in multiple combinations of factors. For instance, five factors emerge from the Liechtenstein PCA and four from the PCA for Albania. Furthermore, the specific variables identified as highly coordinated differed in the overall PCA with those from the individual jurisdiction's PCA results. If the overall PCA results were used to combine variables across all jurisdictions, the results from one system may not mean the same as the results from another. Proceeding with the suggested variables from the PCA would therefore heavily restrict the interpretations available from the findings in this study.

This echoes concerns posed by other researchers. Fabrigar, MacCallum, Wegener, and Strahan (1999) report that too frequently researchers automatically rely on

PCA to reorganize variables. Conway and Huffcutt (2003) also report concerns, stressing how important it is for researchers to think carefully about whether and how factor analyses should be used. After consideration of both studies' arguments, and due to the restricted interpretations that would be available if the variables were combined in this study, PCA was not selected as the best solution to prepare the leadership ordinal variables for analysis.

The second method explored to prepare the ordinal variables for the analysis was the variable transformation technique, dichotomization. Dichotomization is a method where variables are recoded into two specific groups. Altman and Royston (2006) and MacCallum, Zhang, Preacher, and Rucker (2002) discuss the realities and challenges of dichotomization. The advantage of dichotomization is the researcher self-imposes a well-defined cut point in the dataset, allowing for interval issues to be resolved, but there are also some disadvantages with this technique. Placing all responses into two groups reduces the statistical power since much variability is lost. Thus, dichotomization can increase the risk of a positive result being a false positive (2006). It can also lead to underestimating the extent of variation between and within groups. "Individuals close to but on opposite sides of the cut point are characterized as being very different rather than very similar" (2006, n.p.). Despite these limitations, if a clear cut point emerges from the distribution of responses it could be a reasonable way to deal with the ordinal variables in this dataset.

The responses for the majority of sub questions in each jurisdiction revealed a normal distribution, with the middle of the curve falling between 2 and 3. So, a natural cut point did emerge (see Appendix I, Graph 4.1.1 for a sample histograph).

The responses for all leadership priorities for all systems were therefore reorganized into two groups: 1 (never) and 2 (seldom) were coded as 0, and 3 (quite often) and 4 (very often) responses were coded as 1. In the few instances where all principals within any given jurisdiction responded 1 or 2, or when uniformly respondents selected 3 or 4, the variables all coded the same, which eliminated the possibility of running HLM since there is no variation in responses. This is reported in the models using the following notation: n/v (not computable due to lack of variability.) These comprise only a small portion of cases across the dataset, so, after considering the natural distribution of responses in this dataset and despite the limitations of this technique, dichotomization was selected as a solution to deal with the ordinal variables at level 2. Once dichotomized, the responses for all fourteen variables were individually entered into each jurisdictions dataset. The decision to keep all fourteen came with its own limitations, most importantly, chances of multicollinearity.

Multicollinearity

Multicollinearity is the inclusion of two or more highly correlated variables within a multiple regression model. It exists when the two independent variables explain overlapping variances in a particular outcome variable. This inflates the standard errors of the coefficients thus, making some independent variables appear to be non-significant when they should be significant. To examine if there is multicollinearity in this study,

tolerance was calculated by running OLS regression for each of the level 2 predictors. The tolerances ranged from 0.538 for leadership priority *checking whether classroom activities align with educational goals* with a (variance inflation factor [VIF] of 1.860) to a tolerance of 0.898 for leadership priority *taking over lessons when teachers are unexpectedly absent* (with a VIF of 1.114). Freund and Wilson (1998) suggest there are no formal criteria for determining problematic VIF values and Marquardt (1970) writes, "the maximum variance inflation factor usually should be larger than 1.0 but certainly not as large as 10" (p. 610). For the purpose of this study, a more modest VIF (no greater than three) was used to determine risk of multicollinearity. Because VIF is lower than three across the fourteen variables, the risk of multicollinearity is minimal and the study proceeded.

Next, the reliability was estimated for the leadership priority scale. To do this Cronbach's alpha reliability statistics was used to estimate the degree of internal consistency among the items making up the scale. Cronbach's alpha simply provides an overall reliability coefficient for the fourteen questions of interest in this study. Nunnally (1978) reports a Cronbach's alpha coefficient of 0.7 as a minimal reliability threshold. In this particular scale, the Cronbach's alpha was 0.86, which indicates a reasonably high degree of internal consistency.

Missing Data

Another issue that needed resolution to prepare the dataset for multilevel analysis was deciding how to handle missing data. While Kromrey and Hines (1994) rightfully argue, missing data cannot be ignored: a researcher must intentionally decide not to use it

or to change it. Willms and Smith (2005) accurately note that when it comes to multilevel analysis, methods for handling missing data are still in their early stages of development. Two tools frequently utilized to deal with missing data in multilevel analysis are deletion and imputation methods. Simply put, deletion methods include both list-wise and pair-wise deletion strategies that discard missing data while imputation methods aim to 'fill in' missing values by examining the data that are available. Across the scholarly community, deletion strategies are discouraged since omitting data can dramatically alter the results of a study (Howell, 2007). Imputation methods also have their caveats but there are various options including simple imputation methods, such as substituting the mean or mode for the missing data that can be more appropriate.

To decide how to handle the missing data in this study, the amount and type of missing values were considered. This adheres to Rutkowski and Rutkowski's (2010) advice that it is important that missing data are inspected since poor decision-making can lead to inaccurate findings. The PISA dataset codes missing data as 'invalid' or 'missing.' Invalid data are answers outside of the available responses. For instance, if a respondent writes a "6" when the question asks participants to select 1-4, it would be invalid, since it is outside the scope of appropriate answers for this question. Missing data suggests that the respondent left a question blank.

There are missing data points in both the student and school questionnaire data used in this study. The diversity factor variables of interest in this study have less than 4 percent missing data (as visible in Appendix I, Table 4.1.1). There is also less than 4 percent missing data in the leadership priority variables (see Appendix I, Table 4.1.2).

These data points could be missing for a variety of reasons, including but not limited to a student or principal skipping a question or not completing the survey.

The missing data were also examined for patterns. "If cases with missing values are systematically different from cases without missing values the results can be misleading" (IBM, 2010, p. 2). It is therefore important to look through the missing data prior to deciding what to do with it. On the student questionnaire, 6 percent of participants skipped one of the four questions relevant in this analysis while less than 1 percent of students skipped two or more of the questions (see Appendix I, Table 4.1.3).

In the school questionnaire data, the majority of missing data falls under two categories: participants who skipped only one question (2.5 percent) and participants who skipped all the questions of interest (2.3 percent) (see Appendix I, Table 4.1.4). The frequency of missing data in this dataset is low, so a two-step cleaning process was implemented to deal with it. First, excessive missing data are dealt with using list-wise deletion. Excessive missing data are data where respondents skipped all the questions of interest. This included 2.3 percent of the cases in the school questionnaire data. All cases in France fell into this category since no participants completed question 26 (the school questionnaire was not administered in France on the 2009 PISA assessment) (2012d). To use imputation methods on excessive missing data would be inappropriate since there are insufficient cases in the dataset upon which inferences can be drawn. The remaining 469,754 cases were retained. This included representation from sixty-four jurisdictions. There were no excessive missing data on the student questionnaire.

Since list-wise deletion reduces the sample size and can decrease the accuracy of statistical output, it is an inappropriate way to handle the rest of the missing data. A method that would maximize the number of cases in the analysis was preferred. OECD (2009i) recommends that when the rates of missing data are "not high (less than 5 percent) simple imputation approaches are reasonable" (p. 325). Since this is the case here, mean substitution was selected to deal with the rest of the missing data (Cohen, Cohen, West, & Aiken, 2003). Mean substitution "replaces missing values on a variable with the mean value of the observed values" (Rubin, Witkiewitz, Andre, & Reilly, 2007, p. 71).

To handle missing values in the leadership predictors, dummy variables were created and missing values were recoded to 1 and non-missing data to 0. The mean of individual variables within each jurisdiction was calculated (using the original 1-4 scale results, not the converted binary values), and used to replace the missing values. So, for instance, the leadership priority *I make sure professional development activities align with the teaching goals of the school,* had a mean response in Azerbaijan of 3.35. This value was therefore, substituted in for missing values (dummy variables 1) for this question in the Azerbaijan dataset. The new dummy variables were compared to the missing data for correlation purposes. In no instances did the dummy variables change the leadership predictor results by more than 0.01, so the effect from this imputation method should have a minimal impact on the outcomes in each model.

The student diversity factors were recoded as binary variables 1 and 0 to account for missing data (see Appendix I, Table 4.1.3). For gender, boys were coded 1, girls were

coded 0 and missing data were coded 0. Immigrant status was recoded so that students who self-identified as being 'born in a different country' were coded 1 and all other responses were coded 0 (including missing and invalid responses). Students who self-selected 'speaks a language at home other than that of the testing language' were coded as 1 for the home language variable and all other responses (including missing and invalid responses) were recoded 0. The ESCS variable is a continuous variable that ranges from -6.62 to 3.53. All data points were retained except for missing and invalid cases, which were recoded as 0. As discussed in chapter 3, the location variable is a distinct student level variable since it is based upon administrators' responses on the school survey. For recoding purposes, however, the same process was applied. When a principal identified their school as in a village, hamlet, or rural area (fewer than 3,000 people) the students within their school were recoded 1 for location. Students attending schools where the principal marked any other response (including missing and invalid responses) were marked 0.

Imputation techniques such as mean substitution also have limitations. Standard errors of the variables containing missing values can be underestimated and biased estimates of coefficients can occur. Furthermore, while mean substitution preserves the mean of a variable distribution, it can distort other characteristics such as the median (Little & Rubin, 1989). Despite these realities, since all the variables have less than 5 percent missing data, these limitations can be considered negligible (OECD, 2009i).

Centering

The next issue of data cleaning was to decide if and how the data should be centered. Centering data means providing a scale so that results are meaningful and easy to interpret. Raudenbush and Bryk (2002) state issues around centering are "particularly important in multilevel modeling because the level 1 coefficients become outcomes to be explained in higher level models" (p. 6). Bickel (2007) explains this further, stating that when using multilevel regression models "it is best that all independent variables be centered" (p. 135).

There are three scale metrics for centering that are frequently used in HLM: natural metric, grand-mean centering and group-mean centering. Natural metric (or uncentered) is useful when the value of 0 is a meaningful value in the dataset being examined. When 0 is not meaningful, the estimate of the intercept will be arbitrary and can be problematic. In grand-mean centering, the 0 value represents the group-mean value for a person with a grand average on every predictor. This differs from group-mean centering where the predictors are centered around the mean value for the group in which they belong and the intercept is interpreted as the average outcome for each group.

In this study, the value of 0 is meaningful for the diversity factors gender, immigrant status, home language, and location so these variables were entered uncentered into the models. The SES variable ESCS was centered around the grand mean. This shifted the 0 value to represent the group-mean value for a student with a grand average SES. So, an increase on the ESCS index associates with a predicted increase or decrease in reading literacy achievement. The value of 0 is meaningful for

the fourteen leadership predictors entered at level 2, so these variables were entered into each model uncentered.

Model Building

Model building includes three steps, repeated across all sixty-four jurisdictions: an unconditional, a level 1, and a level 2 model. New equations and formulas are entered in each step of the process.

Unconditional Model

As discussed in chapter 3, the initial step in the model building process is to establish a baseline. To do this, an unconditional model or one-way ANOVA with random effects was constructed for each of the sixty-four jurisdictions (Raudenbush & Bryk, 2002). These models partition the variance of reading literacy achievement into within and between classroom components. The five plausible values for reading literacy (PV1READ to PV5READ) are the dependent variable in this analysis and the data is weighted using W_FSTUWT.

The unconditional equations constructed for each jurisdiction are:

Level-1 Model:

$$PV1READ_{ij} = \beta_{0j} + r_{ij}$$

Level-2 Model:

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

Mixed Model:

$$PV1READ_{ij} = \gamma_{00} + u_{0j} + r_{ij}$$

where PV1READ $_{ij}$ represents the inclusion of all five plausible values and is the reading score for student i in school j;

β_{0j} is the average reading score in school j;

r_{ij} is the error of using mean reading score in school j to predict the reading achievement of student i in school j;

$\gamma_{00}$is the grand (overall, across-school) mean of reading literacy scores;

u_{0j} is the error or unique school effect of using grand mean reading literacy score to predict the average reading score in school j.

The results from this model are used to calculate the intraclass correlation coefficient (ICC). The ICC reveals the percent of variation in achievement scores between schools. The following formula calculates the ICC:

$$ICC = \frac{\hat{\tau}_{00}}{\hat{\tau}_{00} + \hat{\sigma}^2}$$

Where $\hat{\tau}_{00}$ is variance between groups;

and $\hat{\sigma}^2$ is variance within groups

When the ICC is large, there is considerable variation that can be explained using school level variables. Furthermore, a high ICC affirms the need for multilevel analysis since it suggests "alpha inflation" would likely surface if one assumes the data came from a simple random sample.

Model 1. Within-School Models

Model 1 for each jurisdiction explores the effects of being "diverse" as described by the five variables of interest (gender, immigrant, home language, SES, and location) on reading literacy achievement. The five diversity factors were added to each jurisdiction's model to control for individual level characteristics and ultimately to see if they reduce within individual variability (σ^2). This model investigates to what degree gender, home language, location, et cetera are associated with students' reading literacy achievement within schools as well as how these relationships vary across schools. In each jurisdiction, the intercept and slopes are examined to see how they correlate.

The model 1 equations built for each jurisdiction are:

Level-1 Model:

$$PV1READ_{ij} = \beta_{0j} + \beta_{1j}*(\text{GENDER}_{ij}) + \beta_{2j}*(\text{LANGUAGE}_{ij}) + \beta_{3j}*(\text{IMMIGRANT}_{ij}) + \beta_{4j}*(\text{SES}_{ij}) + r_{ij}$$

Level-2 Model:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(\text{LOCATION}_j) + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

Mixed Model

$$PV1READ_{ij} = \gamma_{00} + \gamma_{01}*\text{LOCATION}_j$$
$$+ \gamma_{10}*\text{GENDER}_{ij}$$
$$+ \gamma_{20}*\text{LANGUAGE}_{ij}$$
$$+ \gamma_{30}*\text{IMMIGRANT}_{ij}$$
$$+ \gamma_{40}*\text{SES}_{ij}$$
$$+ u_{0j} + r_{ij}$$

Once these models are ready, the variance components are examined. These components are explained by adding the level 1 predictors into the models. The following equation calculates variance components:

$$\frac{\sigma_2(uncond) - \sigma_2(resid)}{\sigma_2(uncond)}$$

Model 2. Between-Schools Models

The model 2s build upon the results from the prior models to determine the effect of fourteen school leadership priorities on reading literacy achievement when controlling for the diversity factors. This model produces the variability of the regression coefficients for both the intercept and slope (Bryk & Raudenbush, 1992).

The model 2 equations built for each jurisdiction are:

Level-1 Model:

$$PV1READ_{ij} = \beta_{0j} + \beta_{1j}*(\text{GENDER}_{ij}) + \beta_{2j}*(\text{LANGUAGE}_{ij}) + \beta_{3j}*(\text{IMMIGRANT}_{ij}) + \beta_{4j}*(\text{SES}_{ij}) + r_{ij}$$

Level-2 Model:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(\text{LOCATION}_j) + \gamma_{02}*(Q1_j) + \gamma_{03}*(Q2_j) + \gamma_{04}*(Q3_j)$$

$$+ \gamma_{05}*(Q4_j) + \gamma_{06}*(Q5_j) + \gamma_{07}*(Q6_j) + \gamma_{08}*(Q7_j)$$

$$+ \gamma_{09}*(Q8_j) + \gamma_{010}*(Q9_j) + \gamma_{011}*(Q10_j) + \gamma_{012}*(Q11_j)$$

$$+ \gamma_{013}*(Q12_j) + \gamma_{014}*(Q13_j) + \gamma_{015}*(Q14_j) + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + u_{1j}$$

$$\beta_{2j} = \gamma_{20} + u_{2j}$$

$$\beta_{3j} = \gamma_{30} + u_{3j}$$

$$\beta_{4j} = \gamma_{40} + u_{4j}$$

ESCS2 has been centered around the grand mean.

Mixed Model:

$$PV1READ_{ij} = \gamma_{00} + \gamma_{01}*\text{LOCATION}_j + \gamma_{02}*\text{Q1}_j + \gamma_{03}*\text{Q2}_j$$

$$+ \gamma_{04}*\text{Q3}_j + \gamma_{05}*\text{Q4}_j + \gamma_{06}*\text{Q5}_j + \gamma_{07}*\text{Q6}_j$$

$$+ \gamma_{08}*\text{Q7}_j + \gamma_{09}*\text{Q8}_j + \gamma_{010}*\text{Q9}_j + \gamma_{011}*\text{Q10}_j$$

$$+ \gamma_{012}*\text{Q11}_j + \gamma_{013}*\text{Q12}_j + \gamma_{014}*\text{Q13}_j + \gamma_{015}*\text{Q14}_j$$

$$+ \gamma_{10}*\text{GENDER}_{ij}$$

$$+ \gamma_{20}*\text{LANGUAGE}_{ij}$$

$$+ \gamma_{30}*\text{IMMIGRANT}_{ij}$$

$$+ \gamma_{40}*\text{SES}_{ij}$$

$$+ u_{0j} + u_{1j}*\text{GENDER}_{ij} + u_{2j}*\text{LANGUAGE}_{ij} + u_{3j}*\text{IMMIGRANT}_{ij}$$

$$+ u_{4j}*\text{SES}_{ij} + r_{ij}$$

In this model, the slopes are allowed to vary randomly. This is done to see if there is variability in slopes across schools. This would be reasonable since being 'diverse' in one school may have different effects than in another school.

The unconditional intercept variance and the conditional variance are used to determine the percent of school level variance explained in each model (see equation below)

$$\frac{\tau_{00}(Random\ coeff.) - \tau_{00}(Current\ model)}{\tau_{00}(Random\ coeff.)}$$

The unconditional residual variance and the conditional variance are used to compute the variance explained.

Results

Results for this study are presented in this section. A brief overview of the descriptive statistics is first introduced, which includes average reading literacy achievement scores for each jurisdiction, sample sizes, and student populations for the five groups of interest. The results for each model are then presented.

Descriptive Statistics

The overall average reading literacy scores and corresponding standard errors for each jurisdiction were computed and compared to OECD's PISA 2009 results. The achievement scores varied slightly from those reported in the PISA 2009 results due to differing approaches for data cleaning and rounding techniques, but the rankings closely

aligned to OECDs rankings. Averages range from 555.51 in Shanghai, China to 312.32 in Kyrgyzstan.

Study Population

All sixty-four jurisdictions met the requirements established by OECD regarding a representative sample size or were granted exceptions, as discussed in chapter 3. The exact number of schools and students included in each sample varied by location and are detailed in Table 4.3.1 and Table 4.3.2 (see Appendix I). As noted earlier in this dissertation, normalized weights supplied by PISA were used to compute all results. Liechtenstein had the smallest number of schools and students participating in the assessment with 12 schools and 329 students. Mexico, on the other hand, had the largest sample size of 1,529 schools and 38,136 participants. By adding weights, both of these systems (and all the systems in between) are less likely to have biases in population parameter estimates.

Student Background Descriptive Information

The number of participants range from 329 students to 38,136, with an average of 7,339 students per jurisdiction. The boy to girl ratio hovers around 50 percent across all the jurisdictions, ranging from 43 percent of participants being male in Thailand to 55 percent of participants in Liechtenstein (see Appendix I, Table 4.3.3). The median for gender across all the jurisdictions is 50 percent. Immigrant populations range across the sampled students. In Japan, Poland, and Thailand fewer than 1 percent of students self-reported being immigrants while in United Arab Emirates 32 percent self-identify as immigrants. In Chile, Colombia, Japan, South Korea, and Tunisia fewer than 1 percent

of students reported speaking a language different at home than the one that PISA was administered in, while 8 percent of students in Luxembourg reported speaking a different language at home. The socio-economic results highlight the average SES score in each jurisdiction, (using grand mean centering of the ESCS index). So, jurisdictions with SES scores higher than 0 signal the average SES in the system is higher than the grand mean across all PISA participants. Average SES scores range from -1.52 in Indonesia to +0.70 in Iceland. The location variable distinguishes between participants living in rural areas verses all other participants. The median was 12 percent across all the jurisdictions with the largest rural participating population identified in Iceland and the smallest populations in Croatia, Korea, and the Netherlands. (Note: Shanghai, Taipei, Macao, Hong Kong, Japan, and Singapore were not included in the location factor since no schools are identified as being located in rural areas.)

Leadership Priorities Descriptive Information

The mean for each leadership priority (without the mean imputed missing values) in each jurisdiction is recorded on Table 4.3.4 (see Appendix I). Lichtenstein principals most frequently had the lowest average scores. They deprioritized the following activities: *school goals, observe, performance, suggestions, update, class activities, exam results,* and *curriculum.* Principals in Jordan, on the other hand, most often had the highest mean on the examined leadership priorities. Jordan principals, on average, highly prioritized *school goals, observe, suggestions, teacher problems, class activities, class problems, behavior,* and *take over lessons*.

Leaders' engagement with the fourteen leadership priorities ranged considerably worldwide. The average response from principals regarding the statement: *I ensure professional development activities align with the teaching goals of the school* ranged from 2.17 in Greece to 3.87 in Hong Kong. The second statement: *I make sure that teachers work according to the school's educational goals* had a similar average score range, from 2.00 in Liechtenstein to 3.76 in Jordan. The response range for the statement: *I observe instruction in classrooms* was wider, from 1.55 in Liechtenstein to 3.89 in Jordan, as was the range of scores for: *I use student performance results to develop the school's educational goals* (ranging from 1.66 in Liechtenstein to 3.79 in the United Kingdom). The statement: *I give teachers suggestions as to how they can improve their teaching* had a narrower average score range, from 2.14 in Liechtenstein to 3.85 in Jordan.

The mean response for the statement: *I monitor students' work* ranged from 2.20 in Sweden to 3.77 in Azerbaijan and had an almost identical range as: *I take the initiative to discuss matters when a teacher has a problem in his/her classroom,* which ranged from 2.28 in Japan to 3.87 in Jordan. The statement: *I inform teachers about possibilities for updating their knowledge and s*kills had a slightly wider range, from 2.18 in Liechtenstein to 3.85 in Montenegro while the statement: *I check to see whether classroom activities are keeping with our educational goals* had a slightly narrower range (2.00 in Liechtenstein to 3.73 in Jordon). The mean response for the statement: *I take exam results into account in decisions regarding curriculum development* had one of the widest ranges, from 1.19 in Liechtenstein to 3.67 in the United Kingdom. The average

response for the statements: *I ensure that there is clarity concerning the responsibility for coordinating the curriculum* and *I take over lessons when teachers are unexpectedly absent* had similar ranges, from 1.64 in Liechtenstein to 3.75 in Montenegro and from 1.64 in Japan to 3.53 in Jordan. While the statements: *I solve classroom problems together when a teacher brings up a classroom problem* and *I pay attention to disruptive behavior in classrooms* responses had wide ranges, from 2.23 in Japan to 3.89 in Jordan and Brazil, and from 2.70 in Japan to 3.89 in Jordan respectfully.

Across all the jurisdictions, the leadership priorities *take over lessons, observing,* and *exam results* had the lowest medians (2.23, 2.79, and 2.92 respectively) while the highest median scores were around *school goals* (3.51), *class problems* (3.47) and *behavior* (3.44), (see Appendix I, Table 4.3.4).

Unconditional Models

The results of the unconditional models for all sixty-four jurisdictions are visible in Table 4.3.5 (see Appendix I). These results are used to: (i) examine the reliability of the model; (ii) evaluate whether the school mean reading literacy scores vary across schools; (iii) estimate the proportion of total variance explained in the school level (intraclass correlation); and (vi) calculate the unexplained variance between individual students.

Reliabilities range from 0.98 in Trinidad and Tobago and the Netherlands to 0.66 in Finland. So, the sample classroom means for Trinidad and Tobago and the Netherlands are very consistent and are reliable for estimating the true population mean (the

maximum reliability coefficient is 1.0). The sample classroom means in Finland, on the other hand, are less consistent and are not as dependable for estimating the true population.

A reliability coefficient of 0.90 or above is generally considered a strong estimate. The majority of jurisdictions (fifty-one out of sixty-four) have reliabilities equal to or greater than 0.90. This includes: Canada, Australia, United States, Ireland, Albania, Lithuania, Portugal, Macao, Luxembourg, Taipei, Singapore, Jordan, Switzerland, South Korea, Colombia, Montenegro, Kazakhstan, Kyrgyzstan, Thailand, Azerbaijan, Hong Kong, Uruguay, Greece, Tunisia, Liechtenstein, Shanghai, Croatia, Serbia, Slovak Republic, Brazil, Romania, Israel, Indonesia, the UAE, Chile, Czech Republic, Japan, Mexico, Peru, Qatar, Belgium, Bulgaria, Austria, Argentina, Turkey, Trinidad and Tobago, Germany, Panama, Italy, Slovenia, the Netherlands, and Hungary. The remaining thirteen jurisdictions have lower reliabilities, ranging from 0.89 in the United Kingdom to 0.66 in Finland. This group includes: The United Kingdom, Latvia, Spain, Estonia, Russia, New Zealand, Poland, Denmark, Sweden, Norway, Iceland, and Finland. Notably, Nordic countries are heavily represented among this group. This could be due to misalignment between the sampling procedures on PISA and the distribution of students within these systems. Turmo (2005) investigates reliabilities among Nordic countries and notes that while they are lower than in some other systems, they are still sufficiently high to make estimates of the whole population. Across all the jurisdictions, the overall mean reliability of the intercept using reading literacy as the outcome variable was notably high at 0.92.

To evaluate if mean reading literacy scores vary from school to school in any specific jurisdiction, the *between* school variability is examined. Between school variability indicates how much of the variability in student reading literacy scores lies between schools (as opposed to between students). In all the jurisdictions in this study, there is between school variability, but it ranges considerably. Bulgaria, Trinidad and Tobago, Argentina and Qatar have the highest τ_{00} (between school variability) at 8139, 7453, 7441, and 7395 respectively. The lowest between school variability's are in Iceland, Denmark, Norway and Finland at 1073, 1042, 826, and 537. Student reading scores are similar across all schools in the latter four systems, and again, Nordic countries are firmly represented. Low between school variability contributes to Nordic countries success according to Lie, Linnakyla, and Roe (2003). In their work, *Northern Lights on PISA,* the scholars acknowledge there is still more to be done in reducing between school variability in Nordic countries and recognize this is essential to reducing low performance. The average mean between school variability across all the examined jurisdictions is 3517. There is also a wide range of within school variability, as evident by σ^2. This is reading literacy variability between individuals within the same school. In Iceland, Australia, and Albania the within school variability is the highest at 8243, 7586, and 7011 respectively, whereas in Indonesia, Hungary, and Liechtenstein it is the lowest out of all the jurisdictions at 3451, 2864, and 2272.

The ICC reveals the proportion of the total variance at the school level. The mean ICC for the reading literacy outcome across all jurisdictions was 0.39. The ICC range across all the examined jurisdictions was quite high, ranging from 0.07 for Finland to

0.71 for Hungary. Seven percent of the variability in reading literacy scores lies between schools in Finland while 71 percent is between schools in Hungary. Despite the wide range, the variance is statistically significant in all jurisdictions. While systems with higher ICCs, such as in Hungary, may be more meaningful than others, there are not strict guidelines as to what qualifies as a minimum amount of variance needed between schools for further multilevel modeling (Scherbaum & Ferreter, 2009). As described earlier in this study, an ICC of 0.15 or higher will automatically be considered reasonable for this dataset. Three systems have ICCs below this threshold: Finland, Iceland, and Norway at 0.12, 0.10 and 0.07. The low ICCs are another indication of minimal inequality between schools in these jurisdictions. Since the proportion of variance between schools is the only variance that can be influenced by school effects, these results will be carefully considered in the next stages of the model building process.

To calculate the variance in reading literacy scores that lies between individuals, the school variance is subtracted from 1. So, the largest amount of unexplained variance is in Finland (92 percent), Norway (90 percent), and Iceland (88 percent) (see Appendix I, Table 4.3.6). This is expected since the ICCs for these three jurisdictions were also the lowest. The smallest portion of unexplained variance is in Italy, Slovenia, Netherlands, and Hungary. In each of these jurisdictions after accounting for between school variability, less than 40 percent of their variance is left to be explained by differences between individuals. The unconditional model results for specific jurisdictions will be revisited in the 'summary of findings' after exploring the results from model 1 and model 2.

Models 1 and 2

The results for model 1 and 2 are presented simultaneously for each jurisdiction. This allows for easy comparison between the models. The presentation is in a table format adapted from Chapman (2011). When there is insufficient representation of a population, the code 'n/a' (not applicable) is reported. If there is a lack of variability in the leadership priorities responses, the symbol 'n/v' (not computable due to lack of variability) will be reported. Details from each model will be discussed after the tables are presented.

Table 4.3.7. *Albania (Models 1 and 2)*

Albania	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept, γ_{00}	422.58	5.99	≤0.001	407.94	36.05	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-61.11	3.77	**≤0.001**	-59.93	4.03	**≤0.001**
Language γ_{20}	-19.66	13.47	0.15	-19.71	13.38	0.15
Immigrant γ_{30}	1.18	13.05	0.93	3.31	12.89	0.80
SES γ_{40}	15.33	1.92	**≤0.001**	15.93	1.88	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-29.03	10.06	**0.00**	-32.32	9.46	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	-12.11	35.81	0.74
School Goals	-	-	-	20.53	40.83	0.62
Observe	-	-	-	-1.09	23.49	0.96
Perform	-	-	-	7.04	32.72	0.83
Suggestions	-	-	-	-33.05	17.12	0.06
Monitor	-	-	-	2.10	13.59	0.88
Teach Problems	-	-	-	-11.00	14.42	0.45
Update	-	-	-	11.44	15.96	0.48
Class Activities	-	-	-	29.88	14.86	**0.05**
Exam Results	-	-	-	-17.42	11.15	0.12
Curriculum	-	-	-	13.42	16.73	0.42
Class Problems	-	-	-	25.61	23.32	0.27
Behavior	-	-	-	-27.49	25.27	0.28
Take Over Lessons	-	-	-	14.30	8.62	0.10
Residual Variance						
Within Schools		0.14			0.14	
Between Schools		0.35			0.44	
Total Residual		0.49			0.58	

Table 4.3.8. *Azerbaijan (Models 1 and 2)*

Azerbaijan	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	380.02	4.96	≤0.001	399.68	10.49	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-22.35	2.38	**≤0.001**	-22.63	2.38	**≤0.001**
Language γ_{20}	4.79	5.50	0.39	1.57	5.95	0.79
Immigrant γ_{30}	4.59	6.81	0.50	7.72	6.62	0.25
SES γ_{40}	10.19	1.20	**≤0.001**	9.86	1.42	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-14.94	9.29	0.11	-20.28	9.79	**0.04**
School- Leadership Priorities						
PD	-	-	-	30.78	16.41	0.06
School Goals	-	-	-	1.70	14.48	0.91
Observe	-	-	-	-56.20	17.17	**0.00**
Perform	-	-	-	-7.68	16.66	0.65
Suggestions	-	-	-	9.08	38.92	0.82
Monitor	-	-	-	91.93	54.53	0.09
Teach Problems	-	-	-	4.01	15.01	0.79
Update	-	-	-	-6.59	19.09	0.73
Class Activities	-	-	-	-104.10	31.80	**0.00**
Exam Results	-	-	-	0.18	11.84	0.99
Curriculum	-	-	-	1.76	12.92	0.89
Class Problems	-	-	-	12.53	21.75	0.57
Behavior	-	-	-	20.15	9.11	**0.05**
Take Over Lessons	-	-	-	-18.78	11.34	0.10
Residual Variance						
Within Schools		0.05			0.07	
Between Schools		0.13			0.26	
Total Residual		0.18			0.33	

Table 4.3.9. *Argentina (Models 1 and 2)*

Argentina	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	403.08	7.30	≤0.001	292.45	29.96	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-28.84	2.65	**≤0.001**	-28.98	2.71	**≤0.001**
Language γ_{20}	-36.54	14.69	**0.02**	-37.98	14.74	**0.01**
Immigrant γ_{30}	-23.26	10.03	**0.02**	-24.06	9.65	**0.01**
SES γ_{40}	12.36	1.55	**≤0.001**	12.10	1.54	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-58.84	16.73	**≤0.001**	-44.24	15.60	**0.01**
School-Leadership Priorities						
PD	-	-	-	17.29	36.60	0.64
School Goals	-	-	-	-3.56	45.06	0.94
Observe	-	-	-	-12.78	13.19	0.33
Perform	-	-	-	29.49	21.28	0.17
Suggestions	-	-	-	4.02	28.46	0.89
Monitor	-	-	-	12.29	16.88	0.47
Teach Problems	-	-	-	34.32	19.92	0.09
Update	-	-	-	-13.51	18.19	0.46
Class Activities	-	-	-	-18.12	15.07	0.23
Exam Results	-	-	-	-4.06	16.02	0.80
Curriculum	-	-	-	14.72	17.02	0.39
Class Problems	-	-	-	26.59	25.19	0.30
Behavior	-	-	-	24.06	20.02	0.23
Take Over Lessons	-	-	-	-0.36	13.06	0.98
Residual Variance						
Within Schools	0.05			0.06		
Between Schools	0.25			0.32		
Total Residual	0.30			0.38		

Table 4.3.10. *Australia (Models 1 and 2)*

Australia	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	534.09	2.63	≤0.001	517.15	17.86	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-36.52	1.90	**≤0.001**	-36.35	1.89	**≤0.001**
Language γ_{20}	-14.35	3.84	**≤0.001**	-16.12	3.99	**≤0.001**
Immigrant γ_{30}	-3.10	3.02	0.31	-2.23	2.97	0.45
SES γ_{40}	31.08	1.38	**≤0.001**	31.02	1.39	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-30.93	7.09	**≤0.001**	-18.62	8.25	**0.03**
School-Leadership Priorities						
PD	-	-	-	-0.01	19.72	1.00
School Goals	-	-	-	21.43	21.76	0.33
Observe	-	-	-	-16.04	6.86	**0.02**
Perform	-	-	-	-15.98	8.05	**0.05**
Suggestions	-	-	-	0.48	6.01	0.94
Monitor	-	-	-	3.54	5.09	0.49
Teach Problems	-	-	-	6.95	9.50	0.47
Update	-	-	-	11.33	7.89	0.15
Class Activities	-	-	-	-1.66	5.83	0.78
Exam Results	-	-	-	2.28	5.65	0.69
Curriculum	-	-	-	12.31	12.34	0.32
Class Problems	-	-	-	6.16	7.53	0.41
Behavior	-	-	-	-18.99	7.08	**0.01**
Take Over Lessons	-	-	-	1.24	4.82	0.80
Residual Variance						
Within Schools		0.09			0.09	
Between Schools		0.37			0.37	
Total Residual		0.46			0.46	

Table 4.3.11. *Austria (Models 1 and 2)*

Austria	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	464.54	6.16	≤0.001	508.73	24.87	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-21.61	2.77	**≤0.001**	-21.47	2.45	**≤0.001**
Language γ_{20}	-19.25	4.11	**≤0.001**	-18.55	3.56	**≤0.001**
Immigrant γ_{30}	-30.34	5.35	**≤0.001**	-28.69	4.76	**≤0.001**
SES γ_{40}	13.41	1.76	**≤0.001**	13.79	1.59	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-26.95	13.66	**0.05**	-31.62	13.39	**0.02**
School-Leadership Priorities						
PD	-	-	-	-7.09	14.51	0.63
School Goals	-	-	-	7.19	15.76	0.65
Observe	-	-	-	5.88	9.26	0.53
Perform	-	-	-	-7.93	9.16	0.39
Suggestions	-	-	-	16.93	10.30	0.10
Monitor	-	-	-	-9.21	13.90	0.51
Problems	-	-	-	5.60	13.80	0.69
Update	-	-	-	-18.17	11.12	0.10
Class Activities	-	-	-	2.20	9.82	0.82
Exam Results	-	-	-	-15.38	11.06	0.17
Curriculum	-	-	-	-2.17	10.86	0.84
Class Problems	-	-	-	25.09	20.94	0.23
Behavior	-	-	-	-52.11	17.81	**0.00**
Take Over Lessons	-	-	-	-13.71	9.31	0.14
Residual Variance						
Within Schools		0.05			0.08	
Between Schools		0.26			0.31	
Total Residual		0.31			0.39	

Table 4.3.12. *Belgium (Models 1 and 2)*

Belgium	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	508.69	4.51	≤0.001	461.70	39.67	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-16.79	2.01	**≤0.001**	-17.59	2.02	**≤0.001**
Language γ_{20}	-9.22	2.92	**0.00**	-10.40	2.93	**≤0.001**
Immigrant γ_{30}	-18.29	4.40	**≤0.001**	-17.75	4.47	**≤0.001**
SES γ_{40}	14.90	1.31	**≤0.001**	14.76	1.31	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	5.99	31.12	0.85	31.27	36.83	0.40
School-Leadership Priorities						
PD	-	-	-	-17.82	18.29	0.33
School Goals	-	-	-	15.21	25.66	0.55
Observe	-	-	-	32.53	9.30	**≤0.001**
Perform	-	-	-	10.95	9.22	0.24
Suggestions	-	-	-	-8.35	9.10	0.36
Monitor	-	-	-	-39.53	9.78	**≤0.001**
Teach Problems	-	-	-	17.02	12.02	0.16
Update	-	-	-	-0.81	11.32	0.94
Class Activities	-	-	-	-1.49	11.82	0.90
Exam Results	-	-	-	9.29	9.39	0.32
Curriculum	-	-	-	5.47	10.26	0.60
Class Problems	-	-	-	66.68	27.24	**0.02**
Behavior	-	-	-	-39.26	16.59	**0.02**
Take Over Lessons	-	-	-	22.96	15.76	0.15
Residual Variance						
Within Schools	0.04			0.09		
Between Schools	0.22			0.39		
Total Residual	0.26			0.48		

Table 4.3.13. *Brazil (Models 1 and 2)*

Brazil	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	419.56	3.32	≤0.001	335.20	18.13	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-27.14	1.70	**≤0.001**	-27.24	1.71	**≤0.001**
Language γ_{20}	-39.77	10.78	**≤0.001**	-39.62	10.83	**≤0.001**
Immigrant γ_{30}	-52.67	19.09	**0.01**	-51.83	18.95	**0.01**
SES γ_{40}	7.35	0.92	**≤0.001**	7.05	0.93	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-57.35	10.00	**≤0.001**	-39.62	10.83	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	6.19	12.70	0.63
School Goals	-	-	-	49.68	18.13	**0.01**
Observe	-	-	-	-4.95	6.76	0.46
Perform	-	-	-	-4.66	10.75	0.66
Suggestions	-	-	-	22.95	9.79	**0.02**
Monitor	-	-	-	-4.37	11.88	0.71
Teach Problems	-	-	-	14.68	13.52	0.28
Update	-	-	-	0.53	10.79	0.96
Class Activities	-	-	-	1.73	9.44	0.85
Exam Results	-	-	-	23.35	11.59	**0.04**
Curriculum	-	-	-	14.40	10.58	0.17
Class Problems	-	-	-	4.34	16.03	0.79
Behavior	-	-	-	-37.79	19.20	**0.05**
Take Over Lessons	-	-	-	-2.53	6.04	0.68
Residual Variance						
Within Schools	0.04			0.05		
Between Schools	0.21			0.28		
Total Residual	0.25			0.33		

Table 4.3.14. *Bulgaria (Models 1 and 2)*

Bulgaria	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	447.00	6.53	≤0.001	486.87	63.43	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-44.07	3.23	**≤0.001**	-45.93	3.39	**≤0.001**
Language γ_{20}	-32.40	6.11	**≤0.001**	-34.13	5.88	**≤0.001**
Immigrant γ_{30}	-32.64	13.32	**0.01**	-33.44	13.26	**0.01**
SES γ_{40}	15.22	1.95	**≤0.001**	14.57	1.94	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-82.53	16.29	**≤0.001**	-72.74	17.78	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	n/v	n/v	n/v
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	-17.12	38.32	0.66
Perform	-	-	-	-4.42	27.55	0.87
Suggestions	-	-	-	17.02	15.84	0.28
Monitor	-	-	-	-40.13	42.37	0.35
Teach Problems	-	-	-	19.10	21.74	0.38
Update	-	-	-	-87.65	41.69	**0.04**
Class Activities	-	-	-	39.38	25.19	0.12
Exam Results	-	-	-	-5.95	13.43	0.66
Curriculum	-	-	-	49.03	45.15	0.28
Class Problems	-	-	-	-11.55	30.07	0.70
Behavior	-	-	-	2.69	29.52	0.93
Take Over Lessons	-	-	-	-1.51	13.52	0.91
Residual Variance						
Within Schools		0.09			0.12	
Between Schools		0.41			0.48	
Total Residual		0.50			0.60	

Note: n/v = not computable due to lack of variability

Table 4.3.15. Canada (Models 1 and 2)

Canada	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	542.88	1.86	≤0.001	528.51	12.83	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-32.91	1.69	**≤0.001**	-32.88	1.69	**≤0.001**
Language γ_{20}	-7.87	3.03	**0.01**	-8.32	3.02	**0.01**
Immigrant γ_{30}	-13.71	3.47	**≤0.001**	-14.24	3.58	**≤0.001**
SES γ_{40}	24.65	1.14	**≤0.001**	24.62	1.14	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-20.62	4.81	**≤0.001**	-20.70	5.19	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	-6.54	7.62	0.39
School Goals	-	-	-	0.17	8.93	0.99
Observe	-	-	-	2.23	3.79	0.56
Perform	-	-	-	-7.21	5.26	0.17
Suggestions	-	-	-	9.26	4.44	**0.04**
Monitor	-	-	-	0.38	3.57	0.92
Teach Problems	-	-	-	-7.33	7.96	0.36
Update	-	-	-	1.56	7.43	0.83
Class Activities	-	-	-	-1.35	4.41	0.76
Exam Results	-	-	-	0.61	3.64	0.87
Curriculum	-	-	-	2.94	5.84	0.62
Class Problems	-	-	-	23.44	9.84	**0.02**
Behavior	-	-	-	-2.48	9.25	0.79
Take Over Lessons	-	-	-	2.03	4.06	0.62
Residual Variance						
Within Schools		0.08			0.12	
Between Schools		0.31			0.47	
Total Residual		0.39			0.59	

Table 4.3.16. *Chile (Models 1 and 2)*

Chile	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	445.98	4.69	≤0.001	423.91	36.57	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-18.31	2.70	**≤0.001**	-19.13	2.69	**≤0.001**
Language γ_{20}	-51.20	13.95	**≤0.001**	-50.50	13.91	**≤0.001**
Immigrant γ_{30}	-0.81	9.66	0.93	-0.62	9.53	0.95
SES γ_{40}	9.90	1.26	**≤0.001**	9.98	1.28	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-83.39	16.78	**≤0.001**	-85.90	17.87	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	-2.01	20.81	0.92
School Goals	-	-	-	44.44	25.02	0.08
Observe	-	-	-	-13.76	8.86	0.12
Perform	-	-	-	21.65	21.97	0.33
Suggestions	-	-	-	-9.05	16.35	0.58
Monitor	-	-	-	6.65	10.28	0.52
Teach Problems	-	-	-	10.67	14.99	0.48
Update	-	-	-	15.92	16.31	0.33
Class Activities	-	-	-	-15.35	11.91	0.20
Exam Results	-	-	-	3.42	13.94	0.81
Curriculum	-	-	-	0.51	16.89	0.98
Class Problems	-	-	-	-1.40	29.77	0.96
Behavior	-	-	-	-47.55	19.52	**0.02**
Take Over Lessons	-	-	-	7.63	9.79	0.44
Proportional Variance Explained						
Within Schools		0.03			0.03	
Between Schools		0.31			0.45	
Total Residual		0.34			0.48	

Table 4.3.17. *Shanghai-China (Models 1 and 2)*

Shanghai-China	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	570.67	3.98	≤0.001	604.49	19.65	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-30.87	1.96	**≤0.001**	-31.25	1.99	**≤0.001**
Language γ_{20}	-37.92	8.82	**≤0.001**	-39.03	8.86	**≤0.001**
Immigrant γ_{30}	-6.65	9.74	0.50	-2.65	9.63	0.78
SES γ_{40}	5.85	1.17	**≤0.001**	5.93	1.18	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	n/a	n/a	n/a	n/a	n/a	n/a
School-Leadership Priorities						
PD	-	-	-	22.09	15.77	0.17
School Goals	-	-	-	-35.30	15.07	**0.02**
Observe	-	-	-	38.34	10.96	**≤0.001**
Perform	-	-	-	-4.02	8.50	0.64
Suggestions	-	-	-	-54.60	35.69	0.13
Monitor	-	-	-	7.32	9.13	0.42
Teach Problems	-	-	-	13.39	11.02	0.23
Update	-	-	-	9.74	12.82	0.45
Class Activities	-	-	-	-5.20	12.69	0.68
Exam Results	-	-	-	22.23	10.46	**0.04**
Curriculum	-	-	-	18.76	17.91	0.30
Class Problems	-	-	-	-34.38	11.86	**0.00**
Behavior	-	-	-	-22.16	12.79	0.09
Take Over Lessons	-	-	-	-8.12	11.53	0.48
Residual Variance						
Within Schools		0.07			0.08	
Between Schools		0.18			0.40	
Total Residual		0.25			0.48	

Table 4.3.18. *Taipei (Chinese Taipei) (Models 1 and 2)*

Taipei	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	514.21	3.86	≤0.001	486.96	46.90	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-37.84	2.39	**≤0.001**	-37.26	2.30	**≤0.001**
Language γ_{20}	-8.07	2.77	**0.00**	-8.30	2.79	**0.00**
Immigrant γ_{30}	-16.87	9.93	0.09	-17.77	10.01	0.08
SES γ_{40}	17.90	1.54	**≤0.001**	17.93	1.52	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	n/a	n/a	n/a	n/a	n/a	n/a
School-Leadership Priorities						
PD	-	-	-	87.25	28.76	**0.00**
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	-49.78	16.62	**0.00**
Perform	-	-	-	3.41	10.02	0.73
Suggestions	-	-	-	15.68	11.44	0.17
Monitor	-	-	-	24.66	16.50	0.14
Teach Problems	-	-	-	-38.54	12.18	**0.00**
Update	-	-	-	23.80	25.89	0.36
Class Activities	-	-	-	-0.55	13.22	0.97
Exam Results	-	-	-	-35.46	14.39	**0.02**
Curriculum	-	-	-	-56.47	17.74	**0.00**
Class Problems	-	-	-	24.13	25.66	0.35
Behavior	-	-	-	20.59	18.66	0.27
Take Over Lessons	-	-	-	6.27	8.92	0.48
Residual Variance						
Within Schools		0.10			0.12	
Between Schools		0.22			0.45	
Total Residual		0.32			0.57	

Note: n/v = not computable due to lack of variability

Table 4.3.19. *Colombia (Models 1 and 2)*

Colombia	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	421.06	3.99	≤0.001	393.55	32.31	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-9.67	2.80	**≤0.001**	-9.62	2.80	**≤0.001**
Language γ_{20}	-56.28	20.86	**0.01**	-56.18	20.69	**0.01**
Immigrant γ_{30}	-6.98	12.57	0.58	-6.22	12.43	0.62
SES γ_{40}	11.85	1.27	**≤0.001**	12.10	1.29	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-28.87	10.12	**0.01**	-24.24	10.70	**0.02**
School-Leadership Priorities						
PD	-	-	-	6.94	27.81	0.80
School Goals	-	-	-	16.39	15.64	0.30
Observe	-	-	-	-0.44	8.13	0.96
Perform	-	-	-	-6.91	10.37	0.51
Suggestions	-	-	-	-2.11	13.38	0.88
Monitor	-	-	-	28.18	13.31	**0.04**
Teach Problems	-	-	-	9.34	11.51	0.42
Update	-	-	-	-3.65	17.30	0.83
Class Activities	-	-	-	4.19	13.38	0.75
Exam Results	-	-	-	6.56	14.07	0.64
Curriculum	-	-	-	-18.19	13.84	0.19
Class Problems	-	-	-	-16.36	12.49	0.19
Behavior	-	-	-	7.52	20.97	0.72
Take Over Lessons	-	-	-	-8.80	8.63	0.31
Residual Variance						
Within Schools	0.02			0.02		
Between Schools	0.33			0.38		
Total Residual	0.35			0.40		

Table 4.3.20. *Croatia (Models 1 and 2)*

Croatia	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	492.94	4.17	≤0.001	520.52	54.12	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-32.10	2.57	**≤0.001**	-32.96	2.63	**≤0.001**
Language γ_{20}	4.69	8.44	0.58	6.04	8.17	0.46
Immigrant γ_{30}	-8.75	4.11	**0.03**	-9.56	4.13	**0.02**
SES γ_{40}	12.89	1.61	**≤0.001**	12.53	1.59	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-21.73	22.56	0.34	2.36	10.20	0.82
School-Leadership Priorities						
PD	-	-	-	-19.59	17.25	0.26
School Goals	-	-	-	29.96	24.99	0.23
Observe	-	-	-	1.24	8.96	0.89
Perform	-	-	-	36.62	14.49	**0.01**
Suggestions	-	-	-	0.70	15.84	0.97
Monitor	-	-	-	-5.42	35.67	0.88
Teach Problems	-	-	-	8.64	20.58	0.68
Update	-	-	-	19.09	11.98	0.11
Class Activities	-	-	-	4.47	35.06	0.90
Exam Results	-	-	-	-27.21	11.33	**0.02**
Curriculum	-	-	-	10.80	27.24	0.69
Class Problems	-	-	-	-84.23	29.01	**0.00**
Behavior	-	-	-	n/v	n/v	n/v
Take Over Lessons	-	-	-	5.12	10.38	0.62
Residual Variance						
Within Schools		0.06			0.09	
Between Schools		0.26			0.41	
Total Residual		0.32			0.50	

Note: n/v = not computable due to lack of variability

Table 4.3.21. *Czech Republic (Models 1 and 2)*

Czech Republic	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	494.82	4.91	≤0.001	532.81	36.42	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-34.63	2.85	**≤0.001**	-34.78	2.82	**≤0.001**
Language γ_{20}	-2.05	12.80	0.87	-3.80	13.30	0.78
Immigrant γ_{30}	-10.82	10.17	0.29	-11.25	10.32	0.28
SES γ_{40}	17.36	1.97	**≤0.001**	17.62	2.01	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-30.46	8.67	**≤0.001**	-24.54	8.75	**0.01**
School-Leadership Priorities						
PD	-	-	-	-28.17	15.79	0.08
School Goals	-	-	-	-29.52	22.75	0.20
Observe	-	-	-	-28.08	7.54	**≤0.001**
Perform	-	-	-	13.35	12.49	0.29
Suggestions	-	-	-	-2.70	10.07	0.79
Monitor	-	-	-	10.39	11.70	0.38
Teach Problems	-	-	-	-4.60	11.21	0.68
Update	-	-	-	-30.36	20.22	0.14
Class Activities	-	-	-	26.98	10.90	**0.01**
Exam Results	-	-	-	7.44	8.04	0.36
Curriculum	-	-	-	38.75	13.03	**0.00**
Class Problems	-	-	-	19.91	18.67	0.29
Behavior	-	-	-	-40.22	9.38	**≤0.001**
Take Over Lessons	-	-	-	-1.30	8.99	0.89
Residual Variance						
Within Schools		0.07			0.10	
Between Schools		0.26			0.43	
Total Residual		0.33			0.53	

Table 4.3.22. *Denmark (Models 1 and 2)*

Denmark	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	509.92	2.62	≤0.001	527.75	11.47	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-29.55	2.67	**≤0.001**	-29.63	2.64	**≤0.001**
Language γ_{20}	-24.65	5.12	**≤0.001**	-27.94	5.06	**≤0.001**
Immigrant γ_{30}	-24.49	5.63	**≤0.001**	-22.59	5.65	**≤0.001**
SES γ_{40}	30.91	1.50	**≤0.001**	30.78	1.49	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-12.29	4.45	**0.01**	-11.97	4.45	**0.01**
School-Leadership Priorities						
PD	-	-	-	9.87	5.11	0.06
School Goals	-	-	-	1.53	5.62	0.79
Observe	-	-	-	-0.34	4.14	0.94
Perform	-	-	-	1.72	4.48	0.70
Suggestions	-	-	-	1.90	3.66	0.60
Monitor	-	-	-	2.82	3.89	0.47
Teach Problems	-	-	-	-3.49	6.81	0.61
Update	-	-	-	-3.44	5.44	0.53
Class Activities	-	-	-	-3.94	4.60	0.39
Exam Results	-	-	-	-2.14	4.87	0.66
Curriculum	-	-	-	0.81	4.54	0.86
Class Problems	-	-	-	-13.73	13.19	0.31
Behavior	-	-	-	-7.53	9.94	0.45
Take Over Lessons	-	-	-	-1.77	4.53	0.70
Residual Variance						
Within Schools	0.13			0.15		
Between Schools	0.55			0.49		
Total Residual	0.68			0.64		

Table 4.3.23. *Estonia (Models 1 and 2)*

Estonia	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	525.19	4.67	≤0.001	537.47	21.34	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-42.94	2.65	**≤0.001**	-43.19	2.64	**≤0.001**
Language γ_{20}	-36.19	6.77	**≤0.001**	-35.96	6.66	**≤0.001**
Immigrant γ_{30}	-9.77	9.22	0.29	-9.43	9.12	0.31
SES γ_{40}	19.30	1.71	**≤0.001**	19.29	1.70	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-10.51	7.55	0.17	-10.39	7.05	0.14
School-Leadership Priorities						
PD	-	-	-	-13.78	13.88	0.32
School Goals	-	-	-	2.18	13.83	0.88
Observe	-	-	-	3.68	8.32	0.66
Perform	-	-	-	-7.77	9.86	0.43
Suggestions	-	-	-	-0.28	8.04	0.97
Monitor	-	-	-	1.72	8.76	0.85
Teach Problems	-	-	-	-1.87	12.32	0.88
Update	-	-	-	-2.87	12.87	0.82
Class Activities	-	-	-	-7.15	7.82	0.36
Exam Results	-	-	-	-2.35	7.27	0.75
Curriculum	-	-	-	8.15	10.93	0.46
Class Problems	-	-	-	15.17	11.47	0.19
Behavior	-	-	-	-7.79	14.77	0.60
Take Over Lessons	-	-	-	-7.69	8.15	0.35
Residual Variance						
Within Schools	0.11			0.12		
Between Schools	0.32			0.40		
Total Residual	0.43			0.52		

Table 4.3.24. *Finland (Models 1 and 2)*

Finland	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	567.44	2.09	≤0.001	574.51	17.01	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-54.25	2.31	**≤0.001**	-54.14	2.32	**≤0.001**
Language γ_{20}	-48.97	6.47	**≤0.001**	-49.33	6.35	**≤0.001**
Immigrant γ_{30}	-19.79	9.77	**0.04**	-16.83	9.75	0.086
SES γ_{40}	28.61	1.52	**≤0.001**	28.17	1.49	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-6.20	7.04	0.38	-1.41	7.00	0.841
School-Leadership Priorities						
PD	-	-	-	0.27	5.26	0.96
School Goals	-	-	-	1.25	5.36	0.82
Observe	-	-	-	3.85	6.58	0.56
Perform	-	-	-	3.43	3.99	0.39
Suggestions	-	-	-	-3.52	4.49	0.43
Monitor	-	-	-	-4.52	4.09	0.27
Teach Problems	-	-	-	3.25	5.57	0.56
Update	-	-	-	1.75	8.36	0.84
Class Activities	-	-	-	3.26	5.01	0.52
Exam Results	-	-	-	-5.91	6.58	0.37
Curriculum	-	-	-	-2.91	4.92	0.56
Class Problems	-	-	-	-1.99	14.64	0.89
Behavior	-	-	-	-7.17	9.92	0.47
Take Over Lessons	-	-	-	-2.23	4.10	0.59
Residual Variance						
Within Schools	0.19			0.20		
Between Schools	0.28			0.48		
Total Residual	0.47			0.68		

Table 4.3.25. *Germany (Models 1 and 2)*

Germany	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	510.25	4.94	≤0.001	563.96	25.69	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-29.87	2.04	**≤0.001**	-30.28	2.07	**≤0.001**
Language γ_{20}	-7.86	4.70	0.10	-7.76	4.61	0.10
Immigrant γ_{30}	-18.83	5.59	**0.00**	-18.02	5.66	**0.00**
SES γ_{40}	12.83	1.36	**≤0.001**	12.93	1.34	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-60.80	18.87	**0.00**	-53.41	20.99	**0.01**
School-Leadership Priorities						
PD	-	-	-	-23.64	11.98	**0.05**
School Goals	-	-	-	-3.65	12.20	0.77
Observe	-	-	-	13.30	9.98	0.18
Perform	-	-	-	-5.25	10.15	0.61
Suggestions	-	-	-	4.27	9.63	0.66
Monitor	-	-	-	5.18	11.78	0.66
Teach Problems	-	-	-	14.69	9.96	0.14
Update	-	-	-	-18.78	10.07	0.06
Class Activities	-	-	-	0.35	9.64	0.97
Exam Results	-	-	-	-14.38	11.94	0.23
Curriculum	-	-	-	-4.98	10.79	0.65
Class Problems	-	-	-	-8.73	17.13	0.61
Behavior	-	-	-	-8.96	13.29	0.50
Take Over Lessons	-	-	-	-24.81	10.00	**0.01**
Residual Variance						
Within Schools		0.08			0.10	
Between Schools		0.21			0.34	
Total Residual		0.29			0.44	

Table 4.3.26. *Greece (Models 1 and 2)*

Greece	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	495.22	5.47	≤0.001	535.14	32.62	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-36.58	2.42	**≤0.001**	-37.42	2.49	**≤0.001**
Language γ_{20}	-22.02	11.58	0.06	-18.46	13.00	0.16
Immigrant γ_{30}	-6.10	6.45	0.35	-7.17	6.59	0.28
SES γ_{40}	17.72	1.44	**≤0.001**	17.76	1.43	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-1.77	24.34	0.94	-5.90	21.32	0.78
School-Leadership Priorities						
PD	-	-	-	-5.74	10.34	0.58
School Goals	-	-	-	30.15	12.95	**0.02**
Observe	-	-	-	4.20	18.55	0.82
Perform	-	-	-	-3.65	11.06	0.74
Suggestions	-	-	-	-3.68	11.21	0.74
Monitor	-	-	-	0.05	10.56	1.00
Teach Problems	-	-	-	-8.31	15.67	0.60
Update	-	-	-	-44.45	14.67	**0.00**
Class Activities	-	-	-	5.09	12.80	0.69
Exam Results	-	-	-	-6.89	11.85	0.56
Curriculum	-	-	-	-3.89	10.90	0.72
Class Problems	-	-	-	23.61	31.39	0.45
Behavior	-	-	-	-15.62	20.64	0.45
Take Over Lessons	-	-	-	-16.36	9.71	0.09
Residual Variance						
Within Schools	0.08			0.10		
Between Schools	0.33			0.34		
Total Residual	0.41			0.44		

Table 4.3.27. *Hong Kong (Models 1 and 2)*

Hong Kong	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	547.72	4.43	≤0.001	601.77	25.25	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-23.56	2.56	**≤0.001**	-23.16	2.54	**≤0.001**
Language γ_{20}	-23.94	6.19	**≤0.001**	-27.31	6.08	**≤0.001**
Immigrant γ_{30}	-3.60	2.87	0.21	-3.22	2.86	0.26
SES γ_{40}	-3.60	2.87	0.21	3.73	1.33	**0.01**
Level 2: Diversity Factor						
Location γ_{01}	n/a	n/a	n/a	n/a	n/a	n/a
School-Leadership Priorities						
PD	-	-	-	n/v	n/v	n/v
School Goals	-	-	-	-16.53	36.99	0.66
Observe	-	-	-	-28.47	10.01	**0.02**
Perform	-	-	-	-66.29	19.04	**≤0.001**
Suggestions	-	-	-	n/v	n/v	n/v
Monitor	-	-	-	-16.91	11.04	0.13
Teach Problems	-	-	-	14.41	12.06	0.23
Update	-	-	-	40.31	17.22	**0.02**
Class Activities	-	-	-	-14.99	13.76	0.28
Exam Results	-	-	-	1.39	14.63	0.92
Curriculum	-	-	-	43.94	30.97	0.16
Class Problems	-	-	-	-6.56	15.35	0.67
Behavior	-	-	-	-0.99	15.62	0.95
Take Over Lessons	-	-	-	-11.02	9.09	0.23
Residual Variance						
Within Schools		0.03			0.06	
Between Schools		0.14			0.27	
Total Residual		0.17			0.33	

Note: n/v = not computable due to lack of variability

Table 4.3.28. *Hungary (Models 1 and 2)*

Hungary	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	478.77	6.92	≤0.001	462.88	69.38	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-23.33	2.18	**≤0.001**	-24.12	2.19	**≤0.001**
Language γ_{20}	-18.34	8.60	**0.04**	-18.79	8.28	**0.03**
Immigrant γ_{30}	3.75	6.17	0.54	4.96	6.10	0.42
SES γ_{40}	10.70	1.35	**≤0.001**	10.24	1.41	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-79.68	15.06	**≤0.001**	-65.29	15.85	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	21.79	27.75	0.43
School Goals	-	-	-	61.26	70.38	0.39
Observe	-	-	-	1.60	13.65	0.91
Perform	-	-	-	1.32	15.33	0.93
Suggestions	-	-	-	-20.83	14.59	0.16
Monitor	-	-	-	-7.83	18.72	0.68
Teach Problems	-	-	-	-10.54	19.64	0.59
Update	-	-	-	2.58	24.73	0.92
Class Activities	-	-	-	-24.63	16.11	0.13
Exam Results	-	-	-	-7.75	14.12	0.58
Curriculum	-	-	-	10.36	19.00	0.59
Class Problems	-	-	-	-13.08	27.31	0.63
Behavior	-	-	-	-23.24	32.75	0.48
Take Over Lessons	-	-	-	20.25	12.78	0.12
Residual Variance						
Within Schools		0.05			0.05	
Between Schools		0.28			0.34	
Total Residual		0.33			0.39	

Table 4.3.29. *Iceland (Models 1 and 2)*

Iceland	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	518.81	4.19	≤0.001	530.63	14.61	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-45.61	3.62	**≤0.001**	-46.29	3.72	**≤0.001**
Language γ_{20}	-51.28	13.72	**≤0.001**	-51.58	12.33	**≤0.001**
Immigrant γ_{30}	-0.32	9.39	0.97	-0.43	8.30	0.96
SES γ_{40}	25.14	1.79	**≤0.001**	25.24	1.71	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	10.31	7.30	0.16	2.64	7.40	0.72
School-Leadership Priorities						
PD	-	-	-	5.35	12.69	0.67
School Goals	-	-	-	-11.10	11.65	0.34
Observe	-	-	-	-4.08	6.33	0.52
Perform	-	-	-	-4.39	7.62	0.57
Suggestions	-	-	-	-11.18	8.07	0.17
Monitor	-	-	-	-5.82	6.84	0.40
Teach Problems	-	-	-	-16.10	9.00	0.08
Update	-	-	-	-2.33	11.80	0.84
Class Activities	-	-	-	-4.51	6.49	0.49
Exam Results	-	-	-	-7.89	7.73	0.31
Curriculum	-	-	-	19.27	10.38	0.07
Class Problems	-	-	-	n/v	n/v	n/v
Behavior	-	-	-	19.82	9.59	**0.04**
Take Over Lessons	-	-	-	16.18	7.68	**0.04**
Residual Variance						
Within Schools		0.12			0.14	
Between Schools		0.14			0.64	
Total Residual		0.26			0.78	

