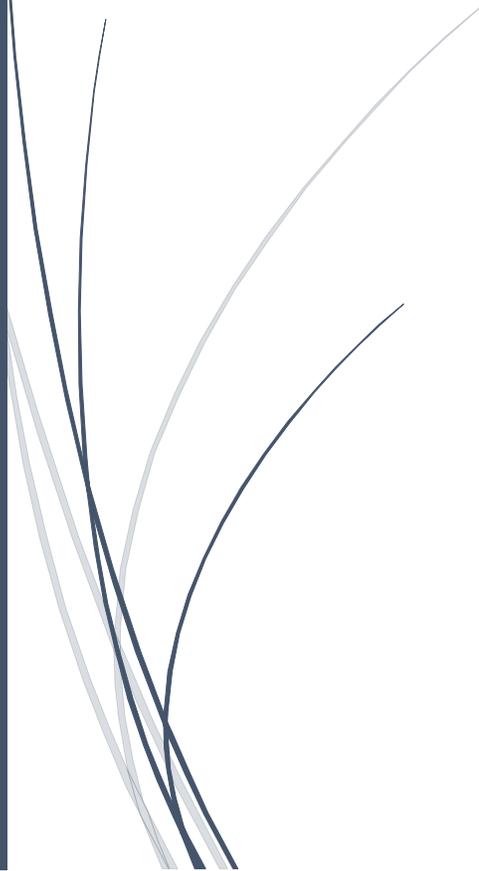




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BC's Strong Districts and their Leadership Project

Final Report of Research



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1. Purposes for the Study

Every learner deserves to be in a school district geared to student success. This study is the latest addition to research focused on what improves the contribution that Canadian school districts make to student success in their schools. ‘Districts’ in this sense are a structured collective of schools. Our working definition of a school ‘district’ is “an organized collective constituted by the [superintendent]; the [elected] district; the central office-level administration; and principals, who collectively serve as critical links between the district and the school for developing and implementing solutions to identified problems” (Rorrer et al, 2008, p. 311).

Supported by the *British Columbia School Superintendents’ Association*, this study builds on the results of earlier research conducted in both Alberta and Ontario (Bedard, Mombourquette & Aitken, 2015; Leithwood & Azah, 2016). The design of the current study parallels many features of a study of high performing districts recently completed in Ontario (Leithwood & McCullough, 2017). Testing the efficacy of nine district Characteristics identified in this previous work, as well as deepening understandings about the profile of each district characteristic in its most effective state, were among the primary objectives for this study. Data from the study provided answers to seven more specific questions contributing to the study’s primary objectives:

1. On average, how well developed are BC school districts?
2. On average, how well developed are those conditions in schools, classrooms and families that prior research indicates make significant contributions to student success?
3. Do those conditions in schools, classrooms and families identified in prior research as making significant contributions to student success have comparable effects in BC districts?
4. How large are the direct and indirect effects of School Leadership on other school, classroom and family conditions?
5. How large are the direct and indirect effects of the nine district characteristics on student outcomes?
6. To what extent are students’ cognitive and socio-emotional capacities related?
7. How do School Leaders understand their districts’ work and its helpfulness to them?

The results of the study do corroborate the value of the nine Characteristics of high performing district. These results also provide additional evidence about the key contributions of school-level leadership and recommend focused attention by districts on the development of such leadership. As well, results point to the importance of focusing school improvement efforts on six school, classroom and family conditions, each of which makes demonstrably significant contributions to student achievement and well-being.

By most international standards, the BC school system is high performing, one of the three provinces in Canada that always rank very high in the results of such testing programs as TIMMS, PISA and PIRLS; typically, the performance of BC students on the Pan-Canadian tests of achievement, sponsored by the Council of Ministers of Education of Canada, is also exceptional.

BC's Strong Districts and their Leadership Project

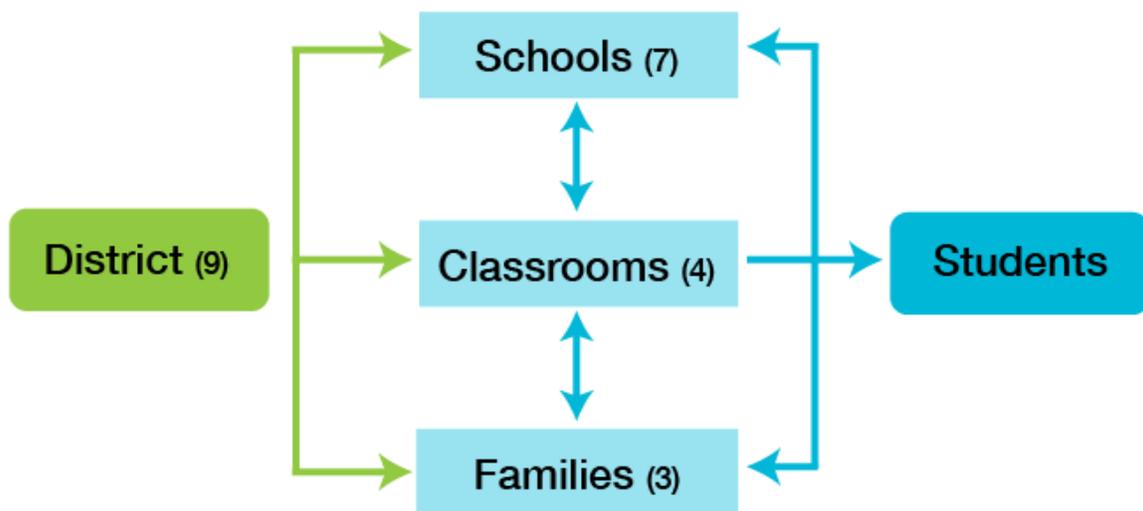
So, it is not surprising that there is considerable interest in determining what accounts for such success. While this study was not designed to accomplish such an objective, it does provide insights about what districts might do to enhance the performance of BC students even further.

2. Framework

2.1 Overview

The framework for the study (see Figure 1) identifies both primary and secondary causal relationships between five sets of variables. Nine characteristics of high performing districts are assumed to make a contribution to student success through mediating Conditions in the school (7), classroom (4) and family (3). The three sets of mediating conditions, as Figure 1 describes, also have reciprocal effects on one another and both individual and combined effects on student outcomes – math and language achievement, student well-being and student engagement.

Figure 1: Framework for study



Equity concerns continue to feature strongly among educational policy makers and practitioners in BC, as in most other educational jurisdictions. The framework for this study was built on evidence about what districts and schools do to provide equitable outcomes for all students.

First, the nine district characteristics included in the framework were initially identified through an extensive review of research about what successful districts do to improve the success at school of children who are underserved by schools and who may experience social and economic disadvantage (Leithwood, Harris & Strauss, 2010). Of the 30 studies included in that review, 29 were conducted in districts chosen for study by the researchers because of their success in providing more equitable education to students in challenging circumstances. The purpose of those studies was to identify what those districts did that accounted for such success in improving the achievement of students who are typically at risk of failure in school (ibid).

Second, four of the seven school conditions in the framework are based on research, by far the largest proportion of which has been conducted in schools serving children in challenging

circumstances (e.g., inner-city schools). For example, empirical evidence about the nature of effective School Leadership began to be collected in the early 1970s when Weber (1971), Edmonds (1979) and later Brookover (1985), Levine & Lezotte (1990), Sammons et al (1995), and others, concerned with the inequitable treatment of children based on race and poverty, developed the “effective schools movement”. Early effective schools researchers included School Leadership among a small handful of effective school “correlates”. A considerable proportion of the contemporary evidence about effective School Leadership (including the evidence on which the *BC Leadership Framework* is based) also has been aimed at providing more equitable outcomes for students.

Third, similar motivations and evidence underlie three of the other six school conditions in the framework including Academic Emphasis (developing a pervasive focus on learning), Disciplinary Climate, and Safe and Orderly Environments. Improving the status of these conditions has been shown to be especially important in schools serving students in challenging circumstances.

Finally, the three family conditions included in the framework (parental expectations, parent/child communications, parents’ social capital) were identified by research aimed at determining how schools can achieve more equitable outcomes for children from families in culturally diverse and economically challenging circumstances (e.g., Jeynes, 2011, 2015). The status of these Conditions will be exemplary in many families without any intervention by schools. But evidence suggests that schools addressing these three variables in what will often be a small proportion of their students’ families can significantly increase equity of outcomes.

2.2 District Characteristics

The nine district characteristics underpinning this study were originally identified through an extensive review of original empirical evidence about what districts do to close achievement gaps among their students (Leithwood, Harris & Strauss, 2010). Because all but one of the 30 studies in that review were based on data from U.S. districts, the framework for this study and its direct predecessors included modifications and additions specifically aimed at capturing the policy context and wider environments in which the BC districts found themselves at the time of the study.

Multiple factors affect what matters most to district success. Rorrer et al (2008) have pointed to “a void in our understanding of the complexities associated with the ability of district-level leaders to contribute to successful, systematic educational reform” (2008, p. 307). Conceptualizing districts as institutional actors (collectively influencing from within), these authors argue that lack of theory is an important weakness of most research on effective districts, an argument reiterated more recently by Trujillo (2013). The nine district characteristics in this framework were derived through a content analysis of studies included in the literature review, not as inferences from theory. Nonetheless, the more detailed features of each of these characteristics are consistent with an eclectic array of relevant and well-established theory.

Figure 2 summarizes the specific features of each of the nine characteristics of “Strong Districts”¹ that served as a guide for the current research. Results of more recent district research appear in later sections of the report.

Figure 2: Nine Characteristics of Strong Districts

Characteristics	Specific Features
1. Broadly shared mission, vision and goals founded on ambitious images of the educated person	<ul style="list-style-type: none"> • Ensure that a transparent visioning/direction-setting process is carried out • Consult extensively about district directions as part of the process • Spend sufficient time to ensure that the mission, vision and goals (directions) of the system are widely known, understood and shared by all members of their organizations • Articulate, demonstrate and model the system’s goals, priorities, and values to staffs when visiting schools • Embed district directions in improvement plans, principal meetings and other leader-initiated interactions
2. Coherent instructional guidance	<ul style="list-style-type: none"> • Adopt a service orientation toward schools • Align curricular goals, assessment instruments, instructional practices and teaching resources • Insist on ambitious goals for teaching and learning • Advocate for attention to the best available evidence to inform instructional improvement decisions • Expect schools to focus on needs of individual as well as groups of students • Encourage staff to be innovative within the boundaries created by the district’s instructional guidance system
3. Deliberate and consistent use of multiple sources of evidence to inform decisions	<ul style="list-style-type: none"> • Use data from all available sources to assist decision making in the central office • Insist on the use of the best available research and other systematically collected evidence to inform decisions wherever possible • Encourage collaboration in the interpretation and uses of data • Build system’s capacity and disposition for using systematically collected data to inform decision-making • Provide training for principals and staff on the use of data and research literature to sustain decision-making • Model evidence-informed decision-making to school staffs • Ground interactions with, and advice to, trustees in sound evidence

¹ Leithwood, 2013, in a position paper commissioned by the Council of Ontario Directors of Education.

4. Learning-oriented organizational improvement processes

- Require improvement processes to be evidence-informed
- Set a manageable number of precise targets for district school improvement
- Include school-level leaders in decisions about district-wide improvement decisions
- Create structures and norms within the district to encourage regular, reciprocal and extended deliberations about improvement progress within and across schools, as well as across the system as a whole.
- Develop and implement district and school improvement plans interactively and collaboratively with school leaders;
- Create structures to facilitate regular monitoring and refining of improvement processes
- Acknowledge Provincial goals and priorities in district and school improvement initiatives
- Allow for school-level variation in school improvement efforts

5. Professional development for all members

- Provide extensive PD opportunities for both teachers and school-level leaders, most of it through some form of learning community or on-the-job context
- Use internal system networks as central mechanism for the professional development of school-level leaders
- Align the content of professional development with the capacities needed for district and school improvement
- Require individual staff growth plans to be aligned with district and school improvement priorities
- Hold staff accountable for applying new capacities by monitoring the implementation of school improvement plans

6. Alignment of budgets, personnel policies, procedures and uses of time with district mission, vision and goals

- Align the allocation of resources with district and school improvement goals
- Align personnel policies and procedures with the district's improvement goals
- Align organizational structures with the district's improvement goals
- Provide principals with considerable autonomy in the hiring of teaching staff
- Expect and assist schools to allocate instructional resources equitably

7. A comprehensive approach to professional leadership development

- Use the best available evidence about successful leadership as a key source of criteria used for recruiting, selecting, developing and appraising school and district leaders
- Match the capacities of leaders with the needs of schools
- Provide prospective and existing leaders with extended opportunities to further develop their leadership capacities
- Develop realistic plans for leadership succession
- Promote co-ordinated forms of leadership distribution in schools

8. A policy-oriented district of trustees

- Encourage trustees to focus on district policy and the achievement of the district's goals and priorities (policy governance model of trustee practice)
- Encourage participation of the elected district in setting broad goals for its use in fulfilling its policy-setting and policy-monitoring responsibilities
- Regularly report to the district progress in achieving these broad goals

9. Productive working relationships with staff and stakeholders

Internal district and school staffs

- Develop communication systems and processes throughout the district to keep all members informed
- Develop open, accessible and collaborative relationships with principals
- Encourage reciprocal forms of communication with and among schools
- Promote high levels of interaction among all school leaders, driven by a shared sense of responsibility for system improvement
- Create structures to facilitate reciprocal forms of communication, resulting in deeply interconnected networks of school and system leaders working together on achieving the system's directions
- Buffer schools from external distractions to the district's and schools' priorities and goals

Local community groups

- Routinely consult with community groups on decisions affecting the community
- Encourage staff to participate directly in community groups
- Demonstrate the importance the district attaches to its community connections

Parents

- Hold schools accountable for developing productive working relationships with parents
- Influence the work of schools toward fostering improved educational cultures in the home environments of their students

Ministry of Education

- Develop/maintain high levels of engagement with provincial department/ministry of education
 - Engagement with department/ministry is frequently proactive rather than only responsive
 - Make flexible, adaptive use of provincial initiatives and frameworks, ensuring that they contribute to, rather than detract from, accomplishing system goals and priorities.
-

2.3 School, Classroom and Family Conditions

This study included 12 Conditions assumed to mediate the influence of districts on student outcomes in school districts. This section describes each of these conditions. For the purposes of this study, seven of these variables are classified as *School-Level Conditions*, four are classified as *Classroom-Level Conditions* and one is classified as a *Family Condition* (with three components). These Conditions were selected because of evidence that they are malleable in response to intentional intervention and that they make significant contributions to valued student outcomes. The brief reviews of evidence about each of the 12 Conditions below does not describe the leadership practices that are helpful in developing each condition. However, there is a corpus of research informing this issue, much of it distilled into the *BC Leadership Framework*.

School Conditions

School Leadership. The study adopted a conception of effective school leadership developed by the *British Columbia Principal, Vice-Principal Association* and is summarized below. This conception included four leadership “domains” and a set of nine related standards of practice. Measures of these domains and standards were developed specifically for the study.