Note: n/v = not computable due to lack of variability

Table 4.3.30. *Indonesia (Models 1 and 2)*

Indonesia	**Model 1**			**Model 2**		
	Reading performance			Reading performance		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	417.40	4.15	≤0.001	423.56	28.32	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-28.77	1.61	**≤0.001**	-28.78	1.61	**≤0.001**
Language γ_{20}	5.29	2.41	**0.03**	4.92	2.36	**0.04**
Immigrant γ_{30}	-36.76	12.08	**0.00**	-39.62	12.62	**0.00**
SES γ_{40}	3.81	1.20	**0.01**	3.70	1.21	**0.01**
Level 2: Diversity Factor						
Location γ_{01}	-30.56	7.77	**≤0.001**	-26.21	8.00	**0.00**
School-Leadership Priorities						
PD	-	-	-	14.54	10.35	0.16
School Goals	-	-	-	-11.75	26.52	0.66
Observe	-	-	-	-6.11	10.57	0.56
Perform	-	-	-	13.55	10.57	0.20
Suggestions	-	-	-	-6.56	20.11	0.75
Monitor	-	-	-	-0.54	8.70	0.95
Teach Problems	-	-	-	-5.61	12.13	0.64
Update	-	-	-	4.79	14.96	0.75
Class Activities	-	-	-	13.26	14.67	0.37
Exam Results	-	-	-	-8.23	11.46	0.47
Curriculum	-	-	-	-8.31	13.56	0.54
Class Problems	-	-	-	9.70	10.08	0.34
Behavior	-	-	-	-5.06	15.85	0.75
Take Over Lessons	-	-	-	-17.78	7.36	**0.02**
Residual Variance						
Within Schools		0.08			0.09	
Between Schools		0.21			0.23	
Total Residual		0.29			0.32	

Table 4.3.31. *Ireland (Models 1 and 2)*

Ireland	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	514.96	4.30	≤0.001	557.68	28.68	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-33.92	4.40	**≤0.001**	-34.36	4.33	**≤0.001**
Language γ_{20}	-37.15	9.67	**≤0.001**	-37.27	8.93	**≤0.001**
Immigrant γ_{30}	1.39	4.50	0.76	3.65	4.44	0.41
SES γ_{40}	30.22	1.88	**≤0.001**	30.29	1.87	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-17.72	11.05	0.11	-15.12	9.08	0.10
School-Leadership Priorities						
PD	-	-	-	-1.23	17.14	0.94
School Goals	-	-	-	-16.89	12.35	0.17
Observe	-	-	-	7.43	10.28	0.47
Perform	-	-	-	0.05	8.36	1.00
Suggestions	-	-	-	18.07	7.41	**0.02**
Monitor	-	-	-	-1.49	7.36	0.84
Teach Problems	-	-	-	-8.40	9.97	0.40
Update	-	-	-	-14.08	9.96	0.16
Class Activities	-	-	-	5.17	10.05	0.61
Exam Results	-	-	-	-7.81	8.90	0.38
Curriculum	-	-	-	9.65	11.73	0.41
Class Problems	-	-	-	-17.15	13.86	0.22
Behavior	-	-	-	5.52	20.58	0.79
Take Over Lessons	-	-	-	-20.00	7.87	**0.01**
Residual Variance						
Within Schools	0.09			0.10		
Between Schools	0.40			0.57		
Total Residual	0.49			0.67		

Table 4.3.32. *Israel (Models 1 and 2)*

Israel	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	482.51	6.07	≤0.001	562.69	35.26	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-32.59	3.09	**≤0.001**	-33.12	3.24	**≤0.001**
Language γ_{20}	8.56	5.72	0.14	9.94	5.54	0.07
Immigrant γ_{30}	-19.75	5.81	**≤0.001**	-19.24	5.70	**≤0.001**
SES γ_{40}	18.94	1.96	**≤0.001**	20.78	1.91	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	5.93	20.59	0.77	9.82	17.19	0.57
School-Leadership Priorities						
PD	-	-	-	18.07	16.69	0.28
School Goals	-	-	-	-55.51	21.79	**0.02**
Observe	-	-	-	-41.66	11.71	**≤0.001**
Perform	-	-	-	-4.07	15.04	0.79
Suggestions	-	-	-	-11.33	15.83	0.48
Monitor	-	-	-	6.18	10.58	0.56
Teach Problems	-	-	-	-20.06	16.61	0.23
Update	-	-	-	6.25	16.62	0.71
Class Activities	-	-	-	-1.99	11.69	0.87
Exam Results	-	-	-	-1.91	15.68	0.90
Curriculum	-	-	-	38.96	14.07	**0.01**
Class Problems	-	-	-	-31.95	15.27	**0.04**
Behavior	-	-	-	-2.59	24.10	0.92
Take Over Lessons	-	-	-	-8.64	11.97	0.47
Residual Variance						
Within Schools		0.05			0.10	
Between Schools		0.18			0.41	
Total Residual		0.23			0.51	

Table 4.3.33. *Italy (Models 1 and 2)*

Italy	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	488.20	3.68	≤0.001	435.14	51.59	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-26.05	1.40	**≤0.001**	-28.33	1.43	**≤0.001**
Language γ_{20}	-4.31	1.87	**0.02**	-5.17	1.88	**0.01**
Immigrant γ_{30}	-35.30	3.02	**≤0.001**	-35.19	3.01	**≤0.001**
SES γ_{40}	6.93	0.69	**≤0.001**	7.03	0.70	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-41.06	11.96	**≤0.001**	-47.40	12.61	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	-24.53	14.84	0.10
School Goals	-	-	-	18.73	18.55	0.31
Observe	-	-	-	-21.89	7.03	**0.00**
Perform	-	-	-	-9.91	9.06	0.27
Suggestions	-	-	-	5.02	8.00	0.53
Monitor	-	-	-	-3.76	9.18	0.68
Teach Problems	-	-	-	-3.88	14.24	0.79
Update	-	-	-	-7.86	20.89	0.71
Class Activities	-	-	-	8.08	10.11	0.42
Exam Results	-	-	-	-6.04	7.40	0.41
Curriculum	-	-	-	19.75	12.03	0.10
Class Problems	-	-	-	56.37	34.02	0.10
Behavior	-	-	-	14.35	32.43	0.66
Take Over Lessons	-	-	-	-4.30	8.43	0.61
Residual Variance						
Within Schools	0.05			0.07		
Between Schools	0.19			0.33		
Total Residual	0.24			0.40		

Table 4.3.34. *Japan (Models 1 and 2)*

Japan	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	531.20	5.22	≤0.001	517.46	4.57	≤0.01
Level 1: Diversity Factors						
Gender γ_{10}	-27.34	2.43	**≤0.001**	-30.43	3.61	**≤0.001**
Language γ_{20}	-62.52	25.41	**0.01**	-58.89	25.54	**0.02**
Immigrant γ_{30}	-7.67	16.76	0.65	-9.61	16.56	0.56
SES γ_{40}	5.66	1.69	**≤0.001**	8.56	3.52	**0.05**
Level 2: Diversity Factor						
Location γ_{01}	n/a	n/a	n/a	n/a	n/a	n/a
School-Leadership Priorities						
PD	-	-	-	-4.46	14.80	0.76
School Goals	-	-	-	9.98	14.84	0.50
Observe	-	-	-	-19.33	12.82	0.13
Perform	-	-	-	19.76	10.78	0.07
Suggestions	-	-	-	5.36	11.94	0.65
Monitor	-	-	-	10.23	10.85	0.35
Teach Problems	-	-	-	-28.01	10.23	**0.01**
Update	-	-	-	-17.08	10.67	0.11
Class Activities	-	-	-	17.37	12.53	0.17
Exam Results	-	-	-	36.41	10.46	**≤0.001**
Curriculum	-	-	-	-15.54	11.33	0.17
Class Problems	-	-	-	38.78	11.72	**0.00**
Behavior	-	-	-	-51.20	11.54	**≤0.001**
Take Over Lessons	-	-	-	-2.40	12.48	0.85
Residual Variance						
Within Schools		0.03			0.01	
Between Schools		0.07			0.71	
Total Residual		0.10			0.72	

Table 4.3.35. *Jordan (Models 1 and 2)*

Jordan	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	434.23	4.03	≤0.001	333.90	35.82	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-49.82	6.13	**≤0.001**	-45.53	5.71	**≤0.001**
Language γ_{20}	-22.16	7.12	**0.002**	-21.54	7.25	0.00
Immigrant γ_{30}	-7.05	5.57	0.21	-6.41	5.55	0.25
SES γ_{40}	17.63	1.39	**≤0.001**	17.60	1.41	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-43.82	12.48	**≤0.001**	-41.55	11.37	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	11.67	5.22	**0.04**
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	n/v	n/v	n/v
Perform	-	-	-	57.31	5.97	**≤0.001**
Suggestions	-	-	-	2.46	12.24	0.20
Monitor	-	-	-	-0.59	14.34	0.97
Teach Problems	-	-	-	17.68	13.62	0.20
Update	-	-	-	n/v	n/v	n/v
Class Activities	-	-	-	-88.73	26.44	**≤0.001**
Exam Results	-	-	-	3.05	10.42	0.77
Curriculum	-	-	-	14.60	10.39	0.16
Class Problems	-	-	-	n/v	n/v	n/v
Behavior	-	-	-	90.55	17.19	**≤0.001**
Take Over Lessons	-	-	-	-6.21	11.96	0.60
Residual Variance						
Within Schools	0.05			0.05		
Between Schools	0.46			0.60		
Total Residual	0.51			0.65		

Note: n/v = not computable due to lack of variability

Table 4.3.36. *Kazakhstan (Models 1 and 2)*

Kazakhstan	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	419.35	5.50	≤0.001	434.15	49.95	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-39.55	2.30	**≤0.001**	-39.53	2.27	**≤0.001**
Language γ_{20}	-2.71	3.92	0.49	-0.56	4.12	0.89
Immigrant γ_{30}	-8.98	5.32	0.09	-7.84	5.77	0.18
SES γ_{40}	20.69	1.83	**≤0.001**	20.98	1.90	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-16.48	7.74	**0.04**	-14.04	7.55	0.07
School-Leadership Priorities						
PD	-	-	-	-41.30	19.71	**0.04**
School Goals	-	-	-	-4.94	26.70	0.85
Observe	-	-	-	-35.20	17.27	**0.04**
Perform	-	-	-	24.22	10.32	**0.02**
Suggestions	-	-	-	-28.45	20.72	0.17
Monitor	-	-	-	39.42	11.64	**≤0.001**
Teach Problems	-	-	-	0.74	10.05	0.94
Update	-	-	-	40.75	18.14	**0.03**
Class Activities	-	-	-	-2.73	23.83	0.91
Exam Results	-	-	-	-14.47	7.77	0.06
Curriculum	-	-	-	1.57	11.10	0.89
Class Problems	-	-	-	-2.68	11.89	0.82
Behavior	-	-	-	-0.14	15.79	0.99
Take Over Lessons	-	-	-	8.30	10.76	0.44
Residual Variance						
Within Schools	0.11			0.14		
Between Schools	0.22			0.33		
Total Residual	0.33			0.47		

Table 4.3.37. *Korea (Models 1 and 2)*

Korea	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	552.43	3.63	≤0.001	561.05	8.39	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-32.16	3.42	**≤0.001**	-32.48	2.62	**≤0.001**
Language γ_{20}	-50.77	28.52	0.08	-50.63	36.03	0.16
Immigrant γ_{30}	0.25	17.73	0.99	0.21	18.41	0.99
SES γ_{40}	14.13	1.44	**≤0.001**	-50.63	36.03	0.16
Level 2: Diversity Factor						
Location γ_{01}	70.23	13.97	**≤0.001**	62.09	12.32	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	9.45	12.51	0.45
School Goals	-	-	-	-1.56	12.20	0.90
Observe	-	-	-	-4.12	8.26	0.62
Perform	-	-	-	-1.70	9.34	0.86
Suggestions	-	-	-	-16.16	9.75	0.10
Monitor	-	-	-	19.98	9.53	**0.04**
Teach Problems	-	-	-	-7.92	8.52	0.36
Update	-	-	-	-1.91	7.89	0.81
Class Activities	-	-	-	2.07	9.21	0.82
Exam Results	-	-	-	5.35	9.67	0.58
Curriculum	-	-	-	2.63	7.96	0.74
Class Problems	-	-	-	-10.15	11.04	0.36
Behavior	-	-	-	-2.34	8.40	0.78
Take Over Lessons	-	-	-	-2.79	15.47	0.86
Residual Variance						
Within Schools		0.05			0.05	
Between Schools		0.28			0.51	
Total Residual		0.33			0.56	

Table 4.3.38. *Kyrgyzstan (Models 1 and 2)*

Kyrgyzstan	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	364.27	7.31	≤0.001	326.45	35.94	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-50.11	2.59	**≤0.001**	-49.58	2.61	**≤0.001**
Language γ_{20}	5.39	4.32	0.21	7.05	4.33	0.11
Immigrant γ_{30}	-1.17	8.61	0.89	0.59	8.54	0.95
SES γ_{40}	17.71	1.53	**≤0.001**	17.69	1.53	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-50.29	8.19	**≤0.001**	-43.07	7.58	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	21.20	9.95	**0.04**
School Goals	-	-	-	1.41	11.57	0.90
Observe	-	-	-	-2.81	21.36	0.90
Perform	-	-	-	0.35	11.64	0.98
Suggestions	-	-	-	-7.91	14.17	0.58
Monitor	-	-	-	29.78	23.39	0.21
Teach Problems	-	-	-	29.37	13.76	**0.03**
Update	-	-	-	3.71	24.84	0.88
Class Activities	-	-	-	-37.98	15.04	**0.01**
Exam Results	-	-	-	-10.03	8.67	0.25
Curriculum	-	-	-	19.02	10.27	0.07
Class Problems	-	-	-	-5.11	9.88	0.61
Behavior	-	-	-	-10.69	11.61	0.36
Take Over Lessons	-	-	-	16.82	7.93	**0.04**
Residual Variance						
Within Schools	0.13			0.15		
Between Schools	0.41			0.54		
Total Residual	0.54			0.69		

Table 4.3.39. *Latvia (Models 1 and 2)*

Latvia	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	511.09	4.04	≤0.001	514.47	21.06	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-45.50	2.51	**≤0.001**	-46.16	2.55	**≤0.001**
Language γ_{20}	-5.62	7.60	0.46	-4.10	8.51	0.63
Immigrant γ_{30}	-0.66	8.66	0.94	-0.17	8.67	0.98
SES γ_{40}	19.95	1.89	**≤0.001**	20.77	2.05	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-18.10	6.42	**0.01**	-13.88	5.56	**0.01**
School-Leadership Priorities						
PD	-	-	-	-5.26	18.45	0.78
School Goals	-	-	-	-23.57	14.88	0.12
Observe	-	-	-	-8.59	7.45	0.25
Perform	-	-	-	31.04	16.48	0.06
Suggestions	-	-	-	20.70	7.61	**0.01**
Monitor	-	-	-	-9.75	8.34	0.24
Teach Problems	-	-	-	-0.76	8.72	0.93
Update	-	-	-	-5.24	11.08	0.64
Class Activities	-	-	-	-9.70	8.60	0.26
Exam Results	-	-	-	-4.25	7.08	0.55
Curriculum	-	-	-	-5.15	7.41	0.49
Class Problems	-	-	-	3.16	7.62	0.68
Behavior	-	-	-	13.52	7.78	0.08
Take Over Lessons	-	-	-	2.49	5.97	0.68
Residual Variance						
Within Schools	0.13			0.16		
Between Schools	0.44			0.68		
Total Residual	0.57			0.86		

Table 4.3.40. *Liechtenstein (Models 1 and 2)*

Liechtenstein	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	512.29	15.38	≤0.001	506.68	19.52	0.00
Level 1: Diversity Factors						
Gender γ_{10}	-21.79	5.88	**≤0.001**	-21.70	7.20	**0.01**
Language γ_{20}	-31.44	8.77	**≤0.001**	-32.06	11.30	**0.02**
Immigrant γ_{30}	0.59	6.48	0.93	2.72	8.48	0.75
SES γ_{40}	1.42	3.62	0.70	1.37	4.75	0.78
Level 2: Diversity Factor						
Location γ_{01}	-40.62	38.84	0.32	86.97	37.08	0.14
School-Leadership Priorities						
PD	-	-	-	180.65	38.99	**0.04**
School Goals	-	-	-	-52.23	25.98	0.18
Observe	-	-	-	283.86	86.12	0.08
Perform	-	-	-	82.28	43.37	0.20
Suggestions	-	-	-	-226.85	73.01	0.09
Monitor	-	-	-	17.38	28.16	0.60
Teach Problems	-	-	-	-99.64	29.68	0.08
Update	-	-	-	-56.46	32.46	0.22
Class Activities	-	-	-	*	*	*
Exam Results	-	-	-	*	*	*
Curriculum	-	-	-	*	*	*
Class Problems	-	-	-	*	*	*
Behavior	-	-	-	*	*	*
Take Over lessons	-	-	-	*	*	*
Residual Variance						
Within Schools		0.07			0.07	
Between Schools		0.16			0.16	
Total Residual		0.23			0.23	

**Insufficient DF for analysis*

Table 4.3.41. *Lithuania (Models 1 and 2)*

Lithuania	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	497.40	4.01	≤0.001	516.18	21.22	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-52.71	2.50	**≤0.001**	-53.08	2.49	**≤0.001**
Language γ_{20}	-12.27	6.57	0.06	-11.28	6.22	0.07
Immigrant γ_{30}	-9.35	18.82	0.62	-8.23	18.43	0.66
SES γ_{40}	20.69	1.42	**≤0.001**	20.79	1.41	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-20.50	5.72	**≤0.001**	-19.11	5.78	**0.00**
School-Leadership Priorities						
PD	-	-	-	4.11	16.88	0.81
School Goals	-	-	-	-28.43	23.76	0.23
Observe	-	-	-	-17.11	5.68	**0.00**
Perform	-	-	-	-24.09	11.09	**0.03**
Suggestions	-	-	-	1.75	7.45	0.82
Monitor	-	-	-	8.90	6.07	0.14
Teach Problems	-	-	-	-3.85	6.95	0.58
Update	-	-	-	-5.02	9.39	0.59
Class Activities	-	-	-	0.02	6.35	1.00
Exam Results	-	-	-	1.62	6.75	0.81
Curriculum	-	-	-	13.41	8.88	0.13
Class Problems	-	-	-	22.99	9.87	**0.02**
Behavior	-	-	-	1.73	8.60	0.84
Take Over Lessons	-	-	-	-2.59	8.08	0.75
Residual Variance						
Within Schools	0.17			0.19		
Between Schools	0.42			0.53		
Total Residual	0.59			0.72		

Table 4.3.42. *Luxembourg (Models 1 and 2)*

Luxembourg	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	461.83	8.75	≤0.001	387.67	30.25	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-35.58	2.58	**≤0.001**	-34.98	3.56	**≤0.001**
Language γ_{20}	32.32	3.17	**≤0.001**	30.25	3.93	**≤0.001**
Immigrant γ_{30}	-12.44	4.03	**0.00**	-10.28	4.32	**0.02**
SES γ_{40}	20.83	1.28	**≤0.001**	18.58	2.04	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	42.11	51.89	0.42	68.05	46.20	0.15
School-Leadership Priorities						
PD	-	-	-	-5.58	21.01	0.79
School Goals	-	-	-	36.43	23.48	0.13
Observe	-	-	-	-14.83	16.22	0.37
Perform	-	-	-	49.92	20.47	**0.02**
Suggestions	-	-	-	-21.08	15.16	0.18
Monitor	-	-	-	21.35	19.95	0.30
Teach Problems	-	-	-	8.81	37.85	0.82
Update	-	-	-	-28.64	19.24	0.15
Class Activities	-	-	-	27.41	18.88	0.16
Exam Results	-	-	-	-5.25	19.65	0.79
Curriculum	-	-	-	5.42	20.17	0.79
Class Problems	-	-	-	32.14	20.48	0.13
Behavior	-	-	-	-5.58	21.01	0.79
Take Over Lessons	-	-	-	36.43	23.48	0.13
Residual Variance						
Within Schools		0.12			0.15	
Between Schools		0.33			0.22	
Total Residual		0.45			0.37	

Table 4.3.43. *Macao-China (Models 1 and 2)*

Macao-China	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	496.87	6.51	≤0.001	439.98	44.53	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-21.78	2.12	**≤0.001**	-22.54	2.07	**≤0.001**
Language γ_{20}	-47.37	7.88	**≤0.001**	-38.44	6.39	**≤0.001**
Immigrant γ_{30}	3.02	2.50	0.23	2.77	2.66	0.30
SES γ_{40}	6.60	1.66	**≤0.001**	6.71	1.66	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	n/a	n/a	n/a	n/a	n/a	n/a
School-Leadership Priorities						
PD	-	-	-	n/v	n/v	n/v
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	28.61	17.69	0.12
Perform	-	-	-	-19.44	10.17	0.07
Suggestions	-	-	-	-23.26	20.11	0.26
Monitor	-	-	-	-18.65	11.06	0.10
Teach Problems	-	-	-	52.11	13.30	**≤0.001**
Update	-	-	-	16.09	12.26	0.20
Class Activities	-	-	-	-45.47	16.10	**0.01**
Exam Results	-	-	-	2.45	10.45	0.82
Curriculum	-	-	-	23.21	18.78	0.23
Class Problems	-	-	-	-1.53	20.54	0.94
Behavior	-	-	-	55.60	17.34	**0.00**
Take Over Lessons	-	-	-	-26.81	10.97	**0.02**
Residual Variance						
Within Schools		0.04			0.05	
Between Schools		0.19			0.50	
Total Residual		0.23			0.55	

Note: n/v = not computable due to lack of variability

Table 4.3.44. *Mexico (Models 1 and 2)*

Mexico	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	439.84	2.63	≤0.001	431.12	14.17	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-18.62	1.11	**≤0.001**	-19.15	1.13	**≤0.001**
Language γ_{20}	-17.98	4.67	**≤0.001**	-23.18	4.86	**≤0.001**
Immigrant γ_{30}	-22.52	4.48	**≤0.001**	-20.84	4.62	**≤0.001**
SES γ_{40}	6.52	0.54	**≤0.001**	6.37	0.57	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-54.66	6.44	**≤0.001**	-48.19	5.80	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	28.14	10.21	**0.01**
School Goals	-	-	-	-24.02	11.52	**0.04**
Observe	-	-	-	7.90	5.79	0.17
Perform	-	-	-	-7.67	13.59	0.57
Suggestions	-	-	-	-2.42	8.14	0.77
Monitor	-	-	-	-0.41	6.72	0.95
Teach Problems	-	-	-	-13.94	8.61	0.11
Update	-	-	-	14.69	11.02	0.18
Class Activities	-	-	-	-13.84	9.40	0.14
Exam Results	-	-	-	-10.94	5.10	**0.03**
Curriculum	-	-	-	3.19	8.81	0.72
Class Problems	-	-	-	26.46	8.48	**0.00**
Behavior	-	-	-	5.97	10.72	0.58
Take Over Lessons	-	-	-	-10.34	1.66	**≤0.001**
Residual Variance						
Within Schools		0.03			0.05	
Between Schools		0.42			0.39	
Total Residual		0.45			0.44	

Table 4.3.45. *Montenegro (Models 1 and 2)*

Montenegro	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	420.16	9.98	≤0.001	554.41	29.89	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-40.60	3.70	**≤0.001**	-41.34	3.77	**≤0.001**
Language γ_{20}	-11.62	11.87	0.33	-16.94	13.01	0.20
Immigrant γ_{30}	4.63	3.81	0.23	5.05	4.24	0.24
SES γ_{40}	12.85	1.38	**≤0.001**	12.96	1.37	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-54.92	29.54	0.07	-37.66	25.19	0.14
School-Leadership Priorities						
PD	-	-	-	18.72	14.99	0.22
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	-16.26	15.95	0.31
Perform	-	-	-	-49.43	15.19	**0.00**
Suggestions	-	-	-	8.65	22.09	0.70
Monitor	-	-	-	n/v	n/v	n/v
Teach Problems	-	-	-	-7.28	16.47	0.66
Update	-	-	-	n/v	n/v	n/v
Class Activities	-	-	-	-23.13	31.20	0.46
Exam Results	-	-	-	10.97	15.38	0.48
Curriculum	-	-	-	n/v	n/v	n/v
Class Problems	-	-	-	n/v	n/v	n/v
Behavior	-	-	-	-70.87	16.03	**≤0.001**
Take Over Lessons	-	-	-	-34.58	16.22	**0.04**
Residual Variance						
Within Schools		0.08			0.09	
Between Schools		0.36			0.53	
Total Residual		0.44			0.62	

Note: n/v = not computable due to lack of variability

Table 4.3.46. *Netherlands (Models 1 and 2)*

Netherlands	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	516.62	5.91	≤0.001	505.64	29.47	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-17.13	1.84	**≤0.001**	-17.00	1.82	**≤0.001**
Language γ_{20}	-13.06	5.86	**0.03**	-13.69	6.13	**0.03**
Immigrant γ_{30}	-9.48	5.23	0.07	-9.48	5.18	0.07
SES γ_{40}	6.98	1.36	**≤0.001**	6.93	1.37	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-20.77	39.06	0.60	37.97	39.94	0.34
School-Leadership Priorities						
PD	-	-	-	0.10	22.54	1.00
School Goals	-	-	-	-2.80	27.21	0.92
Observe	-	-	-	2.44	11.72	0.84
Perform	-	-	-	11.55	13.74	0.40
Suggestions	-	-	-	16.20	12.04	0.18
Monitor	-	-	-	-5.93	10.87	0.59
Teach Problems	-	-	-	2.75	14.91	0.85
Update	-	-	-	-31.85	15.91	**0.05**
Class Activities	-	-	-	6.59	16.43	0.69
Exam Results	-	-	-	30.15	13.95	**0.03**
Curriculum	-	-	-	14.12	15.66	0.37
Class Problems	-	-	-	-9.88	16.56	0.55
Behavior	-	-	-	-5.63	15.31	0.71
Take Over Lessons	-	-	-	-45.68	14.81	**0.00**
Residual Variance						
Within Schools	0.04			0.05		
Between Schools	0.09			0.24		
Total Residual	0.13			0.29		

Table 4.3.47. *New Zealand (Models 1 and 2)*

New Zealand	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	550.85	2.62	≤0.001	594.27	22.75	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-48.00	3.02	**≤0.001**	-47.99	3.03	**≤0.001**
Language γ_{20}	-45.61	4.78	**≤0.001**	-46.71	4.76	**≤0.001**
Immigrant γ_{30}	7.23	3.60	**0.05**	7.44	3.59	**0.04**
SES γ_{40}	39.90	1.94	**≤0.00**	40.35	1.86	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-19.61	9.89	**0.05**	-14.33	10.18	0.16
School-Leadership Priorities						
PD	-	-	-	-51.09	9.66	**≤0.001**
School Goals	-	-	-	32.05	16.82	0.06
Observe	-	-	-	-7.86	4.99	0.12
Perform	-	-	-	-27.34	14.84	0.07
Suggestions	-	-	-	9.80	5.14	0.06
Monitor	-	-	-	-8.98	5.29	0.09
Teach Problems	-	-	-	-11.54	7.71	0.14
Update	-	-	-	2.19	8.86	0.81
Class Activities	-	-	-	-0.01	5.79	1.00
Exam Results	-	-	-	5.23	7.18	0.47
Curriculum	-	-	-	-11.05	12.44	0.38
Class Problems	-	-	-	15.84	7.12	**0.03**
Behavior	-	-	-	4.87	8.83	0.58
Take Over Lessons	-	-	-	0.00	5.79	1.00
Residual Variance						
Within Schools		0.15			0.16	
Between Schools		0.62			0.86	
Total Residual		0.77			1.02	

Table 4.3.48. *Norway (Models 1 and 2)*

Norway	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	533.52	2.87	≤0.001	540.85	14.18	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-48.42	2.62	**≤0.001**	-48.39	2.62	**≤0.001**
Language γ_{20}	-38.54	5.75	**≤0.001**	-38.33	5.63	**≤0.001**
Immigrant γ_{30}	-11.57	6.50	0.08	-11.93	6.44	0.07
SES γ_{40}	31.97	2.00	**≤0.001**	32.28	2.00	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-10.05	6.26	0.11	-11.04	5.82	0.06
School-Leadership Priorities						
PD	-	-	-	13.12	7.27	0.07
School Goals	-	-	-	-10.94	9.22	0.24
Observe	-	-	-	-3.68	5.27	0.49
Perform	-	-	-	10.22	5.01	**0.04**
Suggestions	-	-	-	-7.23	4.76	0.13
Monitor	-	-	-	-1.27	4.45	0.78
Teach Problems	-	-	-	11.38	9.46	0.23
Update	-	-	-	-1.72	7.81	0.83
Class Activities	-	-	-	6.29	4.64	0.18
Exam Results	-	-	-	-9.48	4.90	0.06
Curriculum	-	-	-	4.49	5.62	0.43
Class Problems	-	-	-	-12.97	8.18	0.11
Behavior	-	-	-	-11.50	8.96	0.20
Take Over Lessons	-	-	-	9.63	5.50	0.08
Residual Variance						
Within Schools		0.16			0.18	
Between Schools		0.27			0.49	
Total Residual		0.43			0.67	

Table 4.3.49. *Panama (Models 1 and 2)*

Panama	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	378.27	9.20	≤0.001	315.16	24.63	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-17.42	4.57	**≤0.001**	-16.81	4.52	**0.00**
Language γ_{20}	-7.43	9.84	0.45	-10.90	9.42	0.25
Immigrant γ_{30}	-6.11	8.85	0.50	-6.55	8.73	0.47
SES γ_{40}	4.21	1.96	**0.03**	4.44	1.90	**0.02**
Level 2: Diversity Factor						
Location γ_{01}	-79.34	18.47	**≤0.001**	-72.51	16.42	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	-37.30	21.14	0.08
School Goals	-	-	-	52.52	21.79	**0.02**
Observe	-	-	-	-9.89	21.50	0.65
Perform	-	-	-	-0.56	24.90	0.98
Suggestions	-	-	-	40.42	30.10	0.19
Monitor	-	-	-	21.43	17.97	0.24
Teach Problems	-	-	-	19.02	22.09	0.39
Update	-	-	-	27.93	17.00	0.10
Class Activities	-	-	-	-51.54	18.51	**0.01**
Exam Results	-	-	-	-36.12	21.98	0.10
Curriculum	-	-	-	40.80	17.78	**0.03**
Class Problems	-	-	-	20.36	24.49	0.41
Behavior	-	-	-	-37.15	26.30	0.16
Take Over Lessons	-	-	-	30.85	13.26	**0.02**
Residual Variance						
Within Schools		0.02			0.05	
Between Schools		0.24			0.36	
Total Residual		0.26			0.41	

Table 4.3.50. *Peru (Models 1 and 2)*

Peru	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	381.83	5.12	≤0.001	353.94	30.64	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-11.98	2.52	**≤0.001**	-11.98	2.56	**≤0.001**
Language γ_{20}	-25.52	6.84	**≤0.001**	-27.35	5.90	**≤0.001**
Immigrant γ_{30}	-25.07	13.07	0.06	-25.99	12.49	**0.04**
SES γ_{40}	11.89	1.20	**≤0.001**	12.16	1.21	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-64.47	9.36	**≤0.001**	-57.76	8.14	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	-3.59	12.80	0.78
School Goals	-	-	-	-41.70	31.43	0.19
Observe	-	-	-	-5.54	10.00	0.58
Perform	-	-	-	8.08	11.86	0.50
Suggestions	-	-	-	26.94	14.07	0.06
Monitor	-	-	-	15.84	9.11	0.08
Teach Problems	-	-	-	-4.30	8.94	0.63
Update	-	-	-	18.52	13.25	0.16
Class Activities	-	-	-	15.00	12.52	0.23
Exam Results	-	-	-	-3.65	8.62	0.67
Curriculum	-	-	-	13.46	17.52	0.44
Class Problems	-	-	-	-0.53	10.73	0.96
Behavior	-	-	-	3.11	17.29	0.86
Take Over Lessons	-	-	-	-22.01	7.78	**0.01**
Residual Variance						
Within Schools	0.02			0.03		
Between Schools	0.45			0.55		
Total Residual	0.47			0.58		

Table 4.3.51. *Poland (Models 1 and 2)*

Poland	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	531.03	3.09	≤0.001	553.32	27.15	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-49.00	2.51	**≤0.001**	-48.97	2.52	**≤0.001**
Language γ_{20}	-52.27	15.80	**≤0.001**	-51.77	16.00	**0.00**
Immigrant γ_{30}	-6.38	23.32	0.78	-7.76	23.51	0.74
SES γ_{40}	34.57	1.61	**≤0.001**	34.44	1.60	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-10.61	4.56	**0.02**	-10.61	4.33	**0.02**
School-Leadership Priorities						
PD	-	-	-	-7.03	10.35	0.50
School Goals	-	-	-	-8.41	14.66	0.57
Observe	-	-	-	-22.98	7.79	**0.00**
Perform	-	-	-	10.87	15.30	0.48
Suggestions	-	-	-	-15.56	5.58	**0.01**
Monitor	-	-	-	-24.01	12.03	**0.05**
Teach Problems	-	-	-	2.82	6.96	0.69
Update	-	-	-	34.07	16.93	**0.05**
Class Activities	-	-	-	12.30	9.83	0.21
Exam Results	-	-	-	4.30	5.99	0.47
Curriculum	-	-	-	2.12	5.91	0.72
Class Problems	-	-	-	12.68	20.41	0.54
Behavior	-	-	-	-26.83	10.50	**0.01**
Take Over Lessons	-	-	-	1.59	4.18	0.71
Residual Variance						
Within Schools	0.18			0.18		
Between Schools	0.53			0.63		
Total Residual	0.71			0.81		

Table 4.3.52. *Portugal (Models 1 and 2)*

Portugal	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	505.48	3.31	≤0.001	456.78	30.96	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-33.94	2.08	**≤0.001**	-34.51	2.10	**≤0.001**
Language γ_{20}	-14.99	8.61	0.08	-13.09	8.60	0.13
Immigrant γ_{30}	-5.50	4.58	0.23	-6.75	4.53	0.14
SES γ_{40}	19.30	1.06	**≤0.001**	19.68	1.04	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-24.69	8.80	**0.01**	-25.88	10.24	**0.01**
School-Leadership Priorities						
PD	-	-	-	0.75	11.50	0.95
School Goals	-	-	-	32.61	14.01	**0.02**
Observe	-	-	-	-5.11	12.55	0.68
Perform	-	-	-	-15.12	8.68	0.08
Suggestions	-	-	-	0.70	6.67	0.92
Monitor	-	-	-	8.18	5.80	0.16
Teach Problems	-	-	-	18.88	11.58	0.11
Update	-	-	-	-2.32	8.06	0.77
Class Activities	-	-	-	-7.53	5.80	0.20
Exam Results	-	-	-	4.49	6.52	0.49
Curriculum	-	-	-	-7.52	11.91	0.53
Class Problems	-	-	-	32.10	26.19	0.22
Behavior	-	-	-	-10.01	14.73	0.50
Take Over Lessons	-	-	-	-13.96	13.66	0.31
Residual Variance						
Within Schools		0.10			0.12	
Between Schools		0.43			0.55	
Total Residual		0.53			0.67	

Table 4.3.53. *Qatar (Models 1 and 2)*

Qatar	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	390.27	7.46	≤0.001	551.37	50.61	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-34.85	6.61	**≤0.001**	-39.00	5.90	**≤0.001**
Language γ_{20}	-13.08	3.56	**≤0.001**	-14.25	3.51	**≤0.001**
Immigrant γ_{30}	34.17	2.93	**≤0.001**	36.23	2.71	**≤0.001**
SES γ_{40}	7.85	1.58	**≤0.001**	11.26	1.79	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-21.58	15.72	0.17	-11.63	12.83	0.37
School-Leadership Priorities						
PD	-	-	-	8.22	23.03	0.72
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	n/v	n/v	n/v
Perform	-	-	-	-123.14	38.42	**0.00**
Suggestions	-	-	-	42.90	27.03	0.12
Monitor	-	-	-	-64.09	31.58	**0.04**
Teach Problems	-	-	-	13.97	20.81	0.50
Update	-	-	-	-68.78	27.95	**0.02**
Class Activities	-	-	-	54.19	27.32	**0.05**
Exam Results	-	-	-	-10.04	14.95	0.50
Curriculum	-	-	-	21.64	15.88	0.18
Class Problems	-	-	-	92.31	32.63	**0.01**
Behavior	-	-	-	-136.22	43.27	**0.00**
Take Over Lessons	-	-	-	10.67	12.49	0.39
Residual Variance						
Within Schools	0.04			0.06		
Between Schools	0.24			0.40		
Total Residual	0.28			0.46		

Note: n/v = not computable due to lack of variability

Table 4.3.54. *Romania (Models 1 and 2)*

Romania	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	436.03	4.96	≤0.001	405.25	41.84	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-14.53	2.54	**≤0.001**	-14.79	2.61	**≤0.001**
Language γ_{20}	-13.41	7.43	0.08	-11.33	7.67	0.15
Immigrant γ_{30}	-1.03	13.38	0.94	-1.80	13.17	0.89
SES γ_{40}	11.93	1.50	**≤0.001**	12.23	1.54	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-29.36	17.73	0.10	-32.65	16.42	**0.05**
School-Leadership Priorities						
PD	-	-	-	-105.26	11.33	**≤0.001**
School Goals	-	-	-	-33.31	40.13	0.41
Observe	-	-	-	-6.77	9.95	0.50
Perform	-	-	-	104.08	21.24	**≤0.001**
Suggestions	-	-	-	-10.76	12.53	0.39
Monitor	-	-	-	-36.37	12.53	**0.00**
Teach Problems	-	-	-	4.63	20.71	0.82
Update	-	-	-	-26.38	35.26	0.46
Class Activities	-	-	-	115.92	44.15	**0.01**
Exam Results	-	-	-	-0.71	18.97	0.97
Curriculum	-	-	-	-9.52	9.78	0.33
Class Problems	-	-	-	n/v	n/v	n/v
Behavior	-	-	-	28.97	15.10	0.06
Take Over Lessons	-	-	-	5.54	10.22	0.59
Residual Variance						
Within Schools		0.17			0.19	
Between Schools		0.12			0.32	
Total Residual		0.29			0.51	

Note: n/v = not computable due to lack of variability

Table 4.3.55. *Russia (Models 1 and 2)*

Russia	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	484.83	3.72	≤0.001	559.33	45.86	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-41.50	2.27	**≤0.001**	-41.25	2.29	**≤0.001**
Language γ_{20}	-20.33	5.82	**≤0.001**	-22.54	5.73	**≤0.001**
Immigrant γ_{30}	-6.93	4.84	0.16	-6.77	4.76	0.16
SES γ_{40}	24.08	1.80	**≤0.001**	24.44	1.87	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-4.69	6.23	0.45	-4.58	6.68	0.49
School-Leadership Priorities						
PD	-	-	-	-10.77	23.32	0.65
School Goals	-	-	-	-24.29	10.55	**0.04**
Observe	-	-	-	-17.78	9.81	0.07
Perform	-	-	-	9.40	7.49	0.21
Suggestions	-	-	-	-20.29	8.69	**0.02**
Monitor	-	-	-	28.99	15.86	0.07
Teach Problems	-	-	-	-0.10	6.51	0.99
Update	-	-	-	-23.38	37.13	0.53
Class Activities	-	-	-	23.68	13.24	0.08
Exam Results	-	-	-	-1.70	5.66	0.76
Curriculum	-	-	-	-28.14	9.88	**0.01**
Class Problems	-	-	-	0.06	15.90	1.00
Behavior	-	-	-	-15.37	7.01	**0.03**
Take Over Lessons	-	-	-	-2.62	6.41	0.68
Residual Variance						
Within Schools		0.11			0.13	
Between Schools		0.21			0.45	
Total Residual		0.32			0.58	

Table 4.3.56. *Serbia (Models 1 and 2)*

Serbia	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	449.68	4.33	≤0.001	441.37	29.74	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-28.27	2.18	**≤0.001**	-29.63	2.18	**≤0.001**
Language γ_{20}	-15.70	7.59	**0.04**	-16.64	7.73	**0.03**
Immigrant γ_{30}	1.73	4.72	0.71	2.04	4.60	0.66
SES γ_{40}	10.41	1.20	**≤0.001**	10.90	1.21	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	21.91	28.72	0.45	26.35	31.54	0.41
School-Leadership Priorities						
PD	-	-	-	-5.16	23.51	0.83
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	-10.54	9.04	0.25
Perform	-	-	-	4.39	13.54	0.75
Suggestions	-	-	-	5.83	20.82	0.78
Monitor	-	-	-	3.49	10.00	0.73
Teach Problems	-	-	-	24.13	24.76	0.33
Update	-	-	-	19.83	15.77	0.21
Class Activities	-	-	-	-2.51	12.63	0.84
Exam Results	-	-	-	-35.33	14.39	**0.02**
Curriculum	-	-	-	-8.33	10.62	0.43
Class Problems	-	-	-	-3.67	30.41	0.90
Behavior	-	-	-	15.42	26.38	0.56
Take Over Lessons	-	-	-	-2.22	8.68	0.80
Residual Variance						
Within Schools	0.04			0.06		
Between Schools	0.22			0.39		
Total Residual	0.26			0.45		

Note: n/v = not computable due to lack of variability

Table 4.3.57. *Singapore (Models 1 and 2)*

Singapore	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	547.73	4.41	≤0.001	635.28	44.01	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-26.21	2.15	**≤0.001**	-25.29	2.19	**≤0.001**
Language γ_{20}	-14.06	2.75	**≤0.001**	-14.05	2.74	**≤0.001**
Immigrant γ_{30}	-10.94	3.81	**0.01**	-11.12	3.78	**0.00**
SES γ_{40}	24.31	1.89	**≤0.001**	24.00	1.91	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	n/a	n/a	n/a	n/a	n/a	n/a
School-Leadership Priorities						
PD	-	-	-	n/v	n/v	n/v
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	2.58	9.18	0.78
Perform	-	-	-	-38.20	22.33	0.09
Suggestions	-	-	-	-16.88	25.84	0.52
Monitor	-	-	-	6.33	9.11	0.49
Teach Problems	-	-	-	0.28	13.91	0.98
Update	-	-	-	6.10	12.43	0.63
Class Activities	-	-	-	-16.03	22.27	0.47
Exam Results	-	-	-	-30.26	14.41	**0.04**
Curriculum	-	-	-	33.05	23.60	0.16
Class Problems	-	-	-	31.48	22.45	0.16
Behavior	-	-	-	-65.79	16.90	**≤0.001**
Take Over Lessons	-	-	-	-12.66	12.67	0.32
Residual Variance						
Within Schools		0.08			0.10	
Between Schools		0.29			0.41	
Total Residual		0.37			0.51	

Note: n/v = not computable due to lack of variability

Table 4.3.58. *Slovak Republic (Models 1 and 2)*

Slovak Republic	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	499.50	4.58	≤0.001	545.80	26.38	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-41.14	2.67	**≤0.001**	-41.91	2.64	**≤0.001**
Language γ_{20}	-33.32	6.76	**≤0.001**	-28.02	6.79	**≤0.001**
Immigrant γ_{30}	15.66	11.01	0.16	15.24	10.93	0.17
SES γ_{40}	16.76	1.64	**≤0.001**	17.62	1.63	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-42.11	7.14	**≤0.001**	-26.89	8.02	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	-2.35	27.20	0.93
School Goals	-	-	-	8.15	16.27	0.62
Observe	-	-	-	-24.62	11.77	**0.04**
Perform	-	-	-	10.84	10.40	0.30
Suggestions	-	-	-	3.38	10.96	0.76
Monitor	-	-	-	12.46	12.51	0.32
Teach Problems	-	-	-	10.85	8.93	0.23
Update	-	-	-	7.40	21.46	0.73
Class Activities	-	-	-	-23.49	12.18	0.06
Exam Results	-	-	-	-3.52	8.73	0.69
Curriculum	-	-	-	-7.90	14.25	0.58
Class Problems	-	-	-	21.08	13.48	0.12
Behavior	-	-	-	-62.93	12.63	**≤0.001**
Take Over Lessons	-	-	-	-3.25	9.30	0.73
Residual Variance						
Within Schools		0.11			0.14	
Between Schools		0.36			0.54	
Total Residual		0.47			0.68	

Table 4.3.59. *Slovenia (Models 1 and 2)*

Slovenia	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	483.94	4.93	≤0.001	526.87	34.35	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-28.73	2.55	**≤0.001**	-31.17	2.57	**≤0.001**
Language γ_{20}	-5.16	4.96	0.30	-5.04	4.89	0.30
Immigrant γ_{30}	-20.51	7.59	**0.01**	-19.91	7.67	**0.01**
SES γ_{40}	5.92	1.10	**≤0.001**	5.86	1.13	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-29.19	15.57	0.06	-43.16	14.35	**0.00**
School-Leadership Priorities						
PD	-	-	-	-18.16	30.01	0.55
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	-28.06	13.15	**0.03**
Perform	-	-	-	15.40	10.48	0.14
Suggestions	-	-	-	23.12	11.68	**0.05**
Monitor	-	-	-	43.30	14.56	**0.00**
Teach Problems	-	-	-	-28.65	14.67	**0.05**
Update	-	-	-	-52.93	19.59	**0.01**
Class Activities	-	-	-	-6.60	14.66	0.65
Exam Results	-	-	-	5.72	9.49	0.55
Curriculum	-	-	-	-1.84	14.04	0.90
Class Problems	-	-	-	36.82	25.72	0.15
Behavior	-	-	-	-24.43	15.10	0.11
Take Over Lessons	-	-	-	-11.58	9.45	0.22
Residual Variance						
Within Schools	0.04			0.06		
Between Schools	0.19			0.38		
Total Residual	0.23			0.44		

Note: n/v = not computable due to lack of variability

Table 4.3.60. *Spain (Models 1 and 2)*

Spain	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	501.29	2.27	≤0.001	501.28	14.59	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-27.52	1.67	**≤0.001**	-27.64	1.70	**≤0.001**
Language γ_{20}	-6.04	3.27	0.07	-8.37	3.40	**0.01**
Immigrant γ_{30}	-43.50	3.20	**≤0.001**	-42.60	3.22	**≤0.001**
SES γ_{40}	21.24	0.98	**≤0.001**	21.21	0.98	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-15.18	5.25	**0.00**	-16.87	5.13	**0.00**
School-Leadership Priorities						
PD	-	-	-	2.77	5.80	0.63
School Goals	-	-	-	3.51	10.04	0.73
Observe	-	-	-	8.87	4.64	0.06
Perform	-	-	-	-4.15	5.51	0.45
Suggestions	-	-	-	5.46	4.27	0.20
Monitor	-	-	-	-1.89	4.38	0.67
Teach Problems	-	-	-	9.17	5.84	0.12
Update	-	-	-	-3.00	5.50	0.59
Class Activities	-	-	-	8.28	4.19	**0.05**
Exam Results	-	-	-	-8.71	4.33	**0.05**
Curriculum	-	-	-	10.69	8.23	0.19
Class Problems	-	-	-	-28.62	7.57	**≤0.001**
Behavior	-	-	-	6.30	9.65	0.51
Take Over Lessons	-	-	-	2.02	3.60	0.58
Residual Variance						
Within Schools	0.12			0.14		
Between Schools	0.38			0.46		
Total Residual	0.50			0.60		

Table 4.3.61. *Sweden (Models 1 and 2)*

Sweden	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	528.88	2.93	≤0.001	517.06	26.88	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-46.59	2.76	**≤0.001**	-46.04	2.73	**≤0.001**
Language γ_{20}	-31.66	5.60	**≤0.001**	-31.73	5.60	**≤0.001**
Immigrant γ_{30}	-29.03	6.83	**≤0.001**	-29.01	6.80	**≤0.001**
SES γ_{40}	35.27	1.75	**≤0.001**	35.25	1.74	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-11.14	6.39	0.08	-9.17	6.35	0.15
School-Leadership Priorities						
PD	-	-	-	2.37	6.79	0.73
School Goals	-	-	-	20.50	10.88	0.06
Observe	-	-	-	8.49	5.76	0.14
Perform	-	-	-	2.83	7.23	0.70
Suggestions	-	-	-	-5.91	5.25	0.26
Monitor	-	-	-	-1.74	6.46	0.79
Teach Problems	-	-	-	-1.76	7.26	0.81
Update	-	-	-	2.20	7.68	0.78
Class Activities	-	-	-	-2.98	5.57	0.59
Exam Results	-	-	-	-8.53	5.56	0.13
Curriculum	-	-	-	6.35	9.88	0.52
Class Problems	-	-	-	1.96	24.05	0.94
Behavior	-	-	-	-16.02	8.60	0.06
Take Over Lessons	-	-	-	3.47	7.99	0.66
Residual Variance						
Within Schools		0.16			0.18	
Between Schools		0.45			0.61	
Total Residual		0.61			0.79	

Table 4.3.62. *Switzerland (Models 1 and 2)*

Switzerland	**Model 1**			**Model 2**		
	Reading performance			Reading performance		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	518.93	3.87	≤0.001	512.11	14.78	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-30.56	2.16	**≤0.001**	-30.87	2.18	**≤0.001**
Language γ_{20}	-17.67	2.73	**≤0.001**	-17.00	2.70	**≤0.001**
Immigrant γ_{30}	-21.02	3.66	**≤0.001**	-20.45	3.62	**≤0.001**
SES γ_{40}	20.96	1.36	**≤0.001**	20.64	1.39	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-27.32	6.69	**≤0.001**	-24.25	7.55	**0.00**
School-Leadership Priorities						
PD	-	-	-	-3.25	8.66	0.71
School Goals	-	-	-	-11.91	8.18	0.15
Observe	-	-	-	8.35	6.39	0.19
Perform	-	-	-	5.55	7.14	0.44
Suggestions	-	-	-	4.92	6.48	0.45
Monitor	-	-	-	-4.47	7.35	0.54
Teach Problems	-	-	-	7.14	9.54	0.46
Update	-	-	-	0.86	8.21	0.92
Class Activities	-	-	-	-4.00	7.58	0.60
Exam Results	-	-	-	8.94	9.30	0.34
Curriculum	-	-	-	17.13	7.22	**0.02**
Class Problems	-	-	-	10.66	12.91	0.41
Behavior	-	-	-	-10.82	9.58	0.26
Take Over Lessons	-	-	-	-12.32	6.97	0.08
Residual Variance						
Within Schools	0.10			0.12		
Between Schools	0.08			0.41		
Total Residual	0.18			0.53		

Table 4.3.63. *Thailand (Models 1 and 2)*

Thailand	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	434.83	3.77	≤0.001	368.80	34.62	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-33.06	1.96	**≤0.001**	-33.04	1.97	**≤0.001**
Language γ_{20}	11.25	2.67	**≤0.001**	10.95	2.63	**≤0.001**
Immigrant γ_{30}	-11.08	32.23	0.73	-11.51	32.10	0.72
SES γ_{40}	7.92	1.02	**≤0.001**	7.69	1.05	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-32.42	5.80	**≤0.001**	-37.84	5.54	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	-22.31	20.26	0.27
School Goals	-	-	-	81.75	38.94	**0.04**
Observe	-	-	-	-24.84	9.33	**0.01**
Perform	-	-	-	33.45	40.13	0.41
Suggestions	-	-	-	-9.01	13.08	0.49
Monitor	-	-	-	6.14	22.92	0.79
Teach Problems	-	-	-	3.47	12.57	0.78
Update	-	-	-	45.82	27.86	0.10
Class Activities	-	-	-	26.36	12.30	**0.03**
Exam Results	-	-	-	-8.34	13.22	0.53
Curriculum	-	-	-	-54.03	30.26	0.08
Class Problems	-	-	-	13.97	13.16	0.29
Behavior	-	-	-	-34.35	8.89	**≤0.001**
Take Over Lessons	-	-	-	14.27	5.14	**0.01**
Residual Variance						
Within Schools	0.08			0.09		
Between Schools	0.31			0.44		
Total Residual	0.39			0.53		

Table 4.3.64. *Trinidad and Tobago (Models 1 and 2)*

Trinidad & Tobago	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	441.88	8.43	≤0.001	422.64	59.36	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-47.55	2.83	**≤0.001**	-46.20	2.82	**≤0.001**
Language γ_{20}	-36.35	9.07	**≤0.001**	-33.57	8.40	**≤0.001**
Immigrant γ_{30}	2.23	7.08	0.75	2.29	7.71	0.77
SES γ_{40}	2.45	1.68	0.15	2.60	1.69	0.13
Level 2: Diversity Factor						
Location γ_{01}	-27.00	16.57	0.11	-26.30	15.50	0.09
School-Leadership Priorities						
PD	-	-	-	4.49	34.80	0.90
School Goals	-	-	-	-62.66	52.86	0.24
Observe	-	-	-	-0.52	14.97	0.97
Perform	-	-	-	18.86	22.13	0.40
Suggestions	-	-	-	16.28	31.41	0.61
Monitor	-	-	-	-5.76	16.45	0.73
Teach Problems	-	-	-	36.68	28.80	0.21
Update	-	-	-	-59.06	26.78	**0.03**
Class Activities	-	-	-	2.71	26.65	0.92
Exam Results	-	-	-	18.78	24.43	0.44
Curriculum	-	-	-	7.60	26.54	0.78
Class Problems	-	-	-	-16.37	45.41	0.72
Behavior	-	-	-	53.26	41.24	0.20
Take Over Lessons	-	-	-	29.84	15.66	0.06
Residual Variance						
Within Schools		0.08			0.10	
Between Schools		0.10			0.25	
Total Residual		0.18			0.35	

Table 4.3.65. *Tunisia (Models 1 and 2)*

Tunisia	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	412.25	4.61	≤0.001	388.44	43.89	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-20.55	2.02	**≤0.001**	-20.75	2.02	**≤0.001**
Language γ_{20}	1.09	19.46	0.96	6.44	19.25	0.74
Immigrant γ_{30}	-21.35	11.85	0.08	-21.99	11.71	0.07
SES γ_{40}	5.34	1.14	**≤0.001**	5.22	1.14	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-34.35	16.18	**0.04**	-27.15	15.29	0.08
School-Leadership Priorities						
PD	-	-	-	-0.21	11.93	0.99
School Goals	-	-	-	15.79	21.45	0.46
Observe	-	-	-	9.74	14.71	0.51
Perform	-	-	-	18.64	18.92	0.33
Suggestions	-	-	-	2.77	21.82	0.90
Monitor	-	-	-	-8.32	10.60	0.43
Teach Problems	-	-	-	4.01	19.65	0.84
Update	-	-	-	-13.03	10.85	0.23
Class Activities	-	-	-	-15.38	9.10	0.09
Exam Results	-	-	-	-12.98	11.55	0.26
Curriculum	-	-	-	-3.61	12.94	0.78
Class Problems	-	-	-	-25.84	39.45	0.51
Behavior	-	-	-	33.08	13.95	**0.02**
Take Over Lessons	-	-	-	9.03	8.61	0.30
Residual Variance						
Within Schools	0.03			0.04		
Between Schools	0.15			0.33		
Total Residual	0.18			0.37		

Table 4.3.66. *Turkey (Models 1 and 2)*

Turkey	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	474.56	5.26	≤0.001	467.78	34.02	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-31.04	1.78	**≤0.001**	-31.39	1.76	**≤0.001**
Language γ_{20}	-6.20	8.20	0.45	-6.04	8.34	0.47
Immigrant γ_{30}	-10.63	7.61	0.16	-10.90	7.57	0.15
SES γ_{40}	9.70	0.91	**≤0.001**	9.98	0.92	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-99.67	12.72	**≤0.001**	-96.83	13.67	**≤0.001**
School-Leadership Priorities						
PD	-	-	-	-17.00	9.09	0.06
School Goals	-	-	-	7.47	13.78	0.59
Observe	-	-	-	-5.85	11.68	0.62
Perform	-	-	-	1.24	14.18	0.93
Suggestions	-	-	-	-9.25	11.19	0.41
Monitor	-	-	-	4.61	10.62	0.67
Teach Problems	-	-	-	-0.71	10.38	0.95
Update	-	-	-	-3.53	11.74	0.76
Class Activities	-	-	-	-5.96	11.30	0.60
Exam Results	-	-	-	15.83	11.51	0.17
Curriculum	-	-	-	29.28	12.56	**0.02**
Class Problems	-	-	-	-57.89	26.23	**0.03**
Behavior	-	-	-	50.08	23.32	**0.03**
Take Over Lessons	-	-	-	-5.94	10.75	0.58
Residual Variance						
Within Schools	0.08			0.08		
Between Schools	0.43			0.48		
Total Residual	0.51			0.56		

Table 4.3.67. *United Arab Emirates (Models 1 and 2)*

United Arab Emirates	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	441.54	4.06	≤0.001	447.80	1.98	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-45.00	3.85	**≤0.001**	-49.30	3.49	**≤0.001**
Language γ_{20}	-4.58	3.08	0.14	-5.89	3.08	0.06
Immigrant γ_{30}	30.55	2.67	**≤0.001**	31.74	2.71	**≤0.001**
SES γ_{40}	30.55	2.67	**≤0.001**	31.74	2.71	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-1.47	7.77	0.85	1.93	7.81	0.81
School-Leadership Priorities						
PD	-	-	-	27.96	28.73	0.33
School Goals	-	-	-	12.78	60.61	0.83
Observe	-	-	-	2.58	16.69	0.88
Perform	-	-	-	-19.20	15.33	0.21
Suggestions	-	-	-	-8.98	36.33	0.81
Monitor	-	-	-	-36.22	14.65	**0.01**
Teach Problems	-	-	-	50.12	35.45	0.16
Update	-	-	-	-27.76	19.60	0.16
Class Activities	-	-	-	7.05	14.39	0.63
Exam Results	-	-	-	-7.89	9.84	0.42
Curriculum	-	-	-	30.51	10.44	**0.00**
Class Problems	-	-	-	-49.26	24.37	**0.04**
Behavior	-	-	-	12.34	29.61	0.68
Take Over Lessons	-	-	-	8.23	7.24	0.26
Residual Variance						
Within Schools		0.08			0.10	
Between Schools		0.10			0.25	
Total Residual		0.18			0.35	

Table 4.3.68. *United Kingdom (Models 1 and 2)*

United Kingdom	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Intercept	506.82	3.08	≤0.001	470.51	21.14	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-25.03	2.91	**≤0.001**	-25.15	2.84	**≤0.001**
Language γ_{20}	-14.67	6.33	**0.02**	-14.66	6.15	**0.02**
Immigrant γ_{30}	-4.07	6.81	0.55	-2.29	6.48	0.72
SES γ_{40}	30.21	1.84	**≤0.001**	30.61	1.85	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	11.91	9.49	0.21	15.12	8.76	0.09
School-Leadership Priorities						
PD	-	-	-	-8.45	18.51	0.65
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	-1.34	9.10	0.88
Perform	-	-	-	36.25	14.68	**0.01**
Suggestions	-	-	-	-8.69	9.58	0.37
Monitor	-	-	-	5.40	8.29	0.52
Teach Problems	-	-	-	16.90	13.25	0.20
Update	-	-	-	-30.05	13.48	**0.03**
Class Activities	-	-	-	-9.01	12.57	0.47
Exam Results	-	-	-	-0.40	15.65	0.98
Curriculum	-	-	-	5.29	15.24	0.73
Class Problems	-	-	-	1.84	17.21	0.92
Behavior	-	-	-	27.13	15.82	0.09
Take Over Lessons	-	-	-	3.50	5.49	0.52
Residual Variance						
Within Schools	0.07			0.09		
Between Schools	0.40			0.52		
Total Residual	0.47			0.61		

Note: n/v = not computable due to lack of variability

Table 4.3.69. *United States (Models 1 and 2)*

United States	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	514.55	4.30	≤0.001	547.64	29.64	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	**-28.50**	**2.38**	**≤0.001**	-28.43	2.39	**≤0.001**
Language γ_{20}	-0.67	4.92	0.89	-1.56	4.95	0.75
Immigrant γ_{30}	-0.36	5.85	0.95	0.05	5.82	0.99
SES γ_{40}	**28.88**	**1.66**	**≤0.001**	28.97	1.74	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-2.27	10.32	0.83	2.54	10.35	0.81
School-Leadership Priorities						
PD	-	-	-	53.10	24.49	**0.03**
School Goals	-	-	-	n/v	n/v	n/v
Observe	-	-	-	-82.68	25.89	**0.00**
Perform	-	-	-	7.11	20.29	0.73
Suggestions	-	-	-	19.00	17.98	0.29
Monitor	-	-	-	2.27	7.56	0.77
Teach Problems	-	-	-	-13.84	18.49	0.46
Update	-	-	-	-7.87	21.37	0.71
Class Activities	-	-	-	1.20	14.23	0.93
Exam Results	-	-	-	-8.14	9.96	0.42
Curriculum	-	-	-	0.51	10.97	0.96
Class Problems	-	-	-	-0.17	23.67	0.99
Behavior	-	-	-	-9.29	19.81	0.64
Take Over Lessons	-	-	-	1.28	8.73	0.88
Residual Variance						
Within Schools		0.08			0.10	
Between Schools		0.43			0.60	
Total Residual		0.51			0.70	

Note: n/v = not computable due to lack of variability

Table 4.3.70. *Uruguay (Models 1 and 2)*

Uruguay	**Model 1**			**Model 2**		
	Reading performance			*Reading performance*		
	C. eff.	*s.e.*	*Sig.*	*C. eff.*	*s.e.*	*Sig.*
Intercept	436.03	4.35	≤0.001	428.79	46.14	≤0.001
Level 1: Diversity Factors						
Gender γ_{10}	-35.75	2.69	**≤0.001**	-36.39	2.66	**≤0.001**
Language γ_{20}	-17.86	10.07	0.08	-18.31	10.17	0.08
Immigrant γ_{30}	-1.87	8.98	0.84	-1.64	8.96	0.86
SES γ_{40}	18.01	1.22	**≤0.001**	17.77	1.19	**≤0.001**
Level 2: Diversity Factor						
Location γ_{01}	-33.72	9.69	**≤0.001**	-23.23	9.32	**0.01**
School-Leadership Priorities						
PD	-	-	-	-13.15	11.64	0.26
School Goals	-	-	-	13.66	21.91	0.53
Observe	-	-	-	-7.48	18.77	0.69
Perform	-	-	-	-2.70	13.71	0.84
Suggestions	-	-	-	10.57	11.13	0.34
Monitor	-	-	-	12.97	10.82	0.23
Teach Problems	-	-	-	21.27	16.19	0.19
Update	-	-	-	-38.03	11.72	**0.00**
Class Activities	-	-	-	-0.80	10.83	0.94
Exam Results	-	-	-	-4.33	9.05	0.63
Curriculum	-	-	-	2.94	9.73	0.76
Class Problems	-	-	-	-18.74	17.93	0.30
Behavior	-	-	-	28.03	40.30	0.49
Take Over Lessons	-	-	-	5.34	9.46	0.57
Residual Variance						
Within Schools		0.08			0.08	
Between Schools		0.39			0.49	
Total Residual		0.47			0.57	

Summary

The findings from the models 1s indicate the effect of "being diverse" on reading literacy achievement between individuals within schools in each jurisdiction. These models control for gender (males =1, females = 0), immigrant status (immigrant=1, native=0), home language (different than the PISA test=1, same as test=0), and location (rural=1, other=0). These variables are fixed effects and are uncentered because the value 0 for each predictor has a meaning (it represents female, non-immigrants, native language speakers, and non-rural students). The SES variable (derived from the ESCS index), discussed in chapter 3 has 0 centered around the grand mean so the intercepts are adjusted means for school *j*. The intercept for SES in each model 1, thus, is the expected outcome for a student in school *j* predictor $X_{ij} = \underline{X}$.

The diversity effects will be examined in detail in chapter 5 but some immediate findings merit initial recognition. The overall intercept terms γ_{00} (the average reading literacy achievement for students in each school within a jurisdiction) are similar to those reported in the unconditional models. Shanghai and Finland still have high averages, the Czech Republics are somewhat lower, and Kyrgyzstan and Peru averages are even lower. Gender is strongly and negatively related to reading literacy achievement between individuals in schools in all sixty-four jurisdictions. In particular, within-school gender effects are considerably high in Albania and Finland. In approximately one-third of the jurisdictions, being an "immigrant" is strongly and negatively related to reading literacy achievement when controlling for the other diversity indicators. The most negative effects are in Brazil and Spain. Notably, being an immigrant is positively associated with

reading literacy achievement within schools in three jurisdictions (New Zealand, UAE, and Qatar). In more than half of the jurisdictions, speaking a language other than that of the test at home is negatively related to achievement within schools. The largest negative effects are in Japan, Colombia, and Poland. Speaking a language other than that of the test at home is positively related to achievement in three jurisdictions − Luxembourg, Thailand, and Indonesia.

SES scores are statistically significantly different than 0 in all but Hong Kong, Lichtenstein, and Trinidad and Tobago. In these three systems, SES differences between individuals in schools are not statistically significantly associated with reading literacy, when controlling for the other diversity indicators. The largest SES effects, when controlling for the other diversity indicators, are in New Zealand and Sweden. Attending school in a rural location is strongly and negatively related to achievement within schools in over half of the examined jurisdictions. The association is profoundly negative in Turkey; attending school in a rural area in South Korea, on the other hand, is positively related to reading literacy achievement. For a holistic overview of these results, see Appendix II, *Results from model 1s, by jurisdiction*.

The findings from the models 2s indicate the predicted effect of the leadership priorities on the level 1 intercept $\beta_{0j.}$ While controlling for the five diversity factors examined in the model 1s, the fourteen leadership priorities were entered at level 2 as fixed effects. Each predictor was uncentered since the value 0 has meaning (0 = low priority). Also the slopes distinguish these models from the previous ones. The slope for each diversity factor was now allowed to vary randomly to see if there is variability in

slopes between schools within each jurisdiction. As expected, the slopes were statistically significantly different from 0 in some jurisdictions and not in others. To allow for later comparison, all five slopes were permitted to vary randomly across all final models 2s.

A brief overview of the model 2 results is presented here and each leadership predictor is examined in depth in the next subsection. In just over half of the jurisdictions, overall intercepts (γ_{00}) are higher in model 2 than they were in model 1. The largest gain emerges in Qatar, where model 2s overall intercept increased by 161, compared to model 1; the smallest gain is in Latvia, with an increase of 3. In the remaining jurisdictions (just under half), the overall intercepts in model 2 are lower than they were in model 1, ranging from a 0.01 decline in Spain to 3 points fewer in Argentina. All fourteen leadership predictors are statistically significantly associated with reading literacy achievement in at least one jurisdiction. Leadership predictor *behavior* is statistically significant at $p \leq 0.05$ in 19 jurisdictions making it the most frequent leadership characteristic to be significant across all sixty-four jurisdictions. The coefficients for this intercept are both negative and positive and range from -136.22 in Qatar to 90.55 in Japan.

The predictors *observe*, *class problems, take over lessons, performance, update skills,* and *exam results* are also statistically significant in a notable number of jurisdictions (ten to sixteen jurisdictions). The coefficients for each of these predictors also vary and include both negative and positive relationships. The coefficients for intercept γ_{04} (observe), are narrowest, ranging from -82.68 in the United States to 38.34 in

Shanghai. The span of coefficients for intercept γ_{09} (update skills), is slightly larger, from -87.65 in Bulgaria to 40.75 in Kazakhstan. The coefficients for intercept γ_{15} (take over lessons) spans from -45.68 in the Netherlands to 39.85 in Panama and the coefficient range for intercept γ_{13} (class problems) is from -84.23 in Croatia to 92.31 in Qatar. The range of coefficients for intercept γ_{05} (perform) is the widest, ranging from -123.14 in Qatar to 104.08 in Romania. Leadership predictor *teach problems* is statistically significant at $p \leq 0.05$ in the fewest jurisdictions, only 5, and its coefficients range from -38.54 in Taipei to 52.11 in Macao. For a holistic overview of these results, see Appendix II, *Results from model 2s, by jurisdiction.*

Review of the Research Questions

The research questions in this study seek to inform school leaders worldwide about the achievement patterns of diverse students and how their priorities may impact the reading literacy outcomes of students in their school. The results from question 1 provide a clearer picture of where diverse students are underachieving compared to their mainstream peers worldwide. It does this by asking:

- Which diversity indicators (gender, immigrant status, home language, socio-economic status, and geographic location) predict reading literacy achievement in PISA 2009 jurisdictions when controlling for all other diversity indicators?

The results from question 2 reveal how much time leaders devote to specific activities and how these efforts associate with students reading literacy outcomes. When an

association is positive, the achievement scores within a school are predicted to increase and when it is negative, scores are predicted to decrease. Question 2 asks:

- Which leadership priorities have an association with student reading literacy outcomes when controlling for diversity indicators at the school and student levels in PISA 2009 jurisdictions?

The results for both research questions are detailed below and indicate which systems merit further investigation in chapter 5.

Question 1: Diverse Student Achievement Worldwide

The model 1s provide the necessary information to identify the jurisdictions where average reading literacy scores for boys, immigrants, language learners, socio-economically disadvantaged, and rural students are statistically significantly different than their mainstream peers. To answer research question 1, each diversity indicator is explored individually while controlling for the others. A map accompanies these discussions to situate the results in the educational landscape; grey indicates a system with a significant gap, black illustrates no gap, and white represents non-participation.

Boys

Gender predicts reading literacy achievement in 100 percent of the jurisdictions, even after controlling for the other diversity factors. Boy's reading literacy scores are, on average, statistically significantly different than girls (see gray shaded countries in Figure 4.4.1).

Boys in all sixty-four systems −Albania, Azerbaijan, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, Shanghai, Taipei, Colombia, Croatia, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hong Kong, Hungary, Iceland, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Korea, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Macao, Mexico, Montenegro, the Netherlands, New Zealand, Norway, Panama, Peru, Poland, Portugal, Qatar, Romania, Russia, Serbia, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Thailand, Trinidad and Tobago, UAE, Tunisia, Turkey, the United Kingdom, the United States, and Uruguay − are underperforming compared to their female peers. The achievement differences between boys and girls in each jurisdiction are greater than $p \leq 0.05$.

Figure 4.4.1. Jurisdictions with statistically significant achievement differences in reading literacy performance between boys and girls on PISA 2009, while controlling for the other diversity factors

These findings suggest there are no systems that have mastered teaching and learning strategies that ensure boys perform on par with their female peers. Not even top-

performing Shanghai or consistently high-performers Finland and Canada have the complete answer on what schools need to do to ensure equal achievement of boys and girls. Such a finding is alarming, and mirrors the results reported in this study's literature review. Boys' underachievement is "an international problem" (Martino, 2008, p. 1). Unpacking specific systems further may reveal some insights into this problem. If, for example, there are unique practices within systems with the widest or narrowest gender effects, it could be a useful starting place to consider new strategies. It may also be worthwhile to inspect practices across performance levels. If gender effects are consistently narrower in one level than in the other two levels, there may be commonalities within that performance level contributing to boys' literacy development. These hypotheses will be explored in chapter 5. What is certain from these results is that gender is a universal predictor of reading literacy achievement and boys, on average, are underperforming compared to girls. If literacy skills are an essential tool for full participation in twenty-first century society, how long will boys continue underperforming before we devote more attention and resources to meeting their needs?

Immigrants

In 36 percent of the jurisdictions examined in this study, there is a statistically significant difference in reading literacy achievement between immigrant and non-immigrant students (see grey shaded countries in Figure 4.4.2), after controlling for the other diversity indicators. This includes: Argentina, Austria, Belgium, Brazil, Bulgaria, Canada, Croatia, Denmark, Finland, Germany, Indonesia, Israel, Italy, Luxembourg, Mexico, New Zealand, Qatar, Singapore, Slovenia, Spain, Sweden, Switzerland, and the

UAE. In the remaining countries (shaded black in Figure 4.4.2), after controlling for the other indicators, there is not a statistically significant gap at $p \leq 0.05$. However, it is important to remember that when controlling for other indicators, some significance can be disguised. The systems identified as non-significant here may indeed have a significant achievement gap (at $p \leq 0.05$) if the other diversity indicators are not controlled for. Question 1 only investigates this relationship with controls; further analysis is needed to explore how this association changes if these controls are removed.

Guo (2012) writes immigrants "bring their values, language, culture, religion, and educational background" when they enter a new country (p. 120). So, understanding

Figure 4.4.2. Jurisdictions with statistically significant and non-significant gaps in reading literacy achievement between immigrant and non-immigrant students when controlling for the other diversity indicators

who is entering a system is important in order to interpret these results. This information may explain the significant gaps that emerge in the results from Western Europe and in Canada, both of which, as described in the literature review have increased recent immigrant movement. Parson and Smeeding (2006) also note that country structures and

cultures can advantage or disadvantage immigrants. It is therefore important to consider the social and cultural realities within receiving countries as well. What is certain from these results is that the diversity indicator immigrant is a predictor of reading literacy achievement in twenty-three systems examined in this study. In the remaining forty-one systems, when controlling for the other diversity indicators, immigrant is not significant. If these controls were to be removed, the number of systems with a significant gap is likely to increase; using controls can bias the estimate of the causal effect of being an immigrant. A logical next step would be to remove the controls and rerun the analyses. This study does reveal that even with the controls in thirty-six percent of the systems, the effect of being an immigrant has a statistically significant association to reading literacy achievement. The effect size of 'being an immigrant' is investigated in chapter 5.

Language Learners

In 64 percent of the systems, there is a statistically significant difference in the reading literacy performance of students who speak a different language at home than the language of the PISA test and students who speak the same language at home when controlling for the other diversity indicators (see gray shaded countries in Figure 4.4.3).

Systems with a significant gap between language learners and non-language learners include: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, Shanghai, Taipei, Colombia, Denmark, Estonia, Finland, Hong Kong, Hungary, Iceland, Indonesia, Ireland, Italy, Japan, Jordan, Liechtenstein, Luxembourg, Macao, Mexico, Netherlands, New Zealand, Norway, Peru, Poland, Qatar, Russia, Serbia, Singapore, Slovak Republic, Sweden, Switzerland, Thailand, Trinidad and Tobago, and the United

Kingdom. This indicator includes a wider spectrum of subgroups (e.g. Aboriginals, ethnic minorities, et cetera) in comparison to the prior two diversity indicators that had clear, definitive boundaries by gender and birth location. The results could also signify language learners are not being supported as regularly as other diverse students. Colding, Hummelgaard and Husted (2010) suggest that educational background and parental professions may explain why some language learners perform better than others. Students' exposure to the mainstream language and culture before attending school impacts their ability to (learn in the language) at school. To analyze these results further, the subpopulations within the system will need to be identified and their backgrounds considered.

In the remaining jurisdictions, after controlling for the other diversity indicators, the difference in reading literacy achievement between the two populations is

Figure 4.4.3. Jurisdictions with statistically significant and non-significant gaps in reading literacy achievement between language learners and native speakers, when controlling for the other diversity indicators

insignificant at $p \leq 0.05$ (see black shaded countries in Figure 4.4.3). Again, non-significance does not necessarily mean there is not a significant achievement gap between the two populations of interest; by holding the other diversity indicators constant, the effect of being an immigrant on achievement is subject to a potential bias. For instance, the United States results are non-significant in this subsection but copious research documents a performance gap between Hispanic and mainstream students (Craft & Slate, 2012). These findings do not dispute this. Rather they affirm Carnoy and Rothstein's (2013) findings that "social class inequality is greater in the United States" and that "we have so many more test takers from the bottom of the social class distribution" (n.p.). It is therefore reasonable that the social stratification of immigrants is profound in the United States, so by controlling for SES (along with the other indicators), the effect of being an immigrant is distorted. The results in this study do affirm that even with the potential bias of holding all other indicators constant, the effect of being an immigrant is still significant in 64 percent of the examined jurisdictions. These findings will be probed in chapter 5.

Socio-Economically Disadvantaged

In 95 percent of the systems in this study, there is a statistically significant difference between the reading literacy scores of socio-economically disadvantaged and advantaged students. This means that for every one unit increase on the ESCS index, there is a statistically significant increase or decrease ($p \leq 0.05$) on the reading scale for learners in the following systems: Albania, Azerbaijan, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, Shanghai, Taipei, Colombia, Croatia, Czech

Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Iceland, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Korea, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Macao, Mexico, Montenegro, the Netherlands, New Zealand, Norway, Panama, Peru, Poland, Portugal, Qatar, Romania, Russia, Serbia, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Thailand, the UAE, Tunisia, Turkey, the United Kingdom, the United States, and Uruguay (see gray shaded systems in Figure 4.4.4). In all of these systems, disadvantaged students are, on average, underperforming compared to their peers. This makes lower income students the second most frequent group to underperform, after boys.

These results affirm that socio-economic status is a strong predictor of reading achievement worldwide. This finding is well supported by literature (Rothstein, 2004; Lareau, 2003). Lareau (2003) argues "the importance of eliminating poverty and

Figure 4.4.4. Jurisdictions with statistically significant and non-significant associations between social class and reading literacy performance, when controlling for the other indicators

narrowing gaps in social inequality" are not discussed enough in present society (p. 256). The results in this subsection affirm calls for greater efforts to narrow class stratification; social class is almost a universal predictor of reading literacy achievement. To ignore such an indicator would be a travesty. Drawing from the Human Development Index (HDI) and GINI index, the discussion in the following chapter around social class will seek to shape a clearer picture of the social class gap. It may be informative to compare the practices of systems with statistically narrow gaps, such as Slovenia and Japan, to the practices in the systems with the widest gap (New Zealand, in this case). There is certainly much work to be done regarding closing the reading achievement gap between students of different social classes. Allocating attention on how the literacy practices in schools can be revolutionized to meet the needs of poorer students is of the utmost importance. Until then, the reading performance of children born into poverty remains bleak, worldwide.

Rural Pupils

There is a statistically significant difference in reading scores between rural students and those in other locations in 59 percent of the jurisdictions (the six systems that did not report any rural schools as defined by the terms of this study are not included in this category) (See Figure 4.4.5).

The systems with a statistically significant difference in achievement between rural students and their non-rural peers are: Albania, Argentina, Australia, Austria, Brazil, Bulgaria, Canada, Chile, Colombia, Czech Republic, Denmark, Germany, Hungary, Indonesia, Italy, Jordan, Kazakhstan, Korea, Kyrgyzstan, Latvia, Lithuania, Mexico, New Zealand, Panama, Peru, Poland, Portugal, Slovak Republic, Spain, Switzerland, Thailand, Tunisia, Turkey, and Uruguay. After controlling for the diversity indicators, the reading achievement between rural and non-rural students in the remaining jurisdictions is not statistically significant different at $p \leq 0.05$ (see black shaded countries in Figure 4.4.5).

Figure 4.4.5. Jurisdictions with statistically significant and non-significant gaps in reading literacy achievement between rural and non-rural students, when controlling for the other indicators

While many geographically large systems have significant rural achievement gaps, as is the case for Australia, Canada, and Brazil, geographical grandness does not necessarily lead to a statistically significant gap, as visible by the results in Russia. Investigating systems both with and without a statistically significant location gap at $p \leq 0.05$ may be a useful way to learn more about rural underachievement. As noted in the

literature review, there is substantial concern about rural education in China, but since no rural participants participated in PISA 2009, these results cannot speak to this issue. The large number of significant systems in South America and among Western jurisdictions is curious. Tayyaba (2012) writes some economically disadvantaged countries funnel resources into urban centers instead of rural areas simply because the impact reaches more learners in these locations. This may be a reality in South America where, with the exception of Chile, all the participating systems have a statistically significant achievement gap. Shan-Hua, Hsuan-Fu, and Cheng-Cheng (2012) detail how teacher quality and resources limitations are issues in rural locations. This could be contributing to the paltry rural performance in some Western jurisdictions. Both hypotheses will be explored further in the following chapter.

In conclusion, the results from research question 1 reveal that gender and poverty are the diversity indicators that most frequently predict reading literacy achievement worldwide. Since the PISA dataset is designed to identify gaps that are larger than the margin of error, it is a useful tool to showcase these patterns. It does not, however, offer interpretations on its own. To further explain why gender and poverty most frequently predict reading achievement worldwide, and why language, location, and immigrant status (to varying degrees) also predict performance, when controlling for the other indicators, a deeper inspection of the practices and realities within individual systems must be explored. Chapter 5 focuses on current literature and interprets demographic shifts, local populations, policy changes, and societal realities within and across systems.

Question 2: Leadership Priorities Associated with Achievement

Controlling for the 5 diversity indicators, the results from the model 2s provide the necessary information to identify the leadership priorities that have an association with student reading literacy outcomes. The priorities associated with literacy achievement differ within jurisdictions, but all leadership variables are statistically significant in at least two systems. There are no jurisdictions where all fourteen predictors are statistically significant. This discussion will highlight the coefficients and standard errors that are statistically significant in each model 2.

The leadership priority *PD* has an association with student reading literacy outcomes when controlling for the diversity indicators in Romania, Germany, New Zealand, the United States, Taipei, Kyrgyzstan, Jordan, and Mexico. In these eight jurisdictions, there is a statistically significant association between the reading literacy scores in schools with principals who highly prioritize *ensuring professional development activities align with the teaching goals of the school* and the scores in schools with principals who do not. The relationship is negative in Romania, Germany, and New Zealand. The predicted loss is largest in Romania. The reading literacy scores of students attending Romanian schools where principals highly prioritize (reported 'frequently' or 'very often') *ensuring that the professional development activities of teachers are in accordance with the teaching goals of the school* are predicted to be 105 points lower than their Romanian peers in schools where principals report this is a low priority ('seldom,' 'never'). This may be due to Romania's new teacher training program. According to Erbănescu (2009), when Romania entered the European Union,

the country underwent considerable educational reforms, including shifting away from a "theoretical and teacher-oriented" approach to a focus "on the needs and interests of pupils" (p. 49). With this change came new teacher professional workshops and mentoring. It is possible that leaders who spent time aligning PD sessions to school goals were not sufficiently focused on helping teachers understand and implement the new instructional approaches. This is problematic since it could have resulted in some teachers feeling ill-equipped to properly implement the new approaches into their teaching and, therefore, may have had a negative impact on student performance.

On the other hand, the association between PD and student achievement is positive in Taipei, Kyrgyzstan, and Mexico, with the greatest gains occuring in Taipei. Taiwanese students attending schools where principals highly prioritize PD are predicted to score eighty-seven points higher than students attending schools where the principal reported PD as a low priority. This makes sense given the strong focus on effective professional development in Taiwan (Collinson, Kozina, Lin, Ling, Matheson, Newcombe, & Zogla, 2009; Chan, 2000; Chang, 2001). Among the professional development opportunities for teachers in Taiwan are weekly (every Wednesday) afternoon seminars and workshops. Administrators and teachers select the topics and presenters for these workshops and therefore have flexibility in how they want to use the time. Those who opt to connect the new 2004 national curriculum to the PD sessions may be having a positive impact on the teachers' understanding of programming. It is reasonable that such alignment also has had a meaningful effect on lesson preparation and presentation, ultimately impacting student achievement.

The leadership priority *school goals* has an association with students' reading literacy outcomes when controlling for the diversity indicators in nine jurisdictions. In Mexico, Russia, Greece, Portugal, Shanghai, Brazil, Panama, Israel, and Thailand there is a statistically significant association between school leaders who highly prioritize *ensuring that teachers work according to the school's educational goals* and student reading literacy achievement. In Thailand, Panama, Brazil, Portugal, and Greece, the relationship between school goals and student achievement is positive. The greatest gain appears in Thailand, where students attending schools where principals prioritize ensuring that teachers work according to the school's educational goals are predicted to score 81.75 points higher than students in schools where principals did not prioritize this activity. This finding echoes the results in literature from Thailand. Kanatabutra (2012), for example, finds that student performance increases when principals and teachers agree upon a shared vision and school goals. It is therefore reasonable that Thai principals who prioritize connecting with teachers to make sure their work aligns with the goals are viewed as supportive and are having a positive impact on teacher-principal relationships. As discussed in this study's literature review, strong communication between principals and teachers can have a positive impact on student achievement.

In Mexico, Russia, Shanghai, and Israel the association between school leaders who highly prioritize *ensuring that teachers work according to the school's educational goals* and student reading literacy achievement is negative with the greatest predicted performance loss is in Israel. Students in Israel that attend a school where the principal reported a high dedication to *school goals* are predicted to perform, on average, 55.5

points below their Israeli peers attending schools where the principal reported this activity as a low priority. This is likely a reflection of Israel's heightened sense of identity. Religious identity is foundational to all the schooling options in Israel (Amara & Mari, 2002). If school goals reflect their respected religious beliefs, it is reasonable that teachers already have a solid understanding of how to align these to their work. Principals focused on this activity, therefore, may be neglecting other aspects of leadership that are more urgently needed to impact achievement.

The leadership characteristic *observe* is significant in sixteen jurisdictions, making it the second most frequent significant predictor in this study. There is a positive association between school leaders who highly prioritize *observing instruction in classrooms* and the reading literacy achievement of students in only two systems, Shanghai and Belgium. The greatest gains are in Shanghai, where reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 38.34 points higher than scores in Shanghai schools where principals did not. This is curious given that principals in China were historically selected as secretaries by the Communist Party appointed to carry out their policies (Johnson, Møller, Jacobson, & Wong, 2008). Tan (2013) argues that beyond political engagements, however, the dual observational process within Shanghai schools may be at the center of why principal observations are well received and having a positive impact on achievement. This is described in detail in chapter 5.

In the other fourteen systems that have a statistically significant association between school leaders who highly prioritize *observing instruction in classrooms* and the

reading literacy achievement, the relationship is negative. This includes Australia, Lithuania, Italy, Poland, Slovak Republic, Thailand, Slovenia, Czech Republic, Hong Kong, Kazakhstan, Israel, Taipei, Azerbaijan, and the United States. The largest predicted loss is in the United States, where the reading literacy scores in schools with principals who highly prioritize *observing instruction in classrooms* are predicted to be 82.68 lower than scores in US schools where principals did not prioritize this activity. This makes sense since observation effectiveness is debated in United States literature. DuFour and Marzano (2009) write "observations by principals fail to evaluate teacher quality or improve teaching methods" (p. 62). If teacher quality and teaching is not improving on account of principals prioritizing observations, it is feasible that student performance is not improving from these efforts. Principals *should* be observing in classrooms, but researchers stress *how* the principals observe needs to be reassessed. This is also explored further in chapter 5.

The leadership characteristic *perform* is significant in twelve jurisdictions (Norway, Romania, Kazakhstan, United Kingdom, Croatia, Luxembourg, Qatar, Australia, Lithuania, Montenegro, Jordan, and Hong Kong). In these jurisdictions, there is a statistically significant association between school leaders who highly prioritize *using student performance results to develop the school's educational goals* and the reading literacy achievement of students in their schools. In Norway, Romania, Kazakhstan, United Kingdom, Croatia, Jordan, and Luxembourg, the relationship is positive. The greatest predicted gain is in Romania where the reading literacy scores in schools with principals who highly prioritize using performance results are predicted to be 104.08

points higher than the scores in Romanian schools with principals who do not prioritize this activity. So, while aligning PD to school goals had a negative impact, Romanian leaders who are prioritizing using student achievement scores to develop school goals are having a positive impact on student achievement. This may be a reflection of the role of assessments in Romania. Joining the EU triggered reforms and a renewed focus on internal student assessments. Assessments were "considered a key step in raising the importance and effectiveness of the internal assessment system (Bethell & Mihail, 2005, p. 84). It is therefore reasonable that principals who pay attention to student assessment scores, and use them as a driver for school goals, are having a positive impact on class performance.

In Qatar, Australia, Lithuania, Montenegro, and Hong Kong, the association between *perform* and achievement is negative. The greatest loss is in Qatar, where reading scores in schools with principals who highly prioritize using performance results are predicted to be 123.14 points lower than scores in schools where the leader reported minimal time on this activity. This is logical, since current research suggests improving instruction in classrooms needs urgent attention in Qatar (Brewer, Augustine, Zillman, Ryan, Goldman, Staz, & Constant, 2007). It is possible that principals who are focused on using scores to move the school goals are not spending sufficient time helping teachers to develop their teaching skills. This will be considered further in chapter 5.

The leadership characteristic *suggest* is significant in Ireland, Latvia, Brazil, Slovenia, Canada, Poland, and Russia. In these seven jurisdictions, the association between principals who highly prioritize *giving teachers suggestions as to how they can*

improve their teaching and the reading literacy scores in their schools was statistically significant. In Poland and Russia, the association is negative; the greatest loss is in Russia. The reading literacy scores in schools with principals in Russia who highly prioritize this activity are predicted to be 20.29 points below the scores in schools where principals did not prioritize this activity. This is likely connected to the increasing literature suggesting education in Russia is on the decline (Sokolova, 2011). As described in this study's literature review, and reported by Sokolova (2011)

> There has been a substantial increase in the number of school teachers who do not have any pedagogical training… 50 percent of Russians think that the teacher's profession does not enjoy respect; 65 percent do not recognize the authority of the teaching profession. Only 46 percent think teachers themselves like their profession. We are seeing signs of the decline in the social and public prestige of the teaching profession. (p. 81)

With declining prestige and respect, it is possible that teachers are increasingly disillusioned by their profession and therefore less receptive to feedback. At a time when teachers feel they need more support and positive response, especially given their ever-changing environments, it is possible that headmasters who prioritize discussing ways to improve are viewed negatively by the faculty. In Ireland, Latvia, Brazil, Slovenia, and Canada, the scores in schools with principals who highly prioritize *giving suggestions* have higher predicted reading literacy scores than those in schools where leaders did not prioritize this. The greatest predicted gain is in Slovenia where γ_{06} (suggest) is 23.12, meaning that school leaders who prioritize giving suggestions are predicted to have

reading literacy scores that are 23.12 higher than scores in schools where leaders do not prioritize this activity. This is reasonable given the ambitious national reforms across Slovenia aiming to increase literacy (Bregar, 2011; Šinko, 2012). As will be detailed in chapter 5, Slovenia's large-scale efforts to promote literacy have increased access and interest to literary activities across the entire country. Sentočnik and Rupar (2009) add that the National Education Institute in Slovenia has promoted distributed leadership practices which could be having a positive impact on teacher-principal relationships within schools. It is feasible that these changes are increasing teachers' eagerness to hear suggestions aiming to improve their classroom instruction.

The leadership characteristic *monitor* is significant in nine jurisdictions: Korea, Colombia, Kazakhstan, Slovenia, Qatar, Belgium, Romania, the UAE, and Poland. In each of these, there is a statistically significant association between principals who highly prioritize *monitoring student work* and the reading literacy scores of learners in their schools. The relationship is positive in South Korea, Colombia, Kazakhstan, and Slovenia. Slovenia again rises to the top for gains around this priority. The reading literacy scores in schools in Slovenia with principals who highly prioritize this activity are predicted to be 43.50 higher than the scores in schools with principals who do not prioritize this activity. Sentočnik and Rupar (2009) would likely attribute this to the success of the National Education Institute; this will be considered when Slovenia is showcased in chapter 5.

The association between principals who prioritize monitoring students work and reading literacy scores is statistically significantly negative in Qatar, Belgium, Romania,

the UAE and Poland. The greatest predicted loss is in Qatar where the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 64.09 lower than the scores in schools with principals who do not prioritize this activity. As noted earlier, the current challenges around instruction are a major obstacle in Qatar and will be magnified in chapter 5. It is possible that prioritizing monitoring student work comes at the expense of focusing on the teaching and learning in classrooms, which needs initial improvement.

The leadership characteristic *teacher problems* is significant in five jurisdictions. In Kyrgyzstan, Macao, Japan, Slovenia, and Taipei, principals who highly prioritize *taking initiative to discuss matters when a teacher has a problem in his/her classroom* had reading literacy scores that were statistically significantly different than scores in schools where principals did not highly prioritize this activity. The relationship is positive in Kyrgyzstan and Macao. The greatest predicted gain is in Macao where the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 52.11 points higher than the scores in schools with principals who do not prioritize this activity. This may be because of cultural realities in Macao. Cheung (2006) writes that "Macao people are a group of humble and conservative citizens who might see themselves as lower than other cultural groups" (p. 36). At the same time, Macanese teachers who have high self-expectations will be motivated to solve problems that arise in their classroom and may be very appreciative of principals that support them with struggles.

In Japan, Slovenia, and Taipei, leaders who highly prioritize *taking initiative to discuss matters when a teacher has a problem in his/her classroom* had reading literacy scores that were statistically significantly lower than scores in schools where principals did not highly prioritize this activity. The decline is particularly pronounced in Taipei; the reading literacy scores are predicted to be 38.54 lower than the scores in schools with principals who do not prioritize this activity. This may be due to the traditional relationship between principals and teachers in Taiwan. Chen, Chen and Chin-Chung (2009) describe the relationship between principals and teachers as being a strong hierarchical structure: the principal has the power and control in the relationship while, the teachers are seen as inferior. This structure may explain why despite principals' efforts to prioritize matters when a teacher has a problem in Taiwan, the relationship between the two populations is not conducive to empowering teachers and therefore does not improve student outcomes.

The leadership characteristic *update skill* is significant eleven jurisdictions (Poland, Hong Kong, Kazakhstan, United Kingdom, Netherlands, Uruguay, Greece, Slovenia, Trinidad and Tobago, Qatar, and Bulgaria). In each of these jurisdictions, there is a statistically significant association between principals who highly prioritize *informing teachers about possibilities for updating their knowledge and skills* and the reading literacy achievement of students in their schools. The association is positive in Poland, Hong Kong, and Kazakhstan. The greatest predicted gain is in Kazakhstan where the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 40.75 higher than the scores in schools with principals who do not

prioritize this activity. This may be due to teachers' eagerness to develop their teaching skills. UNICEF describes teacher quality as an issue in this system, suggesting the crumbling Soviet school infrastructure, poor teacher pay, and low educational financing are restricting teacher growth and student outcomes, especially in rural areas (UNICEF, 2010b). With limited resources and training within their schools, it is possible that teachers are eager and receptive to attend workshops and trainings described by their principals. If the trainings are helpful they are likely improving their teaching and instruction and thus boost student outcomes.

In the United Kingdom, Netherlands, Uruguay, Greece, Slovenia, Trinidad and Tobago, Qatar, and Bulgaria, the association between leadership priority *update skill* and achievement is negative, so the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be lower than scores in schools with principals who do not highly prioritize this activity. The largest predicted loss is in Bulgaria, where the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 87.65 lower than the scores in schools with principals who do not prioritize it. Bulgarian education has undergone sweeping reforms over the past few years as the jurisdiction adjusts its standards and structures to align more with other successful European models (Savova, 1996). As teachers learn a new curriculum and adjust to reformed educational structures, it is reasonable to assume they are saturated with changes and are unmotivated − or able − to absorb more. Principals who prioritize informing teachers on more workshops and trainings are therefore having a negative impact on student outcomes. Teachers and students in this system would benefit

more from principals who focus on other priorities that aim to build understanding and implementation of the current changes.

The leadership characteristic *class activities* is significant in Romania, Czech Republic, Albania, Spain, Panama, Macao, Kyrgyzstan, Jordan, and Azerbaijan. In these ten systems, there is a statistically significant association between principals who highly prioritize *checking to see whether classroom activities are in keeping with educational goals* and the reading literacy achievement of students in their schools. The association is positive in Romania, Czech Republic, Albania, and Spain. The greatest predicted gain is in Romania where the reading literacy scores of students in schools with principals who highly prioritize this activity are predicted to be 115.92 higher than the scores in schools with principals who do not prioritize it. This is the second time that Romania emerges as having the greatest gains from school principals prioritizing actions around educational goals. It is feasible that principals who are focused on ensuring classroom activities align with school goals are seeing students' internal assessment scores rising. It is reasonable that the same gains are occurring on the PISA assessment (Bethell & Mihail, 2005).

The relationship is negative in Panama, Macao, Kyrgyzstan, Jordan, and Azerbaijan. In Azerbaijan, the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 104.10 lower than the scores in schools with principals who do not prioritize this. Azerbaijan school leaders who are focused on aligning classroom activities to educational goals may not be aligning their behaviors with the cultural context in Azerbaijan. Mogno (2009) writes "Principals in Azerbaijan

are well skilled in task management and place lower priority on relationship building and developing visions or strategic plans for their schools" (p. 23). The researcher argues that most Western models call for these behaviors, but more useful leadership models for the Azerbaijan context (and other non-Western systems) need to be constructed to burgeon student learning. It is therefore conceivable that principals who spend considerable time on school goals and class alignment are not considered most effective by teachers or their local community and, at the same time, are not having a positive impact on student performance.

The leadership characteristic *exam results* is significant in ten jurisdictions (Mexico, Croatia, Singapore, Serbia, Taipei, Spain, Japan, Netherlands, Brazil, and Shanghai). In each of these locations, the association between principals who highly prioritize *taking exam results into account in decisions regarding curriculum development* and student reading literacy achievement is statistically significant. The association is negative in Mexico, Croatia, Singapore, Serbia, Taipei, and Spain. The predicted losses are greatest in Taipei. The reading literacy scores of students in schools in Taipei with principals who highly prioritize this activity are predicted to be 35.46 points lower than the scores in schools with principals who do not prioritize this activity. This result could reflect exams that call for facts and memorization instead of application. As discussed in this study's literature review, Chen, Crockett, Namikawa, Zilimu, and Lee (2007) argue that rote learning leading to facts and memorization is already an issue in this system, especially in schools catering to socio-economically disadvantaged students. Principals may perceive low tests scores as a need for more drill and

memorization skills and align their curriculum to develop these skills. But such skills are not the focus on the PISA assessment and therefore could result in lower performance on this assessment.

The association between the leadership priority *exam results* and achievement is positive in Japan, Netherlands, Brazil, and Shanghai. In Japan the reading literacy scores in schools with principals who highly prioritize *taking exam results into account in decision regarding curriculum development* are predicted to be 36.41 points higher than the scores in schools with principals who do not prioritize this. In his book *Global Crisis, Social Justice and Education,* Apple (2009) argues the matriculation exam is still at the center of education in Japan. High stake standardized testing instruments are managed and evaluated by the Ministry of Education and performance is key to acceptance in higher education. It is therefore reasonable that leaders in this system who prioritize ensuring students are prepared for the test when considering the curriculum, coupled with shadow education (tutoring) where students are revisiting material multiple times, could be having a positive (but stressful) impact on student outcomes.

The leadership characteristic *curriculum* is significant in eight jurisdictions. In Panama, Israel, Czech Republic, UAE, Turkey, Switzerland, Russia, and Taipei there is a statistically significant association between principals who highly prioritize *ensuring that there is clarity concerning the responsibility for coordinating the curriculum* and the reading literacy achievement of students in their schools. The association is positive in six of these locations (Panama, Israel, Czech Republic, UAE, Turkey, and Switzerland) and the largest gains are in Panama. The reading literacy scores in schools in Panama

with principals who highly prioritize this activity are predicted to be 40.80 points higher than the scores in schools with principals who do not prioritize it. This is surprising since the Ministry of Education in Panama has considerable control over school principals. The system, which includes urban, rural, and indigenous schools (that have developed in recent years), grasps the current target as "by 2015, Panama will have an educational system of the highest quality and effectiveness, one that is properly institutionalized, sustainable over time and widely supported by society" (as cited in Jordan, 2010, p. 475). It is possible that among these changes, school leaders who are actively overseeing the school curriculum, or are dividing the responsibility between staff, are gaining a better sense of what students should be learning and therefore are able to articulate what needs to be taught and how to support teachers. More research on Panamanian education is needed to examine this hypothesis.

The association between *curriculum* and achievement is negative in the remaining two systems, Russia and Taipei. In Taipei, the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 56.47 points lower than the scores in schools with principals who do not prioritize this. This is the third time that Taipei emerges as the system with the most significant change in achievement (based on a priority examined in this study). For this particular priority, it makes sense that the relationship would be negative since curriculum in Taiwan is nationalized (Hui & Lua, 2010; Collinson et al., 2009). Principals are not responsible for coordinating the curriculum, rather, they are expected to oversee its implementation.

The leadership characteristic *class problems* is significant in New Zealand, Lithuania, Canada, Mexico, Japan, Belgium, Qatar, Spain, Israel, Shanghai, UAE, Turkey, and Croatia. In these thirteen jurisdictions, there is a statistically significant association between principals who highly prioritize *solving issues together when a teacher brings up a classroom problem*. The relationship is positive in seven of the systems (New Zealand, Lithuania, Canada, Mexico, Japan, Belgium, and Qatar). The reading literacy scores in Qatar schools with principals who highly prioritize this activity are predicted to be 92.31 points higher than the scores in schools with principals who do not prioritize this activity. This finding suggests that teachers in Qatar are eager to collaborate with school principals to solve classroom challenges. This will be explored further in chapter 5.

In the remaining six systems, the association between *class problems* and achievement is negative (Spain, Israel, Shanghai, UAE, Turkey, and Croatia). The greatest loss is predicted in Croatia, where the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 84.23 points lower than the scores in schools with principals who do not prioritize this activity. This is consistent with the current challenges in Croatian education. Mihaličeк, Habdelića and Gorica (2012) detail national concern over low teacher retention recently in Croatia. Principals who are concerned with high teacher turnover may over-prioritize helping teachers seeking help. While the effort may have an immediate positive effect by solving the issue of concern, teachers who are burned out may take advantage of the relationship.

Ultimately, these teachers may over-rely on principals to solve their problems, having a negative impact on student achievement.

The leadership characteristic *behavior* is statistically significantly associated to reading literacy scores in nineteen jurisdictions. In Macao, Iceland, Azerbaijan, Tunisia, Turkey, Qatar, Russia, Australia, Poland, Thailand, Brazil, Belgium, Czech Republic, Chile, Japan, Austria, Slovak Republic, Jordan, and Singapore there is a statistically significant association between school leaders who highly prioritize *paying attention to disruptive behavior in classrooms* and the reading literacy achievement of their students. As mentioned earlier, this predictor is the most frequent out of all the examined leadership priorities to be statistically significant. The relationship is positive in Macao, Iceland, Azerbaijan, Tunisia, Jordan, and Turkey. Jordan is predicted to have the greatest gain; the reading literacy scores in their schools with principals who highly prioritize this activity are predicted to be 90.55 points higher than the scores in schools with principals who do not prioritize this activity. Reasonable, since behavioral issues are considered one of the major disruptions to learning in Jordan. Magableh and Hawamdeh (2007) write "students' undesired behavior is considered one of the most [challenging] issues to teachers in general . . . and preventing such behaviors is a difficult job for the teachers" (p. 901). Beaman, Wheldall and Kemp (2007) cite three specific disciplinary issues: talking out of turn, inattentiveness, and a lack of motivation. If teachers feel discipline is a vast issue, it makes sense that principals who prioritize dissolving unruly behavior by intervening are having a positive impact on student learning. If teachers are spending

less time disciplining and more time dedicated to assisting students who are ready to learn, it is feasible that overall student outcomes improve.

The remaining thirteen jurisdictions have negative relationships between principals who prioritize disruptive behavior and reading literacy achievement: Qatar, Russia, Australia, Poland, Thailand, Brazil, Belgium, Czech Republic, Chile, Japan, Austria, Slovak Republic, and Singapore. The greatest predicted losses are in Singapore, where the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 65.79 points lower than the scores in schools with principals who do not prioritize this. This is logical since the scope of a principalship in Singapore does not include behavioral issues (Singapore Ministry of Education, 2009). When principals, nevertheless, have to focus on discipline within their school, due to lack of teacher and parent responses, it is often a sign of a larger problem. This will be distilled in detail in chapter 5.

The leadership characteristic *take over lessons* is statistically significant in Thailand, Iceland, Kyrgyzstan, Panama, Netherlands, Montenegro, Macao, Germany, Peru, Ireland, Indonesia, and Mexico. In these twelve jurisdictions there is a statistically significant association between students reading literacy scores and principals who highly prioritize *taking over lessons from teachers who are unexpectedly absent*. The association is negative in the Netherlands, Montenegro, Macao, Germany, Peru, Ireland, Indonesia, and Mexico. In the Netherlands, the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 45.68 points lower than the scores in schools with principals who do not prioritize this activity. Imants and

Zoelen (1995) recognize that filling in for missing teachers is not uncommon in the Netherlands but comes with some caveats. They write

> A negative effect of teacher absenteeism is that much time of school managers has to be spent on recruitment of stand-in teachers. Under present circumstances it is not uncommon that in regions where stand-in teachers are scare primary school principals have to replace the absent teacher themselves. These time-consuming tasks lead the principals away from their educational leadership tasks. All in all, teacher absenteeism is assumed to be a negative condition for the quality of education in schools. (p. 77).

School leaders in New Zealand who highly prioritize filling in for missing teachers may be neglecting other more urgent responsibilities.

The association between the predictor *take over lesson* and achievement is positive in Thailand, Iceland, Kyrgyzstan, and Panama. The greatest predicted gains are in Panama, where the reading literacy scores in schools with principals who highly prioritize this activity are predicted to be 30.85 higher than the scores in schools with principals who do not prioritize this activity. Two realities in Panama may contribute to this finding. First, teacher quality in Panama is a prevalent concern (Sorto, Marshall, Luschei, & Carnoy, 2009). Second, substitute pay is minimal, making it difficult to attract qualified teachers to fill in when a teacher is unexpectedly absent. These realities may mean that greater learning occurs when a principal stands in for absent teachers' because of the principal's expertise. Such a reality could have a positive effect on learning if it occurred regularly.

In summary, the results from research question 2 reveal that the statistically significant leadership priorities associated to reading literacy achievement differ worldwide. The effects of associations also vary across the educational landscape. Such discrepancies can be difficult to interpret. While some hypotheses are presented throughout this section, greater insights are needed to fully understand the results from these analyses. In chapter 5, the results from the fourteen priorities will be reorganized using Hallinger and Murphy's (1985) performance framework, and literature will be elicited to interpret the relationship between leadership priorities and student achievement worldwide.

5 LEARN GLOBAL; THINK LOCAL

This chapter interprets the results from this study by tipping over the PISA tower and scanning achievement and leadership patterns in high, middle, and promising systems. It aims to: (i) identify practices within schools or systems that might explain achievement results; and (ii) highlight leadership patterns across systems that may inform principals worldwide. Specific systems where diverse students have particularly interesting achievement patterns are showcased in part 1 of this chapter and then in part 2, leadership priorities across each performance level are distilled using Hallinger and Murphy's (1985) three conditions of effective leadership. The chapter ends by considering what may be the most valuable part of the study: what underlying assumptions surface in the results? And what is missing? The interpretations, while preliminary, suggest all educational systems are not created equal − some have advantages and others have disadvantages based on their history, context, and current realities, which collectively impact the achievement of their diverse learners.

Informing Leaders

A goal of this dissertation is to inform principals about underachievement patterns worldwide and about how their priorities can impact performance. Increasing 'global inspiration' is central to meeting this goal. Global inspiration increases principals' knowledge of the educational landscape, as a tool to inform their own practices and priorities. It does not encourage policy borrowing (Phillips & Ochs, 2004) or "renting and delivering the policies of others" (Hargreaves, as cited in Salhberg, 2012, p. xviii).

Simply copying and pasting programs, practices, or strategies, from foreign systems and placing them into one's own school with the assumption of obtaining the same results is not encouraged. Brown and Conrad (2011) write

> Cross-national policy borrowing is common to almost all nations. It is difficult, some may argue impossible, for any society in a globalized era to refrain from 'borrowing' educational policies from other countries (p. 183).

While this may be so, educational borrowing often ignores or downplays local realities. A better solution is to generate a tool where principals can learn, reflect, and consider practices worldwide in conjunction with their local expertise. The results from this study cultivate such a tool in the form of global inspiration. It calls on school leaders to learn from the global landscape, and use the new knowledge to rethink about their local challenges: learn global; think local. Arnove (2007) writes "the increasing interconnectedness of societies pose common problems for educational systems around the world" (p. 1). Understanding how systems worldwide are addressing these common problems increases the spectrum of solutions that school leaders consider, but also expands the possibility of generating new innovations. The perpetual underperformance of diverse learners justifies the need for thinking differently about the teaching and learning of marginalized students. At the same time, disregarding unique local realities to solve common problems with global solutions is risky and ill advised. The tension between global and local solutions cannot be ignored. Instead, with increased global inspiration, school leaders can transform tensions into positive drivers of change and will ultimately improve the achievement of diverse learners.

Rather than exclusively seeking global inspiration from high-performing systems, principals are encouraged to consider effective practices in jurisdictions with similar achievement patterns to their own. To identify similar systems, the interpretations in this chapter are presented using the three level performance framework. According to McKinsey and Company (2010)

> Educators in a moderately performing system would be better off in seeking inspiration from similar systems that are managing to improve, rather than from those that are configured and positioned very differently, even if they are the world's best-performing ones. (p. 18)

Showcasing high, middle, and promising jurisdictions make it feasible for all principals to identify like-performing systems that are managing to improve. There may also be learning to be gained from examining struggling systems. Significant results with the narrowest and widest effect size are therefore explored in this chapter, which distinguishes this research from many studies that focus exclusively on results with the smallest effects. In this study, a wide effect size is informative as it could render further insights into why diverse learners are underperforming worldwide.

Part 1. Achievement Patterns

An aerial view of the results from research question 1 illuminates the magnitude of the performance gap worldwide. Diverse learners are performing differently than mainstream peers across all sixty-four systems (see Figure 5.0.1). In 17 percent of the examined jurisdictions, all five diverse groups are performing statistically significantly

different, after controlling for the other diversity indicators. This includes Argentina, Austria, Brazil, Bulgaria, Canada, Denmark, Indonesia, Italy, Mexico, New Zealand, Singapore (rural not assessed), and Switzerland. This illustrates a profound performance gap within these systems. In another 30 percent of the examined jurisdictions, four out of five diverse groups are performing statistically significantly different; in just under 41 percent of systems, three out of five; and in the remaining 12.5 percent, two of the five diverse populations are performing statistically significantly different than non-diverse peers. Organizing these results within the performance levels and showcasing the effect sizes of each gap reveals which systems are managing better than others when it comes to the teaching and learning of diverse learners.

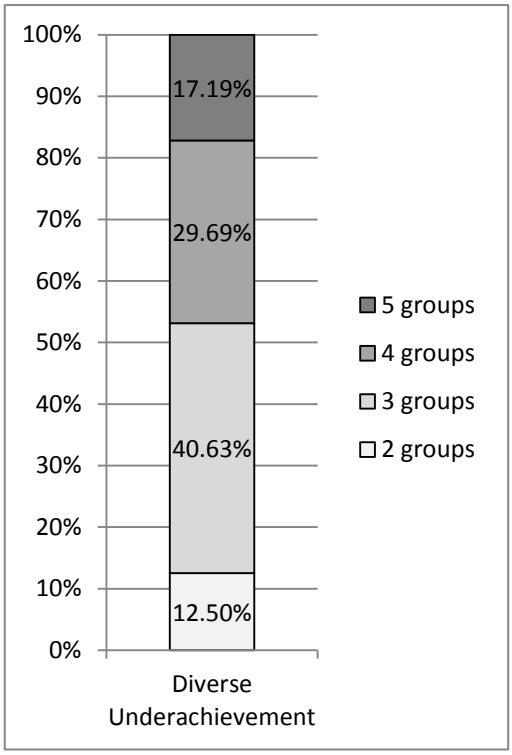

Figure 5.0.1. Percent of diverse groups performing statistically significantly different than peers across all 64 systems

Boys' Achievement

The average gap between boys' and girls' literacy achievement remains relatively the same across the high, middle, and promising performance levels. In the high-performing systems, the average gap between boys and girls is thirty-five points; in the middle and promising groups the gap is slightly narrower at thirty-two and thirty-three points but in all jurisdictions it is statistically significant and negative (see Figure 5.1.1).

Across all the jurisdictions, boys score (on average) 32.94 points lower than girls. As noted in the previous chapter, regardless of the system the effect of 'being a boy' on reading literacy achievement is negative.

Belgium, Romania, and Colombia are the systems with the narrowest gender effect at their respective performance levels. Investigating the schools in these systems and the context in these jurisdictions may provide a useful starting place to understand boys' underperformance. If there are identifiable practices within these systems that could explain their smaller gender effects, new insights into this achievement gap may surface.

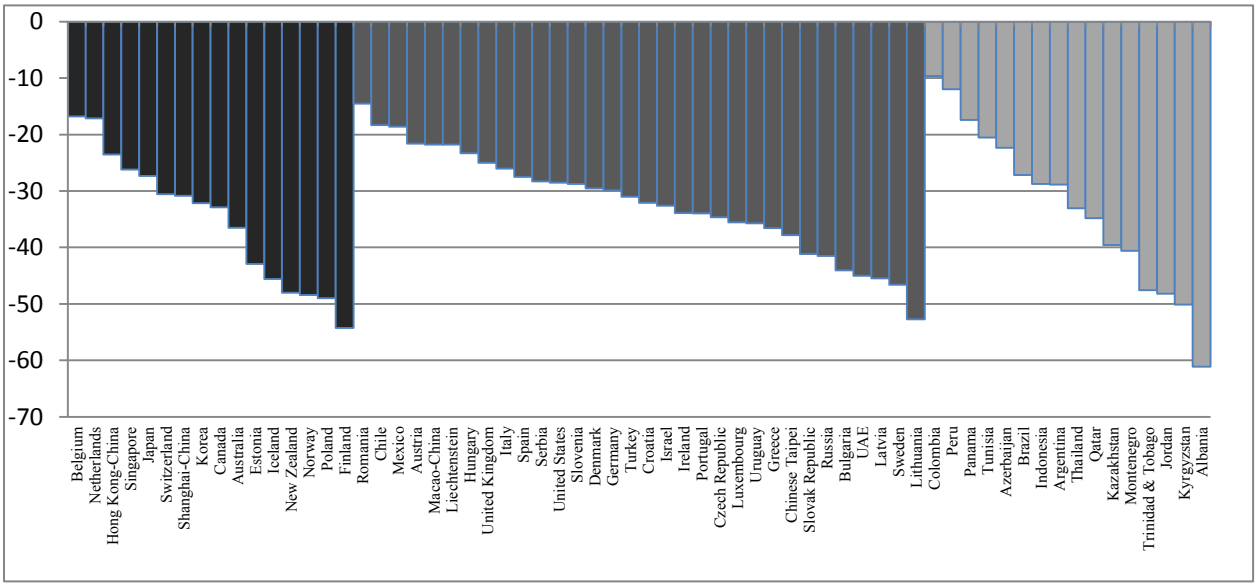

Figure 5.1.1. Effect size on reading literacy performance in high, middle, and promising systems with significant achievement differences between boys and girls

Belgium: The literacy practices and educational values in Belgium may be at the center of their boys' literacy success. On average, Belgian boys performed only 16.8 points below girls, and overall reading performance in the system is impressive at 506,

making this the high-performing system with the narrowest gender effect. Such success appears to reflect boys' overall literacy achievement in this system. Belgium boys are more successful at reading (and understanding) longer text than males in other systems (OECD, 2009h). In almost all PISA participating jurisdictions, girls performed better on continuous text questions than boys but in Belgium, boys performed better than their female peers on continuous texts. It is possible that the content in the continuous text section on PISA was more interesting to boys in Belgium than boys in other systems. This would connect to King, Gurian, and Stevens (2010) and Watson and Kehler's (2012) claim that text needs to be interesting to boys. Reviewing the sample questions released from PISA 2009 affirms the reading passages were indeed boy-friendly; continuous text samples discussed graffiti and scientific police weapons (OECD, 2009b). These topics, however, are undoubtedly of interest to boys in other countries as well, so more research is needed to understand this performance trend.

Another possible explanation for Belgium's results is the local values for linguistic proficiency. While an official trilingual country (Dutch, French, and German), Belgium prohibits bilingual education. All communities offer schooling in the dominant language and second language instruction is heavily regulated. "Belgium is a linguistically heavily legislated country…as a result, one cannot remain a law-abiding citizen in Belgium if one wants to become bilingual" (as cited in Van de Craen & Soetaert, 1997, p. 3). The challenges of this are numerous and controversial, but one response to it is that Belgians take pride in having high fluency within their specific language. One way that a multilingual society sustains itself is equipping each generation

with the linguistic tools to be successful in their first language. If one language gained dominance, it could lead to the marginalization of the others. Part of the Belgium strategy is to focus on high monolingual development so that collectively the society has a solid trilingual presence. In schools, this means heavy focus on literacy instruction in the native tongue. This extra time might be the advantage for boys. Such a theory would align with the work of Yiwen, Xingming, Xiaoming, Jinming, and Hoff (2008) who argue it simply takes boys longer to develop language than girls.

If the achievement between boys and girls in Belgium continues to narrow, these realities may be contributing to their success. If the gender effect widens it is possible these strategies are not making a difference or are not dispersed wide enough to impact enough boys across the entire jurisdiction. Either way, they provide possible insights into the current state of boys' literacy skills in Belgium and are useful for school leaders worldwide, particularly those in top-performing systems, to consider the reading literacy in their schools and the amount of time dedicated to literacy instruction.

Romania: Teacher education and curricula structures may contribute to Romanian boys' literacy success. Romania is the middle-performer with the narrowest gap between boys' and girls' achievement. While the overall reading performance score in Romania is not as high as Belgium, at 424, on average, Romanian boys performed only 14.5 points lower than girls, so the gender effect is actually smaller than it is in Belgium. This success could be because of the rigorous training and specialization of teachers in Romania. Over 80 percent of educators are qualified teachers of reading (Nouveau, n.d.). This preparation includes training in language, literature, pedagogy, psychology, and

children's language development and ensures teachers have a strong foundation in literacy. Some teachers report additional training in remedial reading and reading theory. Teachers' extensive preparation may mean they have a more developed skillset to support boys' literacy development than average educators in other systems. This would concur with research asserting teacher preparation impacts an educator's ability to meet the needs of learners in their classroom (Boggess, 2008). Furthermore, according to the World Bank, the majority of school principals in Romania report reading as a special priority. Students receive daily reading instruction as well as opportunities to focus on literacy in other subject areas (Nouveau, n.d). Similar to Belgium, boys in the Romanian system are getting extra opportunities to develop and hone their literacy skills.

Reading instruction in most Romanian schools is reported to be an intense, focused period where all students are taught the same lessons but in some schools, it is more individualized or includes small group instruction. In all cases, however, pace and material are serious considerations. Most Romanian teachers want all students to read the same material but to do so at their own speed. This means all students can eventually engage in whole group discussions around the structures, messages, and ideas in any given text. Such a vision supports Baucal, Pavlovic-Babic, and Willms' (2006) argument that boys need more time to absorb material presented in reading passages. Giving slower readers the chance to comprehend text at an appropriate speed while not holding back faster paced readers means, in the end, everyone gains the necessary knowledge to discuss the reading. For boys who read more slowly or need more time to comprehend what they have read, this means they are not left behind or forced to skip sections to stay

aligned with the rest of the class. They are encouraged to focus on understanding instead of speed.

The interdisciplinary approach to literacy development may also be an advantage for Romanian boys and is supported by literature. Watson and Kehler (2012) would applaud efforts to encourage literacy development in courses that boys traditionally enjoy more than literacy. Romanian schools that are encouraging reading and writing in courses such as biology and geometry are providing boys with greater exposure to a wide variety of reading material and their literacy skills are being reinforced in subjects in which they are traditionally more interested. For boys, the ongoing infusion of literacy across multiple subjects may generate greater interest in reading and writing and may be narrowing the effect between their achievement and their female peers.

Student preparation and external resources may also be contributing to boys' success in Romania. Compulsory school begins in grade one at age seven. Prior to this, students can attend free kindergarten from age three to six years. Kindergarten programs began during the Soviet years and have a long tradition of providing a literacy-rich environment that prepares students for school. Geske and Ozola (2009) argue a literacy-rich environment can have a notable impact on boys' literacy performance. Boys who attend three years of kindergarten have considerable time to play and learn in a free-movement space that sets a useful foundation for future learning. In recent years, however, attendance and conditions in Romanian kindergartens are reported to be deteriorating, so it is possible future scores in this system will decline.

The literacy resources in Romanian schools may also be benefiting boys' performance. All children receive reading booklets and materials to take home to supplement their instructional programming at school and teachers frequently (monthly) use film versions of children's books in parallel with reading activities. Media literacy is emerging as a popular way to improve boys' interest and engagement with reading and may be having a positive effect on the achievement of boys in this middle-performing system. Möβle, Kleimann, Rehbein, and Pfeiffer (2010) along with many other researchers, are increasingly looking at how technology can improve boys' literacy performance. If Romanian teachers are consistently engaging in meaningful learning activities with technology that are successfully getting boys eager and excited about reading, their efforts could have a positive effect on the performance gap between boys and girls.

Notably, Romania's overall literacy performance suggests more work is needed to improve mainstream reading achievement. One of the major concerns in Romania currently is the high dropout rates plaguing their public system (Blândul, 2012). It is therefore also possible that boys who struggle in reading and writing do not stay in school long enough to reach age fifteen, the age PISA is administered. Compulsory schooling in Romania is until sixteen years old but early leavers, individuals who do not re-enroll in other schools or complete alternative school programs, are a notable concern. Boys who struggle in school and do not receive the supports they need to find success usually leave school well before the end of compulsory education and thus they would not be represented in PISA results.

Colombia: As the promising-performing system with the narrowest achievement difference between boys and girls, societal understandings of what it means to be 'a male' may be an advantage for Colombian boys. Recognizably, overall achievement in Colombia is lower than in Belgium and Romania at 413. The gender effect in this system, however, is just 9.67 points making it the narrowest out of all the participating systems. The small effect may be an indication of practices within the system that are advantaging boys, or, it could be due to low overall performance. Both theories are explored below.

Distinct gender identities may be central to Colombian boys' literacy success. Arciniega, Anderson, Tovar-Blank, and Terence (2008) write "most conceptions of *machismo* focus on a restricted, negative view of hypermasculinity" but such perspectives can be misleading (p. 19). In fact, *machismo* may be advantaging boys in literacy development. While *machismo* includes both traditional *machismo* and *caballerismo*; the latter associates with strong problem-solving skills and overcoming challenges. It is possible that this cultural stereotype motivates boys to succeed in this system. Teachers and parents may also reinforce this stereotype when boys are struggling, encouraging them to work harder and perform better. Van de Gaer, Pustiens, Van Damme, and De Munter (2009) write that students' motivation and effort impacts performance; if boys' self-esteem is inflated regarding reading skills, they may rise to the occasion. It is also possible that *machismo* is having a negative impact on the reading literacy performance of girls. If girls feel inferior to boys they may also through subtle or overt feedback from parents and teachers come to believe they are less capable in school, bringing their

literacy achievement down. These realities may contribute to Colombia's small gender effect but notably, *machismo* is present in many South and Central American jurisdictions and achievement gaps among these systems vary considerably.

School resources could explain boys' achievement in this system. Colombia is a country with wide economic stratification and the same span is visible in the public and private schools. Students entering both systems come from varied backgrounds. For the majority of students who have fewer resources at home, energetic lessons could grip their attention and motivate them to learn. Díez, Gatt, and Racionero (2011) argue boys need lessons that are active and interesting. If Colombian teachers are drawing from books that captivate boys' interests and planning engaging lessons it could have a positive impact on boys' achievement. At the same time, Burtless (1996) is one of many researchers who presents evidence that school resources can make a difference in student learning. In the public school system in Colombia, limited resources are a concern and may be contributing to lower overall reading literacy achievement.

The practices and strategies in Belgium, Romania, and Colombia are varied and lead to many unanswered questions but a common overarching pattern does emerge. In-classroom behaviors are recognized in all three systems as potential motivators of success. Strong teacher preparation, longer literacy blocks, more cross-curricula literacy learning, and instruction geared towards boys' interests are all in-class strategies and practices which are identifiable in these systems and that may be impacting boys' reading achievement.

If in-class strategies are central to raising achievement, it is worth investigating if they are priorities in systems with the largest gender effect in each performance level; this includes Finland, Lithuania, and Albania.

Finland: Despite being recognized as one of the best educational systems in the world, Finland is the high-performer with the *widest* achievement gap by gender. Finnish boys, on average, performed 54.3 points below girls. According to West (2002), the achievement difference is not an issue for the Finnish (as cited in Francis and Skelton, 2005, p. 38). Francis and Skelton (2005) acknowledge there are "three times as many boys reading at level 1 or below" in Finland, but also note "there was no other country where boys did better" (p. 39). They argue the gender gap was because females scored exceptionally well, rather than boys performing poorly. The researchers have an important point. The achievement differences between boys and girls in Finland do not imply Finland's system is not successful. Boys in Finland still performed better than boys in all other participating systems. The gap, does however, divulge that while Finnish schools are very successful, they, like all the other systems, have not mastered how to ensure boys' literacy skills are as advanced as girls'.

Societal factors and school structures may explain the gap between boys and girls literacy performance in Finland. According to the Finnish National Board of Education, the Finnish culture values reading. Literacy is viewed as the foundation for further learning and high reading and writing mastery is widely accepted as an essential skill. This strong societal value is evident by high numbers of subscriptions to newspapers and journals, extensive numbers of parents reading to their children at home, the news

media's promotion of reading and writing and a comprehensive, well-funded, library network (Linnakylä, Kupari, Reinikainen, & Arffman, 2002). On average, 44 percent of Finnish students borrow a book from a library at least once a month (2002). (Community libraries are most popular.) This means that overall, Finnish students spend considerable time in libraries, browsing books, and selecting texts to bring home.

On PISA 2000, only 26 percent of their peers in other systems were borrowing books, revealing the strong societal emphasis on reading in the Finnish culture. Furthermore, Finnish students have some of the highest levels of interest in reading and engagement in reading compared to peers in other systems. Disaggregating these results by gender reveals borrowing and interest percentages are lopsided. Finnish girls are more active book borrowers than their male peers and 60 percent of girls report reading as a favorite hobby while only 21 percent of Finnish boys report reading during leisure time (OECD, 2011b). So, while overall, societal values support active reading lifestyles in Finland, boys' interest and engagement with books is lower than girls' and may be contributing to their poorer literacy performance.

The structures within the Finnish educational system may also impact boys' reading performance. Finland has comparatively small between-school variation, as noted in chapter 4. This is because the country has a non-selective educational system where all students are provided with a similar comprehensive education. Döbert, Klieme, & Sroka (2003) note, still, there is some variation. "The best 10 percent of Finnish schools scored on average, 97 points higher in reading literacy than the poorest 10 percent of schools" (p. 213). Boys and girls, irrespective of location or background, have

qualified teachers and receive outstanding instruction. This means differences between rural and urban gender gaps and high and low socio-economic gender gaps are not contributing to the problem, as observed in other systems. Thus, while gender gaps appear widest in Finland when comparing them to achievement across all systems, the high proficiency "of the least successful students [in this system] is a major determinant of Finland's high average reading literacy performance" (Linnakylä, Kupari, Reinikainen, & Arffman, 2002, p. 26).

Efforts to increase boys' literacy achievement are noted in Finnish literature, but in-class changes that specifically cater to boys do not appear to be prioritized in this system as they are in the three systems with the narrowest effects. Policymakers and educators in Finland are aware that Finnish boys underperformed on all three subscales of reading literacy and are considering subtle modifications. Efforts to increase boys' interest and engagement with books both in and out of school are a current strategy to move boys ahead without lowering the average level of overall performance. It is also recognized that boys' underperformance may be due to lower self-perception. Finnish girls' self-concept in reading is higher than boys (OECD, 2009h). Thus, efforts are underway to increase how boys think about their reading abilities and skills. Greig (2011) argues the best way to do this is to move beyond the outdated approaches that plague schools and squelch boys' innate curiosities. Reading activities that permit boys to predict, build, or create may increase boys' self-esteem more than reading activities centered on discussion. Societal attitudes and school structures in Finland that support high quality learning will remain at the center of any modifications. It will be interesting

to monitor these efforts to see if they generate authentic changes in classroom practices and ultimately improve boys' performance.

Lithuania: School policies and cultural stereotypes may have a negative impact on boys' literacy in Lithuania. Lithuania is the middle-performing system with the largest gender effect on achievement. On average, boys perform 52.7 points below girls. Similar to Finland, there is less evidence of intentional boy-friendly practices in classrooms than in the three systems with the smallest gender effects.

Šidlauskiene (2010) writes that neutral attitudes towards gender and learning have a long history in the educational system in Lithuania. While providing equal opportunities for all learners is written in the Law of Education, policies fall short of recognizing boys and girls learn different and have different interests due to cultural upbringings. As Sax (2007) suggested in the literature review, some boys learn best in interactive classrooms where they are engaged in discussion and encouraged to move. The reading material used in class activities also impacts boys' motivation and interest, if the Lithuanian curriculum emphasizes texts that are not of interest to boys, they may be disengaged and less eager to learn.