Domain 1: Moral Stewardship

Standard 1: Values, Vision, and Mission

Principals and vice-principals guide the development and implementation of shared values, vision, mission, and goals to support learning and achievement for all students.

1. Contribute to staff’s sense of overall purpose.
2. Help clarify the reasons for implementing school improvement initiatives.
3. Provide useful assistance to staff in setting short-term goals for teaching and learning.
4. Demonstrate high expectations for teachers’ work with students.

Standard 2: Ethical Decision Making

Principals and vice-principals articulate the process of decision making using an ethical framework based on the moral purpose and direction of the school.

1. Model a high level of professional practice.
2. Ensure that the school's contribution to student success is the central criterion in all decisions.

Domain 2: Instructional Leadership

Standard 3: Supervision for Learning

Principals and vice-principals engage in effective supervision that focuses on instructional and assessment practices that maximize student development, engagement, and learning.

1. Effectively encourage teachers to consider new and promising ideas for their teaching.
2. Effectively encourage teachers to use data effectively to improve their instruction.
3. Regularly observe classroom activities.
4. Work effectively with teachers following classroom observation, to help them improve their instruction.
5. Buffer teachers from distractions to their instruction.

Standard 4: Curriculum, Instruction and Assessment

Principals and vice-principals are knowledgeable and provide guidance regarding curricula, instructional and assessment practices, and their impact on student development, engagement, and learning.

1. Provide individual teachers with help in improving their instruction.
2. Ensure productive use of appropriate technologies for teaching and learning.
3. Provide the resources teachers need to improve their instruction.

Domain 3: Relational Leadership

Standard 5: Intrapersonal Capacity

Principals and vice-principals demonstrate self-knowledge and personal qualities that support positive relationships and build cultures of integrity.

1. Recognize my own emotional responses and how those emotional responses influence the actions of my colleagues.
2. Discern the feelings and emotions of my colleagues.
3. Keep negative feelings from creeping into interactions in my school.
4. Control my temper and handle difficulties rationally.

Standard 6: Interpersonal Capacity

Principals and vice-principals build and support positive, effective working relationships within the school and community for all.

1. Identify staff development needs and provide effective professional development to meet those needs
2. Promote leadership development among teachers.
3. Persuade my colleagues to think carefully about issues that elicit strong emotions on their parts.
4. Help my colleagues calm them down when they get upset.
5. Develop trusting relationships with and among staff, students and parents.

Standard 7: Cultural Leadership

Principals and vice-principals develop and sustain a culture and climate that supports student and adult learning.

1. Provide structures and processes that enable collaborative work among staff.
2. Coordinated staff participation in decisions about school improvement.
3. Create relationships with teachers that encourage our ongoing discussion of educational issues.

Domain 4: Organizational Leadership

Standard 8: Management and Administration

Principals and vice-principals strategically plan and manage to strengthen the school's capacity to support student development, engagement, and learning.

1. Make teachers' expertise of paramount importance in staffing.
2. Ensure that the staffing process in my school is fair and equitable.
3. Place staff in their areas of competence and expertise.
4. Align school policies and procedures with our mission, vision and goals.

Standard 9: Community Building

Principals and vice-principals build positive and effective interdependencies among schools, families and the community.

1. Plan and work productively with community representatives.
2. Incorporate community Characteristics and values in my school's operations.
3. Engage parents in my school's improvement efforts.

Academic Emphasis. School improvement research has suggested that Academic Emphasis is a key feature of high performing schools (Cannata, Smith & Haynes, 2017). Hoy and his associates (Tschannen-Moran, Hoy & Hoy, 1998) define Academic Emphasis as “a combination of teachers setting high, but reasonable goals, students responding positively to the challenge of these goals, and the principal supplying the resources and exerting influence to attain these goals” (p. 342). Academic Emphasis has been found to be positively related to achievement in all types

of schools including schools serving poor and minority students (Goddard, Hoy & Hoy, 2000; Hoy, Tarter, & Hoy, 2006), with its effect stronger in low-SES high schools (Shouse, 1996). For low and middle SES schools, the greatest achievement effects follow from strong combinations of communality and Academic Emphasis (Shouse, 1996).

Disciplinary Climate. School disciplinary climate includes: students' discipline concerns, class disruptions, student absenteeism and tardiness, students counseling about discipline, students' discipline experience, the rules for behavior, race or cultural conflicts at the school, students' behaviors and the punishments for misbehaviors at the school, teachers' behavior, teacher-student relations (Ma & Willms, 2004). Disciplinary Climate has a significant relationship with student learning (Leithwood et al., 2010). Its effects are larger than the effects of student variables including student SES, as reported in a few large-scale studies both in US and Canada (Ma & Crocker, 2007; Willms & Ma, 2004).

Safe and Orderly Environment. Assuming a holistic approach to school safety and orderliness, this condition relies on the coordination of school, parents, community and community services, efficient provision of mental health services for those students who need it, threat assessment rather than violence surveys, emphasis on prevention vs. suspension (on safe school vs. school violence), and increasing the use of restorative justice practices in progressive discipline (vs. retributive practices) (Astor, Guerra, & Acker, 2010; Borum, Cornell, Modzeleski, W., & Jemerson, 2010; Mayer & Furlong, 2010; Swearer, Espelage et al, 2010; Vaillancourt, & Hymel, 2010). Providing an inclusive environment and inclusive instruction consistent with diverse learning styles and fostering students' self-efficacy has become essential to the success of all students. This construct captures the features of both an orderly disciplinary climate and an inclusive environment.

Collaborative Cultures and Structures. This condition captures key elements of teachers' collaborative instructional knowledge sharing, creation and experimentation based on student progress data. One review (Sun et al., 2014) of data use research revealed that teachers felt the opportunity to work with their colleagues, using common assessment to monitor student academic progress, engage in shared instructional decision-making and sharing best practices supported by formative assessment data, was an integral part of the process leading to increased academic scores. This feature is especially prominent in schools making significant progress with their students' achievement (e.g., Hill, 2010). Collaborative school culture and community has positive correlations with teacher perceived effectiveness in specialized programs for students with disabilities (Kristoff, 2003) and student achievement (Lomos et al., 2011).

Organization of Planning and Instructional Time. This school condition includes two components: providing time and structure for teachers' common planning and maximizing instruction time at the school level. Common planning time is probably the support teachers need most from school administration for collaboration and professional development. Teachers' developing common assessment tools, sharing effective assessments and teaching strategies,

identifying student needs are frequently addressed in common planning time. Additionally, developing interventions during common planning times has been reported as one prominent feature of successful schools - a typical way to improve 'social capital' in schools (DuFour & Fullan, 2013; Hargreaves & Fullan, 2012), and an effective way to move students forward (Leithwood, Aitken & Jantzi, 2006; Sharratt & Fullan, 2012; Sun et al., 2016). Across OECD countries, the average amount of time scheduled for learning is positively, but weakly, related to country average performance, while learning time in out-of-school-time lessons and individual study is negatively related to performance.

Limited access to collaborative planning time for teachers and limited time for targeted professional development created to carry out the demands related to instruction and curriculum is an issue with which Districts struggle. Additionally, the lack of formal structure and time dedicated to teachers' data use all hinder teachers from full engagement in precise or focused instruction (Deike, 2009; Gallagher, Means, Padilla, & SRI, 2008; Quezada, 2012). In addition, collaborative data interpretation only seems useful when teachers feel that their time is not being wasted (Fischer, 2011).

Collective Teacher Efficacy. This condition is defined as the level of confidence a group exudes in its capacity to organize and execute the tasks required to reach desired goals (Bandura, 1997; Goddard et al, 2004). Correlations between measures of CTE and student learning range from .38 to .99, with an average r of .69 (e.g., Tschannen-Moran & Barr, 2004). Angelle and Teague (2014) report a strong relationship between teacher's sense of efficacy and the likelihood of them taking on leadership roles in their schools. One recent study reported a modest but significant relationship between collective teacher efficacy and improved math instruction in middle schools (Berebitsky & Salloum, 2017).

Classroom Conditions

Classroom Instruction. This condition incorporates teaching practices that research from three bodies of literature indicate are effective in enhancing student learning: high yield instructional strategies (e.g., Hattie, 2009; Marzano et al., 2001), data-informed instruction (e.g., Mandinach & Gummer, 2013; Pham, 2011; Schildkamp & Karbautzki, & Vanhoof, 2014), and technology use to facilitate face-to-face instruction.

Hattie's (2009) meta-analysis identified a handful of Conditions associated with "high yield" instruction. Providing formative evaluation or assessment ($d = 0.90$), tailored micro-teaching ($d = .88$), and providing prompt and detailed feedback ($d = .73$) are among the most influential of those Conditions.

Using student data to inform instructional decisions has been identified as another key feature of successful Classroom Instruction (e.g., Crum, Sherman & Myran, 2009; Fullan et al., 2006). Though some studies report no significant link between teachers' data use and student learning (e.g., Prichett, 2008; Hoover, 2009), the bulk of available evidence indicates that increased use of formative and/or summative assessment data increases student achievement in

various subjects (e.g., Dalton, 2009; Ferguson, 2009; Filbin, 2008; Hoover, 2009; Palucci, 2010; Rayor, 2010; Soslau, 2009; Williamson, 2012; Yao, 2009).

There is only limited evidence about the effectiveness of online learning for K–12 students. Means, Toyama et al (2009) meta-analysis found a significant impact on learning using technology (about 0.2 average effect size). This effect was the result of blended rather than purely online approaches and parent-directed or collaborative uses of technology rather than independent, self-directed instruction. Technology is effective with children learning at home when it triggers learner activity or learner reflection and self-monitoring of understanding. The value of online learning is attributed to the expansion of learning time outside of school hours.

Teachers' Use of Instructional Time. Instructional time in formal classroom settings accounts for a large portion of public investment in student learning and is a central component of effective schooling (OECD, 2012). Total instructional time matters less than how the time is spent, the subjects on which time is spent, and the strength of the curriculum (OECD, 2012). Time on task is an important contributor to achievement. The content of the curriculum in which students spend time studying, “opportunity to learn”, has quite strong effects on learning (Tornroos, 2005; Wang, 1998). Teachers' Use of Instructional Time includes teachers' efforts to maximize teaching and learning time, create classroom Conditions that allow for an appropriate pace of instruction, and help students take charge of their own learning in age-appropriate ways. The total amount of “time actually devoted to instruction” has moderate effects on student learning (e.g., Bellei, 2009). Time on task is an important contributor to achievement.

Teacher Trust in Others. Common to most concepts of trust is one party's willingness to be vulnerable to another party, and has been defined by some to include the belief that the latter party is competent, reliable and consistent, benevolent, open, and honest (Tschannen-Moran & Hoy, 1998), or other conditions of relevance (Handford & Leithwood, 2013). Benevolence, as a component of trust in a world with many issues of power and difference, may be better recast as personal and professional regard for others (Handford & Scheck, in press; Bryk & Schneider, 2002; Freire, 1970). Teacher Trust in Others in this study includes Teacher Trust in colleagues, school administration, students and parents. This condition has been linked positively to school effectiveness (Goddard, Tschannen-Moran, & Hoy, 2001), school climate (Hoy et al., 2002; Tarter et al., 1989) and student achievement (Leithwood et al., 2010), even when socioeconomic status and other student demographics (prior achievement, school SES, race, and gender) are controlled (e.g., Goddard, 2013).

Teacher Commitment. Evidence has accumulated about four types of Teacher Commitment: commitment to teaching, to students, to the school organization, and to change. This study measured only Teacher Commitment to the school organization because evidence suggests this type of commitment is most closely associated with student learning. Organizational commitment is about an individual's strong belief in the organization, identification and involvement in the organization, and a strong desire to remain a part of the organization (Freeston,

1987; Leithwood et al., 1999; Porter et al., 1974). Connecting back to trust in others, trust in senior leadership was more strongly related to organizational commitment than trust in a supervisor was, while trust in the supervisor related more strongly to job performance than trust in senior leadership did (Dirks & Ferrin, 2002, p. 620).

Teacher Commitment contributes to teachers' instruction (Granger, et al., 2002; Hendel, 1995) and various student outcomes including moral growth (Williams, 1993) and academic achievements (Gill & Reynolds, 1999; Janisch & Johnson, 2003; Harvey, Sirna, & Houlihan, 1998; Housego, 1999).

Family Conditions

To reduce the complexity of analysis and reporting, results described later in this report treat Family Conditions in the aggregate. This aggregate condition, however, was measured in the study as consisting of three distinct components including parent expectations, forms of communication and social capital.

Parent Expectations for Children's Success at School and Beyond. This Condition is defined as "The degree to which a student's parents [hold] high expectations of the student's promise of achieving at high levels" (Jeynes, 2005, p 246). Personally-held and challenging but achievable goals (or expectations) are at the heart of most contemporary theories of human motivation (e.g., Bandura, 1986). Many people, whether children or adults, either rise or fall to the level of expectations that valued others have for them; their own goals and sense of confidence about what is possible for them are, to a great extent, socially constructed. Jeynes' (2005) meta-analysis identified "parental expectations", among all forms of parental involvement in school, as having the greatest impact on student achievement by a large margin; a significant effect size of .58 (p.253).

Forms of Communication between Parents and Children. Schools typically spend considerable effort on creating meaningful ways of communicating with parents (Epstein et al, 2002) such as school newsletters, curriculum nights at school, online messaging systems and the like. However, it is the forms of communication between parents and children in the home that has by far the largest effect on student success at school. Underlying most such communication is what the literature refers to as "parenting styles" (e.g., Jeynes, 2005). While it may seem presumptuous to view parenting styles as something schools might influence, the styles described in this literature are centrally defined by different approaches to communication between parents and their children. Creating effective parent/child communications necessarily entails clarifying with parents the advantages of adopting a supportive yet firm approach to interacting with their children, as compared with more extreme forms of either autocratic or laissez-faire approaches.

The more that parents and teachers share pertinent information with each other about students, the better equipped they are to help those students become successful. Parent and teacher consultation and collaboration create the climate for maximum realization of a student's potential (Davis, 2000; Epstein, 1995). Overt, direct discussions of parenting styles between parents and school staffs may go beyond the boundaries of what some parents will accept from schools and

what some school staffs will feel is a legitimate part of their role. However, schools can strive for parent engagement by tending to lead with their ears—listening to what parents think, dream, and worry about (Ferlazzo, 2011). The goal of family engagement is not to serve clients but to gain partners. So creating effective parent/child communications about school-related matters requires school staff to focus on how productive parenting styles are applied to obviously school-relevant issues (Leithwood & Patrician, 2015).

Parents' Social and Intellectual Capital about Schooling. This condition includes the power and information present in parents' social relationships that can be used to leverage additional resources helpful in furthering their children's success at school (Leithwood & Patrician, 2015). "The more people do for themselves, the larger community social capital will become, and the greater will be the dividends upon the social investment" (Ferlazzo, 2011, p.11). Parents' Intellectual Capital has been defined as the knowledge and capabilities of parents with the potential for collaborative action. Taken together, Parents Social and Intellectual Capital encompass parent engagement, involvement, and assistance in student learning and school activities. Parent engagement is nurtured when parents believe they should be involved in their children's education and schooling and have a positive sense of efficacy about the usefulness of their involvement (Hoover-Dempsey & Sandler, 1977, p.27).

Parent involvement in their children's learning is widely acknowledged as having a positive effect on student academic success (e.g. Fan & Chen, 2001; Harris, Andrew-Power & Goodall, 2009; Henderson & Mapp, 2002; Hoover-Dempsey et al, 2005; Mapp, 2002). While all students benefit from family involvement in education, the influence of parent engagement can mitigate differences in socioeconomic status (SES) and family background (Epstein & Dauber, 1991; Henderson and Mapp, 2002; Jeynes, 2005). Family participation is twice as predictive of students' academic success as family socioeconomic status (Bonci, Mottram, McCoy, & Cole, 2011). Some of the more intensive programs designed to encourage parent participation had effects that were 10 times greater than other relevant factors (Walberg, 1984).

2.4 Student Outcomes

Three sets of student outcomes served as dependent variables for the study, namely student achievement, student well-being and student engagement.

Student Achievement

Provincial data were used to estimate student achievement across each of the 21 districts in this study. Using results from the Foundation Skills Assessment, elementary student achievement was estimated for both Mathematics and Language in grades 4 and 7.² Secondary student achievement was estimated using results from grades 10 and 12 English tests; grade 10 math tests (both Foundations and Pre-calculus, as well as Apprenticeship and Workplace). District graduation rates

² *Foundation Skills Assessment* results were used for the study in the face of controversies in the province, at the time, about the validity and reliability of these results. We do not adopt a position in the controversies. But possible challenges to the reliability and validity of *Foundation Skills Assessment* data could be viewed as one limitation of the study.

were included, as well. A one-year score (the latest year for which data were available) and a five-year change score represented each of these indicators of achievement. Change scores eliminate most challenges to district comparisons based on SES, ethnicity and wealth, for example, without the use of many control variables (e.g., Linn, 2003).

Student Well-Being

Commonly defined as “the state of being happy, healthy or successful” (Merriam-Webster Dictionary, 2016), well-being is a disposition considered important to many disciplines and institutions. Conceptions of well-being in the literature vary from those that are holistic to those that are rooted in particular domains of human experience.

The Ministry of Education in British Columbia includes well-being in its explanation of the Core Competency ‘Personal awareness and responsibility’. According to the BC Curriculum, “Students who demonstrate personal awareness and responsibility demonstrate self-respect and express a sense of personal well-being” (BC Ministry of Education, retrieved 31 October 2017). The competency of well-being is described as “Students who are personally aware and responsible recognize how their decisions and actions affect their mental, physical, emotional, social, cognitive, and spiritual wellness, and take increasing responsibility for caring for themselves. They keep themselves healthy and physically active, manage stress, and express a sense of personal well-being. They make choices that contribute to their safety in their communities, including online interactions. They recognize the importance of happiness, and have strategies that help them find peace in challenging situations.” (BC Ministry of Education, nd)

At a school level, well-being can be about connection between the school and community. The BC Ministry of Education identifies that: “School connectedness is about creating a school community where everyone feels cared for - safe, seen, heard, supported and significant. The focus is building strong positive relationships between students, staff, families and the larger community”, and cites documents such as BC’s School Connectedness: Creating Trusting and Caring Relationships, which ends with this quote from Carl Jung:

One looks back with appreciation to the brilliant teachers, but with gratitude to those who touched our human feelings. The curriculum is so much necessary raw material, but warmth is the vital element for the growing plant and for the soul of the child.

The OECD provides another example of a holistic definition of (subjective) well-being:

good mental states, including all of the various evaluations, positive and negative, that people make of their lives and the affective reactions of people to their experiences (OECD, 2013).

This study adopted a subjective, conception and measure of student well-being that takes account of both the academic press for achievement and the social support needed by students to

be successful at school. This approach is justified for our research purposes by both practical and theoretical considerations.

Practically, the scope of the study has restricted our choice of evidence to what is available from existing sources (BC's annual student attitude survey). We have had neither the opportunity nor the resources to collect original data about student well-being. Among the categories of well-being identified in the literature, subjective, domain-specific satisfaction with some reflection of "functionality" (explained below) comes closest to the form of well-being that can be measured using existing evidence to which we have access.

Although limitations in the evidence available to us have constrained our choices about how to measure well-being in this study, there are sound theoretical justifications for the approach we have adopted. These justifications include (a) the instability or inconsistency of well-being states and dispositions across domains of lived experience, (b) the salience of demands for institutional responsibility and accountability, and (c) the social support and safety required if students are to be successful at school (e.g., Lee & Smith, 1999).

Instability of a Sense of Well-Being Across Domains of Human Experience. Most holistic conceptions of well-being provide additional specification through the identification of "dimensions" of well-being as, for example, the cognitive, emotional, social and physical dimensions outlined in BC's well-being strategy, and Fraillon's (2004) distinction between "intrapersonal" and "interpersonal" dimensions of well-being.

These dimensions notwithstanding, a fundamental, although often unacknowledged, assumption underlying holistic conceptions of well-being is that well-being is a relatively stable state or disposition across the many contexts of peoples' lives. This assumption, however, is inconsistent with OECD's (2013) position on subjective well-being, as well as most people's common experiences. For example, one may experience, at the same time, different levels of well-being physically, socially and cognitively, although there is likely to be some leakage in one's sense of well-being across such states.

Our choice of a sector or domain-specific subjective conception of well-being acknowledges these widely experienced inconsistencies. It is at its' least a defensible, school-relevant response to OECD's recommendation that "All of these aspects of subjective well-being should be measured separately to derive a more comprehensive measure of people's quality of life and allow a better understanding of its determinants..." (2013, p. 10-11).

Schools' Institutional Responsibility and Accountability. A second justification for adopting a sector or domain-specific conception of well-being is rooted in concerns about the scope of schools' institutional responsibility and accountability. Many other public sectors also are responsible for the well-being of children as, for example, health, social services, and community safety. While acknowledging interdependences among different forms of well-being (referred to as "leakage" above), many public-sector institutions, like schools, have primary responsibility for

domain-specific forms of well-being (e.g., physical well-being, social well-being, mental well-being).

The family is one of the very few social institutions responsible for domain-general or 'holistic' conceptions of children's well-being. Public sector institutions with responsibilities for the well-being of their clients are held accountable for, and typically measure, how well their services contribute to well-being in the relation to their specific responsibilities. We argue that schools should do the same, even if they chose to adopt a broader set of responsibilities and accountabilities.

Justification for this argument reflects Fraillon's (2004) important analysis of well-being for the Australian Government aimed at the provision of a measurement model. Fraillon argued that conceptions of well-being should acknowledge the context in which responsibility and accountability for nurturing well-being is exercised. Student well-being should focus on those elements of well-being that are susceptible to school interventions:

An operational measurement model of student well-being will refer to student well-being in the school community where the school community is defined as: *the cohesive group with a shared purpose that is centred around a school.*

The overarching definition of student well-being for the operational measurement model [described in his report] is that student well-being is: the degree to which a student is functioning effectively in the school community. (p. 26)

Academic Achievement as the Primary Mission of Public Schooling. Fraillon's two recommendations narrow the focus of student well-being to the "school community". Louis, Murphy and Smylie (2016) argue, "Ambitious aspirations for student learning require both a strong sense of academic press and a powerful sense of community for students, teachers, and families" (p. 311). Students learn best in supportive environments characterized by a disposition on the part of adults to care for students, and to ensure their safety and security (Christle, Jolivet & Nelson, 2005; Reynolds et al., 2014; Shouse, 1996; Willms and Ma 2004). So, we conceptualize students' sense of well-being as including students:

- feeling able to cope well with the academic demands of the school curriculum;
- believing that adults in the school care about them; and
- believing that the school environment is safe and secure.

Scales used in this project to measure student well-being incorporate items found in the Province's attitude survey used by all districts.

Student Engagement

Student engagement in school refers to the “the attention, investment and effort students expend in the work of school” (Marks, 2000, p.155). This includes such obvious behaviors as attending classes, following teacher directions, doing school assignments and the like (Finn & Zlzimmer, 2012). Christenson et al, (2012) provide three compelling arguments for why student engagement should be considered a central outcome in assessments of both school and district effects. Student engagement:

- is a central explanation for high school dropout and graduation;
- is positively associated with students’ academic, social and emotional learning;
- engaged students, furthermore, exercise effort and persistence in their own learning and self-regulate that learning.

Student engagement is widely considered a multi-dimensional state. Behavioral manifestations of engagement include persistence, effort and attention, for example, while emotional manifestations of engagement include such things as interest in school and pride in success (Finn & Zimmer, 2012). Cognitive engagement encompasses the intentional use of learning strategies (Wolters & Taylor, 2012) while social engagement is evident in students’ participation in extracurricular activities and the development of friendships at school (e.g., Fredricks, Blumenfeld, & Paris, 2004; Fredricks & McColskey, 2011).

The scope of this study limited our measure of both student well-being and student engagement to those dimensions for which data were readily available, and results of the Provinces’ student attitude survey administered annually.

3. Methods

3.1 Overview

This was a mixed-methods study including the collection and analysis of survey and student outcome data to answer seven questions addressed by the research, along with interview data used to answer the eighth and final question (Wei & Lin, 2017). Mixed methods research combines features of both quantitative and qualitative methods helping to overcome the limitations of each and adding both depth and breadth of understanding (Johnson, et al, 2007) to what is possible with the use of only quantitative or qualitative methods. This study used mixed methods research to expand understandings about both the characteristics of districts making exceptionally effective and equitable contributions to the cognitive and emotional lives of students (Greene & Caracelli, 1997).

3.2 Measures

Quantitative Measures

Quantitative data for the study were collected using two surveys of district and school leaders along with measures of student achievement (described above), student well-being and student engagement.

Surveys Two surveys were administered, the first in the fall of 2016, the second in the winter of 2017. This data collection often occurred during a regularly scheduled meeting of district and school administrators. Attendees were divided into two groups. One group, including only principals and vice-principals, responded on-line to the *Leading and Teaching in Schools Survey*. The second group, including both district and school-level administrators, responded on-line to the *BC District Survey*. Both surveys were adaptations of instruments that had been used in previous studies and each required about 15 minutes to complete.

The *BC District Survey* was adapted from an instrument used in an earlier study on which this study built (Leithwood, 2010; Leithwood & Azah, 2016). This survey includes 94 items measuring each of the nine district characteristics identified in the study framework. The 95-item *Leading and Teaching in Schools Survey*, adapted from its use in studies recently carried out in both Ontario³ and Texas⁴, measured each of the 12 school, classroom and family conditions identified in the study framework. A unique measure of school leadership, based directly on the BCPVP Association's leadership framework, was developed for this survey.

Results from earlier uses of both surveys reported scale reliabilities exceeding the commonly acceptable norm of about .70 (Nunnery & Bernstein, 1994) by a wide margin.

Student Well-Being. The survey used in this study asked students about their subjective sense of well-being (our interpretation) in both language and math. Using two well-being distinctions identified by OECD, these measures reflect student's "affect" or feelings ("I like"), as

³ This work was part of the *Leading Student Achievement: Networks for Learning* project annual evaluations.

⁴ Leithwood & Sun, 2016.

well as their sense of flourishing - a “focus on functioning and the realization of the persons’ potential” (p. 31) - reflected in the phrases, for example, “I am getting better at”:

- Do you like school?
- Do you like what you are learning at school? (Grades 3/4, 7)
- Are you satisfied with what you are learning at school? (Grades 10, 12)
- Are you getting better at math? (Grades 3/4, 7)
- Are you getting better at reading?
- Are you getting better at writing sentences or stories? (Grades 3/4)
- Are you getting better at writing? (Grades 7, 10, 12)

Feelings about Adult Care

- How many adults at your school care about you? (percentage responding 2 adults or more)
- Do you feel welcome at your school?
- Do adults in the school treat all students fairly? (Grades 3/4, 7)
- Does staff treat all students fairly at school? (Grades 10, 12)

Feelings about Safety and Security at School

- At school, are you bullied, teased, or picked on?
- Do you feel safe at school?
- At school, are you learning about how to stay healthy?
- Do the teachers and staff at your school support healthy behaviour?
- At school, do you get exercise (for example, physical activity or sports)?

Student Engagement. Student engagement was estimated using scales measuring cognitive, behavioral and social engagement. The scale measuring cognitive engagement includes only three items that weakly reflect the use of intentional strategies for learning:

- Do you try to do your best at school?
- Are you aware of the school goals for improving student learning?
- Do you know how your school expects students to behave?

The remaining four items in the scale are similar to several items found in the University of Minnesota’s Student Engagement Instrument (Fredricks & McClosky, 2011), about the relevance of school work:

- Does your school offer the course choices you need to meet your education goals? (Grades 10, 12)
- Are you satisfied that school is preparing you for a job in the future? (Grades 10, 12)
- Are you satisfied that school is preparing you for post-secondary education (for example, college, university, trade school)? (Grades 10, 12)
- At school, do you have opportunities to work on things you are interested in as part of your coursework? (Grades 7, 10, 12)

Two items from the province's student attitude survey touch on behavioral and social engagement respectively. The behavioral engagement item is about students interacting in the home with parents:

- Do your parents help you with your learning? (Grades 3/4, 7); Are your parents involved with your learning? (Grades 10, 12)

The social engagement item is about extracurricular activity:

- At school, do you participate in activities outside of class hours (for example, clubs, dance, sports teams, music)?

Only single items are available to assess these two forms of engagement and these items do not touch on many common behaviors associated with engagement in classroom and school settings. Nonetheless, a growing body of evidence points to the significant contribution made to student success at school by what these two items do measure - many forms of student/ parent engagement in the home (e.g., Jeynes, 2005) and extracurricular participation (Hee Im, Qian, & Oi-man Kwok, 2016; Morris, 2016).

Qualitative Measure

The interview protocol used in the study consisted of a brief overview of the study and the purpose for the interview followed by 10 sets of questions. The first question was a broad and largely open-ended about what respondents' districts had done in the past year that was most and least helpful for respondents and their staffs. Each of the remaining nine sets of questions was about the status, in the respondent's district, of one of the nine district characteristics included in the study framework, along with perceptions of what about each of these characteristics influenced (positively or negatively) the improvement efforts in respondents' schools.

3.3 Samples

Quantitative

The unit of analysis for this study was the district. BC's publicly-funded school system includes 60 districts of which 21 provided sufficient numbers of responses to be included in the study, a 35% response rate. Across the 21 participating districts, 610 school administrators responded to the *Leading and Teaching in Schools Survey* (an average of 29 respondents for each district) while 388 district and school administrators responded to the *BC District Survey* (an average of 18 respondents for each district).