Instructional styles in Lithuanian schools may also curb boys learning. Traditional full class rote learning is a popular style for reading and writing instruction. Textbooks and material used in schools often reinforce stereotypes and there are limited expectations on teachers to address such biases. Šidlauskiene (2010) writes:

> The majority of children formally go to school though they hate it, they imitate learning, negatively react to knowledge, which they do not apply [in the] school environment characterized by increasing tension. (p. 15)

Gender biases and subtle messaging in the curricula may be impacting boys' interest and achievement in reading and writing. If literacy is viewed as a feminine subject in Lithuania and no efforts are made to address this false perception, boys' literacy skills will likely not reach their fullest potential. Similarly, if reading and writing activities do not align to the topics of interest to boys and no efforts are made to engage boys in the lessons, it is likely many will be disengaged, and not perform to their highest capabilities. Geske and Ozola (2009) state boys and girls are affected differently by the same factors. They report that Lithuanian boys' are more affected by undesirable school environments than girls. When a school or classroom environment is not conducive to learning, boys are more distracted and less motivated in literacy activities. Such a finding strongly speaks to transforming classrooms into spaces where boys' achievement is prioritized if Lithuania seeks to narrow its achievement gap.

Albania: Curriculum structures and reading approaches in Albanian schools may contribute to their boys' underperformance. Albania has the largest gender effect on achievement among promising systems and across all sixty-four participating jurisdictions. Its overall literacy achievement is already low and Albanian boys, on average, underperformed by 61.1 points compared to their female classmates.

Curricular challenges and instructional approaches in Albania may inhibit boys' literacy development. It is well documented that high exposure to written text from

infancy to early adulthood impacts reading development (Mol & Bus, 2011) but in Albania, many children have limited exposure to written text prior to school. According to Ellis, Natsume, Stavropoulou, Hoxhallari, Van Daal, Polyzoe, Tsipa and Petalas (2004) the majority of first graders enter school with minimal letter or written word awareness. Nevertheless, reading is introduced in the first year of primary school in Albania. This means many children will have less than a year of exposure to written text before they are asked to start reading it. For boys, this could be especially challenging (Baucal, Pavlovic-Babic, & Willms, 2006). Boys need more exposure to literacy rich environments. Even once they master reading, it takes additional time to use literacy skills as a tool to learn more information. If they are not exposed to written text prior to being asked to read it, it is extremely difficult for them to find immediate success and to 'catch up' to their female peers on the same learning tasks.

Challenges are compounded by instructional approaches. Teachers introduce reading using a whole-word approach (Hoxhallari, 2000). The approach is controversial among language teachers since it is top-down where "teachers emphasize the meaning of texts over the sounds of letters, and phonics instruction" (Reyhner, 2008, n.p.). Some educators do supplement this with appropriate phonic based approaches but if boys are in classrooms where this is not occurring, those who are struggling under the whole-word approach may be left behind. While OECD (2010b) notes that both genders 'enjoy reading' in Albania, Jubani, Lama, and Gjokutaj (2012) argue the quality of reading among Albanian students, particularly among boys, is too low. "Scores of girls in the quality of reading are higher than the boys, they have a higher passing score, the highest

grade point average, greater speed and take less time to read a similar text" (2012, p. 58). The researchers suggest that Albanian students need more strategies to break down text into manageable sizes and more support from teachers on how to connect new information to what they already know.

In-class activities catering to boys are not a current focus in Albania. This is because girls' education is the current priority. In particular, the system's emphasis is on enrollment and attendance rates rather than performance trends. The State of Albanian Children states, "there are no reported indicators of gender inequality in school enrollment and attendance rates" (as cited in INSTAT, 2007, p. 6). UNICEF (2010e) adds that Albania has taken significant strides to close gender attendance gaps. These reports reflect the majority of research within this system, which monitor girls' access, retention, and opportunities upon graduation. The lack of focus on boys in this system is likely contributing to their underperformance. Enrollment and attendance patterns are initial factors to improve literacy achievement since students need to be attending school first and foremost, but once this issue is resolved, achievement will need to be prioritized. Albania will then need to shift its focus to find solutions that raise boys' literacy outcomes in order to continue moving their system forward.

Looking across the showcased systems with the narrowest and widest gender effects confirms Weaver-Higbtower's (2003) proclamation: it is time schools focus on boys. Once retention and enrollment issues are resolved, systems that aim to improve achievement need to focus on developing literacy practices that further boys' success. Initial patterns do emerge by comparing these six systems but there is still too much

unknown about how to improve the reading literacy performance of boys. The majority of published research on boys' performance is produced from small, local projects. Yet, the results from this study suggest gender is a universal predictor of literacy achievement. National and international comparative studies that deeply inspect boys' literacy performance are urgently needed worldwide. These results provide a starting place but more study is needed to affirm meaningful results that explain patterns within and across jurisdictions.

Principals worldwide should reflect on the quality of their literacy practices in their classrooms and consider: are the texts and subjects interesting to boys? Are physical activities and movement embedded in authentic ways into literacy time? Does literacy development emerge as a priority in science or mathematics, subjects that boys traditionally excel in? The statistically significant gender effect within all systems suggests that even boy-friendly strategies within these results do not go far enough to eliminate this gap. Principals need to think out-of-the-box and use global inspiration to generate new innovations that truly move literacy practices in a new direction if they seek to improve boys' literacy performance, while retaining the high standards and gains already emerging in top performing systems worldwide.

Immigrants' Achievement

Significant achievement differences between immigrant and non-immigrant students, while controlling for the other diversity indicators, are most populous among high-performing systems. In 62 percent of high-performing systems, there is a statistically significant difference between the reading achievement of first generation immigrant students and mainstream learners (see Figure 5.1.2). Among middle-performing jurisdictions, only 41 percent of systems have a significant gap while controlling for the other indicators and at the promising level only 25 percent. As discussed in the previous chapter, holding the other diversity indicators constant can bias the estimate, so it is expected that these percentages would increase if the controls were removed but these results do provide a reasonable starting place to explore the immigrant effect.

The inflation among top-performers, while controlling for the other indicators,

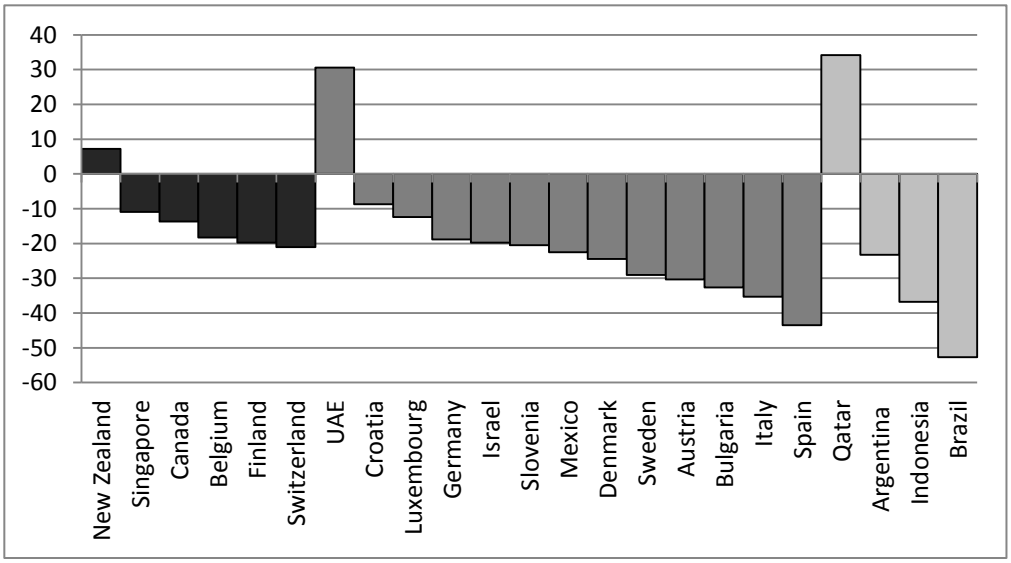

Figure 5.1.2. Effect size on reading literacy performance in high, middle, and promising systems with significant achievement differences between immigrants and non-immigrants

could be because high-performing systems are also highly attractive locations and thus have a steadier flow of immigrants (Parson & Smeeding, 2006). Canada and New Zealand, for example, have a long history of accepting immigrants due to a need for more workers. Switzerland, despite shifting policies in the 1970s, has a substantial number of guest workers that come for a period of time before returning home (Pásztor, 2012). This spikes the number of new immigrants entering and leaving Swiss schools regularly. Singapore also has a history of being a hot spot for immigration, particularly among Asian populations seeking employment opportunities. Since the 1950s, Singapore has had a steady intake of immigrants entering its system (Soon-Beng & Chew, 1995).

Despite these patterns, OECD (2010f) insists "there is no positive association between the size of the immigrant student population and average performance at the country level" (p. 9). These results second this claim, since the average effect size among high-performers is the *smallest* among the performing groups, at 15.16 points. So, while numerous high-performing systems have a significant difference between immigrant' and non-immigrant' performance, immigrant students in these systems are faring better than immigrants in many other systems. For families considering immigration as a means to increase educational opportunities for their children, this is important to consider.

The achievement patterns in high-performing New Zealand, middle-performing the United Arab Emirates, and promising-performing Qatar are distinct. In each of these jurisdictions, students who self-selected 'born in a different country' on their PISA questionnaire actually had statistically significantly *higher* reading literacy scores than

their mainstream peers. This is curious so these systems provide a useful backdrop to explore the immigrant effect on literacy achievement.

New Zealand: Recognized as a tolerant, multicultural society (Ward & Masgoret, 2008), New Zealand's veteran status as a receiving nation may contribute to its success in educating immigrants. On average, immigrants performed seven statistically significant points higher than their non-immigrant peers (21 percent of the 4,451 students self-identified as immigrants). It is the only high-performing system in this study to achieve this success.

New Zealand's immigration selection process may contribute to this accomplishment. Parson and Smeeding (2006) report advantaged systems have policies and procedures in place that tailor which populations enter their country, ensuring high selectivity. New Zealand is one such system because it has strict immigrant policies (McLaughlan & Salt, 2002). Their procedures prioritize highly skilled individuals for immigration. This screening process subsequently refines the population of immigrant students in schools. Immigrants who are highly skilled are usually well-educated, often upper class, and professionally successful (Winkelmann, 2001). Researchers repeatedly observe that immigrant children who arrive with strong schooling backgrounds from their home countries, and are reared in highly literate families that value education, are more likely to succeed (Colding, Hummelgaard, & Husted, 2010; Dahlstedt & Bevelander, 2010). High SES immigrants reduce the taxation on the new school system because their children need fewer supports than immigrants with more diverse backgrounds.

Established procedures in New Zealand may also advantage this system. Levels, Dronkers, and Kraaykamp (2008) argue that New Zealand has a long history of being a receiving nation and therefore has "much experience with the reception of immigrants" (p. 838). New Zealand is well accustomed to foreigners: Polynesian settlers, Europeans, Pacific Islanders, refugees, international visitors, and study abroad students. This familiarity means the country has established processes and procedures to help newcomers transition into their society. It also means that schools may be more equipped to support immigrant students immediately upon arrival. Teachers are trained to work with diverse learners and have the skillset to establish effective interventions and monitor progress (2008). These established procedures distinguish New Zealand as a veteran among the majority of systems worldwide which are still grappling to figure out what supports are best for their new populations and may mean immigrants have a more seamless transition to schooling in their new country.

The linguistic and cultural backgrounds of immigrant populations in New Zealand could also attribute to their success. As of 2006, more than 200,000 immigrants from England resided in New Zealand, making it the highest immigrant population (Ministry of Social Development, 2008). These families arrive in New Zealand already fluent in the language of society. As discussed in the literature, immigrants who speak the language of their new country have a profound advantage as they transition into society (Vallen, Van Steensel, & Kurvers, 2011). Immigrant children who speak the language of instruction in school more easily assimilate to the culture and learning in their new environment. The educational structure and expectations in Britain also closely aligned

to New Zealand standards. This means that learners have fewer school changes that are needed to adapt to succeed in the New Zealand system than immigrants who come from systems that do not have a British structural system. Such commonalities are huge advantages for English immigrant students entering New Zealand schools and may contribute to their high success.

If the performance between immigrant and mainstream students in New Zealand continued to narrow (despite laxer immigration policies that permitted a wider span of immigrants into their system), it would suggest that there are deeper practices that are contributing to their success. Without these changes, however, it is difficult to see New Zealand's success with first generation immigrants as anything other than an elitist immigrant policy where the 'best' immigrants are selected based on specific criteria while rejecting individuals who do not conform to the ideal model. Notably, New Zealand's success does reveal that time may impact immigrant achievement. Its seasoned status as a receiving country gives it veteran policies and processes already refined to support the privileged immigrants. For more novice systems this may mean that as they gain experience as receiving countries, they too may be able to refine societal and school practices to further immigrants' achievement.

United Arab Emirates: Immigrants in the UAE perform on average 30.55 points *higher* than non-immigrants (27 percent of the 8,991 students who participated self-identified as immigrants in this system). So, while overall UAE students scored well below New Zealand learners, their immigrant students performed impressively higher than New Zealand's immigrant students. This could be due to school structures within

the UAE educational system. The system includes both public and private schools with over 50 percent of students attending private education, a large portion of whom are immigrant students. Despite the poor reputation of the public system, parents have ample options within the private sector in which they can select a school. Regardless of the school they select, the average class size in the UAE is low at approximately twenty-three students, which is an asset for immigrant learners (OECD, 2012b). Fewer students per class means immigrants who come from different cultural backgrounds, have less school preparation, or speak a language different than that of the mainstream may receive extra supports or attention from their teacher simply because the educator has the time available, whereas in more populated classes this may be less likely. Immigrants also have greater opportunities in smaller classes to participate in learning activities and teachers have an easier time monitoring student performance. These advantages may be contributing to immigrant performance in the UAE.

Low vertical and horizontal differentiation in the United Arab Emirates is also beneficial for immigrant learners. Vertical differentiation distinguishes the amount of movement by students within grades (OECD, 2012b). In the UAE, students rarely repeat a grade and it is unusual for students to transfer between schools because of low achievement, behavioral issues, or special needs. This means there is low vertical differentiation. Such a reality is ideal for immigrant students since it ensures time to adjust and acquire language skills without the threat of retention. It also suggests struggling students are not shuffled between schools as a means to handle behavioral issues. Instead, schools work with learners to build relationships and solve issues.

UAE's actions align with what Díez, Gatt, and Racionero (2011) call in-school conditions that can have a positive effect on achievement.

Horizontal differentiation articulates the tracking and schooling options available to students at any given grade (OECD, 2012b). In the UAE, students are rarely grouped by ability so all learners are exposed to equal amounts of material. This is ideal for immigrants since it means they receive the same knowledge as non-immigrant peers. Second, the selection processes for advance or remedial tracking in the UAE do not begin until the end of secondary school. As discussed in this study's literature review, systems that funnel students into specific academic and vocational tracks as early as elementary school can prematurely place immigrants in low tracks due to linguistic issues, instead of intellectual capacity (Auernheimer, 2005). The UAEs low horizontal differentiation permits students years of academic training before they have to perform and compete against non-immigrants for placement in specialized schools. This decision results in immigrant students having more time to acquire language skills without premature placement in a vocational track.

The actual immigrants in UAE schools and the languages of testing in the system may also explain the impressive achievement patterns. The UAE has over 2.48 million foreigners, making up approximately 70 percent of the total population, including large numbers of Indonesians, Pakisanis, and Westerners (World Bank, 2011a). Foreign workers comprise two distinct groups: low entry migrants who leave their families to work in the UAE for higher wages than those available in their home country, and highly skilled expatriates who receive financial incentives to move to UAE (and most frequently

bring their families along). The immigrant students in schools, therefore, are overwhelmingly individuals from highly educated parents who have solid educational backgrounds in their home country. As discussed above, such a background advantages these learners when they enter the UAE system. In fact, fewer than 8 percent of immigrants in the UAE scored below the 25th percentile. This impressive result may also be attributed to the PISA testing language. The assessment was administered in both Arabic and English and "significant numbers of immigrant students were administered the PISA test in English" (OECD, 2012b, p. 34). English speaking immigrants, many of whom are Western immigrants, have a double advantage.

A lack of motivation among non-immigrant students could also contribute to immigrant success in the UAE. OECD (2010e) states "motivation can be regarded as the driving force behind learning" (p. 13). On PISA 2000, students who reported one of their greatest strengths was 'high motivation' had considerably better reading literacy performance scores than students who marked low motivation (OECD, 2000). The traditional motivation of attending school to gain skills and training for future employment is distorted in the UAE due to realities in the labor market. "High revenues from oil lead to a high wage premium and subsidies for public sector jobs offer to domestic workers, without requiring high skill levels" (p. 961). Such a distortion disempowers the value of an education since students quickly realize they do not need to perform well in school to obtain a high paying job in the future. Wage inflation therefore may be diminishing native students' natural desire to participate and work hard in school, ultimately contributing to low overall performance.

Qatar: The reading literacy scores of immigrants in neighboring Qatar are even higher than those in the UAE. Immigrants in Qatar scored 34.16 points *higher* than non-immigrant peers (32 percent of the 10,763 students who participated on PISA self-identified as immigrants.) The overall reading performance in Qatar is low at 377. It is therefore conceivable that immigrants are doing so much better than mainstream students simply because the overall achievement bar is so low but it could also be because there are practices and structures within the system that favor immigrants. Closer scrutiny of this system may reveal which is the likelier case.

Qatar is one of the wealthiest nations in the world, with a GDP of $181.7 billion (World Bank, 2011a). Oil and gas reserves are at the center of their riches and the country is repeatedly recognized as having one of the fastest growing GDPs of any country (2011a). With such fortune comes inherited wealth and Qatari children are not naive to this reality. Similar to the UAE results, motivation to work hard in Qatar school decreases when fortune awaits a student regardless of achievement. According to Brewer et al. (2007) native students' lack of motivation is a major concern in Qatar. This may explain low overall performance. Immigrant success in Qatar may therefore reflect poor motivation among non-immigrants more than high performance of immigrants.

System issues − including a dated national curricula and traditional instructional styles − also suggest the impressive immigrant achievement may be due to native students' poor performance. Qatari students complain the curriculum is not challenging and that teachers lecture. "Students expressed boredom in classrooms, when teachers arrived to lecture to them" (Brewer et al., 2007, p. 40). Parents cite similar displeasure

with the system. They note students receive a lack of feedback (only exam results twice a semester) and inadequate time for teachers to offer extra support for struggling students. "With the emphasis on rote learning and memorization, it is not surprising that parents and teachers alike complain" (p. 40). The leaders of the Arabian Gulf nation recognize that improving the educational system is imperative to their future and have already committed substantial funds for educational reform. Changes may be coming to Qatar, but these schooling issues likely contribute to Qatari's current poor reading achievement. It will be interesting to monitor the changes in this system and the performance of Qatari students on future PISA assessments.

Immigrant populations in Qatar are also worth noting. Immigrants comprise approximately 84 percent of the total population in the system, making it even higher than in the UAE (World Bank, 2011a). But without careful inspection of the immigrant populations in school, the data can be misleading. The majority of immigrants are from Pakistan, India, Nepal, the Islamic Republic of Iran, and the Philippines but there are also some Westerners in Qatar (2011a). Similar to the UAE, many immigrants come without their children to Qatar to work and send money home to their families. The immigrants who do arrive with their families are predominantly high-status Westerners whose children have a solid educational foundation. This background works to their advantage since Qatari schools are more likely to group students based on ability in all subjects and more likely to transfer students due to low achievement, behavior issues, and special education needs (OECD, 2012b). Immigrant students who speak English or Arabic (the languages of schooling) and come from systems with strong educational backgrounds

may be over represented in selective tracks and schools because of their educational preparation. Furthermore, most immigrants are not guaranteed the same inheritance as their Qatari peers and likely come from cultures where educational achievement does impact their future so they have higher motivation to do well in school.

The success of immigrants in New Zealand, the United Arab Emirates, and Qatar is attractive, but the learning they offer principals worldwide is limited. Advocating for stricter immigrant policies may refine which students enter a system, as New Zealand's success reveals, but offer little insights for principals who already have immigrants from less desirable educational backgrounds in their system. Furthermore, for many countries, shifting immigration policies towards New Zealand's vision would require a philosophical change. Specific skillsets would be deemed valuable at the expense of considering an immigrant's entire profile. Such a transition may come with new problems. The global inspiration available from immigrant success in the UAE and Qatar is a bit more helpful. The unique inheritances allotted for nationals in these systems may be skewing the results and the misalignment between immigrant statistics and student populations in schools may be deceptive, but distinct school structures − retention and tracking decisions − may also be benefiting immigrant learners.

Principals worldwide should review their school policies and consider their unique immigrant populations. When learners come from different linguistic backgrounds, grade retention and early tracking can have a profound impact on academic growth. Leaders should also reflect on how their school and community support language fluency. Are in-classroom supports sufficient for immigrants to gain literacy

skills? Are immigrant students interacting with native speakers regularly throughout the day? Do literacy blocks permit sufficient time for rich linguistic instruction? How can community further support immigrant students' and families' fluency? How can policies and structures in the system further support linguistic skills for immigrants? While academic fluency takes on average five to seven years (Cummins, 2000), the more meaningful supports around immigrants, the greater their academic fluency.

Language Learners' Achievement

Significant achievement differences between language learners and native speakers are also most predominant among high-performers. In fact, 88 percent of high-performing systems have a statistically significant gap between these two groups, when controlling for the other diversity indicators, compared to 57 percent of jurisdictions in the middle performance level, and 24 percent of systems in the promising performance level (see Figure 5.1.3). The inflation at the highest level could be due to linguistic diversity within top performing systems. In their book *A Continent Moving West,* Black, Engbersen, Okolski, and Pantiru (2010) detail east to west migration patterns in Europe. As mobility increases, new linguistic pockets are emerging throughout Western Europe.

Effect sizes are also widest among high-performers (at 31.56 points, compared to 22.09 among middle-performers and 19.52 among promising-performers). This is interesting since it contradicts the patterns under immigrant achievement. The wider effects among top-performers may be due to the fact the languages in many high-performing systems are not widely spoken outside of these locations. For example,

Japan, Poland, and Iceland are the three highest performing systems with the largest statistically significant language effect. The mainstream languages in these systems − Japanese, Polish, and Icelandic − are spoken by few outside of these locations. So, it is reasonable to assume that most immigrants and migrants entering these countries have limited or no prior exposure to their new countries local language.

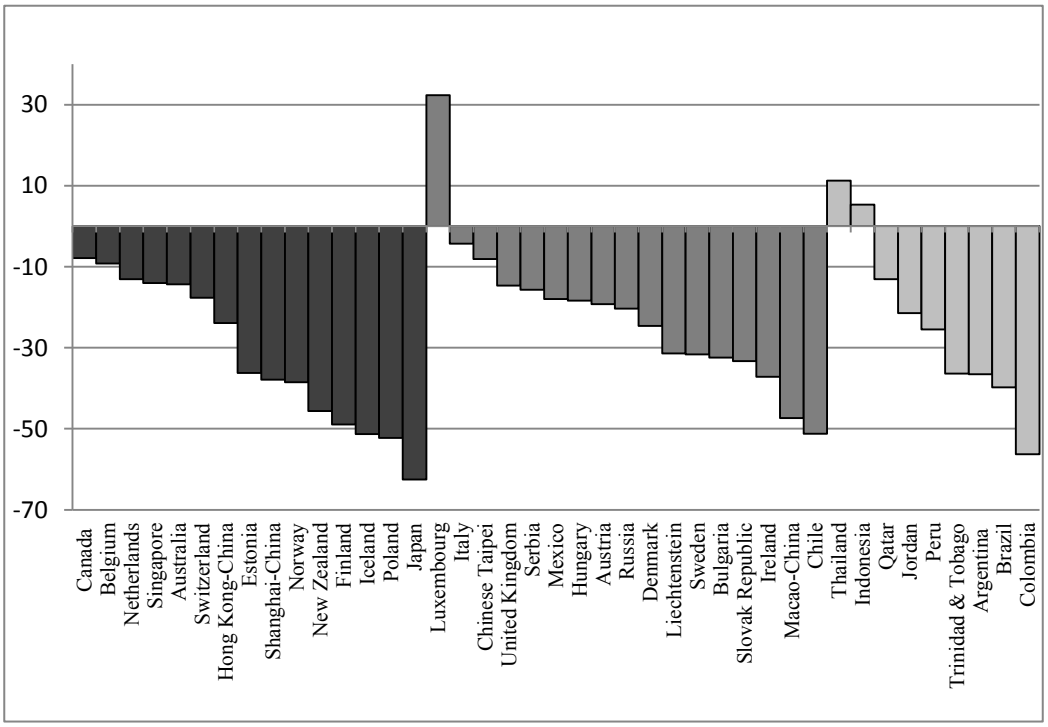

Figure 5.1.3. Effect size on reading literacy performance in high, middle, and promising systems with significant achievement differences between language learners and native speakers

The three systems that stand out within the performance framework are Luxembourg, Thailand, and Indonesia. In these systems, students who self-selected '*I speak a different language at home than the language of the PISA test'* performed *higher* than peers. These jurisdictions, therefore, offer a logical starting place to investigate the language effect on literacy achievement.

Luxembourg: Language learners in Luxembourg have a societal advantage. On average, language learners in this system performed 32.32 points *higher* than their native speaking peers and 80 percent of the 4,539 students who participated in PISA self-selected '*I speak a language other than the testing language*.' This at first seems very impressive − and it is − but the majority of students who self-identified as language learners may not fit under traditional definitions of language learners.

Luxembourg is a trilingual society and unlike most multilingual systems, this society truly functions trilingually. The national language in Luxembourg is Luxembourgish, but German and French are also official languages. French is the written language of society, Luxembourgish is the spoken language in society, and German is the language of media and church (Cenoz & Genesee, 1998). This means that full participation in society requires high fluency in all three languages. The structure of schooling prepares students for this reality and gives Luxembourg 'language learners' a unique benefit. In primary school, the language of instruction starts in Luxembourgish but switches to German by the end of these years (1998). In secondary school French becomes the language of instruction. The PISA assessment is administered in secondary school, which means that most students are assessed in French. All students who do not speak French at home are therefore identified as language learners. While indeed these students are language learners based on PISA's definition, French is one of the three recognized languages in society. These circumstances distinguish most students identified as language learners in this system from traditional language learners, who have to acquire a completely new language when the go to school or enter a new country.

Furthermore, the relationship between their new language (at this point French) and native language (one of the other two mainstream languages) is neutral. As discussed in this study's literature review, a neutral relationship between language giants and minority languages is ideal for speakers of the minority group (Skutnabb-Kangas, 2000). Since all three languages co-exist with relatively equal power, the performance is impressive but the system is also very unique.

Thailand: Despite stagnant overall performance on the Ordinary National Educational Test (O-NET), language learners in Thailand performed 11.25 points *higher* than native speakers on PISA 2009 results when controlling for the other diversity indicators. Language learners in Thailand account for 40 percent of the 6,225 students sampled. While these achievement gains are lower than Luxembourg, they are still notably high. Overall reading literacy performance in Thailand is low, raising the possibility practices are either benefiting language learners or poor native performance is causing language learners' performance to appear high.

Most research points to poor overall performance as a reality in Thailand. Despite three educational reforms and high government spending on education (20 percent of its national budget), student performance has remained stubbornly low. Researchers point in many directions to explain this failure. Some argue that there is a disconnect between policy intentions and actual implementation. "Progress in implementing reforms to a degree that [they] impact students across Thailand has been slow . . . a significant percentage of teachers have yet to 'get off the mark' and actively engage these reforms" (Hallinger & Lee, 2011, p. 153). Others call the system "archaic" and criticize a lack of

data points as being central to the lack of improvement (Wongsurawat, 2011), and still others point to the new English-based instruction policy as key to ongoing low performance (Foley, 2005). The last viewpoint is the most interesting considering the focus in this section and is explored below.

Under the new Thai reforms that seek to equip all Thailand children with skills to be globally competitive, schooling must at least be delivered partially in English from grades one through twelve. The national language in Thailand is Thai but over 75 other languages are also spoken, including Lao and Khmer (Foley, 2005). This means, for ethnic minorities, such as Hill Tribe children, students speak a native dialect at home, Thai outside of their local tribe, and under the new reforms, are taught in English at least part of the time while at school. For migrants from Cambodia, Lao PDF, and Myanmar, they need to master two languages beyond their home language to be successful: Thai to communicate in society, and English to learn in school. While such linguistic fluency is possible, as demonstrated in Luxembourg, it requires societal supports, including teachers who can assist students to gain academic proficiency in English and then teach content in English. This is a challenge in Thailand, says Worthington (2009). Without teachers with the professional skillset to do this, it is nearly impossible for students to acquire proficiency. The answer is not as simple as bringing in native English teachers, according to Foley, who writes, "communicative competency involves intercultural competency. The teaching and learning of English in Thailand also involves an understanding of Thai culture" (2005, p. 223). These linguistic challenges contribute to the low student performance on the O-NET and quite possibly to language tensions

between Thai and English, as discussed in the literature review for this study. English is the language of threat in Thailand as it is gaining more power and is increasingly viewed as a necessary skill for professional employment. Once the system has adjusted for the school change, it will be interesting to revisit language learners' achievement and linguistic tensions in this system.

Beyond public and private schools, approximately 38,000 children and youth are enrolled in refugee schools in Thailand (Oh & Van der Stouwe, 2008). Displaced people come from a range of countries including Afghanistan, the Congo, Mainland China, Nepal, North Korea, Pakistan, Sri Lanka, and Vietnam (Fowley, 2005). The conditions and programming available to these students increase the likelihood that language learner performance is inflated due to poor overall results. The government does not fund refugee schools and requires they are constructed with temporary material. The conditions, therefore, are difficult. Oh (2012) writes refugee schools are

> Crowded and hot, and the classrooms are filled with a loud cacophony of noise from the other classes. . . The scarce resources for building schools and the limitations on materials and space pose challenges to providing good learning environments. (p. 69)

Instruction in these NGO schools is English-only, further restricting educational gains. Refugee families are attempting to learn Thai to communicate in society but in NGO schools, instruction is completely in English. The lack of societal support for either language results in poor fluency in both (Lee, 2011). Such an adjustment requires established structure and societal support for each language, as visible by the results in

Luxembourg. According to Lee, cutting out instruction in the mainstream language is problematic for refugees aiming to assimilate to the mainstream culture. "Only when refugees become functionally communicative in Thai language, do they being to enjoy the rewards of living in Thailand" (2011, p. 811). A lack of fluency in both Thai and English may, unfortunately, soon be a reality for many students in this culture.

Indonesia: Indonesia's success may be built on its multicultural population and commitment to cultural harmony. In Indonesia, language learners, on average, performed 5.29 points *higher* than their native speaking peers (63 percent of the 5,136 students in Indonesia who participated in PISA self-identified as speaking a different language at home than that on the test.) These language learners are predominantly indigenous students. The Javanese, for example, comprise over 40 percent of Indonesia's population and speak Javanese as a first language. Then 300 other ethnic groups speak almost 600 languages (Rahtz & Sidik, 2006). Schooling across Indonesia is in Bahasa Indonesia (Indonesian). So, indigenous students speak their own language at home, while instruction in school (after the first three years) is in Indonesian. Most students are fully bilingual by the time they reach the secondary level. Since there are so many languages in the society, Indonesian is the default language used when speaking with other Indonesians who are not from one's indigenous group; over 83 percent of people in Indonesia speak the national language (Marion, 2002).

Indonesia's national vision of multi-ethnic coexistence is at the core of language learners' achievement in this system. Improved representation, equal funding and a "unity in diversity" model aiming to build mutual respect and tolerance between

indigenous populations is central to national harmony (Pringle, 2011). While there are still some tensions, the two previous governments in Indonesia actively promoted this philosophy and it has resulted in important gains for the nation. In the 1990s "the new order government constructed thousands of elementary school buildings throughout Indonesia in the villages to ensure that all children would have an opportunity to attend school and to receive a basic education in reading, writing and arithmetic" and over the past twenty years efforts to equip teachers with new approaches that build cultural and religious unity were prioritized (Marion, 2002, p. 197). Messages of tolerance, acceptance, and appreciation for others underlay the curriculum and may be contributing to the increased achievement of some ethnic minorities as self-esteem and self-worth increase. "People of these islands belong to many different ethnic and cultural groups, yet they are all engaged, to some degree" (2002, p. 197). Efforts to bring these values into the curriculum may be giving diverse learners an edge. Ogbu (1978) recognizes that minority groups with low status tend to perform poorly. He argues this is because they believe the inferiority that majority populations around them assign to them. Cummins (1986) builds on Ogbu's findings by arguing that these students, when empowered, perform better. The indigenous students in Indonesia are empowered and performing better.

Despite being very different, the practices in Luxembourg, Thailand, and Indonesia have two overarching trends: presence (or lack of societal supports) and language dynamics. In Luxembourg, there is a societal value for trilingualism that fuels a neutral power relationship between the three language giants. In Thailand, the power

relationship between Thai and English is tense and a lack of linguistic support is impacting overall performance (Lee, 2011; Worthington, 2009). Indonesia's success is built on increasing societal appreciation for cultural harmony. The relationships between its many languages appear less inflamed than in Thailand as Indonesian still reigns as the language of power. Lingering marginalization does, however, still pose a potential threat to long-term overall achievement.

For principals worldwide, there is learning to be gained from reflecting on these three systems. Leaders should be vigilant about understanding the power dynamics between minority and majority languages within their society and school. They must adjust and react when school dynamics advantage some students over others. Principals should consider the following: should instructional tutorial options be available in the secondary languages? Should we prepare authentic linguistic celebrations across the school that draw upon the traditions from the majority population along with those of the minority groups? Leaders with the courage to promote respect and tolerance for minority languages within their school can use their successes as a lever to transform views beyond the school. Such efforts could be pinnacle to reducing and eliminating the achievement gap between language learners and mainstream students worldwide.

Socio-Economically Disadvantaged Students' Achievement

The achievement gaps between socio-economically advantaged and disadvantaged students are visible in the results in all three performance levels. As noted in the previous chapter, after gender, poverty is the greatest predictor of literacy

achievement. The effect sizes are widest among high-performing systems. For every one-unit increase on the ESCS scale there is an average increase of 21.87 among high-performers, 16.52 among middle-performers, and 11.13 among promising systems (see Figure 5.1.4). Being socio-economically disadvantaged in a high-performing system, therefore, has a greater impact on achievement than being poor in a middle or promising-performing system. This is understandable given that high and middle-performing systems dominate the 'the highest quartile' on the Human Development Index (UNDP, 2011). As systems gain economic and social growth, they move up on the HDI index, but at the same time the spread between wealthy and poor in their system increases.

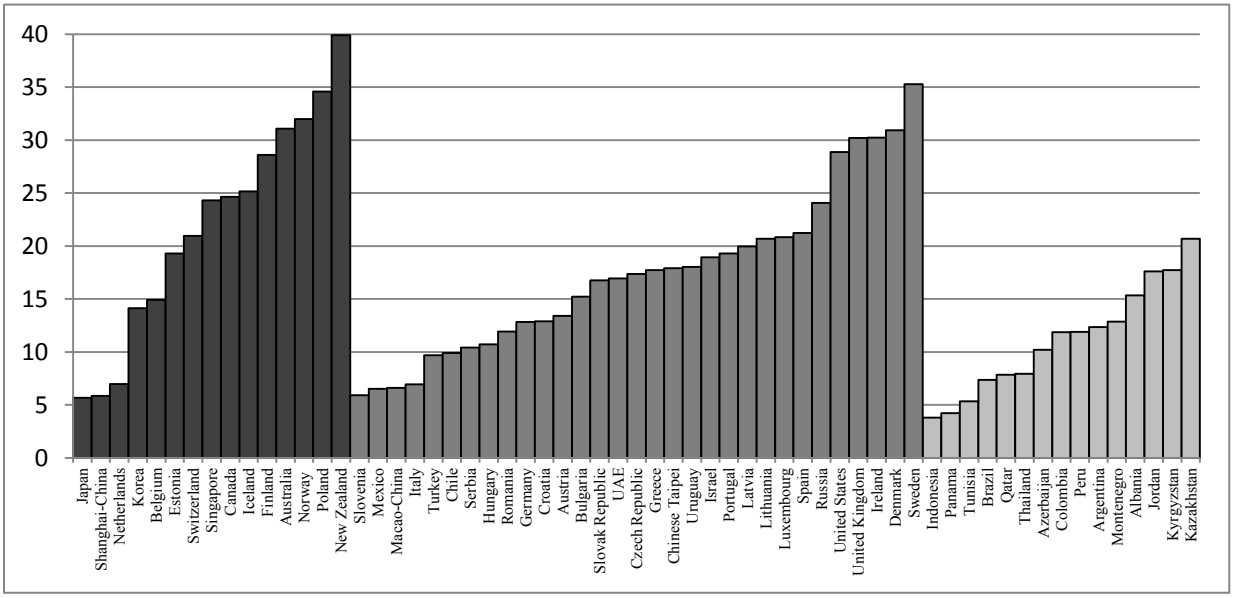

Figure 5.1.4. Effect size on reading literacy performance in high, middle, and promising systems with significant achievement differences by social class

When stratification is low, as it is in many of the promising-performing systems, socio-economic status has a smaller impact on achievement. In highly stratified systems, on the other hand, socio-economic status has a major impact on literacy achievement because

home and life experiences may be vastly different for poor and wealthy students (Rothstein, 2004).

To explore these overarching patterns further, the World Bank's (2008) GINI index will be referenced throughout this discussion. The GINI index measures the degree of inequality in the distribution of individuals and family incomes in a country. This measurement ranges from less than 0.25 (very little to no stratification) to greater than 0.60 (much social stratification). It will be a useful gauge to consider the range of wealth between upper and lower classes in each society.

There are no systems where low socio-economic students performed *better* than high socio-economic students, but Japan, Slovenia, and Indonesia are the jurisdictions with the smallest social class effect in each performance level. These systems, therefore, provide a useful backdrop to explore the socio-economic effect on reading literacy achievement.

Japan: Japan is the high-performer with the smallest social class effect, but the national belief system and educational structures may be impacting performance more than social stratification. For every 1-unit increase on the ESCS scale, scores in Japan are predicted to increase by only 5.66 points. The distribution of income in Japan according to the World Bank (2008) GINI index is approximately 37.6; the stratification between rich and poor is slightly below average. OECD (2004) writes, "The proportion of disadvantaged students in Japan is below that of OECD countries in general" (p. 7). This is curious since remnants of a historical caste system are documented in the literature (Gordon, 2006), but cultural beliefs and educational structures may explain how

disadvantaged youth are performing more similarly to peers in Japan than in many other systems.

The Japanese place a high value on appearance. According to Hein (2011) the Japanese culture holds "cleanliness and a neat appearance of highest value" (p. 23). This value resonates across all social classes and has important ramifications when considering socio-economically disadvantaged people within society. "Japan's poor can be deceptively hard to spot because they try hard to keep up the appearance of middle class comfort" (Fackler, 2010, n.p.). An adult who is out of work or without a home, can, and usually does, uphold an appearance that is similar to middle and upper class individuals. The same value has implications for schooling. Socio-economically disadvantaged children usually arrive at school well groomed and ready to work, despite preparing in public baths down the street. Uniforms further mask economic differences among students. Socio-economic differences are therefore not as visibly obvious to teachers in schools.

The societal value for education could also contribute to the success of socio-economically disadvantaged students (Wray, 1999; Troost, 1983). Status is not perceived as an excuse or reason for low achievement in Japan. Instead, "the model of learning used by the Japanese is 'hard work plus time equals learning.' Ability is viewed as less important than hard work" (1983, p. 26). Student success correlates to work ethic: a student who works hard is expected to do well; students who aren't doing well are not working hard enough. This value is advantageous for national and personal gain. The more educated the entire population is, the more successful the country and the higher a

family's social status. Students from underprivileged backgrounds are held to the same educational expectations as their peers. Family income does not negate paying attention in class, working hard at home, or putting in extra effort on weekends. This belief may contribute to high performance in the Japanese system.

The centralized educational system itself may also advantage the achievement of socio-economically disadvantaged learners. The *Mombusho* (Ministry of Education) controls textbook approval, school accreditation, teacher placement, salaries, and the curriculum. This means all schools have the same textbooks and until tracking begins in grade nine all students are exposed to the same material. Most importantly, all schools are staffed with highly qualified teachers. Teachers are assigned to schools based on the needs of a community. They are able to make requests and ask for transfers, but these can be denied if there is need for their skill in another location. While teachers do not always appreciate this structure (Hughes, in press) it does advantage students in poorer neighborhoods as areas are guaranteed highly qualified teachers regardless of their economic background. As discussed in the literature, ensuring socio-economically disadvantaged students have highly qualified teachers is critical to success (Efstathiou, 2009). Many new teachers do not obtain their first choice placement when entering the profession and request a transfer, but curiously, some decide to remain in their placement once they have completed a year (Hughes, in press). Japanese teachers are also paid competitively and are well respected in society, which repeatedly surfaces among top performing systems as pivotal to high achievement (Ladd, 2007).

Despite consistency across schools, in recent years the Ministry has increasingly offered additional resources to Japanese schools that have high numbers of disadvantaged students. While Japan spends less per pupil overall than most countries, it offers additional funding to schools with high concentrations of disadvantaged students (OECD, 2012b). These decisions create an equitable playing field for all students to succeed in school. The funds are used to reduce student-teacher ratios, thus, low socio-economic students may obtain more attention and support from their classroom teachers than students in advantaged schools. Accounting for these distinctions, the funding spent on disadvantaged pupils is considerably higher than that allotted for middle and upper class students (2012b). The equitable distribution of resources could also be contributing to Japan's narrower achievement gap.

Slovenia: Slovenia is the middle-performing system with the narrowest difference between socio-economically advantaged and disadvantaged students. The effect size is only 0.26 higher than in Japan, so for every 1-unit increase on the ESCS scale achievement scores are predicted to increase by only 5.92 points. The distribution of wealth in Slovenia is low with a GINI index of 28.4 (World Bank, 2008). Interestingly, there are in-school factors in the Slovenian system which, based on the literature, would suggest the gap would be wider between social classes. For instance, Slovenian schools have dense and demanding curricula, students in primary school take eighteen to thirty subjects and in secondary school the number increases to thirty-two (Lipovšek, 2003). Some researchers argue that curricula, which are too expansive can result in shallower learning, and call for 'less is more' programming (Tan & Abbas, 2009), especially for

socio-economically disadvantaged students. Further analysis is needed to investigate if Slovenia's overall literacy scores diminish on account of their wide curriculum. Another contradiction is Slovenia's early selection process; tracking begins after grade eight (Gabršček, 1999). Researchers worldwide repeatedly report early tracking is detrimental to socio-economically disadvantaged learners who may need more time to 'catch up' to their peers before being tested for school placement (Bedard & Dhuey, 2006; Auernheimer, 2005). Despite these realities, socialist underpinnings from Slovenia's Yugoslavian past provide an ideal platform for reform in Slovenia.

Slovenia's reform agenda over the past decade has prioritized public literacy achievement. In 2000, the International Adult Literacy Survey reported 77 percent of adults in Slovenia had literacy skills below international averages. National efforts to improve reading and writing achievement across the country emerged from this report and were well supported in the post-socialist system (Bregar, 2011; Šinko, 2012). Both out-of-school and in-school programs impacted the literacy performance of socio-economically disadvantaged learners. Out-of-school literacy programming included offering adult education classes, increasing library usage, and teaching technology skills. One such program called 'read and write together' targeted "parents with a low standard of education, who have children in the initial years of elementary school" (Knaflic, 2005, p. 81). The program included free biweekly sessions where parents and children came to local schools to engage in games and activities aiming to improve literacy. In some lessons, children and parents worked side by side, and in others, parents received individual supports. This program increased the presence of community members in

school buildings and developed new skills and trust between school-parent relationships, both identified in this study's literature review as best practices to improve the achievement of disadvantaged students (Knaflic, 2005; Musti-Rao & Cartledge, 2004). Knaflic (2005) described the program success as follows:

> Once the parents trust the teachers, they ask very frankly for help in solving problems from everyday life, such as…how to write a note explaining a child's absence from school. They expressed their satisfaction at renewing forgotten skills, or learning new ones such as computer skills. (p. 83)

As parents' skills improve, their motivation to read and write increases and may result in greater literacy exposure in the home of low socio-economic students. It can also advance parents' interest and ability in supporting children with their homework and engage in games at home that increase literacy development. The government's efforts to raise the linguistic competencies of lower class citizens and the national support for this effort are likely a notable contributor to the narrower achievement gap in this system.

Another reform effort *Programs for the Unemployed* aims to elevate the home conditions of the poorest in society. The program goals are to identify the educational needs across the country, establish programs to teach unemployed people the new skills to be successful in these jobs, and create programs to assist them as they transitioned into the positions (Rajar & Možina, 2012). Highly socialist in nature, this reform's success in three regions of Slovenia elevated the most vulnerable families out of poverty by equipping parents with new skills and a job. Transforming home environments has a profound impact on the achievement of low-income students, according to the literature

(MacKenzie & Chamberlain, 2008). It can reduce pressures to leave school early to contribute to the family income. A positive home environment can further student concentration in school, since their basic needs are accounted for, and improve family relations (Gjermeni et al., 2008). Parents who attend such programs are also modeling for children the value of learning new skills, which can have a positive impact on learning outcomes.

Slovenia has also prioritized improving teacher quality, as evident by its commitment to raise the educational competencies of teachers across the jurisdiction (Perme, 2011). Two of the numerous programs established under this goal are mentorships and teacher training (Erčulj, 2007; Perme, 2011). Mentorships are new educational partners for head teachers in primary and secondary schools. Head teachers across Slovenia have been assigned mentors who come to their school to offer advice and council. The mentors provide support for newly appointed head teachers and ultimately can impact the teaching and learning in school. One of the strongest aspects of the program is the professional relationships fostered between mentors and head teachers (2007). Both parties report a positive impact on the professional development opportunities available in schools from this program. Increasing teacher quality is repeatedly recognized in the literature as a way to improve student achievement (Konstantopoulos, 2009). As head teachers collaborate with mentors, they are engaging in more dialogs around teaching and improving the learning in professional development sessions offered in their school. This may be contributing to the achievement of students from low income households (Carpenter & Cooper, 2009).

The training program, which targets teachers in adult education, may directly and indirectly be impacting the achievement of socio-economically disadvantaged learners. The focus of the program is to prepare teachers to work with marginalized learners, including low-income students (Perme, 2011). By prioritizing teachers who will work in adult education, the program is nurturing community growth. As literacy skills improve, a community's interest in public libraries, and learning based activities, increases. This can have a positive effect on the readiness of students from poorer neighborhoods (Krashen, 2011). According to Perme (2011) "Adult education, with properly trained adult educators, is one of the key social mechanisms" in Slovenia to improve literacy skills of the entire society (p. 12). By increasing teachers' knowledge of how to support students from disadvantaged backgrounds, they will more likely impact the achievement of low socio-economic parents. In return, these parents' successes may lead to more books in their home and greater interest in reading with their children. Such efforts are identified in the literature review as useful to improve the achievement outcomes of disadvantaged students (Storch & Whitehurst, 2001).

Indonesia: Indonesia was showcased earlier in this chapter as a system where language learners performed slightly better than native language speakers. It is also the promising-performing system with the smallest social class effect. For every 1-unit increase on the ESCS scale, achievement scores in Indonesia are predicted to increase by only 3.81 points, making it the smallest increase out of the examined systems. As with all promising systems, it is important to remember narrowness of a gap may be due to practices within the system that are empowering low socio-economic students' success,

but it can also be due to poor overall achievement. The distribution of wealth in Indonesia is average, with a GINI index of 37.67 (World Bank, 2008). Social stratification is higher than in Slovenia and similar to patterns in Japan.

School fees and high dropout rates likely skew the achievement of rich and poor students in Indonesia. Students at all levels of schooling in Indonesia pay school fees (also known as admission fees or voluntary donations) to cover construction costs, laboratory equipment, uniforms, and books. Fees range, but on average in elementary school the fees are Rp 350,000 to Rp 500,000 (approximately $35.90 to $51.29 USD) and in secondary school they increase to Rp 750,000 to Rp 1 million (approximately $76.93 to $102.58 USD). There have been actions to reduce school fees in recent years but during the PISA 2009 assessment these were not in effect. Research in this study's literature review link school fees to school dropout (Oberemko, 2006) and this is certainly a reality in Indonesia. "Poverty is the main reason children dropout of school" report Priyambada, Suryahadi and Sumarto (2002) who cite costs and other financial reasons as causes for students' dropout. This means that many low socio-economic students are not in school and thus not part of the PISA 2009 sample. The lack of representation from this population may mean the gap between the rich and poor in this system is underestimated.

Low socio-economic students who *do* stay in school have school-work options that may benefit them (Priyambada, Suryahadi, & Sumarto, 2002). While child labor is strongly disapproved of across the educational landscape, there are instances worldwide where this option offers disadvantaged students, who are savvy enough to juggle work

and school, options that otherwise would not exist (International Labor Organization, 2002). Indonesia is among these places (Priyambada et al., 2002). Education and work can complement each other in Indonesia, meaning "child labor can assist poor families to fulfill their needs without sacrificing the children's future" (2002, p. 17). While students who are in school and working have less time to study and do homework, their extra effort illustrates their determination to stay in school. Part-time work that is after school hours or on weekends can cover school costs, taking this burden off families, and also contribute to home income. Students who manage to pull off this lifestyle may be among the most intellectually capable and thus the 'skimming off the top effect' is explaining the narrow gap on Indoesnia. The best and brightest of the low socio-economic class in this system are represented on the PISA assessment.

Scholarship programs that cover school fees for socio-economically disadvantaged students may also contribute to the narrower social economic effect in Indonesia. Throughout the past two decades, various scholarship programs have appeared and disappeared aiming to support the education of low socio-economic students. For example, the Indonesia Scholarship Programme offered four million scholarships to poor students across the country during the 1998 economic crisis. The funds could be used for all school related costs. While there was some corruption in the system, it is believed to have increased attendance in school and reduced the need for students to work while in school. According to Sparrow (2006) "the probability of attending school was 1.5 percentage points higher for students with a scholarship than for non-recipients" (p.118). At the same time, students who were on a scholarship were 3.8

percentage points less likely to work (2006). Low socio-economic students on scholarships do not have the financial pressures to work and thus, it is conceivable that they had more time to study and do homework. As described in the literature review, home environments have a dramatic impact on student outcomes. The extra time to focus on learning at home may contribute to the small effect between social classes in Indonesia.

Despite having the smallest effect size by social class in their respected performance level, Japan, Slovenia, and Indonesia are very different systems. Untangling the educational outcomes of their disadvantaged students reveals distinct realities and decisions. In one system, strong cultural beliefs and standardized educational structures with supplementary supports for schools serving lower communities may be impacting student performance; in another, large scale literacy initiatives across communities and in families may be essential; and still, in the latter, high dropout rates may distort results or scholarship programs may be making a difference in student achievement. The three systems do, however, share some commonalities. Government structures, reforms, and laws emerge as a common baseline across all three jurisdictions and teacher quality is an essential component in two of the systems. This may illustrate that whole system reforms that raise the lower class or equalize educational structures across classes are important components to narrowing the effects between rich and poor students on achievement. Understandably, there is still a significant gap between the examined populations in this section. Considering these commonalities while investigating the structures in New

Zealand, the system with the widest effect by social class, may provide more insights into these predictions.

New Zealand: While the GINI index reveals the distribution of wealth in New Zealand is average, at 30.9 (World Bank, 2010), on the European Union's Deprivation Index, New Zealand children ages 0-18 ranked 'worse off' than any other age group in the country (New Zealand Institute, 2010, n.p.). "New Zealand's children suffer not only a higher rate of hardship than other New Zealanders, but a greater share of New Zealand's children face hardship than in many other countries" (2010, n.p.). OECD (2010d) affirms the disparity, reporting New Zealand has a long history of inequality. The results in this study also call attention to New Zealand. For every 1-unit increase on the ESCS scale, achievement scores in New Zealand are predicted to increase by 39.9 points. So, the achievement difference between the wealthiest and poorest students in this system is more pronounced than in any other jurisdictions examined in this study.

Researchers in New Zealand repeatedly attack the lack of public policy as a cause for the perpetual class effect. *Every Child Counts* (2008) reports "successive New Zealand governments have not had adequate systems, structures, processes and programs to cater well for all children. This has contributed to the disadvantage suffered by many children" (p. 3). The inadequate national policy initiatives and programs aiming at addressing income inequality is inexcusable according to the United Nations Committee on Human Rights, who report New Zealand "fails to meet international standards on equality and discrimination" (Human Rights Commission, 2010, p. 16). The services set up to support the health of lower class students in New Zealand is recognized as part of

this issue. "More than 25,000 children [in New Zealand] were admitted to hospital last year for respiratory infections, most caused by overcrowded living conditions and doctors are treating diseases such as rheumatic fever and scabies, which have been eliminated from European countries" (Ramsbottom, 2012, p. 32). Poor home conditions are echoed by *Every Child Counts* as a major concern with over 20 percent of New Zealand children living below the poverty line (2011). The system is recognized as having one of the lowest rates of public investment in children out of all OECD members. The lack of supports and the increased early childhood fees have resulted in even fewer low class families sending children to early learning programs. The NZEI Te Riu Roa early childhood education spokesperson recently noted

> Funding changes meant parents are paying on average 11 per cent more in fees for early childhood classes. There is a danger that parents struggling financially will not send their children to ECE or send them to a centre of lesser quality. (as cited in *Education Today*, p. 22)

Over half of the solutions discussed in this study's literature review highlight out-of-school factors that impact the performance of low socio-economic students. Fees, health issues, and minimal national supports all surface as potential barriers which need to be considered by governments aiming to improve the achievement of diverse learners. The division between the wealthy and poor in New Zealand could decrease if serious action to address these issues occurs. Until then, as Professor Richard Wilkinson said in the *Star-Times* two years ago, "while New Zealand may have traditionally thought of itself as an egalitarian society, it is no longer so" (Wilkinson, 2011, n.p.).

Comparing the practices in systems with the narrowest social class effects to those in New Zealand affirm strong national policies and reforms that deliberately support the lowest class, and are well implemented and valued by society, create a socio-economic advantage. The advantage is there is minimal social warfare beyond the doors of their institutions. Actions that demonize the wealthiest class or portray the poorest class as a burden are minimal in reform efforts in societies with the narrowest social class achievement gaps. Policies that aim to empower the lowest class are viewed as contributing to the common good of all. Such a societal backdrop can generate widespread improvements for socio-economically disadvantaged populations that ultimately raise students readiness when they arrive at school and the out-of-school conditions throughout their entire educational career.

The results also suggest that effective leaders practice both upward and downward leadership. Upward leadership includes intentional practices that advocate and build policies beyond the school, such as within one's community, state, or nation, that breed trust and respect for all social class. Over time, these efforts may improve the conditions for incoming low socio-economic students. Such leadership can address inequitable intentional and unintentional policies that are restricting low class students achievement outcomes. Downward leadership includes modeling and promoting genuine tolerance and appreciation for all social classes within the school community, including students, staff, parents, and the local community. Such leadership can transform biases and perceptions within and surrounding a school.

There is also evidence of a socio-economic advantage from fostering practices within a system that ensure high quality teaching and learning for all students within schools. Principals should reflect on the following: is my staff current on best practices to support students from all social classes? Am I aware of the achievement patterns of low socio-economic students and carefully monitoring their achievement and placement? Are we aware of the changing family circumstances of our learners? Am I familiar with the quality metrics and instructional styles at neighboring schools, including those in our district, across our country, and within the entire educational landscape? These questions may assist a leader to narrow their actions and recalibrate their school to ensure the best possible environment for students of the lowest social class to obtain superior learning.

Rural Achievement

The most frequent systems to have a significant difference between rural and non-rural students, when controlling for the other indicators, are in the promising performance level. In 75 percent of promising-performing systems there is a significant gap between these two groups, compared to only 38 percent of high-performing systems and 50 percent of middle-performing systems (see Figure 5.1.5). However, a more useful term for measuring rural achievement is effect size, since six systems did not report any rural schools. The largest rural effects are among middle- performers, averaging -45.46 but effects among promising-performing systems are considerable as well, averaging -43.45. The rural effect among high-performers is much lower at -6.48, suggesting rural students in middle and promising systems are most susceptible to underperforming but, notably, many large geographical landmasses investigated in this assessment are middle and

promising-performers (e.g. Brazil, Argentina, Kazakhstan, and Mexico) (World Bank, 2011b). There are exceptions, such as China and Canada (but since only Shanghai participated in China, rural students are not included in this study). As discussed in chapter 3, Canada was granted the right to exceed the 0.5 percent exclusion cut point by OECD and did so by excluding an additional 1.1 percent of students from its territories and Aboriginal reserves; further research is needed to truly unpack rural effect patterns within the performance framework.

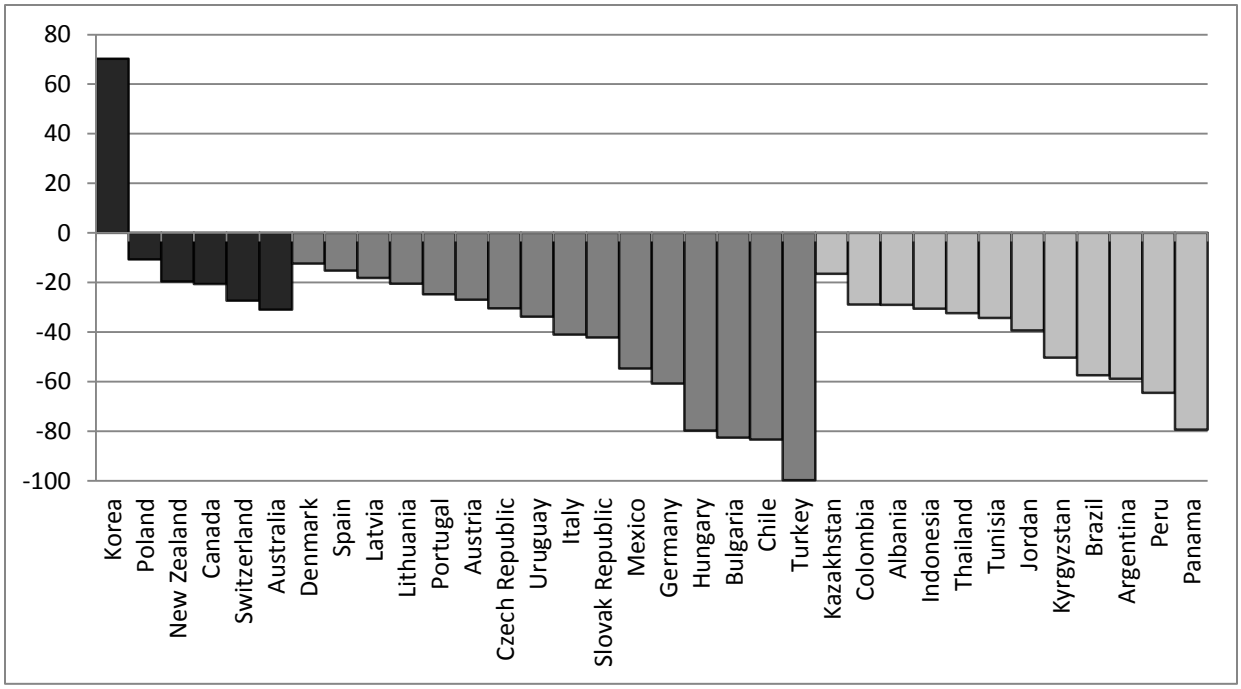

Figure 5.1.5. Effect size on reading literacy performance in high, middle, and promising systems with significant achievement differences by social class

It is also possible that the typical rural challenges highlighted in this study's literature review including teacher quality, resource limitations, and transportation issues are more pronounced in middle and promising-performing systems. Often times, systems with economic restraints must funnel resources into urban centers since the impact

reaches more learners in these locations (Tayyaba, 2012). The high frequency of less developed systems in the middle and promising-performing group could explain the wider, significant achievement gaps in these levels of the framework (Zhang, 2006). Economically advantaged systems, many of which are high-performing systems *without* significant effects, may have more resources and incentives available to extend to remote locations (e.g Russia).

Because rural status is the only indicator controlled at level 2 in this analysis, both significant and non-significant systems are investigated to gain deeper insights into the rural effect on literacy achievement. The results from high-performing Korea are distinct and merit discussion. The results from middle-performing Turkey are also interesting, as this system has the largest significant effect of all.

South Korea: The reading literacy scores of students in high-performing South Korean schools, where principals self-selected their school location, as a 'village, hamlet, or rural area (fewer than 3,000 people),' have statistically significantly *higher* reading literacy scores than non-rural learners. In fact, these learners performed 70.23 points higher than their non-rural peers, on average.

South Korea's rural success may be attributed to shifting educational policies. Only 1 percent of the jurisdiction's 4,989 participants self-identified as rural, and Im (2009) and Auh and Pegg (2009) argue urbanization and an aging population are causing devastation and marginalization in rural areas. Despite this, recent efforts to merge, close, and reorganize rural schools in Korea may explain the strong performance of rural students on this particular assessment. Over the past ten years, a total of 5,262 schools

have closed and several others combined to form new schools in rural areas of the country (Im, 2009). This has occurred under new policies aiming to improve the educational access and quality in rural schools. "Hub schools" have been established with one school in a group serving as a leader. The lead school is responsible for managing educational programs and facilities. These networks foster new opportunities for professional collaboration and communication, reducing rural isolation.

Rural incentives may also contribute to the success of South Korean rural students. Attendance, particularly around middle school ages, has been relaxed for some time in rural areas but efforts are underway to mandate attendance under new policies. These changes bring new incentives for students to attend school and for classroom learning to improve. Rural schools now provide school meals for students. This is important for rural students who travel long distances to attend school, giving them energy to walk home as well as more capability to concentrate and learn in school. Kindergarten education is also a focus in rural areas as the government aims to provide quality education for preschools and relocate centers closer to elementary schools to ease transportation burdens on families with multiple children. There are also changes on the other end of the educational spectrum. Fees have been eliminated and interest-free student loans are now available for university students from rural areas (Im, 2009). Also, a new quota has been developed requiring universities to admit at least 3 percent rural students in each class. These changes aim to improve rural students' access and interest in attending universities (Im, 2009).

Recent efforts to improve the teaching and learning quality in South Korea could also be benefiting rural students. In 2004, Korea began the New University for Regional Innovation (NURI) initiative (Auh & Pegg, 2009). One focus of NURI was to improve the quality of instruction in rural classrooms by developing innovative teacher education programming. NURI seeks to "educate pre-service teachers who are able to lead Korea as a knowledge and information-based society as well as act as professional leaders for rural students" (p. 61). Skills for effective teaching in rural areas were identified, including appropriate pedagogical, management, and communication skills. Strategies to help teachers adjust to rural life, understand rural issues, and acquire information technology were also central in the initiative. A teacher education program is currently underway at the college of Education in Kongju National University in South Korea aiming to use the NURI knowledge to transform the preparation of future rural teachers.

Turkey: In middle-performing Turkey rural students perform, on average, 99.67 points below non-rural peers, making this the system with the *largest* significant rural effect of all participants.

Rural schools in Turkey struggle to find and retain highly qualified teachers. There is considerable research indicating that a major obstacle in rural Turkey is teacher quality, including Taneri and Engin-Demir (2011) who report "the number of teachers teaching outside their areas of license is quite high" (p. 91), and Gedikoğlu (2005) who notes teacher shortages as a major concern in rural Turkey. As discussed in this study's literature review, such a problem is not unusual worldwide but how a system addresses this issue, and compensates for it, is important. A lack of qualified teachers reduces the

learning available to students since teachers do not have the necessary training or expertise on a given subject (Saiti, 2005). Lesson quality is impacted when teachers double their teaching load, instruct in subjects in which they are not trained, or cover courses to fill open vacancies. The shortage of highly qualified teachers in Turkey means many students far from Istanbul and other metropolitan areas are entering schools where their instructor may not have the knowledge to be the master of his/her subject or the training to meaningfully engage students in learning. Both skills are essential for high quality teaching and learning. Particularly in rural areas, if students do not have exposure to academic knowledge in their home and community life, it is essential teachers have the capacity to deliver.