This sample of 21 districts did not include many of the province's largest districts, especially those in the lower mainland. The effects of such a restricted sample is difficult to know but does represent a limitation of the study. It does seem clear, however, that the mean response to several of the nine district Characteristics would likely would have been different with a more representative sample of districts. For example, responses to the features of Professional Leadership depend on districts having relatively formal and codified procedures for attracting, recruiting, selecting and developing leaders at all levels, something much more likely and more necessary in small as compared with large districts.

To qualify for inclusion in the quantitative portion of the study, the number of responses to each of the two surveys from a district had to closely approach the number required to be statistically representative at the .05 level of probability. This number, determined by using one of the many on-line sample size calculators, varied from one district to another, reflecting differences in the population of potential respondents in each district. Close approximations to the ideal size were accepted to retain as much data as possible but responses from nine districts agreeing to be part of the study failed to meet our flexible criterion.

Qualitative

Principals and vice-principals were randomly selected for interviews from districts volunteering to be participate in response to a series of request from the project advisory committee as well as the researchers directly. A total of 37 interviews were conducted by phone, averaging about one hour in length.

3.4 Analysis

Quantitative Analysis

Because the unit of analysis for the study was the district, the sample size for purposes of statistical analysis is quite small (21) and precludes the use of some of the more powerful techniques for estimating causal relationships among variables in studies using non-experimental designs. Analysis of the quantitative data included the calculation of scale reliabilities along with means and standard deviations of both scales and individual survey items.

Correlations (Pearson Product) along with standard tests of statistical significance were used to assess the strength of direct linear relationships among variables (e.g., the relationship between district Characteristics and all four sets of student outcomes). Both variability and (indirectly) sample size can influence the size of correlations and these factors influence the interpretation of results in this study. Appendix A provides further information about the limitations of these analyses.

A relatively new method, the calculation of “Power Indices” (first published in Sun and Leithwood, 2016) was used to estimate indirect relationships, for example, the relationship between district Characteristics and student outcomes, mediated by school, classroom and family Conditions). This method entails the combination of correlations among three sets of variables, as is illustrated in the report of results below. For this study, Power Indices were used instead of regression analysis, in part, because they require little statistical background to interpret. More technical information about Power Indices can be found in Appendix A. The strength of Power Indices was interpreted using common “rules of thumb” applied to Effect Size (ES) statistics: .10, .30, and .50 are interpreted to be small, medium, and large effect sizes respectively (Cohen, 1988; Hattie, 2009).

The strength of causal claims based on correlational evidence depends, in large part, on the quality of underlying theory and/or previous evidence. The framework for the study is relatively

robust for this purpose. The nine District characteristics were derived from extensive literature reviews and each characteristic reflects one or more social science theories. A 2010 Ontario study, replicated and extended by the current study, provided evidence of the effects of these characteristics on student achievement. Each of the twelve school, classroom and family conditions serving as mediators of district effects has been the subject of varied and quite extensive research demonstrating effects on several different types of student outcomes. While correlations and Power Indices are relatively weak methods for testing causal claims, the theory and evidence on which the framework guiding this study was based is relatively robust. On this basis we have used causal language when reporting results in subsequent sections of this report.

Qualitative Analysis

Qualitative research involved large swaths of context-relevant conversation being used to determine results. Digital voice recordings were made of the 37 hour-long individual interview responses. These recordings were transcribed and then summarized in tabular form including a precis of response to each of the interview questions. Quotes are then used as sample statements that serve to illuminate the general thinking in a code that appears to be significant. Representative quotations cited are just that - representative. The 10 sets of interview questions provided the first set of coding categories; these questions asked about the status of each of the nine districts Characteristics included in the study framework along with interviewee perceptions about the contributions (positive or negative) each characteristic made to improvement efforts in interviewees' schools. Axial or thematic coding was then conducted with interview responses about each district characteristic to identify key ideas about the status of district practices and their value for the work of school leaders. These data were then summarized in the results section of this report responding to question 10, "How do school leaders understand the work of their districts and its helpfulness to them?".

4. Results

This section of the report uses data from the study to answer the seven questions described in the first section. Quantitative data were used to answer the first seven questions and qualitative data were used to answer the eighth. Detailed responses to the first seven questions typically include tables summarizing relevant data. The unit of analysis in each of these tables is the district (N =21).

The purposes, design and many of the measures used in this study are similar to those used in a parallel study undertaken in Ontario using a sample of 45 districts. Throughout the reporting of results in this section, comparisons are made to results from the Ontario study (Appendix E).

1. On average, how well developed are BC school districts?

Appendix B reports the means (on a 4-point scale) and standard deviations for responses to all items included in the *BC District Survey*. Table 1 summarizes these results and reports the reliabilities (Cronbach alpha) of scales measuring all nine district Characteristics, as well as the number of items included in each scale. Two variables, central office staff relations and relationships with local community groups, were measured with just one item so reliability cannot be reported.

All scales in this survey except the Relationships scale, exceeded the commonly agreed on acceptable standard for reliability of .70 (Nunnery & Bernstein, 1994) by a significant margin. The Relationships scale is an aggregate of scales measuring, separately, relationships among district leaders, between district and school staffs, relationships with parents and relationships with community groups. The low reliability of this aggregate scale likely means that these different sets of relationships are not well aligned (some can be weak while others are strong).

Each of the nine district characteristics received mean ratings above the mid-point on the 4-point response scale. Highest ratings were awarded to Mission, Vision and Goals (m = 3.12) and Extent of District Alignment (m = 3.00). Lowest rated was Uses of Evidence (m = 2.48). Standard deviations for all characteristics were relatively small indicating considerable uniformity in ratings among respondents. An exploratory factor analysis (details not reported) conducted on this instrument found that all items loaded on nine factors and almost all items conceptually associated with each district characteristic loaded as expected.

In sum, all nine district characteristics are at least moderately well developed in the province's school districts at present. Three of the nine characteristics are especially well developed - Mission, Vision and Goals for Students, Extent of Alignment and Coherent Instructional Programs. While Uses of Evidence is rated the least well- developed of the nine characteristics, there is also more variation (a larger standard deviation) in responses to this characteristic than all but one of the others (Elected Leadership).

Results of the parallel Ontario study identified the same three characteristics as the best developed in the province whereas, in Ontario, Learning-oriented Improvement Processes was the least well developed.

Table 1
The Status of District Characteristics in BC
*BC District Survey (4-point scale)**

	Mean	SD	SR	N
District Characteristics Aggregate	2.81	.29	.91	9
Mission, Vision and Goals	3.12	.33	.91	11
Coherent Instructional Program	2.95	.30	.86	7
Uses of Evidence	2.48	.44	.94	12
Professional Development	2.63	.32	.92	11
Professional Leadership	2.58	.38	.91	11
Extent of District's Alignment	3.00	.42	.80	4
Elected Leadership	2.74	.44	.93	9
Organizational Improvement Processes	2.62	.34	.93	12
Relationships (aggregate)	2.80	.26	.52	5

*Mean, Standard Deviation (SD), Scale Reliability (SR) and Number of Items (N) in Scale

2. On average, how well developed are those conditions in schools, classrooms and families prior research indicates make significant contributions to student success?

Appendix C reports the means (on a 5-point scale) and standard deviations for responses to all items included in the *BC Leading and Teaching in Schools Survey*. Table 2 summarizes these results and reports the reliabilities (Cronbach alpha) of all scales and the number of items included in each scale. All scales on this survey exceed the commonly agreed on acceptable standard for reliability (p. 70).

The 12 variables measured by this survey all received mean ratings well above the mid-point on the 5-point response scale. Highest ratings were awarded to Safe and Orderly Environment (m = 4.21) and the aggregate measure of School Leadership (4.02); lowest rated were Classroom Instruction (m = 3.52) and Organization of Planning and Instructional Time (m = 3.57). Similar to the results of the district survey, all standard deviations were relatively small indicating considerable uniformity in ratings among respondents.

Results of an exploratory factor analysis (details not tabled) conducted on items in this survey closely reflected the conception of variables on which the instrument was developed for half of the 12 variables, while the distribution of items measuring the remaining 6 variables were not readily interpretable. Given the relatively high reliabilities of all 12 scales, subsequent analyses retained the original conception of item assignment.

In sum, all school, classroom and family conditions measured by the survey are at least moderately well-developed in the province's schools. Safe and Orderly Environments (4.21) and School Leadership (4.02) are the most fully developed while Classroom Instruction (3.52) and Organization of Planning and Instructional Time (3.57) are least well developed. There is

significant agreement among respondents about these results, although more variation in responses to the two less well-developed conditions than nine of the remaining 10.

Results of the parallel Ontario study are notably similar. The best-developed condition in that province was also Safe and Orderly Environment with School Leadership ranking third, just below Teacher Commitment. The two least well-developed Conditions in Ontario were the same as those in BC.

Table 2

The Status of School, Classroom and Family Conditions in BC Schools
*Leading and Teaching in Schools Survey (5-point scale)**

	Mean	SD	SR	N
Conditions Aggregate	3.71	.17	.90	3
School Conditions	3.74	.15	.68	7
School Leadership	4.02	.15	.85	4
<i>Moral Stewardship</i>	4.30	.16	.82	6
<i>Instructional Leadership</i>	3.69	.18	.84	8
<i>Relational Leadership</i>	4.20	.14	.90	12
<i>Organizational Leadership</i>	3.90	.25	.84	7
Academic Emphasis	3.70	.18	.79	5
Disciplinary Climate	3.78	.19	.74	4
Collective Teach. Efficacy	3.91	.19	.84	5
Organization of Planning & Instructional Time	3.57	.28	.73	4
Safe and Orderly Environment	4.21	.15	.78	6
Collaborative Cultures and Structures	3.62	.23	.88	9
Classroom Conditions	3.78	.15	.77	4
Classroom Instruction	3.52	.24	.87	8
Uses of Instructional Time	3.66	.17	.83	6
Teacher Commitment	3.96	.18	.90	6
Teacher Trust in Others	3.99	.19	.71	4
Family Conditions	3.61	.25	.84	5

*Mean, Standard Deviation (SD), Scale Reliability (SR) and Number of Items (N) in Scale

3. Do those Conditions in schools, classrooms and families identified in prior research as making significant contributions to student success have comparable effects in BC districts?

This question explores whether the 12 school, classroom and family conditions included in this study warrant the improvement efforts of school and district leaders. Tables 3 and 4 report results about this question as it is related to math (Table 3) and language (Table 4) performance, while Tables 5, 6 and 7 report results related to student well-being and engagement.

Statistically significant relationships are noted with symbols in this and subsequent tables of correlations as follows: ** = significant at $p < .01$; * = significant at $p < .05$; + = significant at

$p < .10$. While results at the $p < .10$ level of significance are typically considered weak, the restricted nature of the sample for the study risks overlooking results which, in combination with other research, might be worth attention.

Math and Language Achievement. Table 3 reports correlations between two measures of math and language achievement in Grades 4 and 7, a one-year measure and a five-year change measure.

Table 3
Relationships Between Conditions and Grades 4 & 7 Language and Math Achievement

	Grade 4				Grade 7			
	Language		Math		Language		Math	
	2016	Chg	2016	Chg	2016	Chg	2016	Chg
Conditions Aggregate	.35	.17	.20	.41+	.10	-.12	.25	-.14
School Conditions	.38+	.10	.28	.40+	.14	-.11	.27	-.12
School Leadership	.37+	.15	.11	.10	.04	-.34	.32	-.25
<i>Moral</i>	.39+	.40+	-.10	-.16	.04	.00	.38+	-.29
<i>Instructional</i>	.33	-.08	.29	.25	.10	.01	.14	.02
<i>Relational</i>	.31	-.19	.25	.13	.23	-.29	.30	-.26
<i>Organizational</i>	.21	.26	-.02	.08	-.15	-.36	.26	-.27
Academic Emphasis	.32	.00	.18	.29	.12	.01	.28	.00
Disciplinary Climate	.01	-.35	.16	-.26	.06	-.21	-.06	-.14
Collective Teaching Efficacy	-.01	-.32	.31	.09	.19	.13	.05	.05
Organization of Planning	.47*	-.12	.60**	.24	.43*	.11	.19	-.05
Safe & Orderly Environment	.30	-.19	.34	.11	.02	-.30	.24	.03
Collab Culture & Structures	.21	-.16	.45*	.36	.10	.24	.19	.29
Classroom Conditions	.22	-.04	.26	.26	.10	-.11	.26	-.12
Classroom Instruction	.18	.11	.06	.24	-.06	-.20	.29	-.20
Use of Instructional Time	.29	-.10	.31	.10	.29	-.09	.37+	-.15
Teacher Trust	.17	-.18	.31	.15	.24	-.02	.04	-.03
Teacher Commitment	.04	.00	.18	.31	-.09	.02	.10	.05
Family Conditions	.37	.33	.09	.45*	.07	-.12	.21	-.14

Legend: ** $p < .01$; * $p < .05$; + $p < .10$

Similar to results in the parallel Ontario study, there are no significant relationships in Table 3 with the five-year change measures except for the relationship between Family Conditions and Grade 4 math achievement (.45). The primary reason many of the negative correlations with five-year change scores in this and most of the subsequent tables is the negative direction of many of these change scores; that is, the scores declined rather than increased over five years and, as a result, our discussion is focused disproportionately on one-year scores.⁵

⁵ BC experienced the longest teacher-strike in its history in the middle of this data. It is well-known that the loss of instructional time, as well as the loss of focus that is an indirect result of workplace action, comes at a cost that is far greater than the period of a six or ten week strike, which is, in itself, very long. Moving a province in and out of strike action is roughly a three-year disruption. On top of this, BC chose to implement a K-12 curriculum revision in all subject areas during this time.

Organization of Planning and Instructional Time is significantly related to one-year (2016) measures of grade 4 language (.47) and math (.60) achievement, as well as grade 7 language achievement (.43). School leadership (aggregate) is weakly but significantly related to grade 4 math achievement (.37).

The secondary achievement results reported in Table 4 indicate that Grade 10 Math (Apprenticeship and Workplace) achievement is particularly sensitive to the Conditions – the Conditions in aggregate (.48), as well as those in the school as a whole (.49) and the classroom as a whole (.46). Among the School Conditions, this set of student outcomes is significantly related to School Leadership (.40), Safe and Orderly Environments (.38) and especially Collaborative Cultures and Structures (.62).

Among the four Classroom Conditions, Teacher Commitment (.58) and Classroom Instruction (.51) make significant contributions, while Family Conditions, in aggregate, also have a significant relationship (.42) with Grade 10 Workplace and Apprenticeship performance.

Student Well-Being. Table 5 shows the relationships between the 12 Conditions and student well-being in grades 4, 7, 10 and 12, as well as across all four grades combined. Grade 4 student well-being is clearly more sensitive to the Conditions than well-being in the other grades; it is significantly influenced by School Leadership (.52), Uses of Instructional Time (.49), Teacher Trust in Others (.46), Academic Emphasis (.47) and Classroom Instruction (.38).. As the Combined column (far right) indicates, student well-being across the grades is significantly related to Academic Emphasis (.52), Collective Teacher Efficacy (.47), Uses of Instructional Time (.48) and Teacher Trust in Others (.46).

Grade 10 well-being is responsive to three of the Conditions: Academic Emphasis (.38), Collective Teacher Efficacy (.39) and Teacher Trust in Others (.46).

Table 4
Relationships between Conditions and High School
English and Math Achievement as well as Graduation Rates

	Grade 10 & 12		Grade 10				Graduation Rate	
	English		F&P ¹		W&A ²		Math	
	2016	Chg	2016	Chg	2016	Chg	2016	Chg
Conditions Aggregate	-.11	-.16	-.02	-.18	.48*	.28	.06	-.10
School Conditions	-.03	-.17	.09	-.11	.49*	.29	.12	-.04
School Leadership	-.08	-.34	.08	-.11	.40+	.42+	.31	.25
<i>Moral Stewardship</i>	.02	.05	-.01	-.02	.16	.25	.01	-.02
<i>Instructional Leadership</i>	-.18	-.30	.10	-.06	.37+	.39+	.39+	.32
<i>Relational Leadership</i>	.04	-.42+	.23	-.05	.47*	.50*	.54*	.37+
<i>Organizational Leadership</i>	-.10	-.40+	.00	-.17	.32	.28	.14	.17
Academic Emphasis	-.01	-.34	.20	-.02	.31	.36	.26	.12
Disciplinary Climate	.62**	.23	.38	.08	-.09	-.29	.11	-.09
Collective Teaching Efficacy	.31	.00	.30	-.02	.24	.05	.07	-.03
Organization of Planning	.23	-.03	.43+	.23	-.04	-.11	.34	.26
Safe & Orderly Environment	.13	-.04	.34	.29	.38+	.45*	.42+	.39+
Collab Culture & Structures	.04	-.20	.33	.31	.62**	.54*	.11	.04
Classroom Conditions	.03	-.29	.14	-.14	.46*	.29	.09	-.02
Classroom Instruction	-.25	-.48*	-.03	-.23	.51*	.43*	.05	.03
Use of Instructional Time	.27	-.20	.33	.01	.24	.24	.27	.14
Teacher Trust in Others	.33	.07	.24	-.02	.07	-.16	.08	-.09
Teacher Commitment	-.18	-.22	-.07	-.15	.58**	.35	-.13	-.03
Family Conditions	-.22	-.05	-.18	-.23	.42+	.22	-.01	-.17

¹ Mathematics: Foundations and Pre-calculus.

² Mathematics: Workplace and Apprenticeship.

Legend: **p<.01; *p<.05; +p<.10

Collective Teacher Efficacy has significant effects on the well-being of Grade 7 and 10 students (.47, .39), while Teacher Trust in Others has the greatest influence on the well-being of Grade 10 students. None of the 12 Conditions has even weakly significant relationships with the well-being of Grade 12 students.

Results for all but Grade 12 are similar to, although weaker than, the Ontario results highlighting the importance of Academic Emphasis, School Leadership and Collective Teacher Efficacy, in particular.

Table 5
Relationships between Conditions and Student Well-being

	Grade 4	Grade 7	Grade 10	Grade 12	Combined
Conditions Aggregate	.39	-.02	.07	-.15	.10
School Conditions	.41*	.01	.11	-.13	.14
School Leadership	.52*	-.19	-.17	-.15	-.05
<i>Moral Stewardship</i>	.66**	-.15	-.24	-.26	-.07
<i>Instructional Leadership</i>	.17	-.10	-.17	-.10	-.12
<i>Relational Leadership</i>	.45*	.10	.01	.02	.22
<i>Organizational Leadership</i>	.45*	-.35	-.13	-.13	-.12
Academic Emphasis	.47*	.16	.38+	.19	.52*
Disciplinary Climate	.24	.12	.29	-.09	.25
Collective Teach. Efficacy	.17	.47*	.39+	.01	.47*
Organization of Plan & Inst.	.00	.02	.08	-.10	.01
Safe & Orderly Environment	.19	.02	-.02	-.08	.03
Collaborative Cultures & Structures	.12	-.01	.02	.13	.11
Classroom Conditions	.39+	.18	.15	-.10	.26
Classroom Instruction	.38+	.05	-.09	-.19	.02
Uses of Instructional Time	.49*	.25	.29	.09	.48*
Teacher Commitment	.13	-.02	-.14	-.20	-.12
Teacher Trust in Others	.21	.32	.46*	.02	.46*
Family Conditions	.33	-.17	.00	-.18	-.04

Legend: **p<.01; *p<.05; +p<.10

Student Engagement. Table 6 identifies the relationships between each of the 12 Conditions and Student Engagement in Grades 4 and 7. While separate correlations are provided for measures of Cognitive and Behavioral/Social Engagement, we limit our discussion to the correlations for the combined scores (data in columns 3 and 6). Grade 4 student engagement is significantly related to four of the Conditions: Disciplinary Climate (.48), Collective Teacher Efficacy (.43), Safe and Orderly Environments (.50) and Uses of Instructional Time (.42). Grade 7 engagement is significantly related to only two conditions: Collective Teacher Efficacy (.43) and Teacher Trust in Others (.43).

Ontario results also point to the significant influence of Collective Teacher Efficacy and Teacher Trust, among five other Conditions not identified in these BC results. While similar evidence is available for engagement among students in Grades 10 and 12, it is not tabled because there were no significant relationships.

Table 6
Relationships between Conditions and Grades 4 & 7 Student Engagement

	Grade 4			Grade 7		
	Cog	Behav	Comb	Cog	Behav	Comb
Conditions Aggregate	.07	.12	.12	.15	.29	.31
School Conditions	.18	.18	.21	.16	.25	.28
School Leadership	.27	.28	.32	-.11	.10	.03
<i>Moral Stewardship</i>	.12	.32	.29	.03	.22	.19
<i>Instructional Leadership</i>	.40+	.03	.18	.02	-.08	-.06
<i>Relational Leadership</i>	.45*	.31	.42+	.11	.23	-.06
<i>Organizational Leadership</i>	.02	.26	.21	-.37+	.03	-.06
Academic Emphasis	.22	.10	.16	.28	.05	.18
Disciplinary Climate	.32	.47*	.48*	.16	.18	.23
Collective Teach. Efficacy	.40+	.35	.43+	.37+	.03	-.06
Organization of Plan & Inst.	.37+	.06	.19	-.01	-.22	.43+
Safe & Orderly Environment	.49*	.40+	.50*	.02	-.17	-.14
Collaborative Cultures & Strct.	.44	.18	.31	-.04	-.14	-.14
Classroom Conditions	.22	.29	.31	.16	.31	.33
Classroom Instruction	.03	.17	.14	-.04	.31	.23
Uses of Instructional Time	.37+	.35+	.42+	.21	.19	.26
Teacher Commitment	.10	.14	.15	-.09	.19	.11
Teacher Trust in Others	.24	.25	.28	.44*	.25	.43+
Family Conditions	-.09	-.04	-.06	.12	.27	.28

Legend: **p<.01; *p<.05; +p<.10

In response to the question about the effects of the 12 Conditions on student outcomes posed in this section of the report, the overall answer is a guarded ‘yes.’ All Conditions are significantly related to at least one of the cognitive or socio-emotional outcomes measured in the study and several of these Conditions have significant relationships with considerably more than just one outcome measure; collective teacher efficacy and academic emphasis seem especially pervasive. Results of the parallel Ontario study also provide an affirmative, but much less guarded, answer to this question.

4. How large are the direct and indirect effects of School Leadership on student cognitive and socio-emotional outcomes?

Direct Effects of School Leadership on Student Outcomes⁶

Table 3-6, above, report the direct effects of School Leadership on the four sets of student outcomes measured by the study. In sum, and focusing on the one-year measures of these outcomes only, School Leadership has:

- Weak but significant relationships with Grade 4 Math (.37)
- Significant relationships with Grade 10 Math: Workplace and Apprenticeship (.40).
- Significant relationships with Grade 4 student well-being (.52)

Most studies of the direct effects of School Leadership report small but significant effects on student achievement. Leadership effects are generally considered to be indirect, that is, through the effects on mediating variables, the Conditions measured in this study, for example. Such indirect effects for this study are reported below. However, the parallel study carried out in Ontario reported direct School Leadership effects (all statistically significant) as follows:

...correlations of .50 for Language, .55 for Academic Math, .21 for Applied Math, .49 for the aggregate Well-Being Measure and .60 for the aggregate Student Engagement measure. These results indicate that the direct effects of School Leadership rank at approximately the mid-point among all 12 Conditions for Language, Academic Math (6 Conditions have weaker effects) and Applied Math (5 Conditions have weaker effects). The direct effects of School Leadership on student well-being are stronger than all other Conditions except Academic Emphasis (.49 compared to .56) and the strongest of the Conditions for student engagement (Leithwood & McCullough, 2017, page 55).

We can only speculate on why the direct effects of School Leadership on student outcomes are much weaker in this study, as compared with the parallel Ontario study. One reason might be the differences in the frameworks on which the BC and Ontario measures of School Leadership were based, along with the measures themselves. A second reason might be differences in the sample sizes for each study, 21 districts in BC and 45 districts in Ontario. Other possibilities exist, of course, but we will not speculate about these.

School Leadership Effects on School, Classroom and Family Conditions

Table 8 reports correlations between School Leadership (aggregate), as well as each of the four dimensions of school leadership separately, and each of the remaining 11 school, classroom and family Conditions.

⁶The term “direct” effects refers to the calculation of correlations which included only school leadership and each of the student outcomes measured. Such calculations do not take into account the effects of school leaders on students through their effects on other features of the schools which influence student outcomes (the school, classroom and family Conditions included in this study, for example).

As the first column of correlations indicates, the aggregate measure of School Leadership is significantly related to 7 of the 11 Conditions: Academic Emphasis (.63), Safe and Orderly Environments (.58), Collaborative Structures and Cultures (.49), Classroom Instruction (.70), Uses of Instructional Time (.56), Teacher Commitment (.43) and Family Educational Culture (.58). Among the four dimensions of School Leadership, Instructional Leadership has significant relationships with 7 Conditions, Relational and Organizational Leadership with 5 Conditions each. Moral Leadership is significantly related to only Family Conditions (.44).

School Leadership, in sum, makes significant contributions to the majority of school, classrooms and family Conditions identified by a substantial body of prior research as having direct effects on student success at school. These effects are a function of the Instructional dimension of leadership followed closely by both the Relational and Organizational dimensions of leadership.

Table 8
Relationships between School Leadership and
Classroom, School & Family Conditions

	Dimensions of School Leadership				
	Aggr	Moral	Inst	Relat	Organiz
School Conditions					
Academic Emphasis	.63**	.29	.55**	.57**	.59**
Disciplinary Climate	.01	.04	-.13	.18	-.01
Collective Teach. Efficacy	.03	-.28	.13	.41	-.07
Organization of Plan & Inst.	.33	.15	.50*	.17	.24
Safe & Orderly Environment	.58**	.34	.55**	.56**	.46*
Collaborative Cultures & Strct.	.49*	.09	.64**	.51*	.37
Classroom Conditions					
Classroom Instruction	.70**	.33	.64**	.65**	.64**
Uses of Instructional Time	.56**	.25	.42	.69**	.50*
Teacher Commitment	.43*	.09	.54*	.40	.37
Teacher Trust in Others	.03	-.10	.04	.29	-.07
Family Conditions					
	.58**	.44	.58**	.38	.48*

Legend: **p<.01; *p<.05

Indirect Effects of School Leadership on Student Outcomes

Power Indices were used to estimate the indirect effects of School Leadership on student outcomes. Appendix A provides a more detailed explanation about the calculation and rationale for these indices. Briefly, a Power Index combines (multiplies) the correlation between a student outcome and a Condition and the correlation between School leadership and that same Condition.

We conceptualize the meaning of a Power Index as an estimate of the chances of School Leadership influencing a selected student outcome through its influence on a selected Condition. To interpret the size of a Power Index, we used the rules of thumb applied to the interpretation of an Effect Size: .20 is typically considered the smallest Effect Size that can be considered practically meaningful, at least by itself, and so report only Power Indices that meet or exceed this standard.

The calculation of Power Indices responds to a “wicked” practical problem faced by school leaders attempting to determine the most productive focus for their own improvement efforts. While there is a considerable body of evidence about the effects on students of a wide range of school, classroom and family variables (e.g., see Hattie’s (2009) enormous synthesis of this evidence), there is very little evidence about how likely it is that school leaders’ improvement efforts will actually improve the status of these variables. For example, a compelling body of evidence indicates that Teachers’ Trust in Others has important effects on student achievement, but what evidence there is suggests that at least the typical practices of school leaders have little influence on it (e.g., Sun & Leithwood, 2017).

Using the aggregate measure of School Leadership, our calculation of Power Indices identified 16 that met or exceeded the minimum standard of .20 to be considered practically meaningful:

- Through Academic Emphasis, School Leadership indirectly influences Grade 4 Language achievement and student well-being (Power Indices range from .20 to .32).
- Through the Organization of Time for Planning and Instruction, School Leadership has an influence on Grade 4 Math achievement (.20).
- Through Safe and Orderly Environments, School Leadership has an influence on achievement in Grade 4 Math and Grade 10 Math (Workplace and Apprenticeship), as well as Graduation rates and overall student Engagement (.20 to .29)
- Through Collaborative Cultures and Structures as well as Family Condition (aggregate) School Leadership has an influence on Math achievement at both Grades 4 and 10 (Workplace and Apprenticeship) (.21 to .36)
- Through both Classroom Instruction and Teacher Commitment, School Leadership has an influence on Grade 10 Math (Workplace and Apprenticeship).

Based on the number of Power Indices meeting or exceeding .20, these results indicate that School Leadership's influence on the multiple types of cognitive and socio-emotional student outcomes included in the study is exercised by leaders who work at least to ensure Safe and Orderly Environments in their schools and to optimize the Uses of Instructional Time in their classrooms.

5. How large are the direct and indirect effects of the nine district Characteristics on student outcomes?

Effects of District Characteristics on Conditions

The first row of correlations in Table 9 reports the effects of each district Characteristic on the aggregate measure of school, classroom and family Conditions. Seven of the nine district characteristics are significantly related to the Conditions, in aggregate. The relationship with Learning-oriented Improvement Processes is the weakest of those relationships (.40) while Coherent Instructional Guidance and Uses of Evidence have the strongest relationships (.52 and .51 respectively). Among the Conditions influenced most by district Characteristics:

- Family Educational Culture has significant relationships with six of the nine district Characteristics – Vision, Mission and Goals (.50), Coherent Instructional Guidance (.53), Uses of Evidence (.53), Professional Leadership Development (.43), district Alignment (.48) and Learning-oriented Improvement Processes (.38).
- Classroom Instruction is influenced by seven of the nine district Characteristics (all but Elected Leadership and Professional Development).
- Academic Emphasis is influenced significantly but weakly, by four of the nine Characteristics including Coherent Instructional Guidance (.39), Uses of Evidence (.37), Professional Leadership Development (.37) and district Alignment (.39).