Low parental involvement and limited resources affect the quality of education available to rural children in Turkey. According to Henderson (1994) parental involvement is critical to high quality schooling yet work responsibilities, isolation, and childcare are preventing parental involvement in rural Turkey. Weak school-home partnerships can lead to disengaged students and limited support at home for academic achievement. In rural Kalecik, for example, the researchers discover that 73 percent of students think their parents have little interest in school related activities or lessons (Taneri & Engin-Demir, 2011). Parents' attendance at school events is low and volunteering in classrooms is also not the norm. Limited resources available to rural schools compound this problem. According to the World Bank (2005), resource allocation is uneven in Turkey with some regions acquiring more physical and human

resources than others. In rural areas, school libraries and computer resources are insufficient to meet the needs of students (2011).

Considering the practices in South Korea and Turkey, while examining systems that had a non-significant gap between rural and non-rural students, may provide richer insights. Three systems − the United Kingdom, the United States and Russia − while all middle-performers, have more than ten million rural residences and thus are showcased below (World Bank, 2011b).

United Kingdom: The rural population in the United Kingdom is approximately 12,756,464 or 11 percent of the total population (World Bank, 2011b) and 7 percent of UK participants on PISA 2009 belonged to this subgroup.

Rural students in the UK may be reaping the rewards of a rural advantage. While a rural advantage is infrequently described within the educational landscape, according to the National Centre for Social Research (2009), in the UK "pupils living in rural areas tend to have higher secondary school attainment than those living in urban areas" (p. 1). The advantage, interestingly, appears to increase in more dispersed settlements. Rural advantage is a compilation of factors which ultimately favors rural environments as more conducive for learning. Some of the most discussed factors include less overcrowding, better safety, or low social movement (2009). Rural schools are generally smaller and less oversubscribed (Environment, Food and Rural Affairs Committee, 2003). Rural students may therefore have more teacher attention and greater opportunities to engage with resources, such as library and computer access. Hammond (2002) suggests that overcrowded areas may have fewer libraries and more traffic, thus limiting the access

available to students whereas rural locations do not have this challenge. Rural areas in the UK have lower crime rates, so the risk of victimization or school vandalism declines (Walker, Flatley, Kershaw, & Moon, 2008). This means rural students may be safer walking to the library alone or staying late at school to attend events or tutoring. These opportunities could contribute to rural advantage.

Finally, Dobson (2008) argues that high mobility impacts the quality and learning in schools. In high transient schools new students are enrolling throughout the year, and teachers are continuously working to catch students up. This can divert instructional focus away from the rest of the class. In rural areas, mobility tends to be lower than in urban areas, thus student populations are relatively consistent across academic years. Teachers are familiar with students and learning is founded upon common experiences. The lack of disruptions may be having a positive impact on learning in the UK.

Certainly all rural locations do not benefit from these advantages. Across the UK there are examples of regions and situations where rural students do not have an academic edge over their non-rural peers, perhaps explaining why the overall rural gap is insignificant; rural locations are all different. Rural students in North West, Yorkshire, the Humber, and the East Midlands have rural advantages over their non-rural peers but in the South East, rural students are actually underperforming compared to non-rural peers (National Centre for Social Research, 2009). Geographic location, therefore, determines if rural living has an academic advantage. Affluence is also linked to academic advantage in the UK. Rural advantage and poverty appear to be polar opposites in the UK. According to the National Centre for Social Research "higher

attainment in rural areas is largely due to greater affluence" (p. 3). The achievement patterns of students who are not wealthy are more similar to student performance in urban areas.

United States: In the United States, the rural population is more than double that of the UK at approximately 54,890,032, or 21 percent of the total population. Of the U.S. students who participated in PISA 2009, 13 percent attend schools in rural areas. Advocacy in the United States may be advantaging these rural students. Across the states, rural education is in the spotlight. Whether it is to advocate for more funding for rural schools (such as Lindahl [2011] who points out that rural schools receive lower funding than non-rural schools despite having approximately the same costs and high transportation bills), or to argue that rural schools have fewer resources (such as Richard, [2005] who argues rural areas have limited access to supplementary tutoring), researchers across the states are stepping up and advocating for rural schools to get equal treatment. Prioritizing rural education may be making a difference in policies and processes that are impacting rural schools in the United States. If rural schools are increasingly getting fair budgets to cover their expenses and more resources to meet the needs of their students, it could be improving the educational quality in these areas.

Increased accountability and standards may also contribute to rural students' performance in the United States. The recent national policy No Child Left Behind required rural schools to meet the same standards and participate in the same assessments as schools in other settings. Despite the policy's shortfalls, Maxwell, Huggins, and Scheurich (2010) describe how one rural school − deemed failing − transformed under

the new pressures by establishing professional development communities and setting higher standards. Their transformation included "changing teachers' practices in order to improve student achievement" and "shifting teacher attitudes and beliefs" (p. 177). For rural students attending schools that have typically been disregarded or lacked supervision, the increased accountability measures may be improving the teaching and learning in their schools. Similarly, a dearth of special education teachers in some rural areas has resulted in poor support for the special education students in some remote locations (Bargerhuff, Dunne, & Rencik, 2007). Over the past ten years, under special education mandates, districts are now required to provide appropriate personnel and training for students who require these services. The increased training and specialized personnel may be making a difference in this jurisdiction's rural achievement. Williams, Martin, and Hess (2010) describe how distance learning and on-site professional development opportunities are enhancing rural teachers' skillsets on assisting special education learners.

Rural schools in the United States are increasingly connecting with external resources to improve practices in remote areas. Technology is transforming teacher preparation, training, and classroom learning in rural settings in this jurisdiction. Distance-delivery teacher education programs are now making higher education accessible to individuals living in remote locations who do not want to relocate (Lohfink, Morales, Shroyer, Yahnke, & Hernandez, 2011). Such programs may improve future staffing challenges in remote areas by increasing the number of individuals who are qualified and already residing in rural locations. Virtual programming and online

learning provide rural students with access to specialized courses and opportunities to connect with experts and peers worldwide (Barbour, 2011). Such opportunities have numerous benefits for students in remote areas who would traditionally not be able to access such information without leaving their town.

Russia: The rural population in Russia is approximately 37,151,029 or 27 percent of the total population and 30 percent of the students who participated in PISA 2009 in this country attend schools in a rural area. Russia's historic investments in high quality education across the entire system may explain the achievement of rural students on the 2009 assessment. According to Sinagatullin (2001)

> Rural education [in Russia] has traditionally played a significant role in promoting better living standards for rural residents, advancing agricultural production and, on the whole, in resolving …the quality of social development, the prosperity, or, on the contrary, the poverty and backwardness of Russia. (p. 37)

Programming and curriculum for primary and secondary schools have, for decades, been scrutinized and issues specifically relevant to the rural context examined. Kindergarten programs, which have historically been well attended, have benefited from abundent funding to ensure the nation's youngest learners have a rich environment to explore and learn. Early schooling opportunities continue to be considered essential for rural students in Russia who have less exposure to learning centered activities at home. Primary and secondary school programs have an ongoing reputation for being comprehensive and well developed, preparing students with the tools to be productive contributors to the

workforce and with the academic discipline to excel in higher education. Rural students have met the same high standards for decades and attracted equally qualified teachers as urban schools, an essential component to Russia's effective rural educational system.

Structural and cultural realities are also an advantage in this system. Rural schools in Russia are autonomous and self-contained with small class sizes. While urban schools are often networked, rural schools have a high degree of autonomy to deliver the curriculum and make decisions for their school without consulting or impacting other schools. This permits rural teachers to personalize their instruction to meet the needs of their students. Since classes are small, teachers know their students' names, interests, and challenges. This intimacy is advantageous to providing the best supports for all learners to develop. The close-knit nature of rural communities also means all adults in a community watch over children and so "when compared with their urban counterparts, rural children … possess higher moral and personal characteristics (Sinagatullin, 2001, p. 37). Rural schools are more than simply a building for learning; they are the center of a community. Schools are the "social and cultural heart" (2001, p. 40) of a rural area. Community events, meetings, and activities are usually held at the school and often the school doors are open well beyond the hours of teaching. Since rural children grow up under the watchful eye of adults throughout their community, they may be more equipped to make good decisions when out of sight of their parents. This same discipline translates to better behavior in the classroom and is compounded by strong teacher-parent relationships from engaging together in various aspects of community life.

Despite these successes, there is grave concern about the future state of rural education in Russia. Issues relevant to rural schools and rural teacher preparation are increasingly being ignored or brushed aside, deeply troubling researchers about future achievement and rural life in general (Vinogradova, 2000). "It is abundantly clear now to any insightful Russian citizen that the decline of a rural school in a village will lead to the demise of the village itself" (Sinagatullin, 2001, p. 37). Researchers fear a "territorial hierarchy" continues to expand with newer resources and better teachers going to Moscow/urban schools and rural schools increasingly being neglected (Country Analytical Report, 2004, p. 31). Such a reality threatens the future quality of rural education in Russia. It will be important to monitor this gap on future PISA assessments.

Comparing the practices in South Korea and Turkey with the practices in the three systems (without a significant effect) reveals the complexity of rural education. There are many factors at play in and across these systems that may contribute to rural achievement patterns. Greater advocacy, connections with community, and national policies to develop rural education are successful features of both South Korea and the United States, while issues of poverty and unequal resources stand as major challenges in Turkey and Russia. Principals in rural settings worldwide should reflect on the following: do our students have the same access to high quality teaching and resources as their peers in other parts of the country? Are we connecting with our community and are we aware of families who are struggling with generational or recent poverty? Can we modify our practices to further support the challenges our students face every day to

attend or stay in school? Effective rural schools are the hub of the town and leaders are at the center of maintaining its success.

Summary

The first half of chapter 5's *learn global; think local* reveals the complex, multidimensional realities that collectively explain the underperformance of diverse learners worldwide. Scanning the results from all five diversity groups yields initial findings about what is perhaps the most important finding: to dissolve the achievement gap between diverse and mainstream learners will require diverse solutions. In short, diverse populations are dissimilar. All subgroups have unique circumstances that call for specific supports and changes. Breaking down the term 'diversity' into specific populations provides the best road maps for school leaders.

The interventions that appear to be most effective in systems with the smallest gender effects are in-class supports. Selecting boy-friendly texts, adding movement to lessons, and engaging boys in more conversations about subjects of interest are critical to narrowing this gap. The lack of systems where boys are performing on par (or above) their female peers suggests classroom practices worldwide are not currently meeting the literacy needs of boys. The span of innovation and changes within classrooms thus far has not been radical enough to shake up literacy practices to the point where boys across an entire system are unable to put a book down or − so eager to write a story − that their literacy performance equals that of their female peers.

To support immigrant students, establishing a linguistic lyceum is worth considering. Students who have a linguistic advantage by sharing a common language between their home and new country are doing profoundly better than those that do not share this commonality. School principals must transform all learning across their school into an ongoing haven for rich language learning. Efforts beyond the school day further expose students to language; ensuring that after school programs and community centers offer opportunities for students and families to engage with native speakers yields positive gains for language learners. At the same time, cultural acceptance and societal support is essential if these students are to achieve their highest potential. They must feel valued and appreciated. Valuing previous cultural, linguistic, social, and academic knowledge by establishing ways for them to share their culture, language, and home life will further students' sense of worth in a new system.

In schools with large concentrations of language learners, linguistic neutrality is essential. Some language learners may benefit from a 'linguistic paradise' but not all. This is because of the wide scope of students within the 'language learner' group. It can be misleading to assume the solution is a simple in-school language rich environment. Schools' efforts are tainted by the beliefs and actions surrounding these learners in mainstream society. When language learners feel inferior or undervalued, their achievement patterns often reflect this disempowerment. The linguistic dynamic between the students' home language and culture needs to be neutral (if not friendly) for most language learners to succeed. Identifying power struggles and increasing structural or

historical commonalities can be initial steps to improving the performance of language learners.

National reforms to reduce crime and improve the health of disadvantaged children are essential to improving the achievement of socio-economically disadvantaged students. Unemployment and generational poverty are also national concerns that perpetuate low socio-economic status and high social warfare. Societal supports that foster new employment opportunities and raise the standard of living for the poorest class of students are advantageous for socio-economically disadvantaged learners. Ensuring safe neighborhoods and regular interactions between peers across social classes are vital to healthy societies. Efforts that narrow the span between wealthy and poor, and change beliefs that these populations are at odds, will further support low socio-economic students. Principals in these systems must reach out to their community and parent population and seize opportunities to work with families. Getting more books into the homes of children, supporting tuition-free, literacy rich readiness preschool programming, and adult education can further the opportunities for parents and children to read and play literacy games together.

Local supports are pivotal to rural achievement. Chronic poverty, desolation, school closings and a lack of highly qualified teachers are ongoing issues inhibiting the achievement of diverse learners. Until greater efforts are made to address these issues, the reading and writing skills of rural students will continue to lag. As technology resources increasingly connect rural and non-rural locations, such resources may be one tool for which school leaders can bring more learning opportunities into classrooms.

However, these alone will be insufficient. Stronger school-community and school-home relationships are essential to long-term rural educational gains. When schools are buzzing community centers with after-school, evening, and weekend options they become the focal point of activity. Encouraging community friendliness can attract highly qualified teachers and such relationships are important to retention. Communication between rural schools and families is especially important, since distance can inhibit ongoing contact.

The interpretations presented in this section provide initial insights into the chapter 4 findings but by no means are comprehensive. More research is needed to meaningful detail each diversity road.

Part 2. Leadership Priorities

The macro view of the results from research question 2 affirms that there are identifiable leadership priorities that have a positive association with reading literacy achievement. However, relationships worldwide are weak and efforts frequently do not yield the desired effects. As visible in Figure 5.2.1, no priorities associate with student achievement in more than 30 percent of the jurisdictions. While all of the examined priorities are statistically significantly associated to achievement in at least two systems, none are significant in more than nineteen jurisdictions (at $p \leq 0.05$). There are many possible reasons for the low frequency, some of which will be discussed throughout this section.

Adding the leadership priorities into each model does slightly alter gap sizes but in the majority of systems, performance differences retain their respected significant/non-

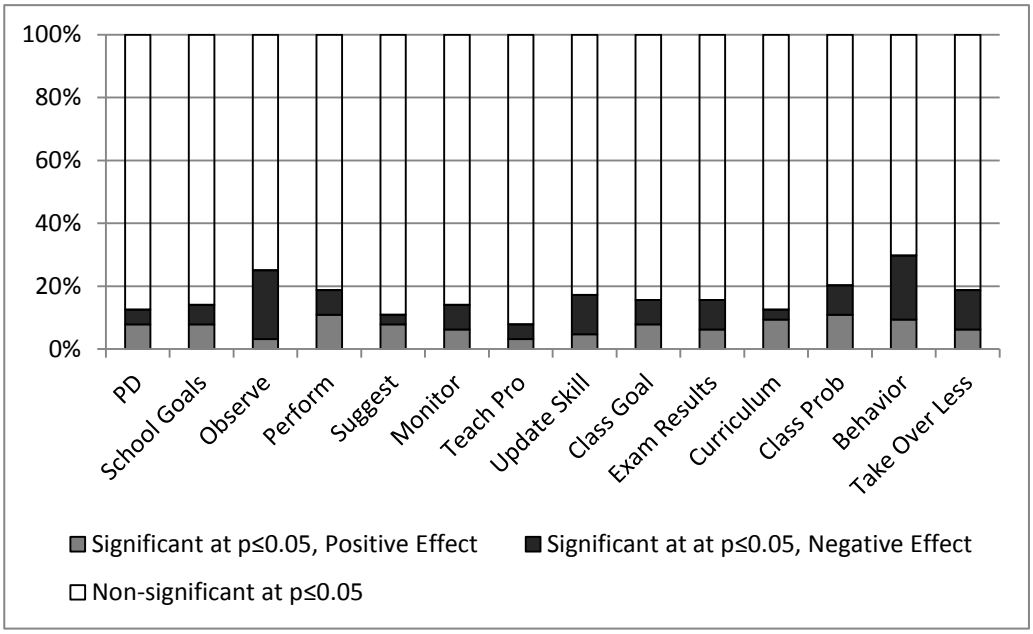

Figure 5.2.1. Frequency and effects of statistically significant priorities with associations to achievement

significant associations (at $p \leq 0.05$). There are nine exceptions. The gap between immigrant and non-immigrant students in Finland was significant in model 1 but in model 2, it is insignificant. In Peru, the gap between immigrant and non-immigrant students had been insignificant in model 1 but after adding the leadership priorities in model 2, the relationship is significant. In Spain, language learners and native speakers did not have a significant achievement difference in model 1 but in model 2 they do. In Kazakhstan, Tunisia, and New Zealand, the gaps between rural and non-rural changed from significant to insignificant and in Slovenia and Romania, the gap between rural and non-rural students was insignificant in model 1 and now, after adding the leadership priorities in model 2, both are significant. In Korea, the achievement differences between

disadvantaged and non-disadvantaged on the ESCS index was significant in model 1 but it is insignificant in model 2. These changes at $p \leq 0.05$ illustrate that the relationship between mainstream and diverse learners' achievement associates with the examined leadership priorities.

As highlighted in the previous chapter, the most frequent association across all sixty-four jurisdictions is between the leadership priority paying attention to disruptive behavior in classrooms and student achievement. This predictor is statistically significant in nineteen systems (30 percent of all systems). This aligns to the results on the Teaching and Learning International Survey (TALIS), which reports that disruptive student behavior is a major issue worldwide. "In some countries, more than half of lesson time is lost to student behavior" (OECD, 2009a). The association between school leaders who prioritize disruptive behavior in classrooms and literacy achievement is overwhelmingly negative: in 63 percent of the jurisdictions where the relationship is significant, it is negative. The negative association is likely, at least in part, due to leader and staff clashes over *how* to prioritize disruptive behavior. In Hungary, Italy, Poland, and Slovenia, teachers generally favor positive disciplinary climates, while teachers in Belgium, Norway, Portugal, and Spain more frequently favor direct transmission beliefs (negative classroom disciplinary environments) (2009a). If a principal and teacher's beliefs of effective interventions misalign, achievement may be negatively impacted.

The second most frequent association across the examined systems is around the predictor *observe*. In sixteen systems (25 percent of all systems) there is a significant association between school principals who prioritized observing in classrooms and the

achievement patterns of students. This relationship is again overwhelmingly negative. In 88 percent of the systems where the relationship is significant, it is negative. This could be the result of *how* a leader's presence impacts teaching and learning in a classroom. Marshall (2012) describes most observations as a dog-and-pony show.

> In most schools, by contract or by tradition, administrators give advance notice of their formal classroom observations and teachers quite understandably take their performance up a notch or two. In addition, students usually behave better when there's a suit in the room. (p. 19)

If the teaching observed is unauthentic, it is foreseeable that the impact of the observation on achievement is negative. According to Charlotte Danielson (2012), class observations can have a positive effect on classroom learning, when they "incorporate practices associated with professional learning − namely, self-assessment, reflection on practices and professional conversation" (p. 36). The highly negative association in these results suggests that more observations are dog-and-pony shows than reflective opportunities that lead to meaningful growth. This will be further discussed later in this chapter.

Beyond these two priorities the associations across the sixty-four systems are increasingly weak. This could be an indication that effective leadership is so grounded in context that patterns across the entire educational landscape are not visible; or, that the PISA questionnaire does not investigate all essential priorities of leadership. To consider both possibilities, the results are reorganized under Hallinger and Murphy's three conditions of effective leadership and frequency and effect patterns within the performance framework are distilled.

Defining the School Mission

Examining only the priorities under the condition 'defining the school mission,' the most frequent significant associations are in promising-performing systems. School leaders in promising-performing systems who collectively prioritized *PD, school goals, performance,* and *class activities* had a significant effect on student achievement (at $p \leq 0.05$) more frequently than leaders in middle and high-performing systems (see Figure 5.2.2). This may be because many promising-performing nations are less focused on reforming their educational jurisdictions and more interested in developing them. Hargreaves and Shirley (2012) write establishing "an inspiring dream" is a first pillar of purpose. They argue that this foundation is critical to building professionalism and coherency. The high frequency of associations between priorities under 'defining the school mission' and achievement suggest many promising-performing leaders are focused on the first pillar of purpose.

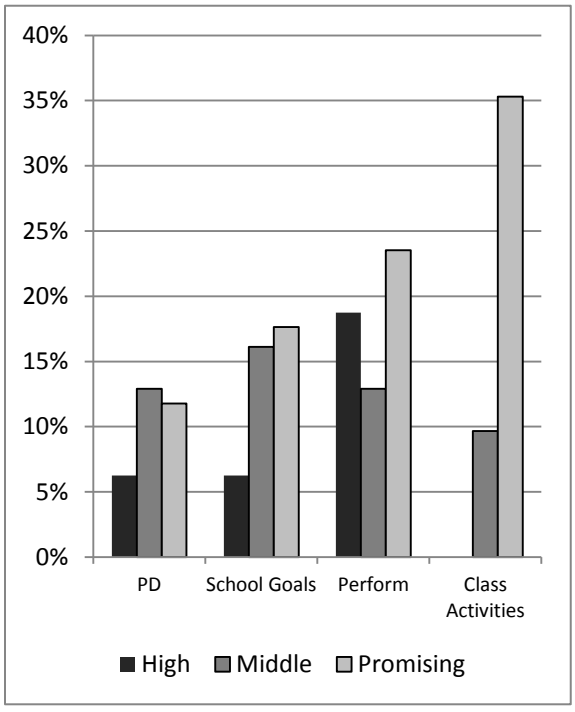

Figure 5.2.2. Priorities with a statistically significant association to achievement within *Defining a Mission*, by performance level

Over the past thirty years, many promising systems have experienced societal changes that may explain why school leaders in these jurisdictions who emphasize priorities that develop a school

mission are having an impact on achievement. For instance, Azerbaijan, Kyrgyzstan, and Kazakhstan have all undergone political transformations. With the fall of the Soviet regime, values, beliefs, and attitudes in these systems were reshaped. Schools play an essential part in this reculturing. Beyond rethinking educational processes, curriculum, and instruction, philosophies of learning have to shift (Magno, 2009). Principals who prioritize developing a school mission, vision, and goals in light of these changes may impact student outcomes, especially since some popular behaviors from the prior era still linger. In Azerbaijan, the current leadership model continues to mirror that developed under the Soviet period. The best teachers are appointed as school administrators in a teacher-turned-principal approach (2009). Such individuals begin as principals equipped with the skills to be instructional leaders, so it is sensible that they prioritize developing a school mission.

The effect patterns of prioritizing behaviors that define a school mission within the promising-performing systems are, however, not always predicting achievement gains. As visible in Figure 5.2.3., only one predictor, *school goals* consistently has a positive effect, but this includes only three systems (at $p \leq 0.05$). *Perform* has both a positive and negative effect (positive in two; negative in two), as

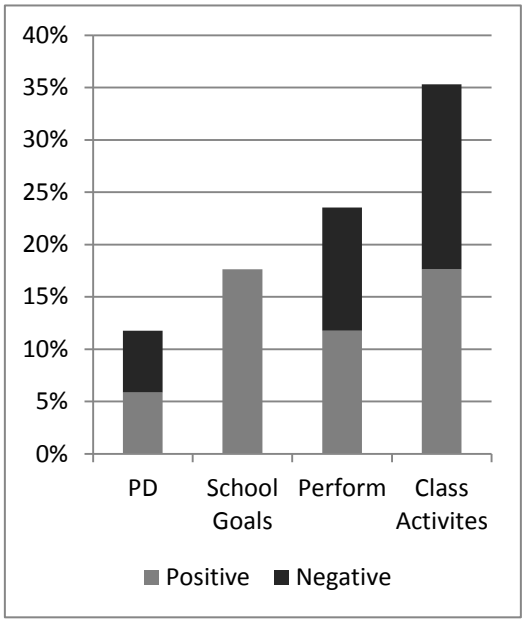

Figure 5.2.3. Effects of predictor associations within *Defining a Mission*, across promising-performing systems

is *class activities* (positive in three and negative in three). (The predictor *PD* is only significant in two systems so it is not a focus for this discussion). Notably, sample sizes for all four predictors are small. The mixed effects may reflect the wide diversity of schools within this performing group. Some systems are highly centralized and school principals have little autonomy outside of defining the mission; others are decentralized but ministries establish a common mission.

Investigating the leadership priorities *school goals, perform,* and *class activities* within specific promising-performing systems provides a clearer understanding of these effect patterns.

The positive predicted effect on achievement from prioritizing *school goals* makes sense given that most leaders in promising systems create their own educational goals. In Brazil, for example, the reading literacy scores in schools where leaders prioritize ensuring teachers work according to the school goals are predicted to be fifty points higher than in schools where leaders do not prioritize this. This may reflect ongoing challenges within the system and restricted decision-making power of school leaders. Improving education has been a national priority in Brazil since the 1990s but school leaders continue to face enormous challenges, including overcrowded classrooms (teacher-student ratios of one to forty), high poverty communities, and a reputation for poor instruction built upon "rote memorization, dictations, and mechanical drills" (Leonardos, 2013, p. 70). The Ministry of Education in Brazil is responsible for designing school programming and overseeing teacher evaluation, but most principals have some flexibility regarding goal setting (OECD, 2011a). It is therefore conceivable

that leaders within this system who take pride in establishing their school goals ensure teachers understand them and actively seek evidence that they are central in lesson planning and during collaborative professional learning. If the goals align with the needs of the school, such behavior would likely have a positive impact on student performance.

The results from Brazil remind leaders worldwide that before they check to see if teachers work aligns with the school goals, they should affirm the goals clearly match the needs of the school. For leaders in diverse contexts who have the authority to establish their own school goals this means promoting objectives that intentionally target improving the academic performance of at-risk learners. As this study's literature review attests, this most likely involves monitoring the academic gains of these learners and rewriting goals which do not center on this objective. It also means, as the Brazilian example attests, successfully navigating the confines of one's system is a prerequisite to ensuring diverse students are receiving the support they need while also increasing learning across the entire school.

The mixed effects among promising systems between prioritizing using student performance scores to develop school goals (indicator *perform*) and student achievement likely reflects the quality of assessments being considered. If the assessment a principal is using is not reputable, or teachers believe it misaligns with the skills and learning students should acquire, establishing school goals based on student performance may be futile. In Montenegro, for example, national assessments are widely criticized and leaders who prioritize student performance scores when developing the school goals are predicted to have a negative impact on achievement (forty-nine points lower than in

systems where this activity is not prioritized). Iliff (2005) explains that grade level assessments and secondary entrance exams in Montenegro are "almost exclusively fact and knowledge based, and reward good memorization skills" (p. 12). It is therefore reasonable that leaders who prioritize understanding student results on these tests as a means to develop their school goals are constructing goals that perpetuate superficial learning instead of deep, meaningful knowledge development.

On the other hand, in Kazakhstan, national assessments are more reputable and student performance scores are predicted to be twenty-four points higher in schools where leaders prioritize student performance results when creating school goals. According to the National and International Education Development System Assessment in the Republic of Kazakhstan, assessments aim to align primary and secondary education and ensure all students are learning (UNICEF, n.d.). High quality national assessments that provide meaningful insights into what students know and do not understand are a priority of President Nursultan Nazarbayev, who recently stated "we must ensure delivery of quality education services across the country according to worldwide standards" (as cited in UNICEF, n.d., p. 2). Kazakhstan's efforts are also recognized by UNICEF, who applauded the government for overcoming inequalities within its system through carefully monitoring student performance (UNESCO, 2006). If assessments in this system are reputable and comprehensive, it makes sense that leaders who prioritize using student performance scores to develop school goals are having a positive impact on achievement.

The results from Montenegro and Kazakhstan unveil important lessons for leaders in diverse schools worldwide. Principals must carefully review their assessments to ensure they are effective tools for monitoring *all* learners' achievement before utilizing them as a tool to develop goals. If they are robust and non-biased, they could be a useful way to establish interventions to improve the achievement of specific populations. If not however, using them as a means to develop goals could perpetuate diverse learners' underperformance by falling short of addressing the most pressing needs of these students (Hernandex, 1994).

The predictor *class activities* is perhaps the most interesting under 'defining the school mission' since it is significant in more systems than any of the other predictors. Its mixed effects may reflect goal ownership. In systems where school goals are decided at the Ministry level, they may not align with the needs of a particular school. It is reasonable to assume that if a principal pushes for classroom activities to connect with the goals, they could have a negative effect on student outcomes. On the other hand, in systems where school goals are created locally and align with the school needs, it is forseeable that they will have a positive impact on achievement when prioritized by leaders. In Albania, for example, goal-setting is one of the only ways leaders can personalize their school. It makes sense that on PISA 2009, the literacy scores of students in Albanian schools with principals who highly prioritize ensuring class activities align with school goals are predicted to be thirty points higher than in schools where the leader does not prioritize this behavior. Albanian principals are head of an advisory council and oversee the day-to-day operations in their school but the Ministry is

responsible for monitoring school quality, hiring, teacher appointments, and financial resources (Fiszbein, 2001). While some describe school leaders as powerless, others attest that they do have freedom to seek out special projects or funds to personalize their school (2001). Ownership of school goals and ensuring that classroom practices align with these focuses is a way many of these leaders are able to personalize their school within the larger system, and the results of this study suggest this effort is making a difference.

Reflecting on the results under 'defining the school mission' reveals there is much more to learn regarding how leaders impact student achievement. The associations that emerge from reviewing the results around *PD, school goals, performance,* and *class activities* on the PISA 2009 assessment are weak and effects vary. Despite this, the data do provide some initial insights for principals serving diverse populations that are seeking global inspiration around defining their school mission. Such leaders should consider the following: are our school goals aligned with the needs of all our students, or are they centered around mainstream learners? Do the goals truly, and honestly drive the behaviors in our classrooms in such a way that they are improving the achievement of diverse learners? How can we refine our school vision and mission to lever deeper awareness and commitment across the staff to narrowing the achievement gaps between our mainstream and diverse learners? While overall promising-performing systems had the greatest statistical associations under the priorities for 'defining the school mission,' associations also surface in high and middle-performing systems (Figure 5.2.2), affirming that defining the school mission is an essential condition of effective leadership at all

performance levels. A school mission that resonates from not only the principal's words and actions, but also from the staff, students, and community can truly propel a system forward.

Managing the Instructional Programming

The priorities under the condition 'managing the instructional programming' are most frequently statistically significantly associated with achievement among high-performing systems, although middle-performing systems follow closely. School leaders in high-performing systems who collectively prioritized monitoring student work, observing instruction, taking exam results into account in decisions regarding the curriculum, and safeguarding the coordination of the curriculum (indicators *monitor, observe, exam results,* and *curriculum*) had a more frequent predicted effect on student achievement than leaders in the other performance levels (see Figure 5.2.4). This may reflect the deep commitment across high-performing systems to systemwide learning. In Finland, for example, Hargreaves, Halász, and Pont (2007) describe effective instructional management as "leadership for learning, leadership by learning and leadership as learning"

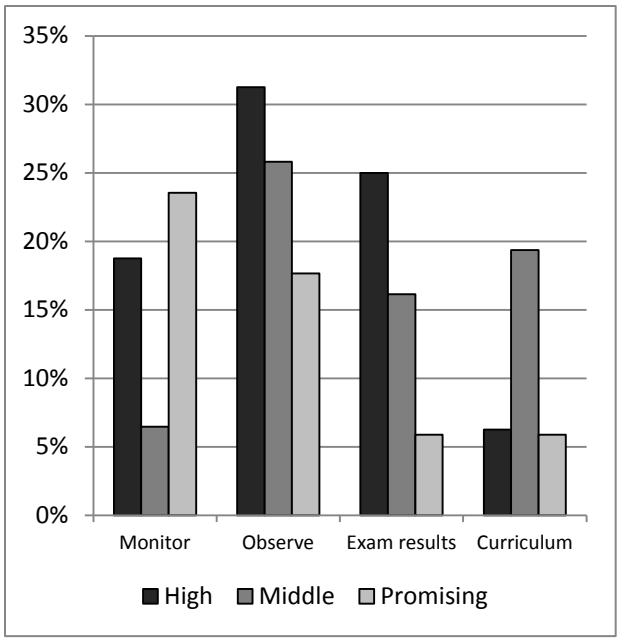

Figure 5.2.4. Priorities with a statistically significant association to achievement within *Managing Instructional Programming*, by performance level

(p. 16). They argue this vision is backed by strong local and national trust. Pasi Sahlberg (2007) agrees, adding that Finnish principals provide teachers with considerable autonomy so they also can be ongoing learners, and view their relationship more as a partnership than top-down leadership. The same commitment permeates in China. Walker, Qian, and Zhang (2011) describe effective leaders in Shanghai as "leaders of learners" (p. 338). Understandably, the relationship between principals and teachers in this system is considerably different. Principals mediate between the Ministry and teachers; school leadership is one of many responsibilities. So, while Chinese leaders spend notable time outside of their schools attending political engagements and Finnish leaders are dominantly in their schools (Tan, 2013), both systems value lifelong learning. Such a commitment may explain the increased associations between prioritizing instructional management and student achievement within this performance level.

The predicted effects between the priorities under 'managing instructional programming' and student achievement within the high-performing systems are, however, again mixed. The predictor *monitor* is significant and positive in one system and signficant and negative in two others. *Observe* is significant in two systems and negative in

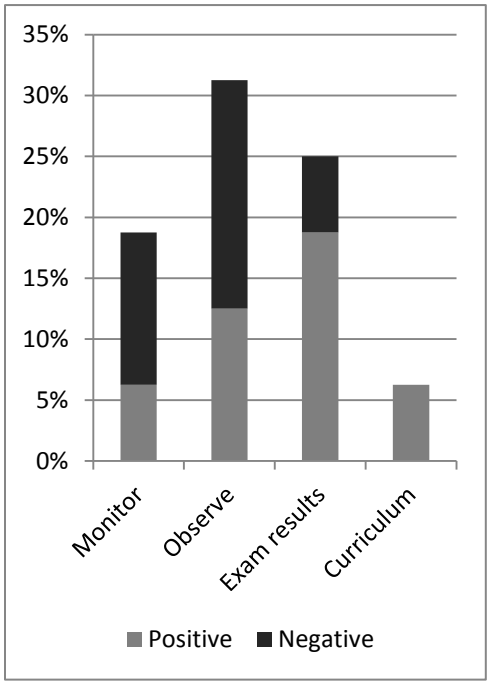

Figure 5.2.5. Effects of predictor associations within *Managing Instructional Programming*, across high-performing systems

three and *exam results* is predicted to have a positive effect in three systems and a negative effect in one. *Curriculum* is predicted to have a positive and significant effect in only one system, so it is not a part of this discussion (see Figure 5.2.5).

All four predictors are notably weak and their effects vary, mirroring the results from the previous condition. This may be because of evolving understandings of instructional management among high-performing jurisdictions. Many systems are seeking ways to refine their practices to edge above other top-performers and instruction is central in these reforms. For example, in top ranking Shanghai, the "creativity gap" is a major focus. The Ministry is considering how to modify their curriculum to further develop learners as creative thinkers (Walker, Qian, & Zhang, 2011). A different strategy is underway in Hong Kong, where reforms have shifted substantial decision-making away from the Education Manpower Bureau and into the hands of school leaders (Hui & Cheung, 2006). Such differing improvement strategies could explain the varied effects but they also may represent an important finding: there is no perfect protocol of instructional leadership worldwide.

Investigating the leadership priorities *monitor, observe,* and *exam results* within specific high-performing systems reveals effective instructional leaders are the individuals with the capacity and flexibility to identify and respond to the changing needs of their school.

The mixed effects around the predictor *monitor* and achievement reflect different needs in systems. In high-performing Poland, for example, scores in schools where principals prioritize monitoring student work are predicted to be twenty-four points lower

than in schools where principals are not prioritizing this activity. This makes sense considering Poland's educational system has undergone sweeping changes over the past few years. Principals and teachers are still adjusting to the new outcomes-based approach to instruction and need time and support to understand it before administrators focus tirelessly on monitoring student achievement (Dąbrowski & Wiśniewski, 2011). This does not mean principals shouldn't monitor student achievement. Rather, focusing on providing teachers with the best possible supports to adjust to the new school requirements could be a more effective and productive priority at this time. This hypothesis is further supported by the fact Polish principals who are prioritizing informing teachers on ways to update their skills are having a positive effect on instruction.

For school leaders worldwide serving diverse populations, Poland's results provide an important reminder. As new reforms or initiatives emerge in a school, leaders should listen to the needs of their staff and monitor the implementation of the changes before expecting to see improvements in student performance. Effective leaders likely consider how a new curriculum or instructional style will impact the at-risk populations in their school. Their findings influence the supports and training they provide to staff to ensure changes have a positive impact on diverse learners' achievement. Once teachers adjust to the changes, prioritizing monitoring student achievement will be a more useful tool to improve the performance of diverse learners.

The mixed effects between headmasters who prioritize observing in classrooms and student achievement may reflect different observational pressures and processes

worldwide. The results from Shanghai and Australia accentuate this point. As noted in chapter 4, China's double observation structure is unique. Tan (2013) describes teachers participate in [*gongkaike*], which are 'public' or 'open' lessons as well as 'informal' observations. Public lessons are scheduled and open to the community, parents, and any interested school personnel. There is time for visitors' critiques once the lesson is complete. These lessons are required at all levels, not just for classroom teachers, and "is a requirement for teacher professional development and teacher appraisal in Shanghai" (2013, p. 24). It is likely that because of the high pressure and stress of public lessons, teachers appreciate the less formal principal observations. The principal observations are situated under the vision: "open the classroom door to create learning together as one body [*dakai jiaoshi damen, gongchuang xuexi gongtongti*]" (2013, p. 25). These observations occur randomly and upon conclusion, a principal has an informal chat with the teacher to discuss what he/she saw. Many teachers appreciate these observations and value the informal feedback as a way to prepare for open lessons. It is therefore reasonable to infer that, in this society, principal observations in this system are having a positive impact on instruction and also on student achievement.

Principals prioritizing observations in Australia, conversely, are predicted to have a negative effect on achievement. This may be due to Australian teacher's preference for peer observations over formal principal visits. Bell and Mladenovic (2008) evaluated teachers' reactions to participating in peer observations and reported 94 percent of teachers found it valuable and 88 percent said their teaching practices would be revised based on the results. Formal, structured principal visits, in contrast, were met with

greater anxiety and resistence (2008). It is fathomable to believe that if alternative forms of observation are more useful to teachers in this system, but principals insist on conducting ongoing observations themselves, it could have a negative impact on instruction.

The practices in Shanghai and Australia suggest leaders who support multiple observation strategies are more likely to ensure classroom visits are meaningful and will ultimately enhance the learning of all learners. For principals in diverse contexts, intentionally focusing on diverse subgroups when observing in classrooms and providing teachers with feedback on how at-risk populations are performing in the post-lesson discussion may be worthwhile (Gooden, 2012). Considering seating arrangements, interactions with peers and the teacher, and student focus are all important to success and can be monitored during an observation. In other systems, leaders may have greater success if they discuss strategies for at-risk populations with the entire staff and meet with individual teaching pairs who are interested in peer observing to collectively develop a protocol. Observation flexibility − at least until a leader can reculture understandings of observing − could alleviate unnecessary performance pressure on teachers and, at the same time, raise sensitivity towards the practices within schools serving diverse learners.

The mixed predicted effects in high-performing systems between taking exam results into account when creating the curriculum and student achievement may reflect conflicting pressures. In many of the top-performing systems, including Shanghai, Japan, Korea, and Singapore, students sit for long, high-stake national tests and schools are

under extreme pressure to ensure learners are prepared. Similarly, Ministries of Education are increasingly messaging headmasters and teachers to not simply teach to the test. In Singapore, for example, the Ministry messaging of *teach less learn more* is reflected in principals' deprioritizing of exam results in creating curriculum (Ng, 2008) and scores are predicted to be thirty-two points lower when principals do this. In China, principals are more hesitant. Local Chinese governments call on leaders to emphasize holistic development and "upgrade curriculum leadership skills" but school leaders are "watching closely and react pragmatically to what the government is 'really saying'" since exam results remain the single most important evaluative criteria of a school's reputation (Walker, Qian, & Zhang, 2011, p. 401). It is therefore not surprising that principals in Shanghai who indicated they prioritize exam results when creating curriculum are predicted to score twenty-two points higher than students in schools where leaders do not prioritize this activity.

For leaders in diverse systems worldwide, these conflicting pressures affirm their responsibility of navigating the demands of stakeholders. While all stakeholders may have good intentions, it is the responsibility of the principal to set into motion the path that will keep teachers focused on improving the supports for diverse learners. This may mean making the necessary decision to protect instructional time, administering alternative assessments that disaggregate results by at-risk populations, or training teachers to identify and respond to underachievement patterns (Hallinger, 2003). Collecting ongoing data from more than one source provides leaders in diverse contexts

with the tools to monitor the achievement of their at-risk learners and tailor their instructional programming.

The relationship between leaders' behaviors under 'managing instructional programming' and student achievement are most distinct among high-performers but again, the associations are weak and the effects vary. These results do confirm that principals worldwide benefit from being involved in the instructional management of their schools (Sofo, Fitzgerald, & Jawas, 2012) but it is perhaps even more telling that they repeatedly imply effective leaders are the individuals who are able to respond to the current needs of a system at any given point. Principals who want to impact student achievement ensure teachers understand and have the skills to succeed when new initiatives or reforms are implemented in their system; similarly, headmasters in systems where the school culture does not support traditional observation methods adapt and implement alternative protocols that ensure instruction across their school is constantly improving.

To build flexibility as an instructional leader, principals should reflect on the following: does our instructional programming align with the needs of at-risk learners? What evidence in our observational protocols and assessments reveals our ongoing drive to improving the achievement of diverse learners? How can I shift my priorities to further enrich my staffs' awareness and commitment to narrowing the achievement gaps between our mainstream and diverse students? Principals in promising and middle-performing systems also have significant associations between achievement and

instructional management as visible in Figure 5.2.4., indicating this is an essential condition of effective leadership at all performance levels.

Developing the School Learning Climate

The priorities under the condition 'developing the school learning climate' are also most frequently statistically significantly associated with student achievement in high-performing systems. Collectively, there are more statistically significant associations between the leadership priorities *suggest, teacher problems, update skills, class problems, behavior,* and *take over lessons* to achievement among high-performing systems than in the other two performance levels (see Figure 5.2.6). It is notable that promising-performers dominate associations around *take over lessons,* which has mixed effects, and, as discussed in the previous chapter, likely has to do with differing strategies. Overall, high-performers have the most associations under this condition, reflecting McKinsey and Company's (2010) finding that top performing systems keep

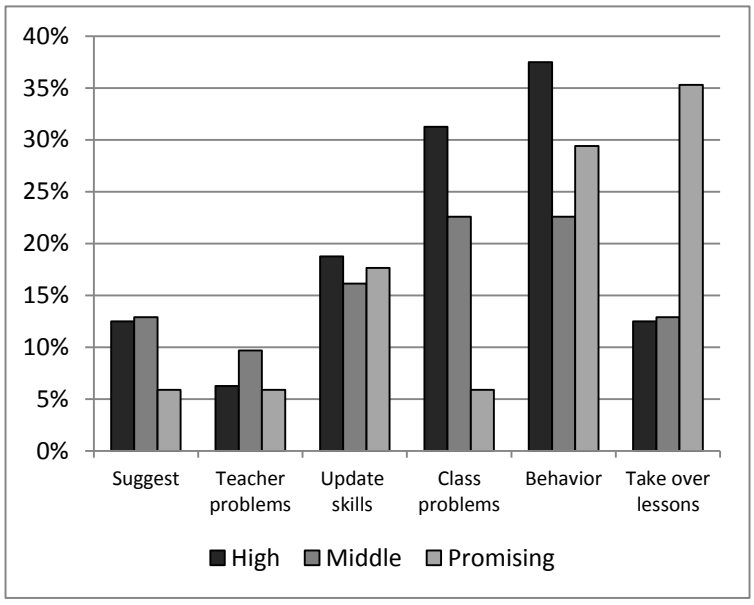

Figure 5.2.6. Priorities with a statistically significant association to achievement within *Developing School Climate*, by performance level

getting better by focusing on culture. Leaders who want to move their systems from great to excellent build collective capacity through developing school culture. Fullan writes

> Collective capacity is when groups get better − school cultures, district cultures, and government cultures. The big collective capacity and the one that ultimately counts is when they get better conjointly − collective, collaborative capacity. (as cited in McKinsey & Company, 2010, p. 74)

The results within this condition suggest that effective leaders in top-performing systems are going beyond building trust and learning centered classrooms to foster collective ownership for a culture of learning. Interestingly, many high-performing systems exist in societies that are either homogeneous or strongly support equality. Both realities may advantage systems in building collective capacity for a culture of learning. Levin (2012) writes "in many cases, even though inequalities in schools is high, inequality in the rest of society is even greater. Schools by themselves are unlikely to be able to overcome these deep divisions in society" (p. 75). Principals in many high-performing systems do not have to overcome deep societal division to build collective capacity around learning because of nominal diversity in their system, or because a value for equity is already embedded within their society.

The predicted effects between principals' actions and student achievement within high-performing systems, however, are once again weak and varied. Only one or two systems had associations for the predictors *suggest, teacher problems,* and *take over lessons*, but the remaining three indicators have higher frequency and merit closer

consideration (see Figure 5.2.7). The predictor *update skills* has a positive and significant effect in two systems and negative and significant in one other. The predictor *behavior* is the most frequent association but its effect on achievement is mostly negative (negative in five systems and positive in one). The predictor *class problems* is more positive. The reading literacy scores of students in schools where principals prioritize helping teachers with class problems are predicted to have a significant and positive effect on achievement in four systems and a significant and negative effect in one.

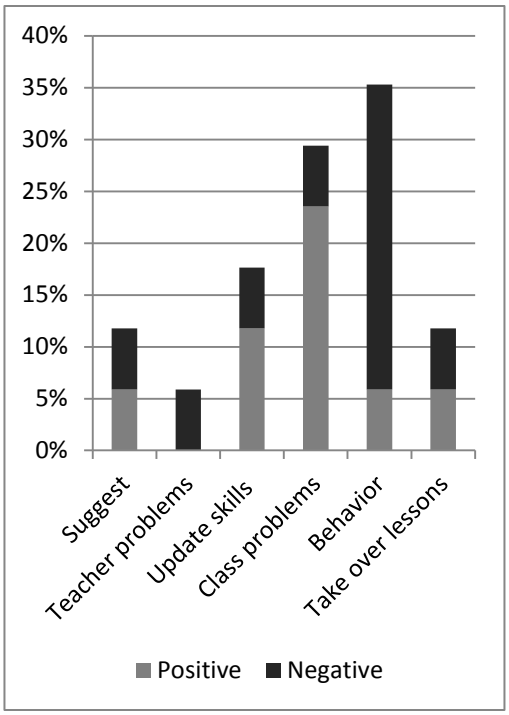

Figure 5.2.7. Effects of predictor associations within *Developing School Climate*, across high-performing systems

Investigating the priorities *class problems, behavior,* and *update skills* within specific high-performing systems provides a richer understanding of these effect patterns.

To understand the effect patterns for the indicator *class problems*, it is useful to compare it to the indicator *teacher problems*. The subtle but distinct linguistic differences between solving problems collectively when a teacher brings up an issue and taking the initiative to discuss matters when a teacher has a problem is profound in some contexts. In Japan, for example, there is a thirty-eight point gain predicted in literacy scores where a leader prioritizes solving a problem with a teacher when the teacher brings up a classroom issue but there is a twenty-eight point decline predicted when leaders take

the initiative to discuss problems with teachers. This makes sense because leaders who are seen as too assertive in Japan, coming directly to a teacher to discuss a classroom matter can be viewed as overstepping their responsibilities and ultimately could embarrass a teacher. Arum and Ford (2012) write "Japan relies heavily on homeroom teachers to provide guidance and to support the rehabilitation of delinquent students" (p. 60). A principal who disregards this cultural norm and interferes could cause a teacher to 'lose face' (a cultural taboo) in Japan and could ultimately have a negative impact on the achievement of students in that classroom (Lin & Yamaguchi, 2011). On the other hand, a Japanese leader who is willing and able to solve problems collectively when a teacher brings them to his or her attention, results in the teacher feeling supported. Such actions build teachers' confidence which, over time, could have a positive effect on student achievement.

The subtle linguistic differences are a model for leaders worldwide. Cultural norms are important factors and leaders must understand them before they can meaningfully impact the learning in their school. Principals who are aware of linguistic and cultural understandings (and refine their actions and messaging to align to the norms in their society), will likely be more successful at moving a school forward than those who disregard them. Headmasters who take time to understand what is important to teachers, students, and the community will gain deeper insights into the traditions and historical contexts, the cornerstone for understanding in a learning institution. Valuing this local knowledge by using it to foster a school climate of open, honest communication sets a stage for improvement. Respect for teachers fuels healthy relationships; healthy

relationships empower teachers and build collective capacity so that a positive tone resonates from the school.

Contextual norms and cultural expectations may also explain the negative effects around prioritizing disruptive behavior. The reading literacy scores in Singaporean schools, for instance, where principals prioritize addressing behavioral issues are predicted to be sixty-six points lower than in schools where leaders do not prioritize this activity. This appears to reflect the fact that disciplinary issues in Singapore are a teacher-parent concern. The Singapore National Education Code of Conduct states the responsibility of a teacher is "rewarding and recognizing appropriate behavior and communicating with students and parents if student behavior is not appropriate" (Singapore Ministry of Education, 2009, p. 7). The responsibility of a parent is "to seek from school and community agencies help in correcting a student's misbehavior" (p. 6). It is not the responsibility of a principal to intervene with behavioral issues. When a leader in this system actively resolves disciplinary issues, they are overstepping their leadership responsibility. Neglecting school norms may cause cultural confusion, or result in a leader negating other aspects of leadership that are in urgent need of attention. So, while Singaporean leaders are called the "CEO of their school" and are expected to lead staff, manage their school, and produce high educational outcomes (Ng, 2008, p. 239), there is a negative effect between leaders prioritizing behavior and student achievement in Singapore.

The results from Singapore remind leaders worldwide that success may, at first, be closely bonded to the expectations within a system. But leaders who work within such

schools to break down barriers and reshape expectations can, in the end, be more successful in fostering sustainable improvements. Behavioral issues are one of the most difficult aspects of leadership and principals need to consider their relationship with students, staff, and the community to identify how best they can ensure all students have safe and productive learning environments. In some systems, this involves close relationships with students and active involvement in classrooms, but in others it means supporting teachers 'at the elbow' and ensuring they have the skillset to improve their connection with challenged learners (Hargreaves et al., 2012).

The mixed effects around the priority *update skills* and student achievement suggests some systems have more work to do to align their relationship with staff to that of their school culture. Comparing the practices in Hong Kong and the Netherlands accentuates this point. In Hong Kong, the predicted effect is positive between principals who prioritize informing teachers about possibilities for updating their knowledge and skills and student achievement. This is likely because teachers in Hong Kong want more strategies and supports as they adapt to the sweeping educational reforms within their system. Wong (2010) writes, "Hong Kong has undergone tremendous educational reform and teachers have no choice but to adapt" (p. 152). It is foreseeable that principals who avail teachers of new ways to update their skills and knowledge are providing educators with the supports they need to plan and execute high quality lessons. For teachers who are struggling to master the new reform requirements, opportunities to gain extra support may make all the difference in building their confidence and success in the classroom.

In the Netherlands, on the other hand, the relationship between prioritizing opportunities to update skills and student achievement is negative. This makes sense according to Opdenakker and Damme (2004) who argue that teachers in the Netherlands need better in-class supports and more structured school learning environments, not information about out-of-school learning opportunities. The current needs in these schools are different than those in Hong Kong; priorities of leaders in this system that will have the greatest impact on achievement are distinct. "When one wants to improve the outcomes of schools, it is necessary that one sees the whole picture of the school and accounts for and pays attention to school context, student composition and school practices of [a] particular school" (2004, p. 187).

The practices from Hong Kong and the Netherlands suggest that different cultures call for different supports. Some leaders in diverse contexts who seek out professional opportunities for their teachers will have a positive effect on at-risk learners' achievement, but in other systems leaders who identify coaches who come in and work with teachers on how to develop their classroom environments into a more inclusive space, and foster the same behaviors school wide will be more successful. Chew, Stott, and Boon (2003) explain it like this: "different teachers have different personalities and motivations, and they have to be managed differently. Some want to be hand-held; others prefer the freedom to work things out on their own" (p. 67). Listening and reacting to the needs of teachers again emerges from the practices in these two systems as an important driver of a leader's priorities.

Reflecting on the results under this last condition of effective leadership solidifies the colossal work still ahead in unpacking the relationship between school leaders and student achievement. Complementing the first and second condition, the associations around the final six priorities examined in this study are again weak and the effects vary. The initial message that emerges from this final condition is that leaders who are intuitive to the present needs of their school, and adjust their priorities to align with these needs, are frequently having a positive effect on acheivement. These actions, in return, have a positive effect on school climate and appear to develop collective capacity across a staff. In short, effective leaders may influence culture but the needs of the school drive the direction of their efforts. Principals aiming to improve their school culture should ask: does our school ensure all students the best possible environment to learn? Do I listen to the needs of the stakeholders in our school and community and direct my efforts accordingly? How can I model in my actions and behaviors the school culture most conducive to narrowing the achievement gaps between our mainstream and diverse students? Leaders across all performance levels who aim to refine their culture to support learners must align their priorities to the needs of the school.

Summary

Part 2 of *learn global; think local* affirms that effective leadership looks different worldwide. Indeed "there is no 'best cocktail of school leadership styles' mix for all school leaders; one size does not fit all" (Leadership Improvement for Student Achievement, 2009, p. 8). The priorities that most frequently associate with student achievement vary across systems and across performance levels. The priorities under

'defining the school mission' are most frequently statistically significantly associated to student achievement in promising systems and the priorities under 'managing the instructional programming' and 'developing school climate' are most frequent among high-performers. But perhaps of greatest importance in part 2 of this chapter are the questions left unanswered. This summary addresses two of these: the associations among middle-performers and the limitations of the PISA questionnaire.

Middle-performers

Middle-performers appeared to have a more divided potpourri of leadership priorities that significantly associate to achievement and were therefore not the focus in any of the leadership conditions. The frequency of associations in this performance group is similar to those in the other performance levels; collectively, they are not the most frequent in any condition. This may be because of a wider spread of priorities among these systems, which is reasonable since there are more middle-performing systems than high and promising systems. The results could also reflect the intense pressure on middle-performing principals to be accountable for more responsibilities and to react to higher demands than ever before. Lynch (2012) writes "historically principals served as disciplinarians and the teachers' bosses. . . principals now must accept the responsibility to manage personnel, funds, and strategic planning . . . and accept responsibilities associated with being their schools' instructional leaders" (p. 40). Increased responsibility comes with new pressures. Some middle-performing principals may feel stretched too thin to have a statistically significant impact on achievement. "Skeptics question whether the principal's job is realistic and reasonable, with its

emphasis on instructional leadership, multiple managerial responsibilities and conflicting time demands" (Walker, 2009, p. 213).

Many middle-performing systems are also under heightened national and international pressure to become high-performing systems. Sahlberg (2012) notes, "take Ireland, Greece, England, or the United States − student achievement is not anywhere close to what it should be" (p. 3). The same messages resonate within systems. In Germany, embarrassment over low PISA results in 2001 led to comprehensive changes, including new responsibilities and accountability measures (Shaw, 2004). In Ireland, after a decline in reading literacy and mathematics performance on PISA 2009, O'Sullivan and West-Burnham (2011) wrote

> Analysts caution against reading too much into such a decline. They list a number of factors influencing the outcomes of this international assessment such as changing demographics, increase in the number of special needs pupils included in PISA 2009 and the scaling procedures used in PISA itself. However, those reservations notwithstanding…those involved in Irish education had to heed the warnings. (p. 154)

And in the United States, Munson (2011) notes, "we're far behind China, Singapore, Canada, Australia, and Japan − and we're increasingly aware of it" (p. 10).

Out of the three conditions of effective leadership, middle-performers collectively had the most associations under instructional management. The effects, however, are significantly negative. This could also be the result of school leaders in middle-performing systems feeling overstretched as accountability, demands, and responsibilities

rise. In England, for example, leaders are expected to handle conflicts, tensions, and dilemmas while at the same time overseeing business-as-usual at their school (Gunter & Thomson, 2009). British leaders who understand and play the "policy game" are most likely to be successful in the English system (p. 469). Similar concerns arise in Chile as school authorities are under increasing pressure to take on more responsibilities. In 2003, the Ministry of Education released a new set of standards for effective management that increased responsibilities and accountability of principals and then again, in 2008, new ambitious school-wide multi-year targets to raise performance on national tests were announced (Anderson, Sanchez, & Kupfer, 2011). Taking the Finns' advice of 'slow schooling' may be beneficial in middle-performing systems where principals are stretched too thin or external demands are too overwhelming (Hargreaves, Halász & Pont, 2007).

Despite their challenges, the results from middle-performing systems ultimately echo the same messaging heard in the high and promising systems. Effective leadership is less about doing any specific action and more about knowing which behavior is needed at which specific time. Leaders who are selecting the 'best tool' to support their teachers, students, and the system in general are having more success than leaders who are selecting the priorities they are most interested in pursuing. These results suggest that context drives effective leadership; effective leaders do not drive context. This subtle but important distinction may be what distinguishes leadership within any given jurisdiction. Effective leadership for diversity, therefore, is embedded by a leaders heightened sensitivity for their context. This also aligns with the results from this study's literature

review. Principals are local experts who know their culture, context, and population; such realities are the blueprint for the actions and behaviors school leaders should be asserting.

The PISA Questionnaire

The weak associations and varied effects of the fourteen leadership priorities across the sixty-four systems and within the three conditions of effective leadership illuminate a possible fallacy of PISA 2009: the questionnaire may not include all the necessary questions to investigate effective leadership in the twenty-first century. As highlighted in this study's literature review, there is significant evidence in current research suggesting that effective leadership in the twenty-first century is more than in-school actions and behaviors − principals must also have exceptional skills to build relationships outside of their school. In Singapore, Minister Teo Chee Hean recognized external relationships as an essential condition of effective leadership nearly two decades ago when he said to a cohort of newly certified school leaders:

> The school does not exist in isolation…principals will also increasingly have to look beyond their schools, and build ties with our partners in the education process. . . we want to tap the wealth of resources among parents and in the wider community to work towards the development of our students. To devise strategies for parents, the community and the school to work in tandem. (Hean, 1998)

What is most perplexing is that OECD themselves recognize this, stating

> An important role of school leaders is that of collaborating with other schools or communities around them. Schools and their leaders strengthen collaboration, form networks, share resources and work together. These engagements enlarge the scope of leadership beyond the school to the welfare of young people in the city, town or region. (as cited in Schleicher, 2012, p. 20)

Nevertheless, none of the subquestions on the 2009 PISA questionnaire inquire as to how principals prioritize building relationships with communities. It is conceivable that this error is contributing to the weak associations and varied effects in part 2.

As the global neighborhood in which schools worldwide are situated continues to shrink, the barriers separating schools from local and distant neighbors will continue to break down and leaders who are abreast to these changes may be the most effective future leaders of all. Ng (2004) writes about leaders who "have the foresight to anticipate world and local trends and tailor their education package to [prepare] young learners for this emerging reality" are most successful (p. 239). If establishing community connections is a necessary condition of effective leadership, and has a stronger association to student achievement than the priorities explored in this study, it may be a cornerstone for effective leadership in diverse contexts. The PISA 2009 assessment falls short of collecting the necessary data to explore this association but this study exposes the shortcoming, giving OECD the opportunity to take the necessary steps to address the deficiency in future questionnaires.

Discussion

This chapter offers interpretations of the results in this study. It showcases systems and practices worldwide to inspect why diverse learners are underperforming and the actions of leaders that are having an association on achievement. The interpretations offer principals global knowledge upon which they can reflect on their own student demographics, their personal actions, and behaviors. The two-part discussion does not aim to provide solutions but offers new knowledge from which principals can use their local expertise to rethink current challenges in their schools.

As schools continue to diversify, it is increasingly important that systems move away from monocultural leadership models that are driven by the needs of mainstream populations, and instead shift towards multicultural styles that are steered by recognizing the needs of all populations within a system. A paradigm shift is not easy, as visible from the results from question 1. The majority of systems worldwide are currently in paradigm paralysis, as evident by the chronic underperformance of diverse learners. Denessen, Bakker, and Gierveld (2007) ask an important question: "should schools expect parents to comply with the schools' expectations and culture, or should the school take parents' expectations and culture into account?" (p. 29). Blending the results from the two research questions of interest in this study reveals that across the performance framework, effective leaders in diverse contexts are the individuals capable of steering their school somewhere in the middle. They hold high standards and relentlessly focus on achievement while also intentionally seeking out ways to understand the unique backgrounds and realities of their students. They move their systems by building

demographic empathy, responsive mutuality, and collective responsibility (adapted from Hughes, 2012).

Demographic empathy begins by educators being morally and ethically open to understanding where students come from, their values, and priorities (Starratt, 2004). Such leaders have a moral compass which serves as an undercurrent in their decision-making. Leaders who build demographic empathy are visible in the school and community, and connect with parents regularly. Over time, their connections turn into relationships founded upon trust. Sergiovanni (2005) writes "leaders should be trustworthy; without trust leaders lose credibility" (p. 90). This trust is built through listening, asking questions, and sharing with members of all subgroups within a school community. Throughout interactions, effective leaders are "fully present and getting in synch" with all stakeholders (Goleman, 2006, p. 9). Effective leaders steer their staff in ongoing discussions, asking: am I ethically open to appreciating different cultures and backgrounds? Am I comfortable discussing my personal status and learning about others? How can I learn from students and parents about what it is like for them in our school and community?

Responsive mutuality builds on demographic empathy by aiming to bring different visions, values, and goals together to create shared experiences and understandings. The goal of responsive mutuality is through meaningful discussion to move a relationship to a partnership. West-Burnham (2011) calls this community leadership and writes that partners "work through active participation, direct involvement in decision-making and transparency" (n.p.). Partnerships are built on common trust and

most frequently require tough conversations where a principal acts as a 'critical friend' (Costa & Kallick, 1993). Collard (2007) describes responsive mutuality as the ability to "mediate between" the values and assumptions of a school and those of a parent. Principals build responsive mutuality by reflecting upon the following: how will I guide the conversation with this stakeholder to develop common goals? How will I respond as a critical friend? What school and home supports are necessary to accomplish our goals? Developing responsive mutuality may require meeting parents at their home if they are uncomfortable in the school or bringing in translators to assist with language barriers.

Demographic empathy and responsive mutuality are a foundation of collective responsibility. Collective responsibility 'recultures' an entire system (Hargreaves, 1994). It is the recognition that effective leaders who draw from multicultural leadership models ultimately move beyond their individual partnerships with parents to build collective capacity across an entire community. In his discussion on local leadership Leithwood et al. (2004) writes that effective leaders "win the cooperation and support of parents and others in the local community" by empowering all populations in significant decision-making" (p. 4). Collective responsibility develops from establishing joint ownership and commitment between parents and staff about what inclusive education means. It is about building on these individual relationships to generate interconnectedness between entire populations and broadening the learning environment to extend beyond school doors. Effective leaders build collective responsibility by modeling, spreading, and advocating for all stakeholders to challenge assumptions and biases. They connect with local businesses and arrange internships to connect students with professionals in their

community, or send student volunteers to assist with fundraisers and community service projects. Within one's school, a leader building collective responsibility involves staff in school walk-throughs to find visible evidence of inclusive education and seek the same message in classroom teaching and learning. To build collective responsibility a principal considers the following: how can we honor our traditions yet still be inclusive? What process is most effective in our school when presenting change to staff and community? What other aspects in our school environment, curriculum and teaching need modification? An inclusive school is the social and cultural heartbeat of a community and this is what effective leaders in diverse contexts create (Sinagatullin, 2001).