- Teacher Commitment is influenced by four of the nine district characteristics including Coherent Instructional Guidance (.45), Uses of Evidence (.43), Learning-oriented Improvement Processes (.39) and Relationships (.44).

In sum, results point to Coherent Instructional Guidance and Uses of Evidence as influencing the largest number of Conditions followed closely by Professional Leadership Development and Alignment. These results are quite similar to some of the results of the parallel Ontario study. In both studies seven of the nine district Characteristics influence one or more of the Conditions. Both studies report especially prominent roles played by Coherent Instructional Guidance and Uses of evidence. And especially surprising, neither study found significant effects of any district Characteristics on School Leadership, arguably the Condition one might expect district Characteristics to influence most.

Table 9
Relationships between District Characteristics and School, Class and Family Conditions

	District Characteristics									
	District Agg	Vision	Coherent Instruct.	Use of Evidence	Pro Develop.	Pro Lead	Align	Elect Lead	OIP	Relation
Conditions Aggregate	.41*	.44*	.52*	.51*	.16	.43*	.44*	.24	.40*	.34
School Conditions	.37*	.40*	.47*	.47*	.15	.40*	.41*	.20	.37	.33
School Leadership	.18	.11	.25	.32	.24	.29	.23	.06	.07	.29
<i>Moral Stewardship</i>	.24	.19	.27	.15	.29	.43+	.28	.18	.04	.24
<i>Instructional Leadership</i>	.24	.27	.30	.47*	.16	.15	.06	-.08	.03	.35
<i>Relational Leadership</i>	.04	-.04	.16	.30	.16	.15	.06	-.08	.03	.35
<i>Organizational Leadership</i>	.09	-.03	.12	.18	.18	.17	.15	.08	.05	.16
Academic Emphasis	.30	.28	.39+	.37+	.22	.37+	.39+	.22	.26	.30
Disciplinary Climate	-.09	-.17	-.18	-.24	-.10	.16	-.10	-.04	.06	-.12
Collective Teaching Efficacy	-.04	.09	.12	.10	-.11	.04	.04	-.06	.15	.26
Organization of Planning	.03	.00	.10	.07	.02	.04	-.03	-.17	.01	-.21
Safe & Orderly Environment	-.01	-.03	.00	.18	.12	.02	.05	-.01	-.08	.16
Collab Culture & Structures	.05	.15	.13	.14	-.04	-.14	.14	-.04	-.01	.18
Classroom Conditions	.30	.30	.44*	.39*	.16	.36	.33	.19	.40*	.45*
Classroom Instruction	.39+	.31	.51*	.46*	.29	.40+	.42+	.29	.42+	.60**
Use of Instructional Time	-.03	-.07	.08	.08	.02	.23	.00	-.09	.06	.20
Teacher Trust in Others	.17	.24	.26	.19	.03	.28	.18	.10	.32	.10
Teacher Commitment	.33	.41	.45*	.43*	.10	.17	.37	.23	.39	.44*
Family Conditions	.45*	.50*	.53*	.53*	.14	.43+	.48*	.26	.38+	.25

¹ Mathematics: Foundations and Pre-calculus.

² Mathematics: Workplace and Apprenticeship.

**p<01; *p<05; +p<10

Direct Effects of District Characteristics on Student Outcomes?

The term “direct effects” on student outcomes, as it appears in this question, should be interpreted as it was in the analysis of School Leaders’ direct effects - not literally⁷. Almost everything a district does is, in some way, filtered through or mediated by, other conditions much closer to the real experiences of students. Data reported in this section, however, does not take any of those conditions into account.

As Table 10 indicates, however, there were significant direct relationships between several district characteristics and some measures of math achievement in grades 4 and 7. Specifically, Uses of Multiple Forms of Evidence for Decision Making has a significant relationship (.45) with 5-year changes in Grade 4 math achievement. District-provided Professional Development, as well as Relationships (aggregate) make significant contributions to 1-year measure of Grade 7 Math achievement (.47 and .48 respectively). The analysis of relationships between the nine district characteristics and the student outcomes did not produce significant results for any of the high school student achievement measures or for either student Well-being or student Engagement (results not tabled).

By way of comparison, the parallel Ontario study, and a 2010 predecessor, reported the following:

Both studies found similar, practically meaningful effects of four district characteristics on 1-year measures of both math and language achievement: Mission, Vision and Goals, Coherent Instructional Guidance, Uses of Evidence, and Alignment. Weak effects on both math and language achievement were reported by both studies for Elected Leadership. The 2017 study reported much stronger effects for Professional Leadership and Learning-oriented Improvement Processes on both math and language than did the 2010 study, while the opposite was true for Professional Development. In sum, this study largely replicates the results of the 2010 study for 5 of the 9 district characteristics and provides justification, not found in the 2010 study, for Professional Leadership and Learning-oriented Improvement Processes.

Evidence from the current BC study may underestimate the direct district effects on student outcomes for technical reasons or Ontario and BC districts may simply differ in their direct effects on students.

⁷ As we explained earlier, the term “direct effects” refers to the calculation of a series of correlations which included only two variables at a time, In this section, each of these correlations were between a district Characteristic and a student outcome.

Table 10
Relationships between District Conditions and Grades 4 & 7 Student Achievement

	Grade 4				Grade 7			
	Lang	Change	Math	Change	Lang	Change	Math	Change
District Characteristics	.32	.08	.13	.25	.11	-.10	.40	.03
Mission, Vision, Goals	.26	.10	.13	.28	.13	.13	.31	.23
Coherent Instruction G.	.31	.19	.10	.29	.10	-.06	.41	.08
Use of Evidence	.32	.06	.19	.45*	.17	-.10	.33	-.01
Pro Development	.31	.06	.10	.10	.07	-.40	.47*	-.16
Pro Leadership	.30	.04	.03	.00	.05	-.29	.40	-.10
Alignment	.30	.09	.08	.20	.03	-.10	.37	.08
Elected Leadership	.19	.07	.01	.10	-.05	-.22	.40	.01
Learn-orient Imp.	.17	-.06	.15	.19	.01	-.17	.29	-.05
Relationship	.23	.02	.07	-.03	.11	-.28	.48*	.17

Legend: **p<.01; *p<.05; +p<.10

Indirect Effects of District Characteristics on Student Outcomes

As with the analysis of indirect School Leadership effects, above, Power Indices were calculated to estimate indirect effects, through each of the 12 Conditions, of district Characteristics on the four sets of student outcomes included in the study. None of the Power Indices achieved the .20 standard used to designate practically meaningful results.

These results are considerably different than those reported in the parallel Ontario district study. Evidence from that study identified seven conditions through which districts' influenced math achievement including three teacher emotions (Teacher Trust, Collective Teacher Efficacy, and Teacher Commitment), as well as Safe and Orderly Environments, Collaborative Cultures, Academic Emphasis and Classroom Instruction.

6. To what extent are students' cognitive and socio-emotional capacities related?

The cognitive student outcomes in this study were the several different types of math and language achievement, along with graduation rates, while the socio-emotional outcomes were student well-being and engagement.

Evidence from the study provides a very short answer to this question about the extent to which the achievement and well-being outcomes are related. Although the study used "domain specific" measures, there were only two significant correlations between measures of well-being and their corresponding achievement measures. The combined Grade 10 and 12 measure of English achievement was significantly related to well-being in language (.50) and Grade 10 Math (Foundations and Pre-calculus) achievement was significantly related to well-being in math (.44).

In the case of student engagement, while there were several significant correlations with achievement (both math and language) at both the grade 4 and 7 levels, these correlations were

negative. These are certainly counter-intuitive results and cannot be explained by negative change scores since it was the one-year achievement data set that were used.

Results at the high-school level identified several positive correlations. The combined Grade 10 and 12 measure of student engagement was significantly related to:

- Grade 10 and 12 combined English achievement.
- Grade 10 math achievement (Foundations and Pre-calculus).
- 2016 graduation rates.

7. How do School Leaders understand their districts' work and its helpfulness to them?

This section of results summarizes the responses of 37 principals and vice-principals from across the province to a series of ten questions about the work of their districts. Quotes included in this section are representative of comments made by principals who were interviewed. There is no quote used that is representing a single principal, rather the voice of many principals is represented using one direct quote, and represents a theme of the interviews. This is commonly done in qualitative research.

The first question was about what school leaders found most and least helpful while each of the nine remaining questions explored the current status and value of one of the nine district characteristics identified in the framework for this study.

7.1 Most and Least Helpful District Initiatives

The initial question asked interviewees about initiatives taken by their districts, during the current year, that have been most and least helpful to their school improvement efforts and to explain their assessment of those initiatives. Interviewees identified from one to seven district initiatives as helpful and from one to five as least helpful. Five types or categories of “most helpful” district initiatives/practices were evident in these responses and four categories of least helpful initiatives/practices.

7.1.1 Most Helpful

1. District program improvement initiatives.

- French Immersion Task Force: examined programs in all schools providing French immersion, assessing them in light of available research as a means of improving those programs.
- French Immersion Report Card: a provincial initiative involving a team of staff from the district with the objective of developing an innovative report card for students in French Immersion programs.

2. Establishment of structures, processes and cultures to assist school improvement efforts.

- Development by the superintendent of a positive district culture. This culture provides considerable support and a powerful foundation for the improvement work of schools.
- Provision of support systems by senior management for schools to take ownership of their plans and drive their practices forward.

- Encouragement of the use of “spirals of inquiry”, a helpful process for establishing school improvement goals.
 - Creation of opportunities for ongoing communication and collaboration at meetings to reflect back on important priorities.
 - Establishment of Instructional Rounds: provides a unique experience for teachers helping them to reflect on their own teaching practice and how to help their students develop core competencies that are part of the new provincial curriculum.
 - Establishment of an Educational Change Committee: this district-wide committee assists schools to implement new curricula including the provision of time for schools to work on implementation.
 - Establishment of a coordinator of inquiry position in each secondary school: this person is provided with the time to assist other groups of staff engaged in their own inquiries and to help write proposals for additional funding for the school.
 - Development of a district strategic plan: includes a commitment to 100% success for all students; this has increased staff expectations and standards for student achievement in the school.
 - Development of cohesion between the SIP and the district plan and alignment in language and instructional practices.
3. *District support specifically for implementing the new provincial curriculum.*
- Examination of the relationship between school leader’s beliefs and actions: an initiative of the superintendent, conducted as part of superintendent’s meetings, aimed at shifting practices in schools to better conform with beliefs about how best to nurture student growth.
 - Ongoing attention across the district on “core competences” for students: a strategy for deepening understanding of what the competences are and how to develop them.
 - Significant amounts of professional development provided by the district for teachers: assists teachers acquire the knowledge and skill they need to implement the new provincial curriculum.
4. *Leadership development*
- Networks of teacher leaders: these teachers from across the district meet to examine their own work in schools and how to make it more effective. External expertise is included in these networks from time-to-time.
 - Mentorship program for practicing school leaders: helps build skill and confidence.
 - Use of professional experts to foster administrators’ professional learning.
5. *Provision of resources*
- Time built into secondary school schedules for weekly teacher collaborative work.
 - Funding provided by district assists schools’ improvement efforts.

7.1.2 Least Helpful

1. *District demands that add little perceived value to school improvement efforts but consume time that could be used to advance those efforts.*

- Excessive paperwork required of school leaders reducing time to provide leadership in school.
- Poor scheduling of meetings which wastes time out of school - better spent in school.
- Volume of emails (not all from the district, but many) to read and respond reduces time for school improvement work.
- Spending time doing relaxation techniques during professional development sessions while stressing out the entire time about what has to be done.

2. *Poor district management.*

- Too many initiatives downloaded to schools.
- Timing of initiatives by district staff, which do not take account of, or align well with, cycles of work in schools. Those initiatives or demands sometimes arrive when schools are fully occupied; the demands associated with, for example, the end of semester, report cards and grant writing times.
- The number of impromptu, micromanaged, initiatives/activities increases and consume a lot of time as they get implemented.
- Inflexible expectations on schools to focus professional development solely on the “spiral of inquiry” initiative when staff want to do something else with their professional development time.
- Late hiring of staff for schools by the district often means schools cannot begin programs in a timely fashion.
- The process used to reexamine district vision, carefully established some five years ago, was not helpful and staff participated in the reexamination as little as possible.
- Technology “glitches” (with My EdBC): distracting for teachers and time consuming for clerical staff.
- Excessive attention by the district to quantitative data for both accountability and planning purposes and undervaluing what can be learned from qualitative data.
- Lack of opportunities for principals to collaborate with colleagues at management meetings.

3. *Leadership and leadership development shortcomings.*

- Superintendent changes resulting in lack of follow through on use of “spirals of inquiry”.
- A focus on teacher leadership resulting in neglect of the vice-principal role, further capacity development for those in that role, and lack of voice for vice-principals in district decision making.
- Lack of direction around the new curriculum.

4. *Limitations of ministry sponsored projects/initiatives and politics*

- Discontinuation of school participation in the second stage of the Google read and write pilot project left staff feeling frustrated.
- A lot of misuse of resources on political things.

7.2 Broadly Shared Mission, Vision and Goals for Students

The introduction to questions about this district characteristic was as follows: “Many districts go through some process to establish a set of overall directions for the district often including a mission, a vision and sometimes more specific goals intended to serve as priorities for schools in their improvement work”. Interviewees were then asked to (a) briefly describe what their district had done about this and (b) how it had influenced, either positively or negatively, the school improvement work of the interviewee and her/his staff.

For sake of brevity, the term Vision is used in this section to encompass vision, mission and goals. Responses to this question identified two generic approaches to establishing district visions with widely different levels of influence on schools. One of these generic approaches, mostly identified as something that occurred in the past in several districts, was the writing of a district vision statement by someone or several people in the district office and then announcing what it was to those in schools (the *Vision by Announcement* approach). One interviewee even said that the district’s vision had simply been communicated to schools by email. This lack of engagement in the process of determining the district’s vision resulted in it being a key part of the district’s website but having almost no influence on the direction of work in schools.

The second generic approach entailed extensive engagement by school staffs and sometimes members of the wider school community in a well-orchestrated and relatively prolonged process (this is the *Vision by Collaborative Deliberation* approach). Within this generic approach there was some variation across districts in who was involved, how they were involved and over what period of time, but involvement was extensive in all cases. Such involvement or engagement often began with district-encouraged deliberations among staffs in individual schools about what was working well, how much progress had been made over the past four or five years and what priorities called out for future work. Typically, school-level deliberations of this sort were fed into a district-wide process (e.g., a two-day community forum) that synthesized and sometimes added to school-level deliberations. Recent visioning processes of this sort had been substantially influenced by the challenges inherent in the new BC curriculum and the need to determine how schools would shape their practices to help students achieve the competencies identified in the curriculum.

Evidence from the interviews indicated that highly participative approaches to building district vision, alongside alignment of school goals and processes to district goals and a substantial amount of staff buy-in to the vision had a significant influence on the nature and direction of improvement efforts in schools. In contrast, non-participative approaches coupled with the sheer number of things that got thrown at school administrators with very little or no support from district

leaders due to budget cuts and associated reduction in the number of district personnel to support schools, had a negative influence on school improvement efforts.

7.3 Coherent Instructional Guidance

The introduction to questions about this district characteristic was as follows: “One way or another, districts often provide guidance to school staffs about priorities for their instructional work, as well as advocate for particular approaches to instruction to be used by teachers. What has your district done about this and what influence has it had on you’re the work of you and your staff?”

This district characteristic encompasses potential efforts by districts to insist that all schools use similar approaches to instruction; indeed, the review of research, which served as the original source of this characteristic, described many districts doing just that with considerable success (a low discretion approach). But this characteristic also allows approaches that rely on considerably more discretion and control by school leaders, although not complete autonomy (a balanced discretion approach). Interviewees provided examples of both approaches.

Evidence from the interviews revealed considerable variation among districts in both the extent and nature of districts’ instructional guidance to school staffs.

At the most prescriptive extreme, one district strongly advocated inquiry approaches not only for teaching but for almost all efforts related to instructional and school improvement. District professional development was conducted as inquiry, about inquiry. This district had support structures to assist schools to become inquiry-oriented, individual schools conducted their own inquiries related to school improvement and individual teachers worked on inquiry projects with their students. While the guidance provided by this district was certainly prescriptive, it was also considered to be quite useful by most interviewees; it was certainly coherent.

The instructional guidance efforts of most districts fell between the laissez faire and prescriptive extremes. These districts promoted, funded and supported structures and processes aimed at improving instruction without prescribing what the outcome of those processes would be; interviewees gave some of these processes high marks for their positive impact on schools while others were perceived to cost more than they were worth.

Among district-advocated instructional improvement processes were, for example, district-based instructional teams that worked with schools, district-based curriculum, instruction and assessment teams, financial support for training (at Harvard) in the process of “instructional rounds” and the implementation of instructional rounds across the district; Harvard was also the location for staffs to learn about “Visible Learning” approaches to instruction (see <https://visible-learning.org>). Some districts also funded selected staff to visit other jurisdictions to learn about promising instructional improvement processes in use in those jurisdictions as, for example, visits to High Tech High in San Diego. Some district efforts were focused on issues also considered to be high priority across the province.

In the majority of districts placing their improvement bets on some set of processes, the outcome seemed to be guidance related to “content general” forms of instruction as, for example, inquiry, problem-based learning, assessment for learning, differentiation and technology. Most of these districts, in one way or another, encouraged school staff also to consider “content specific” forms of instruction they would need to use in order to accomplish the core competences in the new provincial curriculum (e.g., how best to teach a particular math construct).

Only two districts described the provision of guidance about “content-specific” forms of instruction related to existing disciplines. One of these districts had found an external university expert in math who “spoke the language” of secondary math teachers and was able to provide helpful and typically hard-to-find professional development support for improvements to secondary school math instruction. Interviewees in a second district described efforts to improve instruction in early literacy.

At the *laissez faire* extreme, one district was described as providing little or no central guidance, although it did respond in supportive ways to initiatives from its’ schools. Interviewees from this district, while seeming to appreciate the autonomy, felt neglected or isolated and very much on their own in their efforts to determine optimal forms of instruction for their schools and how those forms of instruction might be implemented. The primary resource called on by school leaders in this district was their own experience, which, while significant and useful, was insufficient in their view.

Evidence from these interviews suggested that central district efforts to provide coherent instructional guidance were generally viewed as useful by school leaders, in particular, when there was some choice available about which of those efforts in which to participate.

In most of the districts, interviews indicated positive effects on instruction when:

- access to professional development was linked with improved instruction and cohesiveness among the staff;
- district-established processes for improving instruction encouraged innovative teaching practices based on research; and/or
- schools got financial support from the district when district directions were followed in the classrooms.

Principals in three different districts, however, identified different factors that had negative influences on their efforts to improve instruction including:

- lack of district support for other school based initiatives or ideas that could impact on the school;
- unrealistic expectations of teachers and schools to differentiate instruction in order to meet students’ learning needs; and/or
- lack of time to visit classrooms and collaborate with teachers due to the number of things surrounding the district’s management system requiring attention in schools.

7.4 Deliberate and Consistent Uses of Multiple Sources of Evidence to Inform Decisions

The introduction to questions about this district characteristic was as follows: “The past dozen years has witnessed a very large increase in the importance attached to the use of systematically collected evidence to inform decision making in both schools and districts. This is evidence sometimes provided by the province, sometimes by districts and sometimes by schools themselves (e.g., parent surveys). What has your district done about uses of evidence and how has this influenced the work of you and your staff?”

The province was the central actor in the story that interviewees told about evidence and its use in their schools. British Columbia was an early adopter of province-wide student achievement testing in Canada and its primary tools, at the time of the interviews, were the *Foundation Skills Assessment* (FSA) in reading, writing and numeracy for elementary students in grades 4 and 7 and provincial exams in Math, Language and Science for secondary students in grades 10, 11 and 12. The province also aggregated and reported out data from districts about graduation rates with a special focus, especially recently, on Aboriginal graduation rates. Most secondary principals reported ‘paying attention’ to these data in their own schools.

Our interviews were conducted on the cusp of significant changes to the province’s testing program at the secondary level. Although uncertain about what those changes would be, interviewees pointed to significant push-back by secondary teachers as the primary reason for the change. Those engaged in the push-back argued that the timing, as well as the substance, of the provincial exams made the results of little use, in schools and classrooms, for diagnosing student needs and assisting with instructional improvement initiatives. Time spent on the tests could be put to better uses, in their views.

Districts were helpful to schools, interviewees indicated, when they had data warehouses and when they provided assistance to schools in accessing and interpreting data about their own schools. Districts were also helpful when they included one or more staff members with evidence-related expertise who could provide guidance to schools about the interpretation and use of data. District developed assessment teams able to work with schools were viewed as important resources. But district size figured prominently in the extent of access to such expertise. Most of that expertise resided in large districts and, according to interviewees, small districts were forced to leave schools on their own to figure out how to use available evidence.

When asked about evidence provided uniquely by the district, many interviewees pointed to the *Tell Them from Me* (TTFM) surveys. These are surveys that can be administered to students, educators and parents measuring, for example, student socio-emotional welfare, physical health and academic outcomes; these surveys also measure some conditions that influence student outcomes such as school, classroom and family contexts, along with demographic characteristics. Though they were the only data identified that included information on conditions in school and classrooms influencing student outcomes, most of the interviews did not reveal much about how such data were used. One district however, used the data from the *Tell Them from Me* survey to

create a Graduation Rate Improvement Committee to discuss graduation results, among other things. Virtually all other evidence noted by the interviewees was exclusively about student outcomes, a highly restricted body of evidence for purposes of school improvement planning.

Some schools and some districts were reported to use parent satisfaction surveys and mention was made of diagnostic evidence collected to help diagnose student needs (e.g., PM Benchmarks, whole class reading assessments). Satisfaction surveys were used to a limited extent because of staff disgruntlement about the simplicity in which the satisfaction survey questions were asked. In order to collect data that is important, some districts had shifted from the old traditional way of collecting data. One district was reported to have developed rubrics to assist in assessing student progress in the core competences included in the new provincial curriculum. In another district, students were interviewed about how they engaged and they were given the opportunity to take math test on their own time. Other data collected from vulnerable student populations in one school was about how they accessed such resources as counsellor time, money for food, lunch programs etc.

7.5 Learning-oriented Organizational Improvement Processes

The introduction to questions about this district characteristic was as follows: Most districts have developed a plan for overall district improvement and often require schools to engage in their own school improvement planning and the implementation of such plans. What do such organizational improvement processes look like in your district and how much involvement have you had in these district processes?

Interview results in response to this question revealed considerable variation in the sophistication of district approaches to organizational improvement. Both capacity development of school staffs and increased student success was our lens for judging “sophistication”, a lens justified by previous evidence about how high performing districts go about organizational improvement with their schools.

The most sophisticated approach to organizational improvement was described by interviewees from one district that required school improvement plans to take the form of a “theory of action”. At least conceptually, a theory of action consists of a series of “if-then” propositions (e.g., *if our grade 4 teachers have opportunities to view model lessons of especially effective math instruction, then they will begin to improve their own instruction in math, if our grade 4 teachers improve their instruction in math, then our math results on the Foundation Skills Assessment will increase*). A school improvement plan designed as a theory of action would include a large number of such propositions so that each component of the improvement strategy is linked to the end goal (some positive impact on students) however indirectly. Each proposition needs to be justified with evidence or - lacking evidence - at least logic or theory. Such an approach demands a high level of discipline in the creation of a plan and bringing such discipline to a plan requires considerable learning in order to justify the plan’s propositions.

Also relatively sophisticated were approaches to improvement by districts that began with the development of a district strategic plan followed by an expectation that schools would align their own improvement goals with district goals included in that plan. Within this general approach, districts varied in the (a) levels of participation by school staffs in the creation of their strategic plans, (b) the extent of interaction that occurred between school and district staffs as school responses were being crafted and (c) the extent to which some form of systematic data were required to justify the focus for school improvement plans. Each of these three dimensions of variation in approaches to improvement are also dimensions of variation in the extent of potential capacity development resulting from the improvement process.

At the weakest end of the sophistication continuum were laissez-faire approaches to improvement. Such approaches either left school leaders on their own to develop and implement school improvement plans or simply dictated the goals for improvement to their schools with little or no involvement of school administrators and teachers. Also among the least sophisticated approaches to improvement by districts were processes limited to the district identifying centrally determined goals and requiring schools to submit their plans for accomplishing those goals, sometimes providing feedback in response to submissions but sometimes not. Interviewees identified this sort of action as a “paper exercise” carried out for symbolic reasons but with few consequences for either staff capacity development or student performance.

Variations in overall approaches to organizational improvement aside, interviewees identified a number of district actions as helpful to their school improvement efforts. These included the creation of instructional leadership teams to support schools, assistance in the provision and interpretation of relevant data, provision of external expertise in key content areas, provision of choice in how resources for purchasing technology were spent, a superintendent that listened carefully to expressions of need by those in schools, effectively sharing of the message around the strategic plan, and development of plans that are simpler and more focused.

A handful of district actions identified as not at all helpful included excessive numbers of district initiatives, inflexibility about the nature of the evidence that could be used to demonstrate school growth (insistence on trailing but not leading indicators), creating supports for school improvement that were difficult to access, discouraging or not listening to feedback or advice from their schools, or not clarifying how organizational improvement decisions were made. Finally, a few districts were seen as using top-down approaches that felt unresponsive to, or unaware of what happens at the ground level, and/or not including principals’ opinions in conversations around strategic planning and creating improvement processes that consumed significant school staff time but had few positive consequences.

7.5 Professional Development for All Members

The introduction to questions about this district characteristic was as follows: How would you describe your district’s primary orientation to professional development? That is, is it mostly delivered by the district, provided within the school, aimed at general capacity building or closely

aligned to district/school improvement priorities? Interviewees were also asked how this orientation had influenced their work and the work of their teachers and if they had suggestions for changes to the PD offered by their districts.

Provincial policies governing professional development for teachers figured strongly in what interviewees had to say in response to this question. The *School Act Regulation* allows for a maximum of six non-instructional days per year, one of which is designated for provincially-determined purposes and designed by districts. Of the remaining five days, interviewees indicated that in their districts teachers and their unions typically controlled the focus of four and school administrators controlled the focus of one of these days.

While views about the value of teacher-controlled days varied, a minority of interviewees had a relatively positive view, their staffs using these days for improvement-related capacity development identified in collaboration with school leaders. The extent to which schools had developed a collaborative culture figured strongly in how non-instructional professional development days were used. In schools with collaborative cultures, there was job-embedded learning targeted at school priorities. According to the majority of those interviewed, however, these days were frequently focused on topics unrelated to the improvement priorities of either the district or the school and allowed for little or no input from school administrators.

Considerable amounts of professional development for both teachers and school leaders occurred both inside and outside districts and schools, in addition to what happened during non-instructional days. Some interviewees spoke in very positive terms about their regular meetings with the superintendent. These meetings were designed as learning opportunities for administrators and were carefully aligned to the goals of districts and their schools. Some provincially organized professional development was considered very worthwhile.

Some districts provided their staffs with an extensive menu of opportunities mostly offered outside the school day. Release time was also provided for teachers to visit other classrooms and to connect with other colleagues.

In sum, a direct response to the interview question about professional development features considerable variation in the amount, the focus and the value of professional development. In comparison with much of the research evidence about effective PD, some districts were “doing it right”. Where this was true, PD was relatively plentiful, sufficiently comprehensive to allow for differences in for PD needs among teachers and administrators, and carefully aligned to the capacities that staffs would need to move the district and school improvement agenda forward.

A substantial proportion of this PD was “job embedded”, allowing opportunities for participants to develop the knowledge and skills needed to successfully implement new practices in their own school and classroom contexts. At the school level, professional development was aimed more at general capacity building, When PD was primarily directed by the district, it was usually aligned with district and school improvement priorities. Professional educators were used

in one district to support both administrators and teachers in their professional learning. Interviewees said that the same educators had been used in this district over a three-year period ensuring continuity. Such district support systems brought some alignment and common direction to professional development efforts which was very helpful when administrators and staff were all working together.

The downside of professional development recorded by the interviews was the amount of time teachers were taken out of their building – a positive for capacity building but detrimental to classroom improvement.

7.6 Budgets, Structures, Personnel Policies and Procedures and Uses of Time are Aligned with the District's Mission, Vision and Goals

The introduction to questions about this district characteristic was as follows: “Evidence suggests that high performing organizations have aligned all of their key policies and practices (e.g., budgets, structures, personnel policies and procedures, uses of time) in support of their priorities”. Respondents were then asked “What areas of your own district appear to be well aligned? Are there areas that still need work? and What difference does this alignment (and misalignment) make to your own School Leadership and the instructional work of your teachers?”

Most interviewees believed their school and district budgets were significantly aligned; as evidence of this, for example, several pointed to the long history of declining district budgets which had resulted in serious shortfalls in facilities and maintenance in order to continue providing resources needed in classrooms for students. Most interviewees also spoke about the alignment of personnel resources with district (if not school) priorities for contributing to student success. Districts that hired teachers were considered to be doing a very good job at selecting effective teachers. Staff required to support key priorities for district improvement were hired. Alignment of budget to the school improvement plan and alignment of school activities to the district plan showed the importance of continuity district wide and school wide. The majority of the interviewees noted that, if alignment was clear, then everybody was “on the same page” and it sent a clear message about the importance of an initiative or an activity.