Across high, middle, and promising-performance levels effective leaders in diverse settings are increasingly using demographic empathy, responsive mutuality, and collective responsibility as levers to define their mission, manage instruction, and develop school climate. Notably, however, there is "no magic recipe for what to do in every situation" (Goleman, 2006, p. 6). The jurisdictions showcased in this chapter provide a snapshot into the current state of achievement and leadership worldwide, but this study's greatest value will only be tapped if leaders use the global knowledge as a tool to rethink their own local challenges. Hargreaves and Fullan (2012) write "the wrong drivers of change change the surface, whereas the right drivers change the culture (p. 175). As the school leaders in the global landscape, we are the drivers; we hold our schools' steering wheels.

6 CONCLUSION

We are standing at a monumental moment in education. Increased interconnectedness between schooling systems worldwide is generating innovation faster and more intensively than ever before. Our capacity to address educational challenges has dramatically expanded as internationalization paints a richer image of teaching and learning practices across the educational landscape. Seizing internationalization as a tool for informing localization has the potential to redefine how we think, reform, and generate new solutions. From the high-performing Netherlands, Fortuijn (2002) writes "contact between persons with different cultural backgrounds can form an efficient, effective, and stimulating method to learn about differences" (2002, p. 263). Embracing the different strategies and practices in systems worldwide creates a new collective capacity that permits us to view our local context and challenges from a refined perspective.

The Programme for International Student Assessment (PISA) is one instrument for learning about the educational practices worldwide. Tipping over the 2009 rankings and looking within the sixty-five participating jurisdictions to investigate the relationship between school leaders and the reading literacy achievement of students worldwide is a useful way to produce global inspiration. The synthesis of global inspiration and local expertise is at the center of present day effective leadership. Capable leaders amalgamate international knowledge and local insight to gain new perspective on the perpetual challenges facing their schools. This study aims to produce new thinking on how to

improve the achievement of diverse learners worldwide. It does this by asking two questions:

- Which diversity indicators (gender, immigrant status, home language, socio-economic status, and geographic location) predict reading literacy achievement in PISA 2009 jurisdictions when controlling for all other diversity indicators?
- Which leadership priorities have an association with student reading literacy outcomes when controlling for diversity indicators at the school and student levels in PISA 2009 jurisdictions?

The results from question 1 reveal that gender and poverty are close to universal predictors of achievement; the dismal underperformance of boys and poor students is visible across the entire international stage. Immigrant, language, and rural status are also predictors in many jurisdictions worldwide. Of the sixty-four systems explored, two or more diverse populations are statistically significantly underperforming in each group when controlling for the other indicators (see Table 6.0.1). Specifically:

- Boys' reading literacy scores are statistically significantly lower than girls in every system;
- Immigrants' reading literacy performance is statistically significantly lower than non-immigrants in twenty systems, and in three systems immigrants are performing statistically better than peers;
- Language learners' reading literacy scores are statistically significantly lower than non-immigrants in thirty-eight systems, and in three systems language learners are performing better than mainstream peers;

- Socio-economically disadvantaged learners' reading literacy performance is statistically significantly lower than advantaged students in sixty-one systems; and
- Rural learners reading literacy scores are statistically significantly lower than non-rural students in thirty-three systems, and in one system rural learners are performing better than non-rural peers.

There is much work to be done to address this underachievement epidemic. Comparing practices in high, middle, and promising-systems provides some global inspiration. Systems having the most success with boys across the performance levels appear to target in-class interventions. Strong teacher-student relationships, boy-friendly instruction, and interactive environments emerge as potential patterns in systems with the narrowest effect sizes between boys and girls, but more attention on boys' literacy and greater innovation is needed. Some receiving systems having success with immigrant language learners have very specific entry requirements ('a skimming effect'), and others share linguistic or cultural commonalities with the majority immigrants groups. Immigrants are underperforming in systems where these two realities are not the norm. There are a few systems, such as in the Netherlands, worth monitoring in the coming years as they may be on the brink of new innovation. The Dutch are heavily emphasizing in-school interventions and national support aiming to heighten assimilation and linguistic fluency among immigrants.

Systems succeeding with language learners appear to be reducing power struggles between giant and minority languages and setting up aggressive in-school and in-

community supports to maximize language exposure and assimilation between language learners and mainstream citizens. Systems succeeding with high poverty populations seem to prioritize strong school-community links. When schools are aware of the needs within their local community and connecting teaching and learning to the lives of diverse learners, they are obtaining better achievement patterns than in systems where schools and communities have poorer links. National programs aiming to reduce poverty and increase economic recovery also repeatedly emerge in this study as effective ways to curb rural achievement.

The results from question 2 reveal all fourteen leadership priorities investigated on PISA are statistically significantly associated with student achievement in at least two jurisdictions, but associations are weak and the predicted effects are more negative than positive. The two priorities with the strongest effect are:

- *Behavior:* In nineteen systems (30 percent of all systems), there is a significant association between school principals who prioritized paying attention to disruptive behavior in classrooms and student achievement. The association is negative in thirteen of these systems.
- *Observe*: In sixteen systems (25 percent of all systems) there is a significant association between school principals who prioritized observing in classrooms and the achievement patterns of students. The association is negative in fourteen of these systems.

Reorganizing the results using Hallinger and Murphy's (1975) three conditions of effective leadership reveals promising-performing systems have more frequently

statistically significant associations between leadership behaviors under 'defining the school mission' and student achievement than either of the other two performance levels. High-performing systems have more frequently statistically significant associations under 'managing the instructional programming' and 'developing the school climate.' These patterns make sense under McKinsey and Company's (2010) claim of how systems move from fair to good, good to great, and great to excellent. The reorganization of the fourteen examined priorities does not, however, produce strong patterns or clear effects, raising the question: does PISA 2009 ask leaders to self-respond on *all* the necessary priorities needed to be an effective administrator in the twenty-first century?

Combining the results from research questions 1 and 2 reveals that across all performance levels, effective leaders in diverse contexts define their mission, manage instruction, and develop climate by building demographic empathy, responsive mutuality, and collective responsibility (adapted from Hughes, 2012).

- *Demographic Empathy:* Connections → Relationship → Trust. Driven by a moral and ethical compass that builds intentional connections and relationships of trust with stakeholders from all subgroups within ones school;
- *Responsive Mutuality*: Discussion → Respect → Partnerships. Led by intercultural respect and critical friendship that turn relationships into partnerships with shared experiences and common goals; and
- *Collective Responsibility*: Modeling → Spreading → Advocating. Establishing joint ownership and commitment while broadening a learning environment and reculturing a system.

Such actions serve as goalposts for leaders as they move from monocultural to multicultural leadership models that narrow the achievement gaps between diverse and mainstream learners worldwide.

Recommendations

Three overarching recommendations emerge from this study and contribute to our ongoing quest to improve the achievement patterns of diverse learners:

No system is 'too good' to overlook the educational gains of their diverse learners. If school leaders are serious about raising the achievement of their students, they cannot disregard the performance of diverse learners. Boys are underachieving in systems worldwide and solutions to resolve this challenge are still in their infancy. Beyond reading material and getting boys up and moving during literacy lessons, radical innovations (such as Aviation High School in New York City which is altering boys' entire educational experience to improve their achievement and retention) are too frequently anomalies. If we are serious about transforming boys' reading scores, such innovation needs to be more widespread across systems.

Immigrant and language learners will continue to increase worldwide as we approach 2050; thus, schools need to prioritize advocating for policies and practices that reduce the cultural and linguistic tug-of-war, which is deteriorating the academic gains of these learners. It is well documented that fluency in any language is a cornerstone to fluency in a second and third language. While Luxembourg chugs along as a beacon of trilingual and tricultural tolerance, too many other systems worldwide are caught up in

linguistic power struggles and cultural superiority. These societal issues impact the educational gains of immigrant and language learners in schools worldwide. Once these issues dissolve, greater focus on linguistic fluency and assimilation in schools can follow and will ultimately turn around the underachievement epidemic of both of these populations.

The performance of low-income students is discussed worldwide. Yet, as societies continue to stratify and grow, there is ongoing evidence that poorer students are being left behind. The intentional and unintentional cultivation of class warfare is pervasive in many societies, applauding individual achievement above the success of an entire system. Multiple Nordic systems offer alternative visions as they embrace reforms and policies that support all citizens as a reflective way to improve their own lives and those of the entire nation. If societies are truly committed to improving the achievement of low-income students, they must make intentional efforts to break down class warfare and create measures that will increase the conditions and opportunities of their most vulnerable families.

Rural underperformance has a long documented history, yet, as technology continues to redefine space and time, it may be on the edge of transformation. Evidence of systems increasing partnerships and networks between rural and non-rural schools are starting to reshape learning experiences in remote locations. But technology alone will not resolve this chronic underperformance gap. Our failure to provide transportation, qualified teachers, and safe conditions for these learners must be addressed. We are already equipped with the tools and knowledge to prioritize these changes − it is a matter

of leadership. Effective school leaders in rural locations are activists capable of empowering entire communities to rise up and demand equal supports for their children.

Moving a twenty-first century school system forward increasingly requires improving the educational gains of diverse learners. We must hold each other accountable to fix these disparities that are lingering in our systems. Until these populations are placed at the center of our policies, procedures, and practices we will continue to marginalize them in our schools.

Effective leadership depends on context. The fourteen PISA subquestions examined in this study easily organize by Hallinger and Murphy's (1975) three conditions of effective leadership but they may not include all the essential conditions of effective leadership as depicted in the literature: there are no questions about community connections. An effective principal must understand the people, events, and realities in their local community. They must also be proficient in the national and international realities that impact their schools and the world in which their students will enter.

The lack of questions on PISA investigating a principal's knowledge and commitment to their local community is perplexing, and leaders worldwide need to sharpen their interpretations of PISA results to reflect this void. Effective leaders are local experts and must value this context when considering global inspiration with the potential to propel their systems forward.

Dissolving underachievement requires more intellectual energy. Identifying solutions to support diverse students is not the responsibility of one system. The complexity of understanding how to narrow the achievement gaps between diverse and

mainstream learners, while also adhering to the needs of teachers and superiors, is not trivial. Such a problem requires the intellectual energy of individuals across the educational landscape. To achieve such a transformation, we need the voices of the missing players. Richard Olaniyan notes, "with almost a thousand separate language groups … Africa is a continent of bewildering diversity and extraordinary dynamism (as cited in Reagan, 2004, p. 55). Yet, Tunisia is the only system in Africa that participated in PISA 2009 and so it is the only African voice in this analysis. Once more systems participate, ensuring that the questions and values of PISA are general enough to encompass both Western and non-Western ideologies will be of increasing importance. Suppressing our own individual ethnocentrism, the practice of viewing one's own culture group as superior to others, will be essential to recognizing successful practices in other types of systems.

While identifying the best performing educational system has merit, placing too heavy an emphasis on ranking systems can come at the expense of the knowledge within a system. This study aims to uncover learning that is available within the ranking system, but it is only *one* study. Few researchers go beyond discussing the top performing systems when seeking solutions to their own national and local challenges. If, as one educational community, we expand our understanding of 'best system' to go beyond ranking order and at the same time, truly collect the intellectual knowledge from systems worldwide, we would produce collective capacity with endless possibilities.

Study Limitations

Multiple limitations emerge from this study's methods and design that merit disclosure. While the risk of multicollinearity was determined to be low, and dichotomization was a reasonable solution to deal with the ordinal variables, the decision to keep all fourteen leadership variables yielded weak associations and varied effects. Rerunning the leadership priorities under three principal variables (the three conditions of effective leadership) may be an interesting alternative to explore this relationship using the PISA dataset. While such a method would be based on a theoretical framework and is notably unconventional, it may reveal more distinct patterns and thus, more meaningful results.

The three level performance framework also had caveats. The framework did cluster all the jurisdictions by the natural curve of the dataset but systems near each cut-off point had very similar achievement patterns. Altman and Royston (2006) note that systems with similar achievement patterns that fall on opposite sides of any cut point end up being characterized differently when in reality, they are quite similar. This may explain the lack of distinct patterns between performance levels in the results for both research questions. Repeating the study using a sample of jurisdictions from each performance level that have definite achievement differences may exhibit clearer patterns.

The design of this study intentionally silos diverse populations to offer a 'pure' inspection of each subgroup. A limitation of this decision, however, is that it cannot predict the literacy performance of students who are members of more than one diverse

population. It is well noted in literature that students who are diverse on multiple factors are often at even higher risk of underperforming (Rumberger & Larson, 1998). A logical next step in this study would be to create new variables that include multiple subgroups. This would provide additional clarity on the achievement of disenfranchised boys, who, as identified in this study, are at heightened risk of underperforming.

The PISA assessment itself also has limitations. The quantitative assessment identifies achievement gaps and effects but does not explain why gaps exist or how they change over time. Possible interpretations of the results are presented in chapter 5 by drawing upon current research but further study is needed to go beyond these preliminary findings. One possible option would be to conduct qualitative research within systems where diverse learners are performing better than mainstream peers or in systems with the narrowest performance gaps. Such a follow-up would build upon the results in this dissertation and will be presented later in this chapter under future research.

The PISA questionnaires also have limitations. The student questionnaire offers insights regarding many diverse groups but it falls short of documenting ethnic minorities. Ethnic minorities are the most widely documented underperforming subgroup worldwide. This assessment does not acquire the necessary information to explore these students' performance. The school questionnaire also has shortcomings. The language used in the fourteen leadership priorities is at points vague and some questions are too closely aligned to others. Both faults can be confusing for leaders and cause interpretations to vary across cultures and contexts. The priorities themselves also closely align to Western leadership models, which could ostracize leaders who value non-

Western styles. The scarcity of questions investigating how leaders prioritize establishing community relationships is also problematic. While efforts to keep the questionnaires as condensed as possible are noteworthy, it would be worthwhile for OECD to consider modifications that account for these two issues. Doing so would improve our visibility into the factors which truly influence the perpetual underperformance of diverse learners and models of effective leadership.

Finally, OECD's PISA rankings are useful for quick ordering but their existence may be more harmful than helpful when it comes to contributing to educational learning worldwide. As interest in the assessment continues to grow, scholars, researchers, and politicians are increasingly investigating the practices in the top-performers − or even worse, sometimes just the practices in the very highest performing system − while disregarding all other systems. This study argues that there is learning to be had from looking within and across all the systems that participate. One way to generate greater learning would be to offer no rankings but rather organize systems into levels. Such a framework may allow us to extract more concrete lessons that otherwise are overlooked.

Future Research

This study contributes to the increasing body of literature aiming to understand the relationship between school leaders and diverse learners worldwide. Its major contributions include detailing patterns in the underachievement of diverse students' internationally and highlighting the vast amount of information we still do not know regarding this complex, multilayered relationship. Jacky Lumby recently noted diversity and leadership are too frequently divorced in the literature (2005). This study is the

beginning of a reconciliation that aims to bring these two entities back together. While the PISA assessment is a useful instrument to gain macro insights into diverse learners' achievement patterns and the relationship between student performance and leadership priorities, the weak associations in the findings and the lack of non-Western representation on PISA 2009 set the stage for future projects.

Replicating this study using data from a different large scale international comparative assessment could reveal stronger associations. The Progress in International Reading Literacy Study (PIRLS), for example, is an international assessment that examines reading literacy achievement in grade four. In 2011, fifty-three jurisdictions worldwide participated in the assessment and similar to PISA, participating schools principals filled out a school questionnaire. The 2011 questionnaire included the inquiry: "during the past year, approximately how much time have you spent on the following school leadership activities in your role as a school principal?" It listed thirteen subcategories: promoting the school's educational vision or goals, developing curricular and educational goals, monitoring teachers' implementation of the school goals in their teaching, monitoring students' learning progress to ensure goals are met, keeping an orderly atmosphere, ensuring clear rules for student behavior, addressing disruptive behavior, creating a climate, initiating discussion to help teachers with problems, advising teachers, visiting other schools or attending conferences, initiating educational projects or improvements; and participating in professional development activities (Progress in International Reading Literacy Study, 2011). Utilizing the same research questions to explore the results in the PIRLS 2011 dataset may elaborate upon the

findings in this dissertation. The PIRLS 2006 dataset and questionnaire also offers a possible platform on which to build this study. On this questionnaire, principals were asked on question 26 to comment on how much time they devoted to parent and community relations (Progress in International Reading Literacy Study, 2006). Since this specifically investigates how much time leaders spend connecting with parents and the community, it may answer the lingering question posed in this literature review regarding if establishing a community connection is an essential condition of effective leadership.

Examining qualitative case studies may also be beneficial. The International Successful School Principal Project (ISSPP), for instance, includes a range of case studies of successful principalships in diverse contexts worldwide. Utilizing qualitative tools to analyze the patterns in and across the ISSPP dataset may corroborate the weak associations or reveal new ones not measureable in this quantitative analysis. According to Creswell and Tashakkori (2007), mixed method designs combine different world views of how knowledge is constructed. Such findings could lead to further research that draws from both the deductive and inductive methods to improve the validity and quality of this dissertation's findings.

Subsequent steps could also include repeating this study using results from PISA 2009+ or conducting original research that explores the relationship between leaders and student achievement in non-Western systems. In 2010, ten additional jurisdictions administered the PISA 2009 assessment and are often referred to as PISA 2009+ (Walker, 2011). These systems, which include Georgia, Himachal Pradesh and Tamil Nadu, India, Mauritius, and Moldova offer greater representation of non-Western systems and would

further enrich this topic. Recognizably, the underrepresentation of Africa remains a concern even with this additional cohort. Conducting original research that includes case studies across Africa would begin to address this shortcoming. While the sample size would be much smaller, such research could be a starting point to understanding the relationship between school leaders and students in this geographical region of the world.

In conclusion, it is clear that underachievement of diverse learners is a complex and ever-evolving challenge. Our approach to future research needs to be vigilant in targeting the aspects of leadership which will truly effect meaningful and positive change, rather than perpetuate short-sighted solutions contrived from top-heavy PISA systems. Our current understanding of perpetual underachievement is clouded by a perception that solutions only exist in the nations with the highest overall achievement. To eliminate the underachievement epidemic once and for all, we must broaden our efforts and upend the perspective that lessons can only be found at the top.

REFERENCES

Adamson, B., Tak-Shing, J., Yu W., Kin-Sang, J., Hau-Fai, E. & Wai-Lun, A. (2010). Making different sense of reform: School leaders' perspectives on the new senior secondary curriculum in Hong Kong. *Planning & Changing, 41*(1/2), 110-127.

Agirdag, O. (2009). All languages here welcomed. *Educational Leadership*, *66*(7), 20-25.

Aitken, N. (2009). Effective leadership and assessment working together for school improvement: Hitching the horse to the cart. *International Journal of Learning*, *16*(3), 151-165.

Akiba, M., Chiu, Y-F., Zhuang, Y. & Eastman-Mueller, H. (2008). Standards-based mathematics reforms and mathematics achievement of American Indian/Alaska Native eighth graders. *Education Policy Analysis Archives*, *16(20)*, 1-20.

Alire, C. (2001). Diversity and leadership: The color of leadership. *Journal of Library Administration*, *32*(3/4), 95-110.

Alloway, N. (2007). Swimming against the tide: Boys, literacies and schooling – An Australian story. *Canadian Journal of Education, 30*(2), 582-605.

Almazoui, K. (2010). Looking at U.A.E. boys and girls written discourse. *International Journal of Applied Educational Studies, 7*(1), 13.

Alsop, S; Ames, P; Arroyo, G. & Dippo, D. (2010). Programa de fortalecimiento de capacidades: Reflections on a case study of community-based teacher education set in rural northern Peru. *International Review of Education, 56*(5/6), 633-649.

Altman, D. & Royston, P. (2006). The cost of dichotomizing continuous variables. *British Medical Journal*, *332*(7549), n.p.

Alvarado, B. (2006). Voices and agencialities in the education of young rural Andean women: A qualitative look. *Revista Electrónica de Investigación Educativa. 12*(2), 1-15.

Alzaroo, S. & Hung, G. (2003). Education in the context of conflict and instability: The Palestinian case. *Social Policy & Administration, 37*(2), 165-180.

Amado, B. & Borzone, A. (2012). Leer y comprender en la escuela rural: La relación entre la perspectiva ecológica de los textos expositivos y los conocimientos previos de los niños. *Cultura y Educación, 24*(1), 17-32.

Amara, M. & Mari, A. (2002). *Language education policy: The Arab minority in Israel.* Dordrecht: Kluwer Academic Publishers.

Ames, P. (2012). Language, culture and identity in the transition to primary school: Challenges to indigenous children's rights to education in Peru. *International Journal of Educational Development*, *32*(3), 454-462.

Anderson, J. (2008). Principals' role and public primary schools' effectiveness in four Latin American cities. *Elementary School Journal, 109(1),* 36-60.

Anderson, S. & Thomsen, M. (2011). Policy implications of limiting immigrant concentration in Danish Public Schools. *Scandinavian Political Studies, 34*(1), 27-52.

Anderson, S., Leithwood, K. & Strauss, T. (2010). Leading data use in schools: Organizational conditions and practices at the school and district levels. *Leadership & Policy in Schools*, *9*(3), 292-327.

Anderson, S., Sanchez, J. & Kupfer, A. (2011). Leadership efficacy, job satisfaction and educational quality. Presented at the International Congress for School Effectiveness and School Improvement, Cyprus.

Andrews, R. & Soder, R. (1987). Principal leadership and student achievement. *Educational Leadership, 44*(6), 9-11.

Angrist, J., Bettinger, E., Bloom, E., King, E. & Kremer, M. (2002). Vouchers for private schooling in Colombia: Evidence from a randomized natural experiment. *American Economic Review*, *92*(5). 1535-1558.

Antecol, H., Cobb-Clark, D. & Trejo, S. (2003). Immigration policy and the skills of immigrants to Australia, Canada and the United States. *Journal of Human Resources, 38*(1), n.p.

Apple, M. (2010). *Global crisis, social justice, and education*. New York, NY: Routledge.

Archer, J. (2003, September 24). Houston case offers lesson on dropouts. *Education Week*.

Arciniega, G., Anderson, T., Tovar-Blank, Z. & Terence, T. (2008). Toward a fuller conception of machismo: Development of a traditional machismo and caballerismo scale. *Journal of Counseling Psychology, 55*(1), 19-33.

Arnove, R. (2007). Reframing comparative education: The dialectic of the global and the local. In R. F. Arnove & C. A. Torres (Eds.), *Comparative Education: The Dialectic of the Global and the Local* (pp.1-20). Lanham, MD: Rowman & Littlefield Publishers, Inc.

Arphattananon, T. (2012). Education that leads to nowhere: Thailand's education policy for children of migrants. *International Journal of Multicultural Education*, *14*(1), 1-15.

Arum, R. & Ford, K. (2012). How other countries 'do' discipline. *Educational Leadership, 70*(2), 56-60.

Auernheimer, G. (2005). The German education system: Dysfunctional for an immigration society. *European Education, 37*(4), 75-89.

Auh, M. & Pegg, J. (2009). Improving professional learning in rural areas: Implications for teacher education practice from Australia and Korea. Presented at the International Symposium for Innovation in Rural Education, Improving Equity in Rural Education. Australia.

Aydeniz, M. & Kaya, E. (2012). Factors impacting Turkish students' attitudes towards science and their academic performance in science. *Journal of Turkish Science Education, 9*(2), 25-48.

Backovic, S. (2001). *The book of changes of the education system of the Republic of Montenegro.* Podgorica: Djurdje.

Bagley, C. & Hillyard, S. (2011). Village schools in England: At the heart of their community? *Australian Journal of Education, 55*(1), 37-49.

Bajaj, C. (2009). Home-school conflicts and barriers to the academic achievement of children of Latin American immigrants. *Perspectives on Urban Education, 6*(1), 5-19.

Ballantyne, K., Sanderman, A. & Levy, J. (2008). Educating English language learners: Building teacher capacity. Washington, DC: National Clearinghouse for English Language Acquisition. Retrieved from http://www.ncela.gwu.edu/files/uploads/3/EducatingELLsBuildingTeacherCapacityVol1.pdf

Ballantyne, K., Sanderman A. & Levy, J. (2008). *Education English language learners: Building teacher capacity.* Washington, D.C.*:* National Clearinghouse.

Banks, J. (1989). Multicultural education: Characteristics and goals. In J. A. Banks & C. A. M. Banks (Eds.), *Multicultural education: Issues and perspectives* (pp. 2-26). Boston: Allyn and Bacon.

Baráth, T. (2006). Features in school management, school efficiency and effectiveness. *New Pedagogical Review,* 7-8, 56-72.

Barbour, M. (2011). The promise and the reality: Exploring virtual schooling in rural jurisdictions. *Education in Rural Australia, 21*(1), 1-19.

Bargerhuff, M. & Dunne, J. & Renick, P. (2007). Giving teachers a chance: Taking special education teacher preparation programs to rural communities. *Rural Special Education, 26*(1), 3-12.

Barnett, R., Gareis, K., Sabattini, L. & Carter, N. (2010). Parental concerns about after-school time: Antecedents and correlates among dual-earner parents. *Journal of Family Issues, 31*(5), 606-625.

Basaran, M. & Ates, S. (2009). Ilkgretim besinci sinif grencilerinin okumaya iliskin tutumlarinin. *Journal of Gazi Educational Faculty*, *29*(1), 73.

Basch, C. (2011). Vision and the achievement gap among urban minority youth. *Journal of School Health, 81*(10), 599-605.

Baucal, A., Pavlovic-Babic, D. & Willms, D. (2006). Differential selection into secondary schools in Serbia. *Quarterly Review of Comparative Education, 36*(4), 539-546.

Beaman, R., Wheldall, K. & Kemp, C. (2007). Recent research on troublesome classroom behaviour: A review. *Australian Journal of Special Education*, *31*, 45-60.

Beck, L. & Murphy, J. (1994). *Ethics in educational leadership programs*. Thousand Oaks, CA: Corwin Press, Inc.

Bedard, K. & Dhuey, E. (2006). School-entry policies and skill accumulation across directly and indirectly affected individuals. *Journal of Human Resources, 47*(3), 643-683.

Begley, P. (2000). Self-knowledge, capacity and sensitivity: prerequisites to authentic leadership by school principals. *Journal of Educational Administration, 44*(6), 570-589.

Bell, A. & Mladenovic, R. (2008). The benefits of peer observation of teaching for tutor development. *Higher Education, 55*(6), 735-752.

Benzies, K. (2011). Effects of a two-generation preschool program on receptive language skill in low-income Canadian children. *Early Child Development and Care, 181*(3), 397-412.

Benzies, K., Tough, S., Edwards, N., Mychasiuk, R. & Donnelly, C. (2011). Aboriginal children and their caregivers living with low income: Outcomes from a two-generational preschool program. *Journal of Children and Family Studies, 20*(3), 311-318.

Berliner, D. (2009). Are teachers responsible for low achievement by poor students? *Kappa Delta Pi Record, 46*(1), 18-21.

Bethell, G. & Mihail, R. (2005). Profiles of educational assessment systems worldwide, assessment in education. *Principles, Policy & Practice, 12*(1), 77-96.

Bickel, R. (2007). *Multilevel analysis for applied research: It's just regression!* New York: Guilford Press.

Billot, J. (2007). Deconstructing the concept of leadership in schools of ethnocultural diversity. *International Journal of Learning, 14*(2), 257-264.

Birgelytė A, Stanaitis S. & Gerulaitis Š. (2012). Pilietinių vertybių raiška geografijos vadovėliuose. *Tiltai*, *1*(58), 159–174.

Bishop, R., Berryman, M., Wearmouth, J., Peter, M. & Clapham, S. (2012). Professional development, changes in teacher practice and improvements in Indigenous students' educational performance: A case study from New Zealand. *Teaching and Teacher Education, 28*(5), 694-705.

Black, R., Engbersen, G., Okólski, M. & Pantiru, C. (2010). *A continent moving west? EU enlargement and labour migration from Central and Eastern Europe*. Amsterdam: Amsterdam University Press.

Blândul, V. (2012). The school. My chance! Project – A case study for preventing pupils' school dropout in Romania. *Problems of Education in the Twenty-First Century, 43*, 7-14.

Blondal, K. & Adalbjarnardottir, S. (2012). Student disengagement in relation to expected and unexpected educational pathways. *Scandinavian Journal of Educational Research, 56*(1), 85-100.

Boggess, L. (2008). Character and critique: District constructions of teacher quality. Paper presented at the annual meeting of the UCEA Convention, Orlando, FL. Retrieved from http://www.allacademic.com/meta/p274561_index.html

Booth, D., Elliott-Johns, S. & Bruce, F. (n.d.). Boys' literacy attainment: Research and related practice. Canadian Government Report. Retrieved from http://www.edu.gov.on.ca/eng/research/boys_literacy.pdf

Borjas, G. (2011). Poverty and program: Participation among immigrant children. *Future of Children, 21*(1), 247-266.

Bradley, D. (2007). The sounds of silence: Talking race in music education. *Action, Criticism, and Theory for Music Education, 6/4*, 132-162.

Bregar, L. (2011). Trends in e-learning and factors for successful and effective introduction of e-learning in adult education in Slovenia. *Andragoska, spoznanja*, *4*, 44-59.

Brewer, D., Augustine, C., Zillman, G., Ryan, G., Goldman, C., Staz, C. & Constant L. (2007). *Education for a new era: Design and implementation of K-12 education reform in Qatar*. CA: Rand Corporation.

Brinch, C., Bratsberg, B. & Raaum, O. (2012). The effects of an upper secondary education reform on the attainment of immigrant youth. *Education Economics, 20*(5), 447-473.

Brockmeier, L., Green, R., Nobles, K. & Tsemunhu, R. (2012). Meaningful and lasting school improvement. *National Teacher Education Journal, 5*(3), 13-20.

Bron, J. & Thijs, A. (2011). Leaving it to the schools: Citizenship, diversity and human rights education in the Netherlands. *Educational Research, 53*(2), 123-136.

Brookover, W., Wchweitzer, J. Schneider, J., Beady, C., Flood, P. & Wisebaker, J. (1978). Elementary school social climate and school achievement. *American Research Journal, 15*, 301-318.

Brooks-Gunn, J., Phelps, E. & Elder, G. (1991). Studying lives through time: Secondary data analyses in developmental psychology. *Developmental Psychology, 27*(6), 899-910.

Brown, L. & Conrad, D. (2011). School leadership in Trinidad and Tobago: The challenge of context. *Comparative Education Review, 51*(2), 181-201.

Brown, K. (2004). Leadership for social justice and equity: Weaving a transformative framework and pedagogy. *Educational Administration Quarterly, 40*(1), 79-110.

Brown, L. & Beckett, K. (2007). Building community in an urban school district: A case study of African American educational leadership. *School Community Journal*, *17*(1), 7-32.

Brown, P., Finch, K. & MacGregor, C. (2012). A comparison of learning cultures in different sizes and types. *US-China Education Review*, 206-222.

Bruna, K., Chamberlin, D., Lewis, H. & Ceballos, E. (2007). Teaching science to students from rural Mexico. *The Science Teacher*, *74*(8), 36-40.

Bruner, D. (2008). Aspiring and practicing leaders addressing issues of diversity and social justice. *Race, Ethnicity, and Education*, *11*(4), 483-500.

Bryk, A. & Raudenbush, S. (1992). *Hierarchical linear models in social and behavioral research: Applications and data analysis methods* (First edition). Newbury Park, CA: Sage Publications.

Burch, P., Theoharis, G. & Rauscher, E. (2010). Class size reduction in practice investigating the influence of the elementary school principal. *Educational Policy*, *24*(2), 330-358.

Burger, K. (2011). A quasi-experimental study into the relations between families' social and cultural background and children's crèche experience and global cognitive competence in primary school. *Early Child Development & Care, 182*(7), 875-906.

Burtless, G. (1996). *Does money matter? The effect of school resources on student achievement and adult success*. Washington DC: The Brookings Institute.

Bygren, M. & Szulkin, R. (2011). Ethnic environment during childhood and the educational attainment of immigrant children in Sweden. *Social Forces, 88*(3), 1305-1329.

Byrne, D., McGinnity, F., Smyth, E. & Darmody, M. (2010). Immigration and school composition in Ireland. *Irish Educational Studies, 29*(3), 271-288.

Calderón, M., Slavin, R. & Sánchez, M. (2011). Effective instruction for English learners. *The Future of Children, 21*(1), 103-127.

Calkins, L. (1997). Focus your reading centers on purpose and passion. *Instructor-Intermediate, 106*(6), 36-37.

Callahan, R., Wilkinson, L. & Muller, C. (2008). School context and the effect of ESL placement on Mexican-origin adolescents' achievement. *Social Science Quarterly, 89*(1), 177-198.

Calvin, C., Fernandes, C., Smith, P., Visscher, P. & Deary, I. (2010). Sex, intelligence and educational achievement in a national cohort of over 175,000 11-year-old schoolchildren in England. *Intelligence*, July-August, 424-432.

Campbell-Stephen, R. (2009). Investing in diversity: Changing the face (and the heart) of educational leadership. *School Leadership & Management*, *29*(3), 321-331.

Can, N. (2007). Primary education school administrators' proficiency levels instructional leaders in developing and applying new curricula. *Journal of Theory and Practice in Education, 3*(2), 228-244.

Canning, R., Li, J., McGlynn, C. & Pilz, M. (2012). A comparative study of work-related learning in the lower secondary school in Germany, China and Scotland: The implications for the continuing professional development of teachers. *International Journal of Continuing Education & Lifelong Learning, 5*(1), 125-142.

Carnoy, M. & Rothstein, R. (2013). What do international tests really show about U.S. student performance? D.C.: Economic Policy Institute.

Caro, D., Lenkeit, J., Lehmann, R. & Schwippert, K. (2009). The role of academic achievement growth in school track recommendations. *Studies in Educational Evaluation*, *35*(4), 183–192.

Caro, D., McDonald, J. & Willms, D. (2009) Socio-economic status and academic achievement trajectories from childhood to adolescence. *Canadian Journal of Education, 32*(3), 558-590.

Carpenter, V. & Cooper, C. (2009). Critical action research: The achievement gap. *Educational Action Research, 17*(4), 601-613.

Carrington, B. & McPhee, A. (2008). Boys' underachievement and the feminization of teaching. *Journal of Education of Teaching, International Research and Pedagogy, 34*(2), 109-120.

Cartwright, F. & Allen, M. (2002). Understanding the rural-urban reading gap. Retrieved from http://publications.gc.ca/collections/Collection/CS81-595-MIE2002001E.pdf

Cenoz, J. & Genesee, F. (1998). *Beyond bilingualism: Multilingualism and Multilingual Education*. Clevedon, UK: Multilingual Matters.

Chan, C. (2000). The role of teaching teams in leading the Grade 1–9 curriculum. *Secondary Education, 51,* 4–8.

Chang, D. (2001). Opening a new chapter for teacher professional development. *Secondary Education, 52*(2), 134–43.

Chapman, J., Sackney, L. & Aspin, D. (1999). Internationalization in educational administration: Policy and practice, theory and research. In J. Murphy & K. Louis (Eds.), *Handbook of Research on Educational Administration* (Second edition) (pp. 73-97). San Francisco: Jossey-Bass.

Chapman, L. (2011). An international policy analysis of school-level decision making and student achievement. Unpublished Dissertation. Boston College.

Chatelard, G. (2010). *Jordan: A refugee haven.* Retrieved from http://www.migrationinformation.org/Feature/display.cfm?ID=794

Chavez, L. (1995). Demystifying multiculturalism. In J. Joll (Eds.), *Taking sides: clashing views on controversial education issues* (pp. 230-240). New York: The Dushkin Publishing Group, Inc.

Chávez-Reyes, C. (2010). Starting at the top: Identifying and understanding later-generation Chicano students in school. *Journal of Latino Education, 9*(1), 22-40.

Chen, C., & Crockett, M., Namikawa, T., Zilimu, J. & Lee, S. (2007). Eighth grade mathematics teachers' formative assessment practices in SES-different classrooms: A Taiwan study. *International Journal of Science & Mathematics Education*, *10*(3), 553-579.

Chen, Y., Chen, N. & Chin-Chung, T. (2009). The use of online synchronous discussion for web-based professional development for teachers. *Computers & Education, 53*(4), 1155-1166.

Cheng, Y. (2000). The characteristics of Hong Kong school principals' leadership: The influence of societal culture. *Asia Pacific Journal of Education, 20*(2), 68-86.

Cheng, Y. (2010). A topology of three-wave models of strategic leadership in education. *International Studies in Educational Administration, 38*(1), 35-54.

Cherlin, A. (1991). On analyzing other people's data. *Developmental Psychology, 27,* 946-948.

Cheung, H. (2006). Factors affecting the state anxiety level of higher education students in Macau: The impact of trait anxiety and self-esteem. *Assessment and Evaluation in Higher Education*, *31*(6), 709-725.

Chew, J. & Andrews, D. (2010). Enabling teachers to become pedagogical leaders: Case studies of two IDEAS schools in Singapore and Australia. *Educational Research for Policy & Practice, 9*(1), 59-74.

Chew, J., Stott, K. & Boon, Z. (2003). On Singapore: The making of secondary school principals. *International Studies in Educational Administration, 31*(2), 54-75.

Chiswick, B. (2000). Are immigrants favorably self-selected? An economic analysis. Germany: Boon Institute for the Study of Labor (IZA).

Chiu, M. & Walker, A. (2007). Leadership for social justice in Hong Kong schools. Addressing mechanisms of inequality. *Journal of Educational Administration, 45*(6), p. 724-739.

Cho, H., Lee, K., Lee, Y., Kim, O., Lee, S., Hong, D. & Kim, Y. (2009). Time use and quality of life of the Korean rural poor. *Social Indicators Research*, *93*(1), 223-227.

Chow, H. (2007). Sense of belonging and life satisfaction among Hong Kong adolescent immigrants in Canada. *Journal of Ethnic & Migration Studies, 33*(3), 511-520.

CIA. (2007). *The world factbook*. D.C.: Claitor's Publishing Division.

Çınkır, S. & Çetin, S. (2010). Teachers' opinions about the professional working relationships in Schools. *Educational Administration: Theory & Practice, 16*(3), 353-371.

Cohen, J., Cohen, P., West, S. & Aiken, L. (2003). Applied multiple regression/correlation analysis for the behavioral sciences (Third edition). Mahwah, NJ: Lawrence Erlbaum.

Colding, B., Hummelgaard, H. & Husted, L. (2010). How studies of the educational progression of minority children are affecting education policy in Denmark. *Social Policy & Administration*, *39*(6), 684-696.

Colemana, M. & Campbell-Stephen, R. (2010). Perceptions of career progress: The experience of black and minority ethnic school leadership. *School Leadership & Management*, *30*(1), 35-49.

Collard, J. (2007). Constructing theory for leadership in intercultural contexts. *Journal of Educational Administration, 45*(6), 740-755.

Collinson, V., Kozina, E., Lin, Y. K., Ling, L., Matheson, I., Newcombe, L. & Zogla, I. (2009). Professional development for teachers: A world of change. *European Journal of Teacher Education, 32*(1), 3-19.

Commission on Global Governance. (1995). *Our global neighborhood: The report on the commission on global governance.* US: Oxford University Press.

Connelly, P. (2007). *Quantitative Data Analysis in Education. A critical introduction using SPSS.* London: Routledge.

Conway, J. & Huffcutt, A. (2003). A review and evaluation of exploratory factor analysis practices in organizational research. *Organizational Research Methods*, *6*(2), 147-168.

Corbett, M. (2005). Rural education and out-migration: The case of a coastal community. *Canadian Journal of Education, 28*(1/2), 52-72.

Correa, M. (2011). Advocating for critical pedagogical approaches to teaching Spanish as a heritage Spanish as a heritage language: Some consideration. *Foreign Language Annals*, *44*(2), 308-320.

Costa, A. & Kallick, B. (1993). Through the lens of a critical friend. *Educational leadership, 51*(2), 49-51.

Costa, P. (2010). Language ideologies and standard English language policy in Singapore: Responses of a 'designer immigrant' student. *Language Policy, 9*(3), 217-239.

Country Analytical Report. (2004). Equity in education thematic review: Russian Federation. Retrieved from http://www.oecd.org/dataoecd/36/38/39027427.pdf

Craft, K. & Slate, J. (2012). The achievement gap between Hispanic and White students in middle school: A conceptual analysis. *Journal of Education Research, 6*(2), 187-215.

Craven, G., Bodkin-Andrews, G. & Mooney, J. (2012). *Indigenous peoples. Education and equity*. Charlotte: Information Age Publishing.

Crow, G. (2007). The complex landscape of successful principal practices: An international perspective. *ISEA*, *35*(3), 67-74.

Crul, M. & Schneider, J. (2009). Children of Turkish immigrants in Germany and the Netherlands: The impact of differences in vocational and academic tracking systems. *Teachers College Record, 111*(6), 1508-1527.

Cummins, J. (1986). Empowering minority students: A framework for intervention. *Harvard Educational Review, 56,*18-36.

Cummins, J. (2000). Language proficiency in academic contexts (Ch. 3). In *Language, power, and pedagogy: Bilingual children in the crossfire.* Clevedon, England: Multilingual Matters.

Cummins, J. (2001). *Negotiating identities: education for empowerment in a diverse society.* (Second edition). Los Angeles: California Association for Bilingual Education.

Cummins, J. (2011). Literacy engagement. *The Reader Teacher, 65*(2), 142-146.

Cunningham, M. (2006). Minority ethnic teachers as socio-cultural empathisers. *International Journal of Learning, 13*(6), 79-86.

Curdt-Christiansen, X. (2009). Love of reading: An evaluation of the Kids READ Programme in Singapore. *International Journal of Learning, 16*(9), 69-85.

Cvjetićanin, S. & Živanović, V. (2012). The position of the Roma Children in the educational System of Serbia. *Napredak, 153*(1), 53-76.

Daglar, M., Melhuish, E. & Barnes, J. (2011). Parenting and preschool child behaviour among Turkish immigrant, migrant and non-migrant families. *European Journal of Developmental Psychology, 8*(3), 261-279.

D'Agostino, J. & Borman, G. (1998). Longitudinal achievement and chapter 1 coordination in high-poverty schools: A multilevel analysis of the prospects data. *Journal of Education for Students*, *3*(4), 401.

Dahlstedt, I. & Bevelander, P. (2010). General versus vocational education and employment integration of immigrants in Sweden. *Journal of Immigrant & Refugee Studies, 8*(2), 158-192.

Dali, K. (2012). Reading their way through immigration: The leisure reading practices of Russian-speaking immigrants in Canada. *Library & Information Science Research, 34*(3), 197-211.

Danielidou, L. & Horvath, P. (2006). Greek Cypriot attitudes toward Turkish Cypriots and Turkish immigrants. *The Journal of Social Psychology*, *46*(4), 405-421.

Danielson, C. (2012). Observing classroom practice. *Educational Leadership*, *70*(3), 32-37.

Darling-Hammond, L. (2010). *The flat world of education*. New York, NY: Teachers College Press.

Darling-Hammond, L. (2010/2011). Soaring Systems. *American Educators, 34*(4), 20-53.

Darling-Hammond, L., LaPointe, M., Meyerson, D., Orr, M. T. & Cohen, C. (2007). *Preparing school leaders for a changing world: Lessons from exemplary leadership development programs.* Stanford, CA: Stanford Educational Leadership Institute.

Datnow, A., Park, V. & Wohlstetter, P. (2007). *Achieving with data: How high-performing school systems use data to improve instruction for elementary students.* University of Southern California: Rossier School of Education.

Defries, M. (2010). Work 'slivers' for benefit parents. *Nursery World*, *110*(4245), 3-5.

Deloria, V. & Wildcat, D. (2001). *Power and place: Indian education in America*. Golden: CO: Fulcrum Press.

Denessen, E., Bakker J. & Gierveld, M. (2007). Multi ethnic schools' parent involvement policies and practices. *The school community journal, 17*(2), 27-43.

Denessen, E., Driessen, G. & Bakk, J. (2010). School and classroom diversity effects on cognitive and non-cognitive student outcomes. *Journal of Education Research, 4*(2), 79-91.

Department of Education and Science (DES). (2006). Report and recommendations for travellers education provision. Ireland: Government Publications.

DeVellis, R. (2003). *Scale development: Theory and applications.* (Second edition). Newbury Park, CA: Sage Publications.

DeYoung, A., Reeves, M., & Valyayeva, G. (2006). *Surviving the transition? Case studies of schools and schooling in the Kyrgyz Republic since independence*. Greenwich, CT: Information Age.

Dickar, M. (2008). Hearing the silenced dialogue: An examination of the impact of teacher race on their experiences. *Race, Ethnicity and Education, 11*(2), 115-132.

Díez, J., Gatt, S, & Racionero, S. (2011). Placing immigrant and minority family and community members at the school's centre: The role of community participation. *European Journal of Education*, *46*(2), 184-196.

Dimmock, C. & Walker, A. (1998). Comparative educational administration: Developing a cross cultural comparative framework: *Educational Administration Quarterly, 34*(4), 558-595.

Dimmock, C. & Walker, A. (2000). Globalization and societal culture: Redefining schooling and school leadership in the twenty-first century. *COMPARE*, *30*(3), 303-312

Dimmock, C. & Walker, A. (2005), *Educational leadership: Culture and diversity*. Sage Publications: London.

Döbert, H., Klieme, E. & Sroka, W. (2003). *Conditions of school performance in seven countries.* Munster: Waxmann.

Dobson, J. (2008). Pupil mobility, choice and the secondary school market: Assumptions and realities. *Education Review, 60,* 299-314.

Dockrell, J., Stuart, M. & King, D. (2010). Supporting early oral language skills for English language learners in inner city preschool provision. *British Journal of Educational Psychology, 80*(4), 497-515.

Downman, S. (2012). The forgotten family: Labour migration and the collapse of traditional values in Thailand's tribal communities. *Journal of Intercultural Studies, 33*(1), 53-68.

Doyle, O., McEntee, L. & McNamara, K. (2012). Skills, capabilities and inequalities at school entry in a disadvantaged community. *European Journal of Psychology of Education, 27*(1), 133-154.

Driessen, G. & Dekker, H. (2008). Dutch policies on socio-economic and ethnic inequality in education. *International Social Science Journal, 59*(16), 449-464.

Drone, J. (2006). Desegregation and effective school leadership: Tracking success, 1954-1980. *The Journal of African American History, 90*(4), 410-421.

DuFour, R. & Marzano, R. (2009). High-leverage for principal leadership. *Educational Leadership*, *66*(5), 62-68.

Duke, D. (1987). *School leadership and instructional improvement*. New York: NY: Random House.

Duncan, A. (2010). The best ideas will never come from me or anyone else in Washington, D.C. *Principal*, *90*(2), 34-38.

Eagly, A. & Chin, J. (2010). Diversity and leadership in a changing world. *American Psychologist*, *65*(3), 216-224.

Education Today. (2012). Real reasons for student failure. *4*, 22-25.

Educvisits. (2007). We welcome you to visit the experts behind the PISA success. Retrieved from http://www.palmenia.helsinki.fi/eduvisits/

Efstathiou, I. (2009). Enhancing students' critical awareness in a second chance school in Greece: Reality or wishful thinking? *Journal for Critical Education Policy Studies, 7*(1), 382-405.

Ehmke, T. & Siegle, T. (2005). ISEI, ISCED, HOMEPOS, ESCS. Indikatoren der sozialen Herkunft bei der quantifizierung von sozialen disparitäten. *Zeitschrift für Erziehungswissenschaft, 8*, 521-539.

El Moussaoui, N. & Braster, S. (2011). Perceptions and practices of stimulating children's cognitive development among Moroccan immigrant mothers. *Journal of Child & Family Studies*, *20*(3), 370-383.

Eley, L. (2001). How Janet and John feel about reading: Gender differences in New Zealand primary students' attitude to reading. *Waikato Journal of Education, 7*, 147.

Ellis, N., Natsume, M., Stavropoulou, K., Hoxhallari, L., Van Daal, V., Polyzoe, N., Tsipa, M. & Petalas, M. (2004). The effects of orthographic depth on learning to read alphabetic, syllabic and logographic scripts. *Reading Research Quarterly, 39*(4), 438-468.

Elmore, R. (2000). *Building a new structure for school leadership*. Washington DC: Albert Shanker Institute.

Elmore, R. (2004). *School reform from the inside out: Policy, practice and performance*. Cambridge, MA: Harvard University Press.

Ender, A. & Straßl, K. (2009). The acquisition and use of German in a dialect-speaking environment: facets of inclusion and exclusion of immigrant children in Switzerland. *International Journal of Applied Linguistics*, *19*(2), 173-187.

Environment, Food and Rural Affairs Committee. (2003). *Ninth report of session 2002-03. The delivery of education in rural areas.* London: The Stationery Office Report HC467.

Erbănescu, L. (2009). Training of the academic staff in Romania in the context of promoting European educational policies. *Journal of Educational Sciences, 11*(2), 49-54.

Erčulj, J. (2007). Mentoring newly appointed head teachers in Slovenia experiences from the field. *Educational Administration, Theory & Practice, 52*, 569-591.

Eriksson, M. Marschik, P., Tulviste, T., Almgren, M. Pérez, Pereira, M., Wehberg, S., Marjanovič-Umek, L., Gayraud, F., Kovacevic M. & Gallego, C. (2012). Differences between girls and boys in emerging language skills: Evidence from 10 language communities. *The British Journal of Developmental Psychology, 30*(2), 326-43.

Ersanilli, E. (2012). Model(ling) citizens? Integration policies and value integration of Turkish immigrants and their descendants in Germany, France, and the Netherlands. *Journal of Immigrant & Refugee Studies, 10*(3), 338-358.

Eshpanova, D. & Nysanbaev, A. (2006). A social portrait of young people in today's Kazakhstan. *Russian Education & Society, 48*(2), 75-9.

Espinosa, L. (2005). Curriculum and assessment considerations for young children from culturally, linguistically and economically diverse backgrounds. *Psychology for Schools, 42*(8), 837-853.

Eun, B. (2011). A Vygotskian theory-based professional development: Implications for culturally diverse classrooms. *Professional Development in Education, 37*(3), 319-333.

Evans, R. (2005). Reframing the achievement gap. *Phi Delta Kappan, 86*(8), 582-58.

Every Child Counts. (2011). 1000 days to get it right for every child. Retrieved from http://www.everychildcounts.org.nz/_w/wp-content/uploads/2011/08/ECCInfometricsInvestmentinchildrenAug11.pdf

Every Child Counts (2008). Policy overview. Retrieved from http://www.everychildcounts.org.nz/_w/wp-content/uploads/2010/07/ECC-2008-Policy1.pdf

Fabrigar, L., Wegener, D., MacCallum R. & Strahan, E. (1999). Evaluating the use of exploratory factor analysis in psychological researcher. *Psychological Methods*, *4*, 272-299.

Fackler, M. (2010, April 21). *Japan tries to face up to growing poverty problem*. New York Times.

Fallon, G. & Rublik, N. (2011). Second-language education policy in Quebec: A critical analysis of the policy of English as a compulsory subject at the early primary level in Quebec. *TESL Canada Journal, 28*(2), 90-104.

Fancera, S. & Bliss, J. (2011). Instructional leadership influence on collective teacher efficacy to improve school achievement. *Leadership & Policy in Schools*, *10*(3), 349-370.

Fay, R. & Davcheva, L. (2005). Developing professional intercultural competence: Reflections on DL programmes for language educators, and translators/interpreters in Bulgaria. In B. Holmberg, M. Shelley and C. White (Eds.), *Languages and Distance Education: Evolution and Change* (pp.140-165.) Clevedon, England: Multilingual Matters.

Feeney, E. (2009). Taking a look at a school's leadership capacity: The role and function of high school department chairs. *Clearing House*, *82*(5), 212-219.

Ferreira, I. (2009). Education, social mediation and community development: an ethnographic research in a rural area. *Community Development Journal, 44*(4), 460-469.

Fiszbein, A. (2001). *Decentralizing Education in Transition Societies*: *Case Studies from Central and Eastern Europe*. Washington, DC: World Bank.

Flashman, J. (2012). Academic achievement and its impact on friend dynamics. *Sociology of Education, 85*(1), 61-80.

Fletcher, J., Greenwood, J., Grimley, M. & Parkhill, F. (2011). Raising literacy achievement in reading: How principals of 10- to 12-year-old students are making this happen. *International Journal of Leadership in Education, 14*(1), 61-83.

Florin, T., Shults, J. & Stettler, N. (2011). Perception of overweight is associated with poor academic performance in US adolescents. *Journal of School Health, 81*(11), 663-670.

Fluharty, C. & Scaggs, B. (2007). The rural differential: Bridging the resource gap. *New Directions for Community Colleges,* 137, 19-26.

Fokion, G. & Apostolos, Z. (2008). Values, diversity and educational leadership: A critical review of the Greek paradigm: Training and professional development on issues of social justice for head teachers within a culturally diverse primary school. *International Journal of Learning*, *14*(12), 255-263.

Foley, J. (2005). English in Thailand. *RELC Journal. 36*(2), 223-234.

Forgach, N. (2006). Japan's population decline and its implications for Japanese Society. Unpublished Dissertation. Hobart and William Smith Colleges.

Fortuijn, J. (2002). Internationalisng learning and teaching: A European experience. *Journal of Geography in Higher Education, 26*(3), 263-273.

Francis, B. & Skelton, C. (2005). *Reassessing gender and achievement: Questioning contemporary key debates.* London: Routledge.

Francis, B. (2006). Heores or zereos? The discursive positioning of 'underachieving boys' in English neo-liberal education policy. *Journal of Education Policy, 21*(2), 187-200.

Frankford-Nachmias, C. & Nachmias, D. (1996). Research methods in the social sciences. (Seventh edition). London: Edward Arnold.

Fredriksson, U., Eklund, M. & Taube, K. (2009). Reading and education for students of immigrant origin in some Swedish municipalities. *US-China Education Review, 6*(11), 17-33.

Fredriksson, U., Holzer, T., McCluskey-Cavin, H. & Taube, K. (2009). Strengths and weaknesses in the Swedish and Swiss education systems: A comparative analysis based on PISA data. *European Educational Research Journal, 8*(1), 54-68.

Freudenthaler, H., Spinath, B. & Neubauer, A. (2008). Predicting school achievement in boys and girls. *European Journal of Personality, 22*, 231-245.

Freund, R. & Wilson, W. (1998). *Regression analysis: Statistical modeling of a response variable*, CA: Academic Press.

Frierman, W. (2006). Post-Soviet Kazakhstan: Kazakh-medium instruction in urban schools. *The Russian Review, 65,* 98-116. Retrieved from http://www.ihc.ucsb.edu/research/identity_articles/Rus_Rev_Jan_2006_article.pdf

Fullan, M. (2001). *Leading in a culture of change*. San Francisco: Jossey-Bass.

Fullan, M. (2005). Turnaround leadership. *Educational Forum*, *69*(2), 174-181.

Fullan, M. (2013). Great to excellent: Launching the next stage of Ontario's education agenda. 1-14. Retrieved from http://www.michaelfullan.ca/media/13599974110.pdf

Fullan, M. & Knight, J. (2011). Coaches as system leaders. *Educational Leadership, 69*(2), 50-53.

Gabrieli, C. & Goldstein, W. (2008). *Time to learn: How a new school schedule is making smarter kids, happier parents and safer neighborhoods*. Jossey-Bass: CA.

Gabršček, S. (1999). The Interface between Secondary and Higher Education − The Case of Slovenia: 1989-1999. *Higher Education in Europe, 24*(3), 359.

Gao, F. (2009). Model minority, self-perception and schooling: Multiple voices of Korean students in China. *Asia Pacific Journal of Education*, *29*(1), 17-27.

Gardiner, M. & Enomoto, E. (2006). Urban school principals and their roles as multicultural leaders. *Urban Education, 41*(6), 568-584.

Garrett-Staib, J. & Maninger, R. (2011). Ethical leadership in the principalship. *National Forum of Educational Administration and Supervision Journal, 29*(2), 23.

Gaunt, C. (2012). Nurseries' occupancy drops while fees rise. *Nursery World.* Retrieved from http://www.nurseryworld.co.uk/news/rss/1111032/Nurseries-occupancy-drops-fees-rise/

Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York: Teachers College Press.

Gedikoğlu, T. (2005). Avrupa Birliği sürecinde Türk eğitim sistemi: Sorunlar ve çözüm önerileri. *Mersin University Journal of the Faculty of Education*, *1*(1), 66-80.

George, J. (2006). World view analysis of knowledge in a rural village: Implications for science education. *Science Education, 83*(1), 77-95.

George, J. (2006). The evaluation of science curricula in developing countries and the issue of relevance. In M. Cijntje-Van Enckevort, M. George, and S. Scatolini Apostolo (Eds.), *St. Martin Studies 2006: Conference Proceedings* (pp. 89-94). St. Martin, Netherlands Antilles: University of St. Martin.

Georges, A. & Pallas, A. (2010). New look at a persistent problem: Inequality, mathematics achievement, and teaching. *Journal of Educational Research*, *103*(4), 274-290.

Georgiadis, F. & Apolstolos, Z. (2008). *Values, diversity and educational leadership: A critical review of the Greek Paradigm: Training and Professional Development on Issues of Social Justice for Head Teachers within a culturally diverse primary school.* US: The Learning Collection.

Geske, A. & Ozola, A. (2009). Different influences of contextual educational factors on boys' and girls' reading achievement. *US-China Education Review, 6*(4), 38-44.

Gjermeni, E., Van Hook, M., Gjipali, S., Xhillari, L., Lungu, F. & Hazizi, A. (2008). Trafficking of children in Albania: Patterns of recruitment and reintegration. *Child Abuses & Neglect, 32*(10), 941-948.

Glass, G. (1976). Primary, secondary and meta-analysis of research. *Educational Researcher, 5*, 3-8.

Gobbo, F. (2011) Racism, 'race' and ethnographic research in multicultural Italy. *Ethnography & Education, 6*(1), 9-27.

Goddard, T. & Hart, A. (2007). School leadership and equity: Canadian Elements. *School Leadership & Management, 27*(1), 7-20.

Goddard, T. (2010). Towards glocality: Facilitating leadership in an age of diversity. *Journal of School Leadership*, *20*(1), 37-56.

Goldring, E., Xiu C., Murphy, J., Porter, A., Elliot, S. & Carson, B. (2009). The evaluation of principals: What and how do states and urban districts assess leadership? *Elementary School Journal*, *110*(1), 19-39.

Goldstein, H. (1995). *Multilevel statistical models*. (Second edition). London: Edwards Arnold.

Goleman, D. (2006). *Social intelligence: The new science of human relationships*. New York: Bantam Books.

Gooden, M. (2012). What does racism have to do with leadership? Countering the idea of color-blind leadership: A reflection on race and the growing pressures of the urban principalship. *Journal of Educational Foundations, 26,* 67-84.

Gordon, J. (2006). From liberation to human rights: Challenges for teachers of the Burakumin in Japan. *Race, Ethnicity & Education, 9*(2), 183-202.

Graves, J. (2011). Effects of year-round schooling on disadvantaged students and the distribution of standardized test performance. *Economics of Education Review, 30*(6), 1281-1305.

Greger, D. & Holubová, M. (2010). Postoje učitelů k časnému rozdělování žáků a jejich zkušenosti s přechodem žáků do víceletých gymnázií. *Journal of Pedagogy, 1*(1), 85-101.

Greig, C. (2011). Boys-only classrooms: gender reform in Windsor, Ontario 1966-1972. *Educational Review, 63*(2), 127-141

Grieshaber, S., Shield, P., Luke, A. & Macdonald, S. (2012). Family literacy practices and home literacy resources: An Australian pilot study. *Journal of Early Childhood Literacy*, *12*(2), 113-138.

Grogan, M. (2002). Leadership for social justice. *Journal of School Leadership, 12*(2), part I, special issue.

Grogger J. & Trejo, S. (2002). *Falling behind or moving up? The intergenerational progress of Mexican Americans.* CA: Public Policy Institute of California.

Guisbond, L. & Neill, M. (2004). Failing our children. *Clearing House, 78*(1), 12-16.

Gumuseli, A. (1996). *İstanbul ilindeki ilköğretim okulu müdürlerinin öğretim liderliği davranışları. Yayınlanmamış araştırma*. Yıldız Teknik Üniversitesi, İstanbul.

Gunter, H. (2006). Educational leadership and the challenge of diversity. *Educational Management Administration & Leadership*, *34*(2), 257-268.

Gunter, H. & Thomson, P. (2009). The makeover: A new logic in leadership development in England. *Educational Review*, *61*(4), 469-483.

Guo, Y. (2012). Diversity in public education: Acknowledging immigrant parent knowledge. *Canadian Journal of Education, 35*(2), 120-140.

Gurr, D., Drysdale, L. & Mulford, B. (2007). Instructional Leadership in three Australian schools. *International Studies in Educational Administration, 35*(3), 20-29.

Guthrie, J. & Wigfield, A. (2000). Engagement and motivation in reading. In M.L. Kamil, P. Mosenthal, D. Pearson, & R. Barr (Eds.), *Handbook of reading research: Volume III* (pp. 403-422). New York: Erlbaum.

Haenn, N. (2004). New rural poverty: The tangled web of environmental protection and economic aid in southern Mexico. *Journal of Poverty, 8*(4), 97-117.

Hafizi, A. & Papa, M. (2012). Improving the quality of education by strengthening the cooperation between schools and families. *Problems of Education in the twenty-first century. 42*, 38-49.

Hallinger, P. & Lee, M. (2011). A decade of education reform in Thailand: Broken promise or impossible dream? *Cambridge Journal of Education, 41*(2), 139-158.

Hallinger, P. & Leithwood, K. (1996). Culture and educational administration: A case of finding out what you don't know you don't know. *Journal of Educational Administration*, *34*(5), 98-116.

Hallinger, P. & Leithwood, K. (1998). Unseen forces: The impact of social culture on school leaders. *Journal of Education*, *73*(2), 126-151.

Hallinger, P. & Murphy, J. (1985). Assessing the instructional leadership behavior of principals. *The Elementary School Journal, 82*(2), 217–248.

Hallinger, P. & Murphy, J. (1987). Assessing and developing principal instructional leadership. Retrieved from http://understandingbydesign.com/ASCD/pdf/journals/ed_lead/el_198709_hallinger.pdf

Hallinger, P. (1995). Culture and leadership: Developing an international perspective in educational administration. *UCEA Review, 36*(2), 1-13.

Hallinger, P. (2003). The emergence of school leadership development in an era of globalization: 1980-2002. In P. Hallinger's (Eds.), *Reshaping the landscape of school leadership development: A global perspective* (pp. 3 - 22). Lisse: Swets and Zeitlinger Publishers.

Hallinger, P. (2004). Meeting the challenges of cultural leadership: The changing role of principals in Thailand. *Discourse: Studies in the Cultural Politics of Education*, *25,* 61-73.

Hallinger, P. (2010). A review of three decades of doctoral studies using the principal instructional management rating scale: A lens on methodological progress in educational leadership. *Educational Administration Quarterly, 47*(2), 271-306.

Hallinger, P. & Heck, R. (2002). The do you call people with visions? The role of vision, mission and goals in school leadership and improvement. *Springer International Handbook* of *Educational, 8,* 9-40.

Hammond, C. (2002). Efficiency in the provision of public services: A data envelopment analysis of UK public library systems. *Applied Economics, 34,* 649.

Hargreaves, A. & Fullan, M. (2012). *Professional development*. New York, NY: Teachers College Press.

Hargreaves, A. & Shirley, D. (2009). *The fourth way*. Thousand Oaks, CA: Corwin Press.

Hargreaves, A. (1994). *Changing teachers, changing times: Teachers' work and culture in the post-modern age*. New York, NY: Teachers College Press.

Hargreaves, A., Braun, H., Hughes, M., Chapman, L., Gurn, A., Wei Ling K. L., Lee, Y., Morton, B., Sallis, K., Steiner, A. & Welch, M. (2012). Leading for all: A research report of the development, design, implementation and impact of Ontario's "essential for some, good for all" initiative. Retrieved from http://www.ontariodirectors.ca/downloads/Essential_FullReport_Final.pdf

Hargreaves, A., Halász, G & Pont, B. (2008). The Finnish approach to system leadership, a case study report for the OECD improving school leadership activity. In Pont, B., D. Nusche and D. Hopkins (Eds.), *Improving School Leadership, Volume 2: Case Studies on System Leadership*. Paris: OECD Publishing.