Interviewees identified several sources of non-alignment, even in districts that seemed to be otherwise aligned. Technology was mentioned most frequently. While demands for use of increasingly sophisticated and embedded technology in classrooms continued to escalate, many schools did not have the resources needed to keep their computing equipment up to date. Additionally, IT support for many schools was “hit and miss”, depending on whether or not a school happened to have a teacher or administrator on staff willing to promote the use of technology and able to support teachers’ use of technology.

Approaches to special education were also identified by several interviews as an example of misalignment. This misalignment was rooted in confusion about the overall model of special education services to be used and difficulties in developing productive working relationships with outside agencies able to provide additional support to students with special education needs. Poorly

developed descriptions of roles and responsibilities were also identified as a source of misalignment that created confusion. Sometimes, it was a bit difficult for schools to adjust to some decisions made at the district level. This made it difficult for principals to explain district decisions to staff resulting in poor relationship between the administrator and teaching staff.

The overall response to the question about alignment, in sum, was quite clear and relatively brief. Alignment makes a big difference to work in schools and elements of the organization that are misaligned really stand in the way of effective education – improvement efforts “grind” to a halt.

7.7 Comprehensive Approaches to Leadership development

The introduction to questions about this district characteristic was as follows: “Briefly describe how your district goes about selecting, preparing, evaluating and supporting principals and vice principals”? This question was followed up with “Which features of this approach to leadership development do you consider especially powerful?” and “Could the district add to and/or improve some parts of its overall approach to leadership development?”

This section summarizes responses to these questions as they relate to leadership recruitment, selection, initial preparation, and both the professional development and performance appraisal of incumbent leaders. Descriptions of what districts were actually doing about each of these components of leadership development are combined with interviewees’ assessments of its’ value and ideas about possible improvements.

As with most of the other features of districts that were inquired about in the interviews, variations in approaches to leadership development were extensive. Interviewees were asked about the most common components of leadership development including how early encouragement to consider a formal leadership role was provided, processes to help prepare for application for a formal leadership position, the nature of the leadership selection process, subsequent support available for those selected, and evaluation of those in formal leadership roles, primarily principals and vice-principals.

Evidence from the interviews indicates that several districts have very well developed and carefully implemented leadership development processes; support for the value of those processes came not only from those who experienced them directly but from others who believed that leadership development in their districts could be much better than it was. A few districts had experimented with promising approaches but had not followed through consistently or extensively enough to reap the potential benefits of their approaches. Another few districts had no identifiable process for carrying out leadership development processes.

Effective ways of encouraging people to consider assuming formal school leadership positions were both indirect and direct. Interviewees pointed to the importance of being encouraged (multiple times often) by others (e.g., principals and superintendents) to consider the move from teacher to administrator and informal observations or conversations which helped them

to better understand the nature of the job. Direct encouragement to consider formal leadership roles included being asked to be part of a school or district committee for the experience and being ‘tapped on the shoulder’, a process with considerable influence, according to the available research.

Selection and hiring processes were reported as very uneven by the interviewees. But evidence points to the value of processes that (a) are well known to candidates, including the qualities needed to be successful, (b) allow for both internal and external candidates to apply, (c) entail significant data collection about the candidate including references and some process to assess the candidates abilities and dispositions such as an interview, (d) are enacted by a selection committee that includes representatives from multiple professional and support roles in the district.

The selection process may be for a single position or to create a pool of eligible candidates for a set of positions not fully known at the time of selection to the pool. When a pool is selected, it is important to be clear to successful candidates about the lifespan of that pool; some districts select pools that have no life at the end of a selection cycle while others place candidates in a pool until they are actually placed in a position. Neither of these options seems superior. It is the understanding those selected into a pool have about the duration of the pool that needs to be clear to avoid unnecessary confusion and frustration.

Preparation processes for leaders reported by most interviewees was the, a short course (week-long seminar) held by a provincial organization on the grounds of UBC for new administrators. Closely followed were informal processes for preparing leaders including: informal mentoring and opportunities for leadership roles in school, on district and school committees.

Once placed in a principal or vice-principal position, interviewees described very uneven approaches to both evaluation and ongoing support. Ongoing support for those in school leadership roles was quite extensive in a few districts. Especially valuable, according to the interviewees, were mentoring experiences, close working relationships with a district supervisor, a variety of formal professional development programs mostly available through provincial associations, and participation in a network of colleagues willing to provide advice and support on an “as needed” basis.

In several districts comments about 360 degree evaluation processes were prevalent. 360 degree evaluations typically include the collection of survey data from multiple stakeholder groups about the school leaders performance, analysis by district staff of the themes appearing in these data and then the provision of these themes and recommendations for consideration by the evaluated leader. Interviewees in several districts reported versions of such an approach to evaluation every three to five years and spoke quite positively about its value. Interviewees in one district also noted that evaluation was very thorough and done twice a year; once at the beginning of the year and then at the end of the year. As part of this process, the superintendent spent two days at school interviewing about 25 staff and the principal. The principal’s growth plan was used

in the process as the superintendent, in collaboration with the principal, identified goals and submitted an evaluation draft to the district. Ongoing conversations regarding the evaluation were carried out between the superintendent and the principal.

7.9 A Policy-oriented Board of Trustees

The introduction to questions about this Strong District characteristic was: “How familiar are you with the trustees’ approach to governance?” This question was followed by “What is it about their approach that influences the work of you and your teachers?” and “What is the nature of that influence?”

Most interviewees claimed little knowledge about the work of trustees in their districts.

7.10 Relationships

We have known since the beginning of formal leadership research that good relationships are one of the key qualities of effective leadership. This question inquired about the quality of relationships among district office leaders, between district and school-level leaders and between schools and parents.

Relationships Among District Leaders

Interviewees were asked what words they would use to describe the nature and quality of relationships among central office leaders in the district - and why?

According to most of the interviewees, the current status of relationships among their district office leaders was quite good. In only one district were those relationships more problematic; interviewees described them as fragmented, lacking in trust and highly competitive rather than cooperative around the allocation of funds to district leaders’ portfolios. Good, productive or ideal relationships among senior district leaders were characterized by interviewees as collaborative, with a collective focus on the districts’ vision and goals or “moral purpose”. Such relationships were a consequence of high levels of trust, transparency in decision making, considerable respect for one another and a sense of being part of a team. When district leaders had good relationships, school-level leaders heard the same messages from all members of the district team. Longstanding tenure among members of the district team, according to several interviews helped account for good district team relationships while several other interviewees blamed the rapid turnover of members of the district team for less than ideal relationships.

Relationships Between District and School Leaders

Most interviewees were quite positive about the quality of the relationships they had with their district colleagues. High quality relationships with district colleagues, according to the interviewees, meant a collaborative (rather than top down) approach to decision making, ease of access to district leaders for consultation, a respectful disposition on the part of senior leaders toward the concerns, perspectives and preferences of school-level leaders. Relationships also were judged to be of high quality when district leaders provided ample support for the work of school-level leaders and when school-level leaders were clear about who to communicate with in the

district office about challenges they encountered. Relationships between district and school-level leaders were considered less helpful when district leaders were perceived as insufficiently knowledgeable about the challenges faced by school-level leaders. Also challenging the quality of these relationships were difficulties communicating with district colleagues and tardy responses by district leaders to requests for information, advice or assistance from school-level leaders.

Relationships with Parents

Interviewees were also asked about parent relationships, specifically the advice and support they received from their district colleagues about school/parent relationships. Some interviewees described such advice and support as weak to non-existent while others described specific advices with most focusing on building positive relationships with parents and the community and involving them in decision making. Interviewees from one district varied in what they said the district advised them on parental relationship. Based on comments made in the interviews, the consensus seems clear: parent involvement was identified as a challenge but districts encouraged principals to keep trying. Communication was noted as a big tool for parental involvement, an example being one district that advised principals to send out newsletters in a timely manner and to be very transparent.

With the interviewees who described weak to non-existent advice from the district, much of what was identified had to do with responses to parent complaints. One of the districts provided strategies/processes to be used to solve problems with parents and encouraged principals to be empathetic. Considerable evidence now suggests that schools can significantly improve the success of their students by helping to improve the quality of family educational cultures in the homes of some of their neediest students. Interviewees had nothing to say about this type of work or guidelines that might have been provided by their districts related to such work.

Recommendations

Results of the study suggest six recommendations. One of the overall goals of the study was to determine the extent to which the results of earlier and parallel studies⁸ about the direct effects of the nine district characteristics on student outcomes could be replicated. The study did replicate the overall results of those earlier studies.

1. *Results from this study provide further evidence about the efficacy of the nine district Characteristics. District leaders should consider how these characteristics could best be used as a framework for, and focus of, their improvement efforts.*

Among the most important results from this study is evidence of significant effects, on most student outcomes included in the study, of all 12 school, classroom and family Conditions serving as mediators of district effects. These results are entirely consistent with much evidence collected in many other contexts. The quantity and consistency of these findings overwhelms evidence available about other “levers” for change such as specific programs, for example. This evidence justifies four recommendations for district leaders to consider:

2. *Districts should set, as a priority for supporting the improvement work of their schools, learning more about how to improve the status of the 12 Conditions included in the study and developing resource material that schools can use in their efforts to further develop selected Conditions as part of their school improvement efforts.*
3. *Districts should reflect the important contribution to student success of the 12 Conditions by including specific training for school leaders in how to diagnose and improve the status of each of the Conditions in their organizations.*
4. *Districts and their schools should avoid an exclusive focus on any one of the 12 Conditions on the grounds that it is some sort of “silver bullet” for all schools. All 12 Conditions have the potential to significantly help improve student success and the choice of which one or several to focus on at a given time should depend on judgements about what would be most helpful in individual school contexts.*

School Leadership, measured using an instrument based on the BCPVPA conception of effective school leadership, made modest but significant direct contributions to most measures of student achievement. Several dimensions of this conception of leadership (especially Instructional Leadership) were responsible for the bulk of these contribution while one (Moral Stewardship – the centre of the visual, and around which the other dimensions circle) made no contribution.

⁸ Leithwood, 2010; 2011, 2013; Leithwood & Azah, 2017; Leithwood & McCullough, 2017. *consistent with the practices identified as effective by current research*

- 5. Data from this study may be the first empirical test of the predictive validity of BCPVPA's conception of leadership. These results should be used to rethink, adapt or re-confirm the current conception of effective school leadership in BC.*

School Leadership had a significant influence on those school, classroom and family conditions associated with student success by this and many prior studies. However, this study found wide variation across districts in their contributions to School Leadership, with some districts having no influence on the development of school leadership and a few districts having minor influence on the development of school leadership.

- 6. Districts should reassess what they are doing to nurture the development of their school leaders ensuring that the explicit focus of their development efforts are consistent with the practices identified as effective by current research and that the means they are using for leadership development are as effective as possible. There is likely no single improvement focus for a district that will make as large a difference to its performance as will a focus on School Leadership development.*

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Appendix A: Technical Notes

1. Limitations Arising from Small Sample Size

Using two surveys, this study collected data from a relatively large number of school and district leaders (998). However, the responses from these individuals were used to represent the views of the full population of school and district leaders in each of their districts, 21 in total. Standard rules were followed in determining the number of individuals from a district in order to ensure such representativeness. For this reason, we can be quite confident in the answers to questions one and two in the Results section based on descriptive statistics (means and standard deviations).

Answering questions 3 through 7, however, depended on the calculation of correlations. The body of our report includes some conceptual arguments to justify the use of correlations as at least weak indicators of causal relations. But there are significant technical limitations to the use of correlations. Goodwin and Leech (2006), for example, identify six such factors that influence the size of correlations. Our concern here is with sample size, in particular, which is often associated with one or more of the six factors. Small sample sizes can produce unreliable estimates of relationships including the direction of those relationships (positive or negative).

Sample sizes required to produce very stable sets of relationships far exceed what is possible for research with the goals of our study using districts as the unit of analysis. Does this mean giving up on quantitative studies of the characteristics of districts that are exceptionally effective in reducing achievement gaps and enhancing the cognitive and socio-emotional capacities of all students? We do not think so. Rather, we believe studies such as this one should rely on replication and extension strategies seeking out similar trends across multiple studies each of which is less than technically perfect. This is one of the reasons our report of BC results frequently compares those results to findings from the parallel Ontario study.

2. Technical Explanation of Power Indices

A new method, the calculation of “Power Indices” (first published in Sun and Leithwood, 2016) was used to estimate indirect relationships of interest in this study, for example, the relationship between district Characteristics and student outcomes, mediated by school, classroom and family Conditions). This method entails the combination of correlations among three sets of variables, as is illustrated in the report of results. For this study, Power Indices were used instead of regression analysis, in part, because they require little statistical background to interpret. While Power Indices approximate the outcomes of regression analysis, they do lack some of the valuable properties of regressions. The logic used in calculating a Power Index is similar to the path model of Structural Equation Modeling (SEM). In the former, the two estimates are multiplied (e.g., the extent to which a district characteristic (A) impacts a school condition (B), and the extent to which that school condition influences student achievement (C)). Similarly, in SEM path models, path coefficients are multiplied to obtain an index that estimates the indirect impact of A on C through B.

While a Power Index is easy to calculate and can be applied to small samples, this method cannot estimate the interactions among path impacts whereas SEM, can model the impact of a

latent variable formed by a few closely related path variables and thus discover which effects are obscured when variables are entered into an equation. This sophisticated technique, however, imposes a set of model restrictions on the sample covariance matrix and can only be used with large data sets. While a Power Index is by no means superior to the results that can be obtained through SEM, it does provide another method, beyond correlations, for examining indirect influences in studies with small samples.

The strength of the Power Indices calculated in this study was interpreted using common rules of thumb applied to Effect Size (ES) statistics (Cohen, 1988; Hattie, 2009). Despite inconsistencies in how ES is defined, there are generally three approaches to it (Preacher & Keeley, 2015). One typical approach, held by scholars such as Cohen (1988), regard effect size as the magnitude of departure from a particular null hypothesis. Another approach defines ES as a numeric quantity intended to convey *practical importance* (i.e., substantive importance of an effect in real terms). The third group use both kinds of definitions interchangeably. This report adopts a more general, inclusive, definition of effect size provided by Preacher & Kelley (2011): “any measure that reflects a quantity of interest, either in an absolute sense or as compared with some specified value” (p. 95).

Generally, there are two types of effect sizes: d family (e.g., Cohen d ; Hedges' g) and r family (e.g., β ; r ; t , R^2 ; ω^2) (Cohen, 1992). The effect size in this report to denote the impact of school leadership on various school, class and family Conditions, the impact of these Conditions on student achievement, and the impact of district Characteristics on school leadership and school class and family Conditions is the Pearson correlation coefficient r . To convey the meaning of effect size index, it is necessary to apply some idea of its scale (Cohen, 1992). This report adopted Cohen's (1992) conventions, probably the most widely used ones across disciplines, to appraise effect sizes; .10, .30, and .50, are interpreted to be small, medium, and large effect sizes respectively.

Indirect effects, a key interest in this study, can be signified by products of the direct effects. Suppose a coefficient represents the impact of school leadership on School, Class and Family Conditions and b coefficient represents the impact of those Conditions on student achievement. To calculate the indirect effect, either