Harris, A. (2002). Effective leadership in schools facing challenging contexts. *School Leadership and Management, 22*(1), 15-26.

Harris, J. (2009). Late-stage refocusing of Irish-language programme evaluation: Maximizing the potential for productive debate and remediation. *Language Teaching Research*, *13*(1), 55-76.

Harth, C. (2010). The global school house going glocal adaptive education for local and global citizenship. *Independent School*, *70*(1), 68-74.

Haruna, P. (2009). Revisiting the leadership paradigm in Sub-Saharan Africa: A study of community-based leadership. *Public Administration Review*, *69*(5), 941–950.

Harvey, A., Paolucci-Whitcomb, P. & Comerford, S. (2005). Ethical leadership: Supporting human rights and diversity in rural communities. *Rural Special Education Quarterly, 24*(4), 26-31.

Haskins, R. & Tienda, M. (2011). The future of immigrant children. Future of Children Policy Brief. Spring. Retrieved from http://www.brookings.edu/research/papers/2011/04/20-immigrant-children-haskins

Hattie, J. (2003). New Zealand education snapshot with specific reference to years 1-13. Paper presentation to knowledge Wave 2003 Leadership Forum, Auckland University, New Zealand.

Hawley, A., Woodrum, A., Burgess, L. & Rhodes, M. (2009). Planning for culturally responsive leadership: Insights from a study of principals of exemplary schools. *Educational Planning, 18*(3), 12-26.

Hee-Yung, J. & Hye-Yoon, J. (2010). South Korean digital textbook project. *Computers in the Schools, 27*(3/4), 247-265.

Hein, N. (2011). *Japanese cultural concepts and business practices as a basis for management and commerce recommendations.* Germany: GRIN Verlag.

Hemingway P. & Brereton, N. (2009). What is a systematic review? In H. T.O. Davies and I. K. Crombie (Eds.), *Hayward Medical Communications*. Retrieved from http://www.medicine.ox.ac.uk/bandolier/painres/download/whatis/Syst-review.pdf

Henderson, A. & Berla, N. (1994). *A new generation of evidence: The family is critical to student achievement*. Washington, DC: Center for Law and Education.

Hentschke, G. (2009). Entrepreneurial leadership. In Brent Davis (Eds.), *The essentials of school leadership* (pp. 147-165). London: Sage.

Hernandez, R. (1994). Reducing bias in the assessment of culturally and linguistically diverse populations. *The Journal of Educational Issues of Language Minority Students, 14,* 269-300.

Herrera, S. (2012). Globalization: Current constraints and promising perspectives. *Journal of Curriculum and Instruction, 6*(1), 1-10.

Hershfeldt, P., Sechrest, R., Pell, K., Rosenberg, M., Bradshaw, C. & Leaf, P. (2009). Double-check*: A* framework *of* cultural responsiveness applied to classroom behavior. *Teaching Exceptional Children Plus*, *6*(2), 2-18.

Hofferth, S. (2005). Secondary data analysis in family research. *Journal of Marriage and Family, 67*, 891-907.

Hornberger, N. (2006). Discursive approaches to understanding teacher collaboration: Policy into practice. *International Journal of Bilingual Education and Bilingualism, 9*(4), 495-499.

Howell, D. (2007). The analysis of missing data. In W. Outhwaite & S. Turner (Eds.), *Handbook of Social Science Methodology.* London: Sage.

Hsin, A. (2007). Children's time use: Labor divisions and schooling in Indonesia. *Journal of Marriage & Family, 69*(5), 1297-1306.

Huebner, Y. (2010). Year-round schooling. *Educational Leadership, 67*(7), 83-84.

Huggins, K., Scheurich, J. & Morgan, R. (2011). Professional learning communities as a leadership strategy to drive math success in an urban high school serving diverse, low-income students: A case study. *Journal of Education for Students Placed at Risk*, *16*(2), 67-88.

Hughes, M. (in press). The schooling of socioeconomically disadvantaged students in Japan: Teachers' views and perspectives.

Hughes, M. (2012, April 12). Professional capital vs. professional capital for diversity. Research presentation, American Educators Research Association. Vancouver, Canada.

Hughes, M. (2011, September 14). Non-standardization and special populations. Research presentation, European Education Research Association, Berlin, Germany.

Hui, A. & Lua, S. (2010). Formulation of policy and strategy in developing creativity education for four Asian Chinese societies: A policy analysis. *Journal of Creative Behavior*, *44*(4), 215-235.

Hui, S. & Cheung, H. (2006). A re-examination of leadership style for Hong Kong school-based management (SBM) schools. *Asia Pacific Journal of Education*, *26*(2), 173-187.

Human Rights Commission. (2010). Human Rights, New Zealand. Auckland. Retrieved from http://www.hrc.co.nz/hrc_new/hrc/cms/files/documents/Human_Rights_Review_2010_Full.pdf

IBM (2010). SPSS Missing Values 19. Retrieved from http://www.uio.no/tjenester/it/forskning/statistikk/hjelp/brukerdokumentasjon/IBM percent20SPSS percent20Missing percent20Values percent2019.pdf

Iliff, H. (2005). Education in Montenegro. Budapest: Institute for Educationl Policy. Retrieved from http://www.see-educoop.net/education_in/pdf/education-needs_assessment-yug-mon-enl-t05.pdf

Im, Y. (2009). Towards new directions for Korean rural education policy. Retrieved from http://www.une.edu.au/simerr/ISFIRE/pages/ISFIRE_proceedings.pdf

Imants, J. & Zoelen, A. (1995). Teachers' sickness absence in primary schools, school climate and teachers' sense of efficacy. *School Organization, 15*(1), 77-86.

Incetas, Y. (2011). The USA and beyond: Bilingual education for Turkish minority children in German public schools. *International Journal of Learning, 18*(1), 35-44.

INSTAT (2007). Women and children in Albania: Double dividend of gender equality. Retrieved from http://www.childinfo.org/files/Albania_Women_Children_Report.pdf

International Labor Organization (ILO). (2002). Child Labour. Global Report. Retrieved from http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_publ_9221124169_en.pdf

Itkoen, T. & Jahnukainen, M. (2007). An analysis of accountability policies in Finland and the United States. *International Journal of Disability, Development & Education, 54*(1), 5-23.

Jackson, S., Vann W., Kotch, J., Pahel, B. & Lee, J. (2011). Impact of poor oral health on children's school attendance and performance. *American Journal of Public Health*, *101*(10), 1900-1906.

Jacobs, H. (2010). *Curriculum 21: Essential education for a changing world.* Alexandria, VA: Association for Supervision and Curriculum Development.

Jacobson, S. & Bezzina, C. (2008). The effects of leadership on student academic/affective achievement. In G. Crow, J. Lumby and P. Pashiardis (Eds.), *International handbook on the preparation and development of school leaders*. Abingdon: Routledge Taylor & Francis.

Jacobson, S. (2008). Leadership for success in high poverty elementary schools. *Journal of Educational Leadership, Policy and Practice, 23*(1), 3-17.

James, C., Brammer, S., Connolly, M., Fertig, M., James, J. & Jones, J. (2011). School governing bodies in England under pressure: The effects of socio-economic context and school performance. *Educational Management Administration & Leadership, 39*(4), 414-433.

Jefferies, S. (2000). A literature review exploring a meaning for the term ‘curriculum leadership. *Waikato Journal of Education, 6,* 133-141.

Johnson, L. (2007). Rethinking successful school leadership in challenging U.S. schools: Culturally responsive practices in school-community relationships. *International Studies in Educational Administration*, *35*(3), 49-58.

Johnson, L., Møller, J., Jacobson, S. & Wong, K. C. (2008). Cross-national comparisons in the international successful school principal project (ISSPP): The United States, Norway and China. *Scandinavian Journal of Educational Research, 52*(5), 407-422.

Johnson, L., Møller, J., Pashiardis, P., Vedøy, G. & Savvides, V. (2011). Culturally responsive practice. In R. Ylimaki & S. Jacobson (Eds.), *US and cross-national policies, practices and preparation: Implications for successful instructional leadership, organizational learning, and culturally responsive practices* (pp. 75 - 101). Dordrecht: Springer.

Johnson, L., Møller, J., Ottesen, E., Pashiardis, P., Savvides, V. & Vedøy, G. (2010). Leadership preparation for culturally diverse schools in Cyprus, Norway and the United States. In R. Ylimaki & S. Jacobson (Eds.), *US and cross-national policies, practices and preparation: Implications for successful instructional leadership, organizational learning, and culturally responsive practices*. (pp. 153 - 177). Dordrecht: Springer.

Johnson, S. (1996). *Leading to change*. San Francisco, CA: Jossey-Bass.

Jordan, F. (2010). A case study of agroforestry education: Seeking a paradigm for the sustainable development of rural youth in Darien, Rep. of Panama. Retrieved from http://fptk.upi.edu/tvet-conference/download/TVET percent20Conference percent20Proceedings/Papers_Theme4/24_Fulvia_jordan.doc percent5B1 percent5D percent5B1 percent5D_Update.pdf

Jordan, G. & Singh, S. (2011). On an Island without sun: Coping strategies of Sikhs in Ireland. *Journal of Intercultural Studies, 32*(4), 407-432.

Jubani, A. Lama, I. & Gjokutaj, M. (2012) Improving the quality of learning by increasing the students' reading skills. *Problems of Education in the twenty-first century, 42*, 50-62.

Kalt, S. (2012). Spanish as a second language when L1 is Quechua: Endangered languages and the SLA researcher. *Second Language Research, 28,* 265-279.

Kanatabutra, S. (2012). Relating shared vision components to Thai public school performance. *The Journal of Applied Business Research, 28*(6), 1159-1170.

Kanan, H. (2006). Building bridges of minds and hearts. *International Schools Journal, 26*(1), 25-29.

Kang, Y. (2012). Singlish or globish: Multiple language ideologies and global identities among Korean educational migrants in Singapore. *Journal of Sociolinguistics, 16*(2), 165-183.

Kantabutra, S. & Tang, J. (2006). Urban-rural and size effects on school efficiency: The case of Northern Thailand. *Leadership & Policy in Schools, 5*(4), 355-377.

Katane, I. (2006). Sustainable development of the modern rural school as a system of educational environment under the conditions of globalisation and various contradictions in Latvia. *Acta Paedagogica Vilnensia, 16*, 27-39.

Katsikas, H. & Therianos, K. (2006). *The education of ignorance*. Athens: Gutenberg.

Kennedy, E. (2009). Narrowing the achievement gap: Motivation, engagement, and self-efficacy matter. *Journal of Education, 190*(3), 1-11.

Kern, C. (1975). White principal, black student. *Education Digest, 40*(9), 33-35.

Kim, P., Hagashi, T., Carillo, L., Gonzales, I., Makany, T., Lee, B. & Garate, A. (2011). Socioeconomic strata, mobile technology, and education: A comparative analysis. *Educational Technology Research & Development, 59*(4), 465-486.

King, K., Gurian, M. & Stevens, K. (2010). Gender-friendly schools. *Closing Opportunities Gaps, 68*(3), 38-42.

Kirk, D. & Durant, R. (2010). Crossing the line: Framing appropriate responses in the diversity classroom. *Journal of Management Education, 34,* 824-847.

Kitching, K. (2010). An excavation of the racialised politics of viability underpinning education policies in Ireland. *Irish Educational Studies, 29*(3), 213-229.

Kivirauma, J., Klemelä, K. & Rinne, R. (2006). Segregation, integration, inclusion - the ideology and reality in Finland. *European Journal of Special Needs Education*, *21*(2), 117-133.

Klar, H. (2012). Fostering department chair instructional leadership capacity: Laying the groundwork for distributed instructional leadership. *International Journal of Leadership in Education, 15*(2), 175-197.

Knaflic, L. (2005). How we started: the family literacy programme in Slovenia. *Literacy*, *39*(2), 81-84.

Knoeppel, R. & Rinehart, J. (2010). A canonical analysis of successful and unsuccessful high schools: Accommodating multiple sources of achievement data in school leadership. *Educational Considerations*, *38*(1), 24-32.

Kogan, I. (2006). Labor markets and economic incorporation among recent immigrants in Europe. *Social Forces, 85*(2), 697-721.

Kolawole, A. (2012). Comparative study of instructional supervisory roles of secondary school principals and inspectors of the ministry of education in Lagos, state, Nigeria. *European Scientific Journal, 8*(28), 37-45.

Kolić-Vehovec, S. & Bajšanski, I. (2007). Metacognitive strategies and reading comprehension in elementary-school students. *European Journal of Psychology of Education, 21*(4), 439-451.

Konstantopoulos, S. (2009). Effects of teachers on minority and disadvantaged students' achievement in the early grades. *Elementary School Journal, 110*(1), 92-113.

Kostin, A. (2006). The regionalization of education: A strategic direction of educational policy. *Russian Education & Society*, *48*(11), 63-73.

Kovács, K. (2012). Rescuing a small village school in the context of rural change in Hungary. *Journal of Rural Studies, 28*(2), 108-117.

Kromrey, J. & Hines, C. (1994). Nonrandomly missing data in multiple regression: An empirical comparison of common missing data treatments. *Educational and Psychological Measurements, 54*(3), 573-593.

Kuo, E. (2009). Taiwan vs. Chinese Taipei: Which should TIMSS Use? *Education Week*, *28*(31), 31-31.

Ladd, H. (2007). Teacher labor markets in developed countries. *Future of Children*, *17*(1), 201-217.

Ladson-Billings, G. (1994). *The dreamkeepers: Successful teaching for African-American students*. San Francisco: Jossey-Bass.

Lalas, J. & Valle, E. (2007). Social justice lenses and authentic student voices: Enhancing leadership for educational justice. *Educational Leadership & Administration: Teaching & Program Development, 19*, 75-102.

Lareau, A. (2003). *Unequal childhoods. Class, race and family life.* CA: University of California Press.

Lather, P. (1999). To be of use: The work of reviewing. *Review of Educational Research, 69*(1), 2-7.

Lau Chin, J. (2010). Introduction to the special issue on diversity and leadership. *American Psychologist, 65*(3), 150-156.

Lau, S. & Ping, C. (2010). Developmental trends of creativity: What twists of turn do boys and girls take at different grades? *Creativity Research Journal, 22*(3), 329-336.

Leadership Improvement for Student Achievement (LISA). (2009). The leadership cocktail. A highly contextual mix. Retrieved from http://www.leadership-in-education.eu/fileadmin/Projects/LISA_Results.pdf

Lee, H. (2011). English language teaching at expenses of Thai language teaching for urban refugee language learners in Thailand: Social inequalities related to what languages to teach. *Journal of Language Teaching and Research, 2*(4), 810-815.

Lehto, J., Scheinin, P., Kupiainen, S. & Hautamaki, J. (2001). National survey of reading comprehension in Finland. *Journal of Research in Reading, 24*(1), 99-110.

Leithwood, K. (2010). Characteristics of school districts that are exceptionally effectives in closing the achievement gap. *Leadership & Policy in Schools*, *9*(3), 245-291.

Leithwood, K. & Mascall, B. (2008). Collective leadership effects on student achievement. *Educational Administration Quarterly*, *44*(4), 529-561.

Leithwood, K., Day, C., Sammons, P., Hopkins, D. & Harris, A. (2006). Success school leadership. What it is and how it influences pupil learning. Retrieved from http://o.b5z.net/i/u/10063916/h/Pre-Conference/2_Successful_School_Leadership_Influences_on_Learning.pdf

Leo, E. & Barton, L. (2006). Inclusion, diversity and leadership: Perspectives, possibilities and contradictions. *Educational Management Administration and Leadership, 34*(2), 167-180.

Lesar, I., Čuk, I. & Peček, M. (2006). How to improve the inclusive orientation of Slovenian primary school—the case of Romani and migrant children from former Yugoslavia. *European Journal of Teacher Education, 29*(3), 387-399.

Levels, M., Dronkers, J. & Kraaykamp, G. (2008). Immigrant children's educational achievement in Western countries: Origin, destination and community effects on mathematical performance. *American Sociological Review,* 73*,* 835-853.

Levin, B. (2012). The diversity challenge. *Phi Delta Kappan, 93*(8), 74-75.

Levy, C. (2011). My family's experiment in extreme schooling. Available at http://www.nytimes.com/2011/09/18/magazine/my-familys-experiment-in-extreme-schooling.html?pagewanted=all&_r=0

Lewis, M. (2009). Ethnologue: Languages of the world. (Sixteenth edition). Dallas, TX: SIL International.

Lie, S., Linnakyla, P. & Roe, A. (2003). Northern lights on PISA: Unity and diversity in the Nordic Countries in PISA 2000. Retrieved from http://www.oecd.org/finland/33684855.pdf

Liebkind, K., Jasinskaja-Lahti, I. & Solheim, E. (2004). Cultural identity, perceived discrimination, and parental support as determinants of immigrants' school adjustments: Vietnamese youth in Finland. *Journal of Adolescent Research, 19*(6), 635-656.

Ligaya, A. (2007, November 12). The debate over Canada's poverty line. CBC News Online. Retrieved from http://www.cbc.ca/news/background/economy/poverty-line.html .

Lin, C. & Yamaguchi, S. (2011). Under what conditions do people feel face-loss? Effects of the presence of others and social roles on the perception of losing face in Japanese culture. *Journal of Cross-Cultural Psychology, 42*(1), 120-124.

Lin, Y. (2006). Teachers' personal knowledge management: A case study in Taiwanese elementary school context. Unpublished thesis, Nottingham Trent University.

Lincoln, Y. & Guba, E. (1985). *Naturalistic inquiry*. NY: Sage Press.

Lindahl, R. (2011). The state of education in Alabama's K-12 rural public schools. *Rural Educator, 32*(2), 1-12.

Linnakylä, P., Kupari, P., Reinikainen, P. & Arffman, I. (2002). *The Finnish success in PISA – and some reasons behind it.* Kirjapaino Oma Oy: Jyvaskyla.

Lipovšek, I. (2003). Changes in geographical education during the last 15 years in Slovenia. *International Research in Geographical & Environmental Education*, *12*(2), 182-185.

Little, J. (1982). Norms of collegiality and experimentation: Workplace conditions of school success. *American Educational Research Journal, 19*(3), 325-340.

Little, R., & Rubin, D. (1989). The analysis of social science data with missing values. *Sociological Methods and Research, 18*, 292-326.

Little, T., Lindenberger, U. & Nesselroade, J. (1999). On selecting indicators for multivariate measurement and modeling with latent variables: When "good" indicators are bad and "bad" indicators are good. *Psychological Methods,* 4, 192–211.

Livesay, M., Moore, C., Stankay, R., Waters, M., Waff, D. & Gentile, C. (2005). Collaborative learning communities: Building leadership in a high school English department. *English Journal, 95*(2), 16-18.

Lizasoain, L., Joaristi, L., Lukas, J. & Santiago, K. (2007). Contextual effects of socioeconomic level on academic achievement in compulsory secondary education in the Basque autonomous community. Differential study about socioeconomic level of families and school centers. *Education Policy Analysis Archives, 15*(8), 1-35.

Lohfink, G., Morales, A., Shroyer, G., Yahnke, S. & Hernandez C. (2011). A distance-delivered teacher education program for rural culturally and linguistically diverse teacher candidates. *Rural Educator, 33*(1), 25-36.

Love, S. & Varghese, M. (2012). Race, language, and schooling in Italy's immigrant policies, public discourses, and pedagogies. *International Journal of Multicultural Education*, *14*(2), 1-19.

Lubienski, S. (2007). What we can do about achievement disparities. *Educational Leadership, 65*(3), 54-59.

Luciak, M. (2004a). Migrants, minorities and education. Documenting discrimination and integration in 15 member states of the European Union and behalf of the European Monitoring Centre on Racism and Xenophobia (Vienna, EUMC).

Luciak, M. (2004b). Minority status and schooling- John U. Ogbu's theory and schooling of ethnic minorities in Europe. *Intercultural Education, 15*(4), 359-368.

Lumby, J. & Coleman, M. (2010). Leadership and Diversity. *School Leadership & Management*, *30*(1), 1-2.

Lumby, J. & Morrison, M. (2010). Leadership and diversity: Theory and research. *School Leadership & Management*, *30*(1), 3-17.

Lumby, J. (2006). Conceptualizing Diversity and Leadership. *Educational Management Administration & Leadership, 34*(2), p. 151-165.

Lumby, J. (2005). Leadership, development and diversity in the learning and skills sector in England. *Management in Education, 19*(3), 33-38.

Lumby, J. & Azaola, C. (2011). Women principals in small schools in South Africa. *Australian Journal of Education, 55*(1), 73-85.

Lundberg, I., Larsman, P. & Strid, A. (2012). Development of phonological awareness during the preschool year: the influence of gender and socio-economic status. *Reading & Writing*, *25*(2), 305-320.

Luo, H. (2001). Women's sexual advantages and their administrative styles. *Journal of China Women's College*, *13*(3), 40-3.

Lynch, J. (2012). Responsibilities of today's principal: Implications of principal preparation programs and principal certification policies. *Rural Special Education Quarterly, 31*(2), 40-47.

Ma, X. & Klinger, D. (2000). Hierarchical linear modeling of student and school effects on academic achievement. *Canadian Journal of Education,* 25, 41-55.

MacCallum, R., Zhang S., Preacher K. & Rucker D. (2002). On the practice of dichotomization of quantitative variables. *Psychology Methodology,* 7, 19-40.

MacKenzie, D. & Chamberlain, C. (2008). Youth homeless 2006. *Youth Studies Australia. 27*(1), 17-25.

Madsen, J. & Mabokela, R. (2002). African American leaders' perceptions of intergroup conflict. *Peabody Journal of Education, 77*(1), 35-58.

Magableh, A. & Hawamdeh, B. (2007). Accountability and discipline in classroom management: Case study: Jarash-Jordan. *College Student Journal. 41*(4), 901-908.

Magno, C. (2009). Reimagining the school leadership paradigm in a post socialist context. *European Education, 41*(3), 23-41.

Magos, K. & Politi, F. (2008). The creative second language lesson: The contribution of the role-play technique to the teaching of a second language in immigrant classes. *RELC Journal, 39*(1), 96-112.

Malceva-Zamkovaja, N., Müürsepp, M. & Muldma, M. (2012). Dialogue of cultures in textbooks of primary school: Comparative analysis. *Problems of Education in the twenty-first century.* 44, 113-122.

Malmberg, L. & Trempala, J. (1997). Anticipated transition to adulthood: The effect of educational track, gender and self-evaluation on Finnish and Polish adolescents' future orientation. *Journal of Youth and Adolescence, 26*(5), 517-537.

Marie, D., Fergusson, D. & Boden, J. (2008). Educational achievement in Maori: The roles of cultural identity and social disadvantage. *Australian Journal of Education (ACER Press). 52*(2), 183-196.

Marion, L. (2002). Developing a sustainable educational process in Indonesia: A project of the global dialogue institute. *Higher Education in Europe, 27*(3), 197-209.

Marjanovič-Umek, L., Fekonja-Peklaj, U. & Podlesek, A. (2012). Characteristics of early vocabulary and grammar development in Slovenian-speaking infants and toddlers: A CDI-adaptation study. *Journal of Child Language*, 1-20.

Marquardt D. (1970). Generalized inverses, ridge regression, biased linear estimation, and nonlinear estimation. *Technometrics* 12, 591-612.

Marshall, K. (2012). Let's cancel the dog-and-pony show. *Phi Delta Kappan, 94*(3), 19-23.

Martino, W. (2008). Which boys are we talking about? The literacy and numeracy secretariat. Ontario Government. Retrieved from http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/martino.pdf

Marx, A. & Stanat, P. (2012). Reading comprehension of immigrant students in Germany: Research evidence on determinants and target points for intervention. *Reading & Writing, 25*(8), 1929-1945.

Marzano, R., Waters, T. & McNulty, B. (2005). *School leadership that works: From research to Results.* Alexandria, VA: Association for Supervision and Curriculum Development.

Mata, L. (2011). Motivation for reading and writing in Kindergarten. *Reading psychology, 32*(3), 272-299.

Mauny, C. (2008). Daily high school life: When the construction of the social bond collides with pedagogical tensions. *Education et Francophonie, 36*(2), 80-97.

Maxwell, G., Huggins, K., & Scheurich, J. (2010). How one historically underperforming diverse rural high school achieved a successful turnaround. *Planning & Changing, 41*(3/4), 161-186.

McAllister, G. & Jordan-Irvine, J. (2000). Cross-cultural competency and multicultural teacher education. *Review of Educational Research, 70*(1), 3-24.

McCarthy, F. & Vickers, M. (2012). *Refugee and immigrant students: Achieving equity in education.* Charlotte: Information Age Publishing.

McCollum, D. & Kajs, L. (2009). Examining the relationship between school administrators' efficacy and goal orientations. *Educational Research Quarterly, 32*(3), 29-46.

McCollum, S. & Rene, C. (2011). Taking it to the next level. *Teaching Tolerance*, 40, 49-51.

McCray, C., Wright, J. & Beachum, F. (2004). An analysis of secondary school principals' perceptions of multicultural education. *Education, 125*(1), 111-120.

McGettigan, I. & Gray, C. (2012). Perspectives on school readiness in rural Ireland: The experiences of parents and children. *International Journal of Early Years Education, 20*(1), 15-29.

McGrath, B. (2001). A problem of resources: Defining rural youth encounters in education, work & housing. *Journal of Rural Studies*, *17*(4), 481.

McKinsey & Company. (2009). Shaping the future: How good education systems can become great in the decade ahead. Retrieved from http://www.mckinsey.com/locations/southeastasia/knowledge/Education_Roundtable.pdf

McKinsey & Company. (2010). How the world's most improved school systems keep getting better. Retrieved from http://clients.mediaondemand.net/MCKINSEY/2010/SCHOOLS/player

McLaughlan, G. & Salt, J. (2002). *Migration policies towards highly skilled foreign workers,* London: Home Office.

Mere, K., Reiska, P. & Smith, T. (2006). Impact of SES on Estonian students' science achievement across different cognitive domains. *Quarterly Review of Comparative Education, 36*(4), 497-516.

Merisuo-Storm, T. (2006). Girls and boys like to read and write different texts. *Scandinavian Journal of Educational Research, 50*(2), 111-125.

Meunier, M. (2011). Immigration and student achievement: Evidence from Switzerland. *Economics of Education Review, 30*(1), 16-38.

Middlestadt, S., Grieser, M., Hernandez, O., Tubaishat, K., Sanchack, J., Southwell, B. & Schwartz, R. (2001). Turning minds on and faucets off: Water conservation education in Jordanian schools. *Journal of Environmental Education*, *32*(2), 37-45.

Mihaliček, S., Habdelića, O. & Gorica, V. (2012). Satisfaction and happiness of teachers. *Croatian pedagogical-literary society and faculty of philosophy studies, 153*(3/4), 389-401.

Mihesuah, D., & Wilson, A. (2004). *Indigenizing the academy*: *Transforming scholarship and empowering communities*. Lincoln: University of Nebraska Press.

Militello, M. & Berger, *J. B.* (2010). Understanding educational leadership in North-West China. *International Journal of Leadership in Education, 13*(2), 185-202.

Miller, J. (1982). Secondary analysis and science education research. *Journal of Research, Science and Teaching,* 19, 719–725.

Millimet, D. & Husain, M. (2009). The mythical 'boy crisis'? *Economics of Education review 28*(1), 38-48.

Ministry of Social Development. (2008). Diverse communities- exploring the migrants and refugee experience in New Zealand. Retrieved from http://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/research/diverse-communities-migrant-experience/migrant-experience-report.pdf

Mitchell, K. (2011). Something's amiss in the international race and rankings. *School Administrator,* 68(9), 40-41.

Mitchell, R., Murphy, R. & Peters, J. (2008). The boys in literacy initiative: Molding adolescent boys into avid readers. *Principal, 87*(4), 70-71.

Mogno, C. (2009). Reimagining the school leadership paradigm in a post socialist context. *European Education, 41*(3), 23-41.

Mol, S. & Bus, A. (2011). To read or not to read: A meta-analysis of print exposure from infancy to early adult. *Psychological Bulletin, 137*(2), 267-296.

Monk, D. (2007). Recruiting and retaining high-quality teachers in rural areas. *Future of Children, 17*(1), 155-174.

Möβle, T., Kleimann, M., Rehbein, F. & Pfeiffer, C. (2010). Media use and school achievement- boys at risk? *British Journal of Developmental Psychology, 28*(3), 699-725.

Muijs, D. & Dunne, M. (2010). Setting by ability - or is it? A quantitative study of determinants of set placement in English secondary schools. *Educational Research*, *52*(4), 391-407.

Muijs, D., Ainscow, M., Dyson, A., Raffo, C., Goldrick, S., Kerr, K., Lennie C. & Miles, S. (2010). Leading under pressure: leadership for social inclusion. *School Leadership and Management, 30*(2), p 143-157.

Mulford, B. (2003). School Leaders: changing roles and impact on teacher and school effectiveness. Paris: OECD Publishing.

Munson, L. (2011). What students really need to know. *Educational Leadership, 68*(6), 10-14.

Murphy, B. (2010). Foreign language learning in Irish second level schools: Gender very much on the Agenda! *Irish Educational Studies, 29*(1), 81-95.

Musti-Rao, S. & Cartledge, G. (2004). Early reading intervention for urban learners: Implications for practice. *Multiple Voices for Ethnically Diverse Exceptional Learners. 10*(1/2), 94-106.

Muwanguzi, S. & Musambira, G. (2012). Communication experiences of Ugandan immigrants during acculturation to the United States, *Journal of Intercultural Communication*, 30, 6-6.

Mycoo, M. (2006). The retreat of the upper and middle classes to gated communities in the post structural adjustment era: The case of Trinidad. *Environment and Planning, 38*(1), 131-148.

National Center for Educational Statistics (NCES). (2007). Graphs and charts. Retrieved from http://nces.ed.gov/nationsreportcard/pdf/main2007/2007496.pdf

National Centre for Social Research (2009). Educational attainment in rural areas. Retrieved from https://www.education.gov.uk/publications/eOrderingDownload/DEFRA-2009-12-02.pdf

National Staff Development Council (NSCD) (2011). Retrieved from http://www.aypf.org/documents/62609NSDCDefinitionofProfessionalDevelopment908.pdf

Nations (2012). Population bureau. Retrieved from http://www.nationsonline.org/oneworld/world_population.htm

Necochea, J. & Cline, Z. (2000). Language learners within mainstream settings. *Race ethnicity and Education 3*(3), 317-332.

Neugebauer, S.R. & Currie-Rubin, R. (2009). Read-alouds in Calca, Peru: A bilingual indigenous context. *Reading Teacher, 62*(5), 396-405.

New Zealand Institute. (2010). Inequality. Retrieved from http://nzinitiative.org.nz/site/nzbr/files/Inequality1.pdf

Newman, D., Newman, I. & Salzman, J. (2010). Comparing OLS and HLM models and the questions they answer: Potential concerns for Type VI Errors. *Multiple Linear Regression Viewpoints*, 36, 1-8.

Ng, P. (2008). Educational reform in Singapore: from quantity to quality. *Educational Research Policy Practice, 7*(5), 1-15.

Ngai, S., Ngai, N., Cheung, C. & To, S. (2008). The effects of service participation, friendship networks and family support on developmental outcomes: A study of young people from low-income families in Hong Kong. *Adolescence, 43*, 399-416

Ngcobo, T. (2010). Organic leadership associated with good academic performance: An ethnographic study of two South African township secondary schools. *International Studies in Educational Administration*, *38*(3), 19-34.

Niesche, R. & Keddie, A. (2011). Foregrounding issues of equity and diversity in educational leadership. *School Leadership and Management*, *31*(1), 65-77.

Nieto, S. (2000). *Affirming diversity: The sociopolitical context of multicultural education*. New York: Longman.

Noguera, P. (2002). Beyond size: The challenge of high school reform. *Educational Leadership, 59*(5), 60-63.

Norton, B. & Leung, C. (2002). Reception classes for immigrant students: Reception classes for immigrant students in England. *TESOL Quarterly, 36*(1), 93-98.

Nugent, M. (2010). Teaching our traveller children to read: An action research project. *Support for Learning*, *25*(2), 55-62.

Nunavut Tunngavik. (2010). The status of Inuit children and youth in Nunavut. Annual report. Retrieved from http://www.tunngavik.com/files/2012/11/2010-11-SICS-Annual-Report-Eng.pdf

Nunnally, J. (1978). *Psychometric theory.* (Second edition). New York, NY: McGraw-Hill.

Ó'Laoire, M. (2012). Language policy and minority language education in Ireland: Re-exploring the issues. *Language, Culture and Curriculum, 25*(1), 17-25.

O'Leary, R., Van Slyke, D. & Kim, S. (2010). *The future of public administration around the World*: *The Minnowbrook perspective*. Washington, DC: Georgetown University Press.

O'Sullivan, H. & West-Burnham, J. (2011). *Leading and managing schools*. London: SAGE Publications.

Oberemko, O. (2006). *For-fee higher education: Advancements of the institutional changes*. Moscow: State University Russian School of Economics.

Ochoa, A. & Cadiero-Kaplan, K. (2004). Towards promoting biliteracy and academic achievement: Educational programs for high school Latino English language learners. *High School Journal, 87*(3), 27-43.

Ochs, K. & Phillips, D. (2004). Processes of educational borrowing in historical context. In D. Phillips & K. Ochs (Eds.), *Educational policy borrowing: Historical perspectives.* (pp. 7-23). Oxford: Symposium Books.

O'Connell, A. & McCoach, D. (2008). *Multilevel modeling of educational data.* Charlotte, NC: Information Age Publishing.

Ogbu, J. (1978). *Minority education and caste: The American system in cross-cultural perspective.* New York, NY: Academic Press.

Oh, S. (2012). Identity and inclusion: Education in refugee camps in Thailand. In F. McCarthy & M. Vicker (Eds.), *Refugee and immigrant students: Achievement equity in education* (pp. 65-88). Charlotte, NC: Information Age Publishing.

Oh, S. & Van der Stouwe, M. (2008). Education, diversity and inclusion in Burmese refugee camps in Thailand. *Comparative Education Review, 52*(4), 589-617.

Okech, J. & Rubel, D. (2007). Diversity competent group work supervision: An application of the supervision of group work model. *Journal for Specialists in Group Work, 32*(3), 245-266.

Oller, D. & Eilers, R. (2002). *Language and literacy in bilingual children*. Clevedon, England: Multilingual Matters.

Ontario Ministry of Education. (n.d.). *Me read? No way! A practical guide to improving boys literacy skills*, Retrieved from http://www.edu.gov.on.ca/eng/document/brochure/meread/meread.pdf

Opdenakker, M. & Van Damme, J. (2007). Do school context, student composition and school leadership affect school practice and outcomes in secondary education? *British Educational Research Journal, 33*(2), 179-206.

Oplatka, I. (2006). Women in educational administration within developing countries. *Journal of Educational Administration*, *44*(6), 604-624.

Organization for Economic Cooperation and Development (OECD). (2000). Motivating students for lifelong learning. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2004). Viewing the Japanese school system through the prism of PISA. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2006). Where immigrant students succeed: A comparative review of performance and engagement in PISA 2003. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2007). Finland. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2009a). Creating effective teaching and learning environments: First results from TALIS. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2009b). Take the test: Sample PISA questions. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2009c). Overcoming social background: Equity in learning opportunities and outcomes. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2009d). School questionnaire 2009. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2009e). Student questionnaire 2009. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2009f). Improving school leadership. The toolkit. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2009g). Assessment framework. Key competencies in reading, mathematics and science. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2009h). Learning trends changes in student performance since 2000. (Volume V). Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2009i). PISA data analysis manual: SPSS. (Second edition). Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2010a). PISA 2009 US technical report. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2010b). PISA 2009 Results: What students know and can do – student performance in reading, mathematics and science. (Volume I). Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2010c). Shanghai and Hong Kong: Two distinct examples of education reform in China. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2010d). PISA at a glance. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2010e). PISA 2009 learning to learn: Student engagement, strategies and practice. (Volume III). Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2010f). PISA 2009 Results: Executive Summary. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2011a). Lessons from PISA for the United States, strong performers and successful reformers in education. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2011b). PISA in focus: Do students today read for pleasure? Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2012a). Equity and quality in education: Supporting disadvantaged students and schools. Spotlight report: The Netherlands. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2012b). Untapped skills, realising the potential of immigrant students. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2012c). Preliminary results. Translation and verification of the test and survey material. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD). (2012d). PISA 2009 technical report. Paris: OECD Publishing.

Oshio, T., Sano, S. & Kobayashi, M. (2010). Child poverty as a determinant of life outcomes: Evidence from nationwide surveys in Japan. *Social Indicators Research*, 99, 81-99.

Paciotto, C. (2010). Language and literacy planning and local contexts: The case of a Rarámuri community. *Anthropology & Education Quarterly, 41*(2), 161-180.

Pajares, F. (2003). Self-efficacy beliefs, motivation and achievement in writing: A review of the literature. *Reading & Writing Quarterly, 19*(2), 139-158.

Papadopoulos, T., Spanoudis, G. & Kendeou, P. (2009). The dimensionality of phonological abilities in Greek. *Reading Research Quarterly*, 44, 127-143.

Parson, C. & Smeeding, T. (2006). *Immigration and the transformation of Europe.* Cambridge: Cambridge University Press.

Passel, J. (2011). Demography of immigrant youth: Past, present, and future. *The future of Children, 21*(1), 19-41.

Pásztor, A. (2008). The children of guest workers: Comparative analysis of scholastic achievement of pupils of Turkish origin throughout Europe. *Intercultural Education, 19*(5), 407-419.

Patel, S. (2010). Reading at risk: Why effective literacy practice is not effective. *Waikato Journal of Education, 15*(3), 51-68.

Pegg, J. & Panizzon, D. (2007). Inequities in student achievement for literacy: Metropolitan versus rural comparisons. *Australian Journal of Language & Literacy, 30*(3), 177-190.

Pegley, P. (2006). Self-knowledge, capacity and sensitivity: prerequisites to authentic leadership by school principals, *Journal of Educational Administration, 44*(6), n.p.

Pelletier, T. (2000). Who is likely to stutter. Revised by C. Spillers. Department of Communication Sciences and Disorders. University of Minnesota, Duluth. Retrieved from: http:// www.d.umn.edu/-cspiller/stutteringpage/incidence.htm

Perez, L., Uline, C., Johnson, J., James-ward C. & Basom, M. (2011). Foregrounding fieldwork in leadership preparation: The transformative capacity of authentic inquiry. *Educational Administration Quarterly, 47*(10), 217-257.

Perme, E. (2011). National priorities and training of adult educators in Slovenia. *The Andragogic Perspective*, 4, 12-22.

Progress in International Reading Literacy Study (PIRLS). (2006). School questionnaire. Retrieved from http://timssandpirls.bc.edu/PDF/P06_SchoolQuestionnaire.pdf

Progress in International Reading Literacy Study (PIRLS). (2011). School questionnaire. Retrieved from http://timssandpirls.bc.edu/pirls2011/downloads/P11_SchQ.pdf

Pont, B., Nusche, D. & Moorman, H. (2008). Improving school leadership, policy and practice. (Volume 1). Paris: OECD Publishing.

Portes, A. & Rivas, A. (2011). The adaptation of migrant children: Future of children. Retrieved from http://web.ebscohost.com.proxy.bc.edu/ehost/pdfviewer/pdfviewer?vid=14&sid=7effbce5-7205-4ff7-8dbc-f0b2477b163b percent40sessionmgr114&hid=128

Power, K. (2005). Promoting school achievement among American Indian students: Throughout the school years. *Childhood Education*, *81*(6), 338-342.

Prasad, G. (2012). Multiple minorities or culturally and linguistically diverse plurilingual learners? Re-envisioning allophone immigrant children and their inclusion in French-language schools in Ontario. *Canadian Modern Language Review, 68*(2), 190-215.

Pringle, R. (2011). Indonesia's moment. *Wilson Quarterly*, *35*(1), 26-33.

Priyambada, A., Suryahadi, A. & Sumarto, S. (2002). *What happened to child labor in Indonesia during the economic crisis? The trade-off between school and work.* Indonesia: SMERU Research Institute.

Rahtz, D. & Sidik, I. (2006). Indonesia: Transition at a crossroads. In A. Pecotich and C. Shultz (Eds.), *Handbook of markets and economies: East Asia, Southeast Asia, Australia and New Zealand.* (pp. 234-270). New York: M. E. Sharpe, Inc.

Rajar, K. & Možina, T. (2012). Partnership for identification of educational needs and new educational programs for the unemployed. *Andragogic Perspectives, 4*, 10-28.

Rakocevic, N. & Miljevic, A. (2003). *Roma and Education.* Beograd: Deciji Romski Centar.

Ramalho, E., Garza, E. & Merchant, B. (2010). Successful school leadership in socioeconomically challenging contexts: School principals creating and sustaining successful school improvement. *International Studies in Educational Administration, 38*(3), 35-56.

Ramsbottom, B. (2012). Rural ramblings: looking after all of our children, a balancing act. *New Zealand Principals' Federation Magazine. 27*(1), 31-32.

Rangvid, B. (2010). Source country differences in test score gaps: Evidence from Denmark. *Education Economics, 18*(3), 269-295.

Rao, N., Sun, J., Zhou, J. & Zhang, Li. (2012). Early achievement in rural China: The role of preschool experience. *Early Childhood Research Quarterly, 27*(1), 66-76.

Rappaport, N. & Minahan, J. (2013). Breaking the behavior CODE. *Principal, 92*(3), 18-22.

Rasmussen, D. (2011). Forty years of struggle and still no right to Inuit education in Nunavut. *Interchange, 42*(2), 137-155.

Ravitch, D. (1990). Multiculturalism. *American Scholar*, Summer, 337-354.

Raymond, L., Tse, S., Lam J. & Loh, E. (2010). Does the gender of the teacher matter in the teaching of reading literacy? Teacher gender and pupil attainment in reading literacy in Hong Kong. *Teaching and Teacher Education, 26*(4), 754-759.

Rayner, S. (2009). Educational diversity and learning leadership: A proposition, some principles and a model of inclusive leadership. *Educational Review*, *61*(4), 433-447.

Ready, D. (2005). Explaining girls' advantage in kindergarten literacy learning: Do classroom behaviors make a differences? *The Elementary School Journal, 106*(1), 1.

Reagan, T. (2004). *Non-Western educational traditions. Indigenous approaches to educational thought and practice.* (Third edition). NJ: Taylor & Francis.

Reardon, M. (2011). Elementary school principals' learning-centered leadership and educational outcomes: Implications for principals' professional development. *Leadership & Policy in Schools*, *10*(1), 63-83.

Reyhner, J. (2008). The reading wars. Retrieved from http://jan.ucc.nau.edu/~jar/Reading_Wars.html

Rhoades, E. (2011). Literature reviews. *Volta Review, 111*(3), 353-368.

Ribeiro, N., Almeida, C., Fernandes-Jesus, M., Neves, T., Ferreira, P. & Menezes, I. (2012). Education and citizenship: Redemption or disempowerment? A study of Portuguese-speaking migrant (and non-migrant) youth in Portugal. *Power and Education, 4*(2), 207-218.

Richard, A. (2005). Supplemental help can be hard to find for rural students. *Education week, 25*(14), 1-3.

Riehl, C. (2008). The principal's role in creating inclusive schools for diverse students: A review of normative, empirical, and critical literature on the practice of educational administration. *Journal of Education*, *189*(1/2), 183-197.

Riley, K. (2009). Reconfiguring urban leadership: Taking a perspective on community. *School Leadership & Management*, *29*(1), 51-63.

Rimers, F. (2004). *Unequal schools, Unequal chances: The challenges to equal opportunity in the Americas.* Cambridge: Harvard Press.

Robins, S., Treiman, R., Rosales, N. & Otake, S. (2012). Parent-child conversations about letters and pictures. *Reading & Writing, 25*(8), 2039-2059.

Robinson, T. & Jeremiah, M. (2011). The development of an African-centered urban high school by trial and error. *Schools Studies in Education*, *8*(2), 311-328.

Robinson, V., Lloyd, C. & Rowe, K. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership type. *Educational Administration Quarterly, 44*(5), 635-674.

Rodríguez, C., Sánchez, F. & Armenta, A. (2010). Do interventions at school level improve educational outcomes? Evidence from a rural program in Colombia. *World Development, 38*(3), 415-428.

Rothstein, R. (2004). *Class and schools: Using social, economic, and educational reform to close the black-white achievement gap.* Washington, D.C. Economic Policy Institute.

Rubin, L., Witkiewitz, K., Andre, J. & Reilly, S. (2007). Methods for handling missing data in the behavioral neurosciences: Don't throw the baby rat out with the bath water. *The Journal of Undergraduate Neuroscience Education, 5*(2), 71-77.

Rude, H., Paolucci-Whitcomb, P. & Comerford, S. (2005). Ethical leadership: Supporting human rights and diversity in rural communities. *Rural Special Education Quarterly, 24*(4), 26-31.

Rumberger, R., & Larson, K. (1998). Toward explaining differences in educational achievement among Mexican American language-minority students. *Sociology of Education, 71*(1), 68-92.

Rust, V. (2008). Minority education policy in Azerbaijan and Iran. *World Studies in Education, 9*(2), 5-21.

Rutkowski, L. & Rutkowski, D. (2010). Getting it better: The importance of improving background questionnaires in international assessment. *Journal of Curriculum Studies, 42*(3), 411-430.

Rutter, M., Maughan, B., Mortimore, P. & Ouston, J. (1979). *Fifteen thousand hours: Secondary schools and their effects on children*. London: Open Books.

Ruzicka, M. (2012). Continuity or rupture? Roma/Gypsy communities in rural and urban environments under post-socialism. *Journal of Rural Studies, 28*(2), 81-88.

Sadowski, M. (2010). Putting the "boy crisis" in context: Finding solutions to boys' reading problems may require looking beyond gender. *Harvard Education Letter, 26*(4), n.p.

Sahlberg, P. (2007). Education policies for raising student learning: The Finnish approach. *Journal of Education Policy*, *22*(2), 147-171.

Salhberg, P. (2012). *What can the world learn from Finland?* New York, NY: Teachers College Press.

Sainsbury, W. & Renzaho, A. (2011). Educational concerns of Arabic speaking migrants from Sudan and Iraq to Melbourne: Expectations on migrant parents in Australia. *International Journal of Educational Research, 50*(5-6), 291-300.

Saiti, A. (2005). The staffing of small rural primary schools in Greece. *Management in Education, 19*(4), 32-36.

Sakellariou, C. (2008). Peer effects and the Indigenous/non-Indigenous early test-score gap in Peru. *Education Economics*, *16*(4), 371-390.

Sanders, M. & Harvey, A. (2002). Beyond the school walls: A case study of principal leadership for school-community collaboration. *Teachers College Record, 104*(7), 1345-1368.

Sanzo, K., Sherman, S. & Clayton, J. (2011). Building bridges between knowledge and practice: A university school district leadership preparation program. *Journal of Educational Administration, 49*(3), 292-312.

Savova, J. (1996). The Bulgarian experience of reform. *European Journal of Education, 31*(1), 85-96.

Sax, L. (2007). *Boys adrift: The five factors driving the growing epidemic of unmotivated boys and underachieving young men*. New York, NY: Basic Books.

Schechter Institute. (2009). TALI schools Israeli. Retrieved from http://www.schechter.edu/Page.aspx?ID=109925997

Scherbaum, C. & Ferreter, J. (2009). Estimating statistical power and sample size requirement for organizational research using hierarchical linear models. *Organizational Research Methods, 12*, 347-367.

Schleicher, A, (2012). *Preparing teachers and developing school leaders for the twenty-first century: Lessons from around the world.* Paris: OECD Publishing.

Schleicher, A. (2009). Securing quality and equity in education: Lessons from PISA. *Prospects, 39*(3), 251-263.

Schleicher, A. & Stewart, V. (2008). Learning from world-class. *Educational Leadership, 66*(2), 44-51.

Seale, J., Shellenberger, S. & Spence, J. (2006). Alcohol problems in Alaska natives. Lessons from the Inuit. *American Indian Alaska Native Mental Health Research 13*(1), 1-31.

Secer, M. & Yelken, T. (2009). Problems encountered by the 6th-7th-8th grade primary school students with transported education. *Ilkogretim Online*, *8*(1), 24-35.

Seirawan, H., Faust, S. & Mulligan, R. (2012). Narrowing the achievement gap: Motivation, engagement, and self-efficacy matter. The impact of oral health on the academic performance of disadvantaged children. *American Journal of Public Health, 102*(9), 1729-1734.

Sensoy, O., Sanghera, R., Parmar, G., Parhar, N., Nosyk, L. & Anderson, M. (2010). Moving beyond dance, dress, and dining in multicultural Canada. *International Journal of Multicultural Education, 12*(1), 1-15.

Sentočnik, S. & Rupar, B. (2009). School leadership of the future: How the national education institute in Slovenia supported schools to develop distributed leadership practice. *European Education*, 41(3). 7-22.

Sergiovanni, T. (2005). The virtues of leadership. *The Educational Forum*, *69*, 112-123.

Shan-Hua, C., Hsuan-Fu, H. & Cheng-Cheng, Y. (2012). Change and dilemma of school feature development of three junior high schools in the remote and rural areas of Taiwan. *International Education Studies, 5*(3), 49-55.

Shaw, N. (2004). Educational reform in the Federal Republic of Germany: Effects on school leadership and the implementation of change. Presented at the 2004 UCEA Annual Conference of the University Council for Educational Administration, Kansas City, MO.

Shields, C. (2004). Dialogic leadership for social justice: Overcoming pathologies of silence. *Educational Administration Quarterly, 40*(1), 109-132.

Shirley, D. & MacDonald, E. (2009). *The Mindful Teacher*. New York: Teachers College Press.

Short, D. & Fitzsimmons, S. (2007). Double the work: Challenges and solutions to acquiring language and academic literacy for adolescent English Language Learners. Washington, DC: Alliance for Excellent Education.

Short, D., Fidelman, C. & Louguit, M. (2012). Developing academic language in English language learners through sheltered instruction. *TESOL Quarterly, 46*(2), 334-361.

Short, D. & Fitzsimmons, S. (2007). Double the work: Challenges and solutions to acquiring language and academic literacy for adolescent English language learners. Washington, DC: Alliance for Excellent Education.

Šidlauskiene, V. (2010). Challenges of gender equality policy of the European Union for the school of Lithuania. *Teacher Education, 15*(2), 14-27.

Silins, H. & Mulford, B. (2002). Leadership and school results. In K. Leithwood, P. Hallinger, K. S. Louis, P. Furman-Brown, B. Gronn, W. Mulford and K. Riley (Eds.), *Second international handbook of educational leadership and administration* (pp. 561-612). Dordrecht: Kluwer Academic.

Silova, I., Johnson, M. & Heyneman, S. (2007). Education and the crisis of social cohesion in Azerbaijan and Central Asia. *Comparative Education Review, 51*(2), 159-180.

Silva, M., Verhoeven, L. & Lleuwe, J. (2011). Socio-cultural variation in reading comprehension development among fifth graders in Peru. *Reading and Writing, 24*(8), 951-970.

Simms, K. (2012). A hierarchical examination of the immigrant achievement gap: The additional explanatory power of nationality and educational selectivity over traditional explorations of race and socioeconomic status. *Journal of Advanced Academics, 23*(1), 72-98.

Simon, H. (1996). Observations on the science of science learning. Paper prepared for the Committee on Developments in the Science of Learning for the Sciences of Science Learning: An Interdisciplinary Discussion. Department of Psychology, Carnegie Mellon University.

Sinagatullin, I. (2001). Expectant times: Rural education in Russia. *Educational Review, 53*(1), 37-45.

Singapore Ministry of Education. (2009). Singapore National School Code of Conduct. Retrieved from http://www.moe.gov.tt/general_pdfs/National_Schools_Code_of_Conduct.pdf

Šinko, S. (2012). Public libraries and adult education. *The Andragogic Perspectives*, 3, 53-61.

Skutnabb-Kangas, T. (2000). *Linguistic genocide in education - or worldwide diversity and human rights?* Mahwah, NJ: Lawrence Erlbaum.

Smagulova, J. (2008). Language policies of Kazakhstan and their influence on language attitudes and use. *International Journal of Bilingual Education & Bilingualism, 11*(5), 440-475.

Smit, R. & Humpert, W. (2012). Differentiated instruction in small schools. *Teaching & Teacher Education, 28*(8), 1152-1162.

Smith, C., Mikulecky, L., Kibby, M. & Dreher, M. (2000). What will be the demands of literacy in the workplace in the next millennium? *Reading Research Quarterly, 3*(3), 378-383.

Smith, J., Smith, L., Gilmore, A. & Jameson, M. (2012). Students' self-perception of reading ability, enjoyment of reading and reading achievement. *Learning and individual differences,* 22, 202-206.

Smith-Davis, J. (2004). The new immigrant students need more than ESL. *The Education Digest, 69*(8), 21-26.

Smyth, E. & McCoy, S. (2009). Investing in education: Combating educational disadvantage. Dublin: Economic and Social Research Institute.

Smyth, J. (2012). Doing research on student voice in Australia. *Management in Education, 26*(3), 153-154.

Smyth, J. & McInerney, P. (2012). Sculpting a 'social space' for re-engaging disengaged 'disadvantaged' young people with learning. *Journal of Educational Administration and History, 44*(3), 187-201.

Sofo, F., Fitzgerald, R. & Jawas, U. (2012). Instructional leadership in Indonesian school reform: Overcoming the problems to move forward. *School Leadership & Management, 32*(5), 503-520.

Söhn, J. & Özcan, V. (2006). The educational attainment of Turkish migrants in Germany. *Turkish Studies, 7*(1), 101-124.

Sokal, L. (2010). Prevalence of gendered views of reading in Thailand and Canada. *The Alberta Journal of Educational Research, 56*(1), 44-56.

Sokolova, I. (2011). Pedagogical education. *Russian Education & Society*, *53*(10), 80-89.

Soh, K. (2012). Fifteen-years-old students of seven East Asian cities in PISA 2009: A secondary analysis. *New Horizons in Education, 60*(1), 83-95.

Sonneborn, L. (2007). *A to Z of American Indian women.* (Revised edition). New York, NY: Facts on File.

Soon-Beng, C. & Chew, R. (1995). Immigration and foreign workers in Singapore. *ASEAN Economic Bulletin, 12*(2), 191-200.

Soon-Won, K. (2010). Multicultural education and the rights to education of migrant children in South Korea. *Educational Review, 62*(3), 287-300.

Sorto, M., Marshall, J., Luschei, T. & Carnoy, M. (2009). Teacher knowledge and teaching in Panama and Costa Rica: A comparative study. *Revista Latinoamericana de Investigación en Matemática Educativa, 12*(2), 251-290.

Southworth, G. (2003). Learning centered leadership: the only way to go. *Educational Assessment, Evaluation and Research Commons.* Retrieved from http://resaerch.acer.edu.au/apc_monographs/11

Sparrow, R. (2006). Protecting education for the poor in times of crisis: An evaluation of a scholarship programme in Indonesia. *Oxford Bulletin of Economics & Statistics, 69*(1), 99-122.

Starratt, R. (2004). *Ethical leadership*. San Francisco: Jossey Bass.

Steinthorsdottir, O. & Sriraman, B. (2008). Icelandic 5th-grade girls' developmental trajectories in proportional reasoning. *Mathematics Education Research Journal, 21*(1), 6-30.

Stelmach, B. (2011). A synthesis of international rural education issues and responses. *Rural Education. 32*(2), 32-42.

Stemler, S., Bebell, D. & Sonnabend, L. (2011). Using school mission statements for reflection and research. *Educational Administration Quarterly, 47*(2), 383-420.

Stevenson, J. (2007). The aspiration and access to higher education of teenage refugees in the UK, *Compare, 37*(5), 671-687.

Stewart, S. (2006). First Nations education: Financial accountability and educational attainment. *Canadian Journal of Education, 29*(4), 998-1018.

Storch, S.A. & Whitehurst, G. (2001). The role of family and home in the developmental course of literacy in children from low-income backgrounds. *New Directions in Child Development,* 92, 51-73.

Støren, L. & Wiers-Jenssen, J. (2010). Foreign diploma versus immigrant background: Determinants of labour market success or failure? *Journal of Studies in International Education*, *14*(1), 29-49.

Stubbe, T. (2011). How do different versions of a test instrument function in a single language? A DIF analysis of the PIRLS 2006 German assessments. *Educational Research and Evaluation, 17*(6), 465–481.

Suárez Pazos, M., DePalma, R. & Membiela, P. (2012). A view of rural schooling through the eyes of former students. *Teaching & Teacher Education, 28*(7), 1018-1026.

Suet-ling, P. (2009). Grade level and achievement of immigrants' children: Academic redshirting in Hong Kong. Educational *Research & Evaluation, 15*(4), 405-425.

Sunder, D. & Uddin, L. (2007). A comparative analysis of Bangladeshi and Pakistani educational attainment in London secondary schools. *Journal of Education & Information Studies, 3*(2), 1-43.

Sztajn, P. (2003). Adapting reform ideas in different mathematics classrooms: Beliefs beyond mathematics. *Journal of Mathematics Teacher Education, 6*(1), 53-75.

Szumski, G. & Karwowski, M. (2008). School achievement of children with intellectual disability: The role of socioeconomic status, placement, and parents' engagement. *Research in Developmental Disabilities*, *33*(5), 1615-1625.

Taboada, A., Kidd, J. & Tonks, S. (2010). English language learners' perceptions of autonomy support in a literacy classroom. *Research in the Schools, 17*(2), 39-53.

Täht, K. & Mills, O. (2012). Comparability of educational achievement and learning attitudes across nations. *Educational Research & Evaluation, 19*(1), 19-38.

Tan, C. (2013). *Learning from Shanghai: lessons on achieving educational success.* Dordrecht: Springer.

Tan, C. & Abbas, D. (2009). The 'teach less, learn more' initiative in Singapore: New pedagogies for Islamic religious schools? *KJEP, 6*(1), 25-39.

Taneri, P. & Engin-Demir, C. (2011). Quality of education in rural schools: A needs assessment study. *International Online Journal of Educational Sciences*, *3*(1), 91-112.

Tapia-Gutiérrez, C., Mansilla-Sepúlveda, J., Becerra-Peña, S. & Saavedra-Muñoz, (2011). Leadership of school principals in vulnerable contexts. *Educación y Educadores, 14*(2), 389-409.

Tashakkori, A. & Creswell, J. (2007). Exploring the nature of research questions in mixed methods research. *Journal of Mixed Methods Research, 1*(3), 207-211.

Taylor, S. & Skutnabb-Kangas, T. (2009). The educational language rights of Kurdish children in Turkey, Denmark and Kurdistan (Iraq). In W. Ayers, T. Quinn & D. Stovall (Eds.), *Handbook for social justice in education* (pp. 171-190). Mahwah, NJ: Lawrence Erlbaum.

Tayyaba, S. (2012). Rural-urban gaps in academic achievement, schooling conditions, student, and teachers' characteristics in Pakistan. *International Journal of Educational Management, 26*(1), 6-26.

Tembe, J. (2008). Developing literacy in second-language learners: Report of the national literacy panel on language-minority children and youth. *Studies in Second Language Acquisition, 30*(1), 116-118.

Hean, T. (1998). Principals - the key leaders in building thinking schools based on strong school home-community relations. Speech by Teo Chee Hean, Minister for Education and Second Minister for Defence, at the *Appointment Ceremony for Principals*, 21 December. Retrieved from http://www.moe.gov.sg/media/speeches/1998/261298.htm

The Finnish National Board of Education. (2011). Retrieved from http://www.oph.fi/english/sources_of_information/pisa/literacy_in_finland

Thiago, A., Gouvêa, M., Backx, N. & Viana, N. (2012). The socioeconomic level of public school students and the conditions for the provision of education in the Brazilian municipalities. *Education Policy Analysis, 20*, 1-29.

Thissen, F., Droogleever, F., Strijker, D. & Haartsen, T. (2010). Migration intentions of rural youth in the Westhoek, Flanders, Belgium and the Veenkoloniën, the Netherlands. *Journal of Rural Studies, 26*(4), 428-436.

Thompson, M. (2004). *Democratic revolutions: Asia and Eastern Europe*. London: Routledge.

Timmeman, M. (2011). Soft pedagogy: The invention of a 'feminine' pedagogy as a cause of educational crises, *Pedagogy, Culture & Society, 19*(3), 457-472.

Tiuliundieva, N. (2006). The accommodation of children and young people in Kyrgyzstan by the system of education, and the problem of gender inequality. *Russian Education & Society*, 48(1), 72-87.

Tonne, I. & Phil, J. (2012). Literacy education, reading engagement, and library use in multilingual classes. *Intercultural Education*, *23*(3), 183-194.

Treiman, R., Levin, I., & Kessler, B. (2007). Learning of letter names follows similar principles across languages: Evidence from Hebrew. *Journal of Experimental Child Psychology, 96*, 87-106.

Trempala, J. & Malmberg, L. (2002). Adolescents future-orientation: Theory and research. European University Studies, 6(691), Frankfurt am Main: Peter Lang.

Troost, K. (1983). What Accounts for Japan's Success in Science Education? *Educational Leadership*, *41*(4), 26-34.

Tucker, M. (2011). Standing on the shoulders of giants: An American agenda for education reform. National Center on Education and the Economy. Retrieved from http://www.ncee.org/wp-content/uploads/2011/05/Standing-on-the-Shoulders-of-Giants-An-American-Agenda-for-Education-Reform.pdf

Tunger, V., Mar-Molinero, C., Paffey, D., Vigers, D. & Barłog, C. (2010). Language policies and 'new' migration in officially bilingual areas. *Current Issues in Language Planning, 11*(2), 190-205.

Tuñón, I. & Halperin, V. (2010). Social inequality and perceptions of quality in Argentina's urban educational offer. *Revista Electrónica de Investigación Educativa*, *12*(2), 1-23.

Turmo, A. (2005). The learning climate in Nordic schools: results from the PISA 2003 study. *P*aper presented at the Nordic Educational Research Association (NERA) Conference "A Nordic Dimension in Education and Research - Myth or Reality?" in Oslo, March 10-12, 2005.

Turner, R. & Adams, R. (2007). The programme for international assessment: An overview. *Journal of Applied Measurement, 8*(3), 237-248.

Turra-Díaz O. (2012). Curriculum and building identity in Chilean indigenous contexts. *Education y Educadores, 15*(1), 81-95.

U.S. Census, Bureau, (2004). Population estimates. Retrieved from http://www.census.gov/popest/

Uchikoshi, Y. & Marinova-Todd, S. (2012). Vocabulary and early literacy skills of Cantonese-speaking English language learners in the U.S. and Canada. *Reading and Writing: An interdisciplinary journal, 25*(9), 2107-2129.

United Nations Children's Fund (UNICEF). (1999). The education revolution. Retrieved November 1, from, http://www.unicef.org/sowc99/sowc99b.pdf

United Nations Children's Fund (UNICEF), (2005). World population policies. Retrieved from http://www.un.org/esa/population/publications/wpp2009/Publication_complete.pdf

United Nations Children's Fund (UNICEF), (2007). Adult literacy. Retrieved from http://www.unicef.org/specialsession/about/sgreport-pdf/07_AdultLiteracy_D7341Insert_English.pdf

United Nations Children's Fund (UNICEF). (2009). Girls education. Retrieved from http://www.unicef.org/education/campaign.html

United Nations Children's Fund (UNICEF). (2010a). The children left behind. Retrieved from http://www.unicef-irc.org/publications/pdf/rc9_eng.pdf

United Nations Children's Fund (UNICEF) (2010b). Country reports. Retrieved from http://www.unesco.org/new/en/

United Nations Children's Fund (UNICEF) (2010c). The situation of Palestinian children in the occupied Palestinian territory, Jordan, Syria and Lebanon. Retrieved from http://www.unicef.org/oPt/PALESTINIAN_SITAN-final.pdf

United Nations. (UNICEF) (2010d). Education in Serbia. Retrieved from http://www.unicef.org/ceecis/Serbia_2010.pdf

United Nations. (UNICEF) (2010e). Education in Albania. Retrieved from http://www.unicef.org/ceecis/Albania.pdf

United Nations. (UNICEF) (n.d.). National and International Education Development System Assessment. Republic of Kazakhstan. Retrieved from http://www.unicef.org/ceecis/KAZA_3day_ENG.pdf

United Nations Department of Economic and Social Affairs (2009). World poverty. Retrieved from http://www.un.org/esa/desa/climatechange/

United Nations Development Programme. (UNDP). (2011). Human development index (HDI). Retrieved from http://hdr.undp.org/en/statistics/hdi/

United Nations Educational, Scientific and Cultural Organization (2002). A league table of Educational Disadvantage in Rich Nations. *Innocenti Report Card*, 4. Innocenti Research Centre, Florence.

United Nations Educational, Scientific and Cultural Organization. (2006). Education for all: literacy for life. Global monitoring report. UNESCO.

United Nations Educational, Scientific and Cultural Organization (2010a). Deprivation and marginalization in education index. UNESCO.

U. S. Census, (2010). Overview of race and Hispanic origin: 2010. Census briefs http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf

Valentine J. & Prater, M. (2011). Instructional, transformational, and managerial leadership and student achievement: High school principals make a difference. *NASSP Bulletin, 95*(1), 5-30.

Vallen, T., Van Steensel, R. & Kurvers, J. (2011). Effects of preschool education centers in the Netherlands − Influence of center organization and children's family backgrounds. *Diskurs Kindheits- und Jugendforschung, 6*(4), 453-470.

Van de Craen, P. & Soetaert, R. (1997). Language teacher training and bilingual education in Belgium. In Piet Van de Craen & Dieter Wolff's *Thematic network. Project in the Area of Languages. Sub-group N° 6. Language Teacher Training and Bilingual Education.* Report prepared for the TNP Evaluation Conference Lille III, Université 'Charles de Gaulle''.

Van de Gaer, E., Pustiens, H., Van Damme, J. & De Munter, A. (2009). School engagement and language achievement: A longitudinal study of gender differences across secondary school, *Merrill-Palmer Quarterly, 55*(4), n.p.

Van den Anker, C. (2007). Globalising liberalism or multiculturalism? The Durban agenda and the role of local human rights education in the implementation of global norms. *Globalisation, Societies & Education, 5*(3), 287-302.

Van der Veen, I. & Meijnen, G. (2002). The parents of successful secondary school students of Turkish and Moroccan background in the Netherlands: Parenting practices and the relationship with parents. *Social Behavior and Personality, 30*, 303-316.

Van Houtte, M. & Stevens, P. (2010). School ethnic composition and aspirations of immigrant students in Belgium. *British Educational Research Journal, 36*(2), 209-237.

Van Tubergen, F. & Wierenga, M. (2011). The language acquisition of male immigrants in a multilingual destination: Turks and Moroccans in Belgium. *Journal of Ethnic & Migration Studies*, *37*(7), 1039-1057.

Van Woerkom, M. & De Reuver, R. (2009). Predicting excellent management performance in an intercultural context: a study of the influence of multicultural personality on transformational leadership and performance. *International Journal of Human Resource Management, 20*(10), 2013-2029.

Vasileva, K. (2011). Populations and conditions. *Eurostat*. Retrieved from http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-11-034/EN/KS-SF-11-034-EN.PDF

Vedøy, G. & Møller, J. (2007): Successful school leadership for diversity? Examining two contrasting examples of working for democracy in Norway. *International Studies in Educational Administration*, *35*(3), 58-67.

Verhoeven, L. & Vermeer, A. (2006). Literacy achievement of children with intellectual disabilities and differing linguistic backgrounds. *Journal of Intellectual Disability Research, 50,* 725–738.

Viadero, D. (2000). Schooled out of poverty. *Education Week, 20*(15), 34.

Vickers, M. (2005). *School, work and social change: revisiting the gender equity debate*. Australia: Sydney Curriculum Corporation.

Vinogradova, V. (2000). The rural community: Negative tendencies and potential resources, *Direktor Shkoli*, 2, 27-33.

Walker, A. & Dimmock, C. (2005). Leading the multiethnic school: Research evidence on successful practice. *The Educational Forum, 69*(3), 291-304.

Walker, A., Flatley, J. Kershaw C. & Moon, D. (2008). *Crime in England and Wales 2007/08: Findings from the British crime survey and police recorded crime.* London: Office for National Statistics.

Walker, A., Qian, H. & Zhang, S. (2011). Secondary school principals in curriculum reform: Victims or accomplices? *Frontiers of Education in China, 6*(3), 388-403.

Walker, J. (2009). Reorganizing leaders' time: Does it create better schools for students? *NASSP Bulletin, 93*(4), 213-226.

Walker, M. (2011). PISA 2009 plus results: Performance of 15-year-olds in reading, mathematics and science for 10 additional participants. Paris: OECD Publishing.

Wallin, D. (2008). A comparative analysis of the educational priorities and capacity of rural school districts. *Educational Management Administration & Leadership, 36*(4), 566-587.

Wallitt, R. (2008). Cambodian invisibility: Students lost between the "achievement gap" and the "model minority." *Multicultural Perspectives, 10*(1), 3-9.

Waltermire, M. (2012). The differential use of Spanish and Portuguese along the *Uruguayan*-Brazilian border. *International Journal of bilingual education and bilingualism, 15*(5), 509-531.

Wang, D. (2011). The new curriculum and the urban-rural literacy gap. *Chinese Education & Society*, *44*(6), 87-101.

Ward, C. & Masgoret, A. (2008). Attitudes toward immigrants, immigration and multiculturalism in New Zealand: A social psychological analysis. *International Migration Review, 42*, 222–243.

Warrington, M. & Younger, M. (2001). Single-sex classes and equal opportunities for girls and boys: Perspectives through time from a mixed comprehensive school in England. *Oxford Review of Education, 27*(3), 339-356.

Washington, V. (2005). Sharing leadership: A case study of diversity in our profession. *Young Children, 60*(1), 23-31.

Watson A., & Kehler, M. (2012). Beyond the boy problem. Raising questions, growing concerns and literacy reconsidered. *New England Reading Association Journal, 48*(1), 43.

Weaver-Higbtower, M. (2003). The "boy turn" in research on gender and education. *Review of Educational Research, 73*(4), 471-498.

White, B. (2007). Are girls better readers than boys? Which boys? Which girls? *Canadian Journal of Education, 30*(2), 554-581.

Wilhelm, T. (2010). Fostering shared Leadership. *Leadership*, *40*(2), 22-38.

Wilkinson, J. (2008). Good intentions are not enough: A critical examination of diversity and educational leadership scholarship. *Journal of Educational Administration & History*, *40*(2), 101-112.

Wilkinson, R. (2011, January 23). Wealth gap divides nation. The Sunday Star-Times.

Willette, N. (2010). Transformational school leadership and student achievement: A case study. *Southeastern Teacher Education Journal*, *3*(1), 55-66.

Willms, D., & Smith, T. (2005). A manual for conducting analyses with data from TIMSS and PISA. Retrieved from http://www.unb.ca/crisp/pdf/Manual_TIMSS_PISA2005_0503.pdf

William (2005). Cross-national variations in rural mathematics achievement: A descriptive overview. *Journal of Research in Rural Education, 20*(5), 1-18.

Williams, J., Martin, S. & Hess, R. (2010). Personnel preparation and service delivery issues in rural areas: The state of the art. *Rural Special Education*, *29*(4), 31-39.

Willm, D. & Smith, T. (2005). A manual for conducting analyses with data from TIMSS and PISA. Retrieved from http://www.datafirst.uct.ac.za/wiki/images/e/e7/TIMSS_1995-99_Manual.pdf

Wilson, A., Dehaene, S., Dubois, O. & Fayol, M. (2009). Effects of an adaptive game intervention on accessing number sense in low-socioeconomic-status kindergarten children. *Mind, Brain & Education, 3*(4), 224-234.

Wing, J. (2007). Beyond black and white: The model minority myth and the invisibility of Asian American students. *Urban Review, 39*(4), 455-487.

Winkelmann, R. (2001*).* Immigration *policies and their impact: The case of New Zealand and Australia*. UC San Diego: Center for Comparative Immigration Studies.

Wiseman, A. (2009). *Educational leadership: Global Contexts and International comparisons*. UK: Emerald Group Publishing.

Wong, M. (2010). Educational challenge: The meaning of leadership in Hong Kong Schools. *International Education Studies, 3*(2), 148-157

Wongsurawat, W. (2011). Education reform and the academic performance of public and private secondary school students in Thailand. *Educational Research for Policy & Practice, 10*(1), 17-28.

Woodrum, A. (2002). Culture in educational administration: Competing values and expectations. Paper presented to the annual meeting of the American Educational Research Association, New Orleans, LA. April.

World Bank. (1996). *From plan to market: World development report*. Oxford University Press.

World Bank (2005). Turkey – education sector study: sustainable pathway to an effective equitable and efficient education system for preschool through secondary school education. (Volume 1). Washington DC.

World Bank. (2008). GINI Index. Retrieved from: http://data.worldbank.org/indicator/SI.POV.GINI

World Bank. (2011a). Migrants and remittances factbook. (Second edition). Retrieved from http://siteresources.worldbank.org/INTLAC/Resources/Factbook2011-Ebook.pdf

World Bank. (2011b). Rural population. Retrieved from http://data.worldbank.org/indicator/SP.RUR.TOTL.ZS

Worthington, J. (2009). Teaching teachers in Thailand: English language learning that is active, useful, and fun. *Delta Kappa Gamma Bulletin, 75*(3), 5-9.

Wray, H. (1999). *Japanese and American Education: Attitudes and Practices.* Westport: Bergin & Garvey.

Wright, V., Chau, M. & Aratani, Y. (2010). Who are America's poor children? The official story. The National Center for Children's Poverty. Retrieved from http://www.nccp.org/publications/pub_912.html

Wright, W. (2007). A catch-22 for language learners. *Educational leadership, 64*(3), 22–27.

Wu, J. (2012). Disenchantment and participatory limits of compulsory education: Lessons from Southwest China. *Compare*: *A Journal of Comparative & International Education, 42*(4), 621-645.

Xiao, D. (2001). Investigation and discussion on the problem of primary and secondary school dropouts in poor areas. *Chinese Education & Society, 34*(5), 49.

Xie, T. (2011). Analysis on inter-provincial disparities of China's rural education and convergence rate Empirical analysis on 31 provinces' (municipalities') panel data from 2001 to 2008. *International Journal of Educational Management, 25*(7), 714-723.

Yaman, A., Mesman, J., IJzendoorn, M., Bakermans-Kranenburg, M. & Linting, M. (2010). Parenting in an individualistic culture with a collectivistic cultural background: The case of Turkish immigrant families with toddlers in the Netherlands. *Journal of Child & Family Studies, 19*(5), 617-628.

Yank, H., Rosen, M., & Gustafsson, J. (2011). Changes in the multi-level effects of socio-economic status on reading achievement in Sweden in 1991-2001. *Scandinavian Journal of Educational Research, 55*(2), 197-211.

Yi, H., Zhang, L., Luo, R., Shi, Y., Mo, D., Chen, X., Brinton, C. & Rozelle, S. (2012). Dropping out: Why are students leaving junior high in China's poor rural areas? . *International Journal of Educational Development, 32*(4), 555-563.

Yilmaz, C. (2012). An investigation into Turkish EFL students' attributions in reading comprehension. *Journal of Language Teaching and Research, 3*(5), 823-828.

Yiwen, Z., Xingming, J., Xiaoming, S., Jinming, Z. & Hoff, E. (2008). Correlates of early language development in Chinese children. *International Journal of Behavioral Development, 32*(2), 145-155.

Yong, G., (2006). Speech by Mr. Tharman Shanmugaratnam, Ministry of Education & Second Minster for Finance at the 9th Appointment ceremony for principals on Thursday, 28 December 2006. Retrieved from http://www.moe.gov.sg/media/speeches/2006/sp20061228.htm

Young, D. (1998). Rural and urban differences in student achievement in science and mathematics: A multilevel analysis. *School Effectiveness & School Improvement, 9*(4), 386.

Young, M. & Grogan, M. (2008). Leadership preparation and development in North America. In J. Lumby, G. Crow, & P. Pashiardis (Eds.), *The international handbook on the preparation and development of school leaders* (pp. 303-324). New York, NY: Routledge.

Younger, M., & Warrington, M. (2007). Closing the gender gap? Issues of gender equity in English secondary schools. *Studies in the cultural politics of education, 28*(2), 219-242.

Zhang, Y. (2006). Urban-rural literacy gaps in Sub-Saharan Africa: The roles of socioeconomic status and school quality. *Comparative Education Review, 50*(4), 581-602.

Zhou, Z., Siu, C., & Xin, T (2009). Promoting cultural competence in counseling Asian American children and adolescents. *Psychology in the Schools, 46*(3), 290-298,

Zhu, Y. & Leung, F. (2011). Mathematics achievement of mainland immigrant students in Hong Kong. *Asia Pacific Journal of Education, 31*(4), 471-485.

Ziyatdinova, F. (2001). Russia is becoming an ill-educated country. *Current Digest of the Post-Soviet Press, 53*(19), 4.

Zogla, I. (2006). Leading educators' relearning in a post-soviet country. *Theory Practice, 45*(2), 133-142.

Zuzovsky, R., (2010). The impact of socioeconomic versus linguistic factors on achievement gaps between Hebrew-speaking and Arabic-speaking students in Israel in reading literacy and in mathematics and science achievements. *Studies in Educational Evaluation, 36*(4), 153-161.

APPENDICES

Appendix I: Tables

Table 2.0.1. *Methodological approach*

Question	Descriptors	
What does the current research within and across the 65 jurisdictions say about the achievement of diverse students?	-Reading -Boy -Immigrant -Socio-economic -Rural	-Achievement -Gender -Language learner -Disadvantaged
What does the current research within and across the 65 jurisdictions say about the 14 leadership priorities of interest in this study?	-Principal -Leadership -Priorities -Learning culture -Mission	-Leaders -Headmaster -Priorities -Goals -Learning climate

Table 3.3.1. *Participating jurisdictions in PISA 2000-2009*

	PISA 2000	PISA 2003	PISA 2006	PISA 2009
Number of Participating Jurisdictions	43	41	57	65

Table 3.3.2. *Participating countries, schools, and student populations*

Rank	Participating Jurisdictions	Weighted number of Schools Sampled (N)	Weighted number of Students Sampled (N)
1	Shanghai-China	99514	5115
2	Korea	683793	4989
3	Finland	63751	5810
4	Hong Kong	77758	4837
5	Singapore	53592	5283
6	Canada	411343	23207
7	New Zealand	59485	4643
8	Japan	1,138,694	6088
9	Australia	271,918	14251
10	Netherlands	192118	4760
11	Belgium	126,899	8501

12	Norway	61909	4660
13	Estonia	13230	4727
14	Switzerland	86006	11812
15	Poland	464535	4917
16	Iceland	4558	3646
17	United States	3,955,606	5233
18	Liechtenstein	358	329
19	Sweden	120,802	4567
20	Germany	838,259	4979
21	Ireland	55997	3937
22	France	699776	4298
23	Chinese Taipei*	324,141	5831
24	Denmark	65964	5924
25	United Kingdom	736,178	12179
26	Hungary	103618	4605
27	Portugal	109251	6298
28	Macao-China	5966	5952
29	Italy	564768	30905
30	Latvia	27713	4502
31	Slovenia	20127	6155
32	Greece	100529	4969
33	Spain	424705	25887
34	Czech Republic	114062	6064
35	Slovak Republic	72105	4555
36	Croatia	44926	4994
37	Israel	112069	5761
38	Luxembourg	5437	4622
39	Austria	94,261	6590
40	Lithuania	42564	4528
41	Turkey	549830	4996
42	United Arab Emirates*	10144	10867
43	Russian Fed.	1,392,765	5308
44	Chile	260,099	5669
45	Serbia	71524	5523
46	Bulgaria	58346	4507
47	Uruguay	43400	5957
48	Mexico	1,399,730	38250
49	Romania	150114	4776
50	Thailand	752392	6225

51	Trinidad and Tobago	17673	4778
52	Colombia	562587	7921
53	Brazil	2614806	20127
54	Montenegro	8527	4825
55	Jordan	105906	6486
56	Tunisia	153198	4955
57	Indonesia	2473528	5136
58	Argentina	607344	4774
59	Kazakhstan	257427	5412
60	Albania	40253	4596
61	Qatar	10507	9078
62	Panama	40329	3969
63	Peru	480640	5985
64	Azerbaijan	168890	4691
65	Kyrgyzstan	89733	4986

As cited in *PISA 2009 Results Overcoming Social Background*, Annex A2, 1p. 140

* Dubai's data was merged with the other United Emirate Arab states that participated in 2010.
** Chinese Taipei will be referred to from this point forward in this study as Taipei, see Kuo, 2009.

Table 3.3.3. *Outcomes variables*

Variable	**Description**
Literacy Achievement	Standardized Literacy Performance Score PISA 2009

Table 3.3.4. *Background variables*

Variable	**Description**
Gender	Male, female
Socio-Economic Status	Index of economic, social and cultural status (ESCS)
Immigrant Status	Immigrant, non-immigrant
Home Language	Different than language of school instruction, Same as language of school instruction
Geographical Location	Rural, urban

Table 3.3.5. *Leadership priorities*

Variable	**Description**
Leadership variable	The frequency of leadership activities and behaviors

Table 3.3.6. *Model building process for analytic plan*

HLM Models	**Student Variables**	**School Variables**	
	Background characteristics	*School characteristics*	*Leadership factor*
Unconditional Model			
Phase 1	X	X	
Phase 2	X	X	X

Table 3.3.7. *Unconditional model for each participating PISA 2009 jurisdiction*

Model	**Gender**	**SES**	**Immigrant Status**	**Home Language**	**Geographic Location**
Unconditional					

Table 3.3.8. *Phase 1 building process for each participating PISA 2009 jurisdiction*

Model	**Diversity Factors**				
	Gender	SES	Immigrant Status	Home Language	Geographic Location
1	X	X	X	X	X

Table 3.3.9. *Phase 2 building process*

	Diversity Factors		**School Leadership priorities**													
Model	Student Background	School Background	PD	School goals	Observe	Student Perform	Suggest	Monitor	Teacher Problems	Update Skills	Class activities	Exam Results	Curriculum Responsibility	Class Problems	Behavior	Take over Lessons
1	X	X														
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 4.1.1. *Background factors missing data*

Diversity Factor	Missing	Valid
Gender	2 (>0.00 percent)	480705
Immigrant Status	7577 (1.6 percent)	473130
Language	18390 (3.8 percent)	462317
SES	5460 (1.1 percent)	475247
Location	9912 (2.1 percent)	470795

Graph 4.1.1 *Sample histogram*

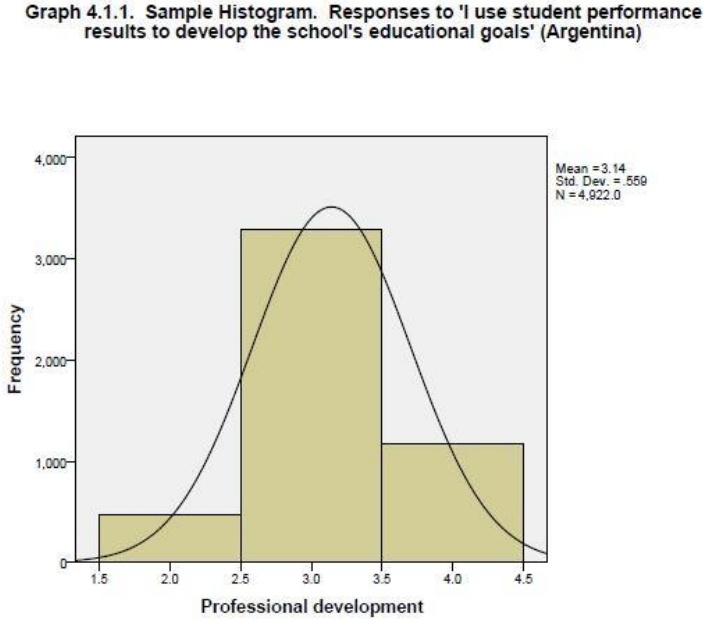

Table 4.1.2. *Leadership priority variables missing data*

Leadership priorities	Missing	Valid
PD	12737 (2.6 %)	467970
School goals	12688 (2.6 %)	468019
Observe	12153 (2.5 %)	468554
Performance	13605 (2.8 %)	467102
Suggestions	12124 (2.5 %)	468583
Monitor	12363 (2.6 %)	468344
Teacher's problems	11966 (2.5 %)	468741
Updating skills	12332 (2.6 %)	468375
Class activities	12609 (2.6 %)	468098
Exam results	16269 (3.4 %)	464438
Curriculum	17113 (3.6 %)	463594
Class problems	12193 (2.5 %)	468514
Behavior	12930 (2.7 %)	467777
Take over lessons	13623 (2.8 %)	467084

Table 4.1.3. *Student background - Frequency of missing data*

Number of Cases	Frequency Missed	Percent of Total
28859	**1**	**6.0**
1855	2	0.4
2752	3	0.6
129	4	0.0
0	5	0.0

Table 4.1.4. *Frequency of missing data − school data − leadership priorities*

Number of Cases	Number missing	Percent of total
12057	**1**	**2.5**
2630	2	0.5
746	3	0.2
602	4	0.1
438	5	0.1
530	6	0.1
57	7	0.0
69	8	0.0
68	9	0.0

0	10	0.0
92	11	0.0
66	12	0.0
51	13	0.0
10953	**14**	**2.3**

Table 4.3.1. *School populations after cleaning dataset*

Jurisdiction	**n schools**
Albania	180
Argentina	197
Australia	353
Austria	269
Azerbaijan	158
Belgium	276
Brazil	927
Bulgaria	178
Canada	969
Chile	188
Taipei	157
Colombia	271
Croatia	156
Czech Republic	249
Denmark	281
Estonia	173
Finland	202
Germany	213
Greece	182
Hong Kong-China	148
Hungary	187
Iceland	114
Indonesia	183
Ireland	127
Israel	170
Italy	1077
Japan	186
Jordan	210

Kazakhstan	199
Korea	157
Kyrgyzstan	173
Latvia	184
Liechtenstein	12
Lithuania	195
Luxembourg	38
Macao-China	45
Mexico	1529
Montenegro	52
Netherlands	182
New Zealand	157
Norway	190
Panama	180
Peru	239
Poland	185
Portugal	213
Qatar	150
Romania	159
Russian	212
Serbia	187
Shanghai-China	152
Singapore	171
Slovak Republic	189
Slovenia	341
Spain	868
Sweden	188
Switzerland	419
Thailand	230
Trinidad & Tobago	152
Tunisia	165
Turkey	169
UAE	366
United Kingdom	457
United States	165
Uruguay	227

Table 4.3.2. *Student populations after cleaning dataset*

Jurisdiction	**n students**
Albania	4593
Argentina	4710
Australia	14251
Austria	6353
Azerbaijan	4586
Belgium	8444
Brazil	19770
Bulgaria	4507
Canada	23074
Chile	5338
Taipei	5792
Colombia	7817
Croatia	4958
Czech Republic	5732
Denmark	5839
Estonia	4603
Finland	5779
Germany	4701
Greece	4952
Hong Kong-China	4743
Hungary	4605
Iceland	3350
Indonesia	5136
Ireland	3477
Israel	5567
Italy	30358
Japan	6088
Jordan	5412
Kazakhstan	6486
Korea	4989
Kyrgyzstan	4986
Latvia	4502
Liechtenstein	329
Lithuania	4500

Luxembourg	4539
Macao-China	5952
Mexico	38136
Montenegro	4825
Netherlands	4667
New Zealand	4451
Norway	4578
Panama	3810
Peru	5950
Poland	4917
Portugal	6292
Qatar	8991
Romania	4775
Russian	5275
Serbia	5473
Shanghai-China	5115
Singapore	5283
Slovak Republic	4555
Slovenia	6155
Spain	25274
Sweden	4541
Switzerland	11614
Thailand	6225
Trinidad & Tobago	4618
Tunisia	4955
Turkey	4966
UAE	10763
United Kingdom	11569
United States	5233
Uruguay	5874

Table 4.3.3. *Diversity factors descriptive information*

Jurisdiction	Boy	Immigrant	Language	SES	Location
Albania	50 %	1 %	1 %	-0.91	33 %
Azerbaijan	52 %	2 %	8 %	-0.60	38 %
Argentina	46 %	2 %	1 %	-0.59	12 %
Australia	49 %	11 %	8 %	0.31	6 %
Austria	50 %	9 %	6 %	0.08	12 %
Belgium	51 %	10 %	21 %	0.21	3 %
Brazil	45 %	1 %	10 %	-1.16	7 %
Bulgaria	50 %	1 %	10 %	-0.10	10 %
Canada	49 %	9 %	15 %	0.45	18 %
Chile	50 %	1 %	0 %	-0.49	6 %
Shanghai-China	49 %	1 %	2 %	-0.48	n/a
Taipei	50 %	1 %	19 %	-0.30	n/a
Colombia	47 %	1 %	0 %	-1.01	7 %
Croatia	53 %	7 %	2 %	-0.18	1 %
Czech Republic	52 %	2 %	2 %	0.01	15 %
Denmark	49 %	8 %	11 %	0.14	16 %
Estonia	51 %	2 %	3 %	0.18	29 %
Finland	49 %	3 %	7 %	0.41	15 %
Germany	51 %	7 %	9 %	0.16	5 %
Greece	49 %	8 %	4 %	0.03	7 %
Hong Kong-China	53 %	23 %	7 %	-0.81	0 %
Hungary	50 %	2 %	1 %	-0.16	6 %
Iceland	49 %	6 %	3 %	0.70	50 %
Indonesia	49 %	1 %	63 %	-1.52	25 %
Ireland	51 %	14 %	6 %	0.05	20 %
Israel	46 %	9 %	11 %	-0.01	13 %
Italy	51 %	6 %	17 %	-0.10	3 %
Japan	51 %	≤1 %	≤1 %	-0.01	n/a
Jordan	50 %	7 %	12 %	-0.46	39 %
Kazakhstan	48 %	7 %	3 %	-0.49	6 %
Korea	52 %	0 %	0 %	-0.13	1 %
Kyrgyzstan	48 %	2 %	19 %	-0.60	49 %
Latvia	48 %	2 %	9 %	-0.05	35 %

Liechtenstein	55 %	25 %	14 %	0.08	17 %
Lithuania	50 %	1 %	4 %	-0.04	32 %
Luxembourg	50 %	18 %	80 %	0.20	3 %
Macao-China	51 %	18 %	10 %	-0.70	n/a
Mexico	48 %	2 %	2 %	-1.15	19 %
Montenegro	51 %	8 %	2 %	-0.26	6 %
Netherlands	50 %	5 %	6 %	0.30	1 %
New Zealand	52 %	21 %	14 %	0.09	7 %
Norway	51 %	5 %	7 %	0.47	22 %
Panama	49 %	4 %	5 %	-0.70	14 %
Peru	50 %	1 %	4 %	-1.30	25 %
Poland	50 %	0 %	1 %	-0.22	31 %
Portugal	48 %	8 %	2 %	-0.30	8 %
Qatar	50 %	27 %	36 %	0.50	8 %
Romania	50 %	1 %	3 %	-0.32	12 %
Russia	49 %	7 %	8 %	-0.16	30 %
Serbia	49 %	5 %	2 %	0.07	2 %
Singapore	50 %	12 %	56 %	-0.42	0 %
Slovak Republic	49 %	1 %	5 %	-0.09	18 %
Slovenia	54 %	2 %	6 %	-0.06	6 %
Spain	51 %	9 %	15 %	-0.25	6 %
Sweden	51 %	6 %	7 %	0.33	14 %
Switzerland	51 %	11 %	15 %	0.03	19 %
Thailand	43 %	0 %	40 %	-1.17	23 %
Trinidad & Tobago	48 %	4 %	3 %	-0.53	21 %
UAE	51 %	32 %	34 %	0.24	7 %
Tunisia	48 %	1 %	0 %	-1.23	7 %
Turkey	51 %	1 %	4 %	-1.15	7 %
United Kingdom	50 %	5 %	6 %	0.18	7 %
United States	51 %	7 %	13 %	0.15	13 %
Uruguay	47 %	2 %	3 %	-0.73	10 %

Table 4.3.4. *Mean distribution of leadership priorities*

Jurisdiction	Leadership Priorities														Total Mean
	PD	School Goals	Observe	Student Perform	Suggest	Monitor	Teach Problem	Update	Class Activities	Exam Results	Curriculum	Class Problem	Behavior	Take Over Lessons	
Albania	3.41	3.65	3.39	3.53	3.44	3.18	3.39	3.13	3.31	3.16	3.23	3.55	3.57	3.27	**3.37**
Azerbaijan	3.28	3.32	3.60	3.22	3.54	3.77	3.21	3.37	3.52	3.07	3.13	3.34	3.79	3.14	**3.38**
Argentina	3.56	3.67	2.77	3.31	3.46	3.13	3.53	3.39	3.19	2.77	3.27	3.73	3.73	2.34	**3.28**
Australia	3.70	3.70	2.75	3.40	2.96	2.70	3.18	3.43	3.07	3.09	3.57	3.29	3.48	2.29	**3.19**
Austria	3.34	3.31	2.48	2.62	2.82	3.14	3.21	3.12	2.85	2.01	2.95	3.40	3.29	2.63	**2.94**
Belgium	3.38	3.50	2.46	2.37	2.79	2.23	3.22	3.32	3.06	2.33	2.88	3.56	3.44	1.41	**2.85**
Brazil	3.83	3.89	2.69	3.56	3.50	3.37	3.73	3.66	3.41	3.47	3.53	3.89	3.81	2.44	**3.48**
Bulgaria	3.67	3.83	3.16	3.27	3.08	3.27	3.25	3.65	3.37	2.91	3.44	3.35	3.59	2.28	**3.29**
Canada	3.70	3.62	3.03	3.35	3.14	2.74	3.41	3.46	3.11	2.78	3.20	3.56	3.57	1.99	**3.19**
Chile	3.59	3.64	2.60	3.44	3.38	2.88	3.22	3.50	3.16	3.24	3.36	3.48	3.39	2.90	**3.27**
Shanghai-China	3.38	3.46	3.22	2.59	3.29	2.75	3.08	3.14	3.18	2.79	3.27	3.28	3.10	1.79	**3.02**
Taipei	3.42	3.47	3.36	3.07	3.09	3.30	3.13	3.36	3.10	3.12	3.27	3.41	3.37	1.89	**3.17**
Colombia	3.59	3.69	2.51	3.13	3.41	3.24	3.26	3.52	3.16	3.23	3.32	3.45	3.40	2.21	**3.22**
Croatia	3.32	3.38	2.80	3.01	3.21	3.36	3.45	3.45	3.38	3.01	3.28	3.65	3.67	2.07	**3.22**
Czech Republic	3.33	3.48	2.63	2.96	3.00	3.24	3.18	3.53	3.09	2.66	3.45	3.51	3.03	2.22	**3.09**
Denmark	3.09	3.17	2.24	2.39	2.56	2.36	3.33	3.17	2.88	2.07	2.90	3.53	3.44	2.19	**2.81**
Estonia	3.27	3.43	2.69	2.07	2.66	2.88	2.88	3.37	2.61	2.74	3.22	3.12	3.04	2.18	**2.87**
Finland	2.73	2.94	1.99	2.47	2.40	2.68	2.94	3.30	2.68	1.93	2.94	3.56	3.25	2.41	**2.73**
Germany	3.05	3.21	2.43	2.61	2.61	2.99	2.96	3.01	2.66	2.16	2.80	3.34	3.10	2.44	**2.81**
Greece	2.17	2.93	1.62	2.58	2.51	2.36	3.51	3.60	2.82	1.91	2.76	3.69	3.64	2.80	**2.78**
Hong Kong	3.87	3.84	3.51	3.64	3.48	3.29	3.46	3.48	3.26	3.43	3.69	3.63	3.58	2.40	**3.47**

Hungary	3.14	3.42	2.64	2.96	2.72	3.07	3.21	3.21	2.72	2.81	3.02	3.29	3.27	2.45	**3.00**
Iceland	3.07	3.14	2.42	2.89	2.91	2.79	3.04	3.30	2.61	2.60	3.10	3.65	2.95	2.13	**2.90**
Indonesia	3.27	3.41	3.07	3.12	3.45	2.91	3.15	3.36	3.23	3.23	3.26	3.03	3.23	2.53	**3.16**
Ireland	3.28	3.34	1.80	2.71	2.43	2.52	3.17	3.34	2.65	3.00	3.17	3.41	3.62	2.44	**2.92**
Israel	3.34	3.59	2.58	3.25	3.10	3.09	3.38	3.28	3.15	3.24	3.32	3.53	3.51	2.21	**3.18**
Italy	3.51	3.63	2.37	3.13	2.96	3.17	3.51	3.68	3.19	3.02	3.37	3.68	3.67	1.83	**3.19**
Japan	2.47	2.57	2.47	2.28	2.40	2.44	2.28	2.57	2.32	2.38	2.23	2.73	2.70	1.64	**2.39**
Jordan	3.76	3.92	3.89	3.69	3.85	3.63	3.87	3.77	3.73	3.25	3.17	3.89	3.89	3.53	**3.70**
Kazakhstan	3.36	3.57	3.34	3.28	3.42	3.48	3.12	3.53	3.39	2.56	3.21	3.20	3.34	1.99	**3.20**
Korea	3.01	3.07	2.47	2.79	2.84	2.64	2.92	2.86	2.78	2.52	2.76	2.98	2.84	1.54	**2.72**
Kyrgyzstan	3.14	3.20	3.34	3.14	3.37	3.41	3.18	3.37	3.19	3.07	3.10	3.20	3.05	2.27	**3.15**
Latvia	3.51	3.66	3.02	3.51	3.16	3.17	3.18	3.46	3.11	3.08	3.19	2.90	3.18	2.22	**3.17**
Liechtenstein	2.33	2.00	1.51	1.66	2.14	2.40	2.88	2.18	2.00	1.19	1.64	3.18	2.75	2.55	**2.17**
Lithuania	3.55	3.57	2.52	3.29	2.90	2.72	3.01	3.31	2.61	2.87	3.28	3.40	3.21	1.72	**3.00**
Luxembourg	3.29	3.49	2.34	2.81	2.58	2.78	3.41	2.97	3.04	1.90	2.47	3.53	3.57	1.99	**2.87**
Macao-China	3.24	3.48	3.04	2.86	3.04	3.04	3.30	3.06	3.15	2.60	3.29	3.47	3.29	2.40	**3.09**
Mexico	3.42	3.49	2.76	3.34	3.18	3.23	3.38	3.28	3.27	2.58	3.12	3.43	3.43	2.42	**3.17**
Montenegro	3.24	3.85	3.04	3.38	3.58	3.50	3.59	3.85	3.59	3.09	3.75	3.78	3.76	2.23	**3.45**
Netherlands	3.23	3.25	2.58	2.74	2.77	2.49	2.87	2.98	2.87	2.88	2.96	3.10	2.85	1.82	**2.81**
New Zealand	3.69	3.52	2.86	3.56	2.87	2.41	2.98	3.15	2.89	3.28	3.56	3.21	3.43	1.79	**3.09**
Norway	2.93	3.05	2.17	2.81	2.52	2.55	3.11	3.14	2.48	2.46	2.94	3.39	3.39	2.22	**2.80**
Panama	3.45	3.61	3.07	3.14	3.45	3.03	3.24	3.29	3.27	3.07	3.13	3.39	3.38	2.41	**3.21**
Peru	3.42	3.56	3.17	3.15	3.27	2.99	3.04	3.29	3.23	3.12	3.24	3.29	3.37	2.57	**3.19**
Poland	3.34	3.48	3.26	3.37	3.17	3.32	3.31	3.67	3.27	2.93	3.10	3.60	3.49	2.43	**3.27**
Portugal	3.47	3.53	1.61	3.46	2.74	2.32	3.20	3.29	2.50	3.04	3.48	3.59	3.55	1.40	**2.94**
Qatar	3.59	3.80	3.56	3.66	3.58	3.46	3.64	3.54	3.45	3.30	3.30	3.64	3.80	2.12	**3.46**
Romania	3.61	3.73	2.99	3.47	3.25	3.28	3.54	3.69	3.65	3.44	3.63	3.74	3.67	2.48	**3.44**
Russia	3.50	3.60	3.23	3.18	3.18	3.39	3.10	3.57	3.31	2.67	3.45	3.47	3.26	2.28	**3.23**

Serbia	3.47	3.74	2.77	3.16	3.22	3.03	3.41	3.62	3.12	3.38	3.27	3.54	3.45	2.34	**3.25**
Singapore	3.79	3.84	3.10	3.66	3.30	2.89	3.29	3.34	3.34	3.54	3.58	3.50	3.52	1.75	**3.32**
Slovak Republic	3.41	3.69	3.17	3.05	3.10	3.13	3.17	3.47	3.18	2.87	3.44	3.47	3.34	2.11	**3.19**
Slovenia	3.62	3.64	2.96	2.93	3.12	3.22	3.25	3.34	3.07	2.77	3.33	3.44	3.44	2.03	**3.15**
Spain	3.25	3.49	2.10	3.13	2.65	2.39	3.16	3.13	2.72	2.83	3.27	3.54	3.67	2.91	**3.02**
Sweden	3.22	3.37	2.40	3.10	2.69	2.20	3.24	3.25	2.60	2.79	3.21	3.45	3.15	1.77	**2.89**
Switzerland	2.92	3.11	2.75	2.24	2.66	2.70	3.20	3.07	2.71	1.82	2.62	3.39	3.20	2.11	**2.75**
Thailand	3.32	3.47	3.05	3.59	3.32	3.48	3.34	3.40	3.26	3.40	3.34	3.48	3.40	2.36	**3.30**
Trinidad & Tobago	3.55	3.56	2.65	3.13	3.21	2.92	3.31	3.36	3.18	3.31	3.38	3.49	3.59	2.14	**3.20**
UAE	3.59	3.77	3.61	3.63	3.62	3.41	3.63	3.68	3.60	3.27	3.39	3.73	3.71	2.20	**3.49**
Tunisia	3.27	3.74	3.18	3.45	3.51	2.85	3.60	3.22	3.25	2.05	2.60	3.77	3.69	2.36	**3.18**
Turkey	3.02	3.40	2.83	3.23	3.06	3.31	3.04	3.22	3.15	3.00	3.26	3.47	3.72	2.34	**3.15**
United Kingdom	3.80	3.84	3.37	3.79	3.29	3.22	3.29	3.34	3.35	3.67	3.73	3.39	3.68	2.28	**3.43**
United States	3.74	3.73	3.58	3.70	3.50	2.96	3.50	3.50	3.40	3.31	3.31	3.51	3.60	1.99	**3.38**
Uruguay	3.19	3.48	3.23	3.25	3.23	3.04	3.40	3.49	3.11	2.31	2.91	3.64	3.74	2.04	**3.15**
Mean	**3.34**	**3.48**	**2.81**	**3.10**	**3.07**	**2.98**	**3.25**	**3.33**	**3.07**	**2.83**	**3.18**	**3.45**	**3.42**	**2.24**	
Median	**3.37**	**3.51**	**2.79**	**3.15**	**3.13**	**3.04**	**3.23**	**3.35**	**3.15**	**2.92**	**3.26**	**3.47**	**3.44**	**2.23**	

Table 4.3.5. *Results from unconditional models*

Jurisdiction	**Reliability**	**Fix Effects**	**Random Effects**		**Reading Literacy ICC[1]**
	Intercept (β_{oj})	*Intercept* (γ_{00})	*within school* (σ^2)	*between school* (τ_{00})	
Albania	0.91	5.85 (≤0.001)	7011.52	2952.77	0.30
Azerbaijan	0.94	4.62 (≤0.001)	3517.05	2297.23	0.40
Argentina	0.96	6.32 (≤0.001)	5488.41	7440.63	0.58
Australia	0.92	2.62 (≤0.001)	7586.4	2191.92	0.22
Austria	0.94	5.03 (≤0.001)	4514.72	6059.72	0.57
Belgium	0.97	5.07(≤0.001)	4875.8	6105.45	0.56
Brazil	0.93	3.41 (≤0.001)	4844.56	4045.39	0.46
Bulgaria	0.95	7.06 (≤0.001)	6120.35	8138.81	0.57
Canada	0.82	1.93 (≤0.001)	6635.88	1566.11	0.19
Chile	0.93	5.51 (≤0.001)	3884.31	3820.89	0.50
Shanghai	0.96	4.41 (≤0.001)	3639.43	2820.46	0.44
Taipei	0.95	5.32 (≤0.001)	4938.07	2605.01	0.35
Colombia	0.94	4.35 (≤0.001)	4884.3	2688.18	0.35
Croatia	0.96	4.79 (≤0.001)	4298.63	3332.31	0.44
Czech Republic	0.95	4.66 (≤0.001)	4347.89	4311.37	0.50
Denmark	0.78	2.57 (≤0.001)	5977.96	1042.17	0.15
Estonia	0.87	4.16 (≤0.001)	5464.65	1467.21	0.21
Finland	0.66	2.21 (≤0.001)	6935.07	537.40	**0.07**
Germany	0.97	5.37 (≤0.001)	3813.56	5552.27	0.59
Greece	0.94	6.66 (≤0.001)	5532.14	4151.04	0.43
Hong Kong	0.96	4.53 (≤0.001)	4165.57	2883.20	0.41
Hungary	0.97	7.19 (≤0.001)	2864.28	6881.48	0.71
Iceland	0.69	3.80 (≤0.001)	8243.41	1073.20	**0.12**
Indonesia	0.95	3.70 (≤0.001)	2272.03	2078.64	0.48
Ireland	0.91	4.79 (≤0.001)	6902.4	2492.41	0.27
Israel	0.97	6.61 (≤0.001)	6767.59	6080.36	0.47
Italy	0.97	2.52 (≤0.001)	4044.51	6260.46	0.61
Japan	0.97	5.58 (≤0.001)	5120.42	5248.45	0.51

[1] ICC = $\tau_{00}/(\tau_{00} + \sigma^2)$

Kazakhstan	0.92	4.26 (≤0.001)	5004.04	2906.18	0.37
Jordan	0.94	3.84 (≤0.001)	5445.27	2939.42	0.35
Korea	0.94	4.53 (≤0.001)	4158.72	2259.73	0.35
Kyrgyzstan	0.94	4.79 (≤0.001)	6012.14	3629.41	0.38
Latvia	0.88	3.94 (≤0.001)	4964.69	1442.53	0.23
Liechtenstein	0.94	15.63 (≤0.001)	3450.62	2670.51	0.44
Lithuania	0.90	3.80 (≤0.001)	5093.05	2347.4	0.32
Luxembourg	0.96	9.94 (≤0.001)	6999.35	3574.15	0.34
Macao-China	0.95	7.04 (≤0.001)	4190.56	2094.85	0.33
Mexico	0.96	2.88 (≤0.001)	3610.11	3912.4	0.52
Montenegro	0.96	11.79 (≤0.001)	5559.05	3142.62	0.36
Netherlands	0.98	6.06 (≤0.001)	2889.44	4984.73	0.63
New Zealand	0.85	3.86 (≤0.001)	8402.92	1787.4	0.18
Norway	0.72	2.58 (≤0.001)	7457.66	826.27	**0.10**
Panama	0.96	8.71 (≤0.001)	4155.31	6143.12	0.60
Peru	0.96	5.63 (≤0.001)	4633.10	5512.69	0.54
Poland	0.81	3.05 (≤0.001)	6804.83	1215.57	0.15
Portugal	0.92	4.12 (≤0.001)	5196.50	2534.82	0.33
Qatar	0.95	7.30 (≤0.001)	5908.81	7394.99	0.56
Romania	0.97	6.11 (≤0.001)	4167.22	3531.89	0.46
Russia	0.87	3.44 (≤0.001)	5790.13	1981.33	0.25
Serbia	0.94	4.98 (≤0.001)	4149.48	3244.6	0.44
Singapore	0.94	4.74 (≤0.001)	6200.02	3289.88	0.35
Slovak Republic	0.94	4.79 (≤0.001)	4307.86	3554.36	0.45
Slovenia	0.94	5.36 (≤0.001)	3012.44	5037.74	0.63
Spain	0.88	2.44 (≤0.001)	5999.59	1648.47	0.22
Sweden	0.78	3.27 (≤0.001)	8309.34	1485.34	0.15
Switzerland	0.91	4.09 (≤0.001)	5559.83	3007.93	0.35
Thailand	0.93	3.43 (≤0.001)	3167.18	1960.93	0.38
Trinidad & Tobago	0.98	7.63 (≤0.001)	5183.43	7452.59	0.59
UAE	0.95	4.70 (≤0.001)	5292.24	4852.15	0.48
Tunisia	0.94	4.90 (≤0.001)	4194.02	3190.11	0.43
Turkey	0.97	6.54 (≤0.001)	3348.80	4667.17	0.58
United Kingdom	0.89	3.41 (≤0.001)	6950.11	2121.51	0.23

United States	0.91	4.88 (≤0.001)	7067.57	2341.41	0.25
Uruguay	0.93	5.19 (≤0.001)	5878.04	4283.59	0.42
Mean	**0.92**				**0.41**

Table 4.3.6. *Variance at the school and individual levels*

Jurisdiction	**Variance between schools (as percent)**	**Variance between individuals (as percent)**
Albania	29.63	70.37
Argentina	57.55	42.45
Australia	22.42	77.58
Austria	57.31	42.69
Azerbaijan	39.51	60.49
Belgium	55.60	44.40
Brazil	45.51	54.49
Bulgaria	57.08	42.92
Canada	19.09	80.91
Chile	49.59	50.41
Taipei	34.54	65.46
Colombia	35.50	64.50
Croatia	43.67	56.33
Czech Republic	49.79	50.21
Denmark	14.85	85.15
Estonia	21.17	78.83
Finland	7.19	92.81
Germany	59.28	40.72
Greece	42.87	57.13
Hong Kong-China	40.90	59.10
Hungary	70.61	29.39
Iceland	11.52	88.48
Indonesia	47.78	52.22
Ireland	26.53	73.47
Israel	47.33	52.67
Italy	60.75	39.25
Japan	50.62	49.38
Jordan	35.06	64.94

Kazakhstan	36.74	63.26
Korea	35.21	64.79
Kyrgyzstan	37.64	62.36
Latvia	22.51	77.49
Liechtenstein	43.63	56.37
Lithuania	31.55	68.45
Luxembourg	33.80	66.20
Macao-China	33.33	66.67
Mexico	52.01	47.99
Montenegro	36.12	63.88
Netherlands	63.30	36.70
New Zealand	17.54	82.46
Norway	9.97	90.03
Panama	59.65	40.35
Peru	54.33	45.67
Poland	15.16	84.84
Portugal	32.79	67.21
Qatar	55.59	44.41
Romania	45.87	54.13
Russia	25.49	74.51
Serbia	43.88	56.12
Shanghai-China	43.66	56.34
Singapore	34.67	65.33
Slovak Republic	45.21	54.79
Slovenia	62.58	37.42
Spain	21.55	78.45
Sweden	15.16	84.84
Switzerland	35.11	64.89
Thailand	38.24	61.76
Trinidad & Tobago	58.98	41.02
Tunisia	43.20	56.80
Turkey	58.22	41.78
UAE	47.83	52.17
United Kingdom	23.39	76.61
United States	24.88	75.12
Uruguay	42.15	57.85

Table 6.0.1. *Frequency of jurisdictions with significant associations at p≤0.05*

Diversity Indicator	**Significant at p≤0.05 (total %)**
Gender	64(100%)
Immigrant Status	23(36%)
Language Status	41(64%)
Socio-Economic Status	61(95%)
Location	34(59%)

Appendix II. *Results from model 1s, by jurisdiction*

	Gender			SES			Immigrant			Language			Location		
Jurisdiction	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.	C. eff.	s.e.	Sig.
Albania	-61.11	3.77	≤0.001	15.33	1.92	≤0.001	1.18	13.05	0.93	-19.66	13.47	0.15	29.03	10.06	0.00
Azerbaijan	-22.35	2.38	≤0.001	10.19	1.20	≤0.001	4.59	6.81	0.50	4.79	5.50	0.39	-14.94	9.29	0.11
Argentina	-28.84	2.65	≤0.001	12.36	1.55	≤0.001	-23.26	10.03	0.02	-36.54	14.69	0.02	-58.84	16.73	≤0.001
Australia	-36.52	1.90	≤0.001	31.08	1.38	≤0.001	-3.10	3.02	0.31	-14.35	3.84	≤0.001	-30.93	7.09	≤0.001
Austria	-21.61	2.77	≤0.001	13.41	1.76	≤0.001	-30.34	5.35	≤0.001	-19.25	4.11	≤0.001	-26.95	13.66	0.05
Belgium	-16.79	2.01	≤0.001	14.90	1.31	≤0.001	-18.29	4.40	≤0.001	-9.22	2.92	0.00	5.99	31.12	0.85
Brazil	-27.14	1.70	≤0.001	7.35	0.92	≤0.001	-52.67	19.09	0.01	-39.77	10.78	≤0.001	-57.35	10.00	≤0.001
Bulgaria	-44.07	3.23	≤0.001	15.22	1.95	≤0.001	-32.64	13.32	0.01	-32.40	6.11	≤0.001	-82.53	16.29	≤0.001
Canada	-32.91	1.69	≤0.001	24.65	1.14	≤0.001	-13.71	3.47	≤0.001	-7.87	3.03	0.01	-20.62	4.81	≤0.001
Chile	-18.31	2.70	≤0.001	9.90	1.26	≤0.001	0.81	9.66	0.93	-51.20	13.95	≤0.001	-83.39	16.78	≤0.001
Shanghai-China	-30.87	1.96	≤0.001	5.85	1.17	≤0.001	-6.65	9.74	0.50	-37.92	8.82	≤0.001	n/a	n/a	n/a
Chinese Taipei	-37.84	2.39	≤0.001	17.90	1.54	≤0.001	-16.87	9.93	0.09	-8.07	2.77	0.00	n/a	n/a	n/a
Colombia	-9.67	2.80	≤0.001	11.85	1.27	≤0.001	-6.98	12.57	0.58	-56.28	20.86	0.01	-28.87	10.12	0.01
Croatia	-32.10	2.57	≤0.001	12.89	1.61	≤0.001	-8.75	4.11	0.03	4.69	8.44	0.58	-21.73	22.56	0.34
Czech Republic	-34.63	2.85	≤0.001	17.36	1.97	≤0.001	-10.82	10.17	0.29	-2.05	12.80	0.87	-30.46	8.67	≤0.001
Denmark	-29.55	2.67	≤0.001	30.91	1.50	≤0.001	-24.49	5.63	≤0.001	-24.65	5.12	≤0.001	-12.29	4.45	0.01
Estonia	-42.94	2.65	≤0.001	19.30	1.71	≤0.001	-9.77	9.22	0.29	-36.19	6.77	≤0.001	-10.51	7.55	0.17
Finland	-54.25	2.31	≤0.001	28.61	1.52	≤0.001	-19.79	9.77	0.04	-48.97	6.47	≤0.001	-6.20	7.04	0.38
Germany	-29.87	2.04	≤0.001	12.83	1.36	≤0.001	-18.83	5.59	0.00	-7.86	4.70	0.10	-60.80	18.87	0.00
Greece	-36.58	2.42	≤0.001	17.72	1.44	≤0.001	-6.10	6.45	0.35	-22.02	11.58	0.06	-1.77	24.34	0.94
Hong Kong-China	-23.56	2.56	≤0.001	-3.60	2.87	0.21	-3.60	2.87	0.21	-23.94	6.19	≤0.001	n/a	n/a	n/a

Hungary	-23.33	2.18	≤0.001	10.70	1.35	≤0.001	3.75	6.17	0.54	-18.34	8.60	0.04	-79.68	15.06	≤0.001
Iceland	-45.61	3.62	≤0.001	25.14	1.79	≤0.001	-0.32	9.39	0.97	-51.28	13.72	≤0.001	10.31	7.30	0.16
Indonesia	-28.77	1.61	≤0.001	3.81	1.20	0.01	-36.76	12.08	0.00	5.29	2.41	0.03	-30.56	7.77	≤0.001
Ireland	-33.92	4.40	≤0.001	30.22	1.88	≤0.001	1.39	4.50	0.76	-37.15	9.67	≤0.001	-17.72	11.05	0.11
Israel	-32.59	3.09	≤0.001	18.94	1.96	≤0.001	-19.75	5.81	≤0.001	8.56	5.72	0.14	5.93	20.59	0.77
Italy	-26.05	1.40	≤0.001	6.93	0.69	≤0.001	-35.30	3.02	≤0.001	-4.31	1.87	0.02	-41.06	11.96	≤0.001
Japan	-27.34	2.43	≤0.001	5.66	1.69	≤0.001	-7.67	16.76	0.65	-62.52	25.41	0.01	n/a	n/a	n/a
Jordan	-48.18	5.68	≤0.001	17.59	1.42	≤0.001	-6.50	5.56	0.23	-21.47	7.25	0.00	-39.38	11.13	≤0.001
Kazakhstan	-39.55	2.30	≤0.001	20.69	1.83	≤0.001	-8.98	5.32	0.09	-2.71	3.92	0.49	-16.48	7.74	0.04
Korea	-32.16	3.42	≤0.001	14.13	1.44	≤0.001	0.25	17.73	0.99	-50.77	28.52	0.08	70.23	13.97	≤0.001
Kyrgyzstan	-50.11	2.59	≤0.001	17.71	1.53	≤0.001	-1.17	8.61	0.89	5.39	4.32	0.21	-50.29	8.19	≤0.001
Latvia	-45.50	2.511	≤0.001	19.95	1.89	≤0.001	-0.66	8.66	0.94	-5.62	7.60	0.46	-18.10	6.42	0.01
Liechtenstein	-21.79	5.88	≤0.001	1.42	3.62	0.70	0.59	6.48	0.93	-31.44	8.77	≤0.001	-40.62	38.84	0.32
Lithuania	-52.71	2.50	≤0.001	20.69	1.42	≤0.001	-9.35	18.82	0.62	-12.27	6.57	0.06	-20.50	5.72	≤0.001
Luxembourg	-35.58	2.58	≤0.001	20.83	1.28	≤0.001	-12.44	4.03	0.00	32.32	3.17	≤0.001	42.11	51.89	0.42
Macao-China	-21.78	2.12	≤0.001	6.60	1.66	≤0.001	3.02	2.50	0.23	-47.37	7.88	≤0.001	n/a	n/a	n/a
Mexico	-18.62	1.11	≤0.001	6.52	0.54	≤0.001	-22.52	4.48	≤0.001	-17.98	4.67	≤0.001	-54.66	6.44	≤0.001
Montenegro	-40.60	3.70	≤0.001	12.85	1.38	≤0.001	4.63	3.81	0.23	-11.62	11.87	0.33	-54.92	29.54	0.07
Netherlands	-17.13	1.84	≤0.001	6.98	1.36	≤0.001	-9.48	5.23	0.07	-13.06	5.86	0.03	-20.77	39.06	0.60
New Zealand	-48.00	3.01	≤0.001	39.90	1.94	≤0.001	7.23	3.60	0.05	-45.61	4.78	≤0.001	-19.61	9.89	0.05
Norway	-48.42	2.62	≤0.001	31.97	2.00	≤0.001	-11.57	6.50	0.08	-38.54	5.75	≤0.001	-10.05	6.26	0.11
Panama	-17.42	4.57	≤0.001	4.21	1.96	0.03	-6.11	8.85	0.50	-7.43	9.84	0.45	-79.34	18.47	≤0.001
Peru	-11.98	2.52	≤0.001	11.89	1.20	≤0.001	-25.07	13.07	0.06	-25.52	6.84	≤0.001	-64.47	9.36	≤0.001
Poland	-49.00	2.51	≤0.001	34.57	1.61	≤0.001	-6.38	23.32	0.78	-52.27	15.80	≤0.001	-10.61	4.56	0.02
Portugal	-33.94	2.08	≤0.001	19.30	1.06	≤0.001	-5.50	4.58	0.23	-14.99	9.61	0.08	-24.69	8.80	0.01

Qatar	-34.84	6.61	≤0.001	7.85	1.58	≤0.001	34.17	2.93	≤0.001	-13.08	3.56	≤0.001	-21.58	15.71	0.17
Romania	-14.53	2.54	≤0.001	11.93	1.50	≤0.001	-1.03	13.38	0.94	-13.41	7.43	0.08	-29.36	17.73	0.10
Russia	-41.50	2.27	≤0.001	24.08	1.80	≤0.001	-6.93	4.84	0.16	-20.33	5.82	≤0.001	-4.69	6.23	0.45
Serbia	-28.27	2.18	≤0.001	10.41	1.20	≤0.001	1.73	4.72	0.71	-15.70	7.59	0.04	21.91	28.72	0.45
Singapore	-26.21	2.15	≤0.001	24.31	1.89	≤0.001	-10.94	3.81	0.01	-14.06	2.75	≤0.001	n/a	n/a	n/a
Slovak Republic	-41.14	2.67	≤0.001	16.76	1.64	≤0.001	15.66	11.01	0.16	-33.32	6.76	≤0.001	-42.11	7.14	≤0.001
Slovenia	-28.73	2.55	≤0.001	5.92	1.10	≤0.001	-20.52	7.59	0.01	-5.16	4.96	0.30	-29.19	15.57	0.06
Spain	-27.52	1.67	≤0.001	21.24	0.98	≤0.001	-43.50	3.20	≤0.001	-6.04	3.27	0.07	-15.18	5.25	0.00
Sweden	-46.59	2.76	≤0.001	35.27	1.75	≤0.001	-29.03	6.83	≤0.001	-31.66	5.60	≤0.001	-11.14	6.39	0.08
Switzerland	-30.56	2.16	≤0.001	20.96	1.36	≤0.001	-21.02	3.66	≤0.001	-17.67	2.73	≤0.001	-27.32	6.69	≤0.001
Thailand	-33.06	1.96	≤0.001	7.92	1.02	≤0.001	-11.08	32.23	0.73	11.25	2.67	≤0.001	-32.42	5.80	≤0.001
Trinidad & Tobago	-47.55	2.83	≤0.001	2.45	1.68	0.15	2.23	7.08	0.75	-36.35	9.07	≤0.001	-27.00	16.57	0.11
UAE	-45.00	3.85	≤0.001	16.94	1.46	≤0.001	30.55	2.67	≤0.001	-4.58	3.08	0.14	-1.47	7.77	0.85
Tunisia	-20.55	2.02	≤0.001	5.34	1.14	≤0.001	-21.35	11.85	0.08	1.09	19.46	0.96	-34.35	16.18	0.04
Turkey	-31.04	1.78	≤0.001	9.70	0.91	≤0.001	-10.63	7.61	0.16	6.20	8.20	0.45	-99.67	12.72	≤0.001
United Kingdom	-25.03	2.91	≤0.001	30.21	1.84	≤0.001	-4.07	6.81	0.55	-14.67	6.33	0.02	11.91	9.49	0.21
United States	-28.50	2.38	≤0.001	28.88	1.66	≤0.001	-0.36	5.85	0.95	-0.67	4.92	0.89	-2.27	10.32	0.83
Uruguay	-35.75	2.69	≤0.001	18.01	1.22	≤0.001	-1.87	8.98	0.84	-17.86	10.07	0.08	-33.72	9.69	≤0.001

Appendix II. *Results from model 2s, by jurisdiction*

	PD	School Goals	Observe	Perform	Suggest	Monitor	Teach Problem	Update	Class Activities	Exam Results	Curriculum	Class Problem	Behavior	Take Over Less
Albania									29.88 (14.86)					
Azerbaijan			-56.20 (17.17)						-104.10 (31.80)				20.15 (9.11)	
Argentina														
Australia			-16.04 (6.86)	-15.98 (8.05)									-18.99 (7.08)	
Austria													-52.11 (17.81)	
Belgium			32.53 (9.30)			-39.53 (9.78)						66.68 (27.24)	-39.26 (16.59)	
Brazil		49.68 (18.13)			22.95 (9.79)					23.35 (11.59)			-37.79 (19.20)	
Bulgaria								-87.65 (41.69)						
Canada					9.26 (4.44)							23.44 (9.84)		
Chile													-47.55 (19.52)	
Shanghai-China		-35.30 (15.07)	38.34 (10.96)							22.23 (10.46)		-34.38 (11.86)		
Chinese Taipei	87.25 (28.76)		-49.78 (16.62)				-38.54 (12.18)			-35.46 (17.74)	-56.47 (17.74)			
Colombia						28.18 (13.31)								
Croatia				36.62 (14.49)						-27.21 (11.33)		-84.23 (29.01)		
Czech Republic			-28.08 (7.54)						26.98 (10.90)		38.75 (13.03)		-40.22 (9.38)	
Denmark														

Estonia													
Finland													
Germany	-23.64 (11.98)												-24.81 (10.00)
Greece		30.15 (12.95)					-44.45 (14.67)						
Hong Kong-China			-28.47 (10.01)	-66.29 (19.04)			40.31 (17.22)						
Hungary													
Iceland												19.82 (9.59)	16.18 (7.68)
Indonesia													-17.78 (7.36)
Ireland					18.07 (7.41)								-20.00 (7.87)
Israel		-55.51 (21.79)	-41.66 (11.71)						38.96 (14.07)	-31.95 (15.27)			
Italy			-21.89 (7.03)										
Japan						-28.01 (10.23)		36.41 (10.46)		38.78 (11.72)	-51.20 (11.54)		
Jordan	11.67 (5.22)			57.31 (5.97)			-88.73 (26.44)				90.55 (17.19)		
Kazakhstan			-35.20 (17.27)	24.22 (10.32)	39.42 (11.64)		40.75 (18.14)						
Korea					19.98 (9.53)								
Kyrgyzstan	21.20 (9.95)					29.37 (23.39)	-37.98 (15.04)						16.82 (7.93)
Latvia					20.70 (7.61)								
Liechtenstein													
Lithuania			-17.11 (5.68)	-24.09 (11.09)						22.99 (9.87)			
Luxembourg				49.92 (20.47)									

Macao-China							52.11 (13.30)		-45.47 (16.10)				55.60 (17.34)	-26.81 (10.97)
Mexico	28.14 (10.21)	-24.02 (11.52)								-10.94 (5.10)		26.46 (8.48)		-10.34 (1.66)
Montenegro				-49.43 (15.19)										-34.58 (16.22)
Netherlands								-31.85 (15.91)		30.15 (13.95)				-45.68 (14.81)
New Zealand	-51.09 (9.66)											15.84 (7.12)		
Norway				10.22 (5.01)										
Panama		52.52 (21.14)							-51.54 (18.51)		40.80 (17.78)			30.85 (13.26)
Peru														-22.01 (7.78)
Poland			-22.98 (7.79)		-15.56 (5.58)	-24.01 (12.03)		34.07 (16.93)					-26.83 (10.50)	
Portugal		32.61 (14.01)												
Qatar				-123.14 (38.42)		-64.09 (31.58)		-68.78 (27.95)	54.19 (27.32)			92.31 (32.63)	-136.22 (43.27)	
Romania	-105.26 (11.33)			104.08 (21.24)		-36.37 (12.53)			115.92 (44.15)					
Russian		-24.29 (10.55)			-20.29 (8.69)						-28.14 (9.88)		-15.37 (7.01)	
Serbia										-35.33 (14.39)				
Singapore										-30.26 (14.41)			-65.79 (16.90)	
Slovak Republic			-24.62 (11.77)										-62.93 (12.63)	
Slovenia			-28.06 (13.15)		23.12 (11.68)	43.50 (14.56)	-28.65 (14.67)	-52.93 (19.59)						

Spain							8.28 (4.19)	-8.71 (4.33)		-28.62 (7.57)		
Sweden												
Switzerland									17.13 (7.22)			
Thailand		81.75 (38.94)	-24.84 (9.33)								-34.35 (8.89)	14.27 (5.14)
Trinidad & Tobago						-59.06 (26.78)						
UAE					-36.22 (14.65)				30.51 (10.44)	-49.26 (24.37)		
Tunisia											33.08 (13.95)	
Turkey									29.28 (12.56)	-57.89 (26.23)	50.08 (23.32)	
United Kingdom				36.25 (14.68)		-30.05 (13.48)						
United States	53.10 (24.49)		-82.68 (25.89)									
Uruguay						-38.03 (11.72)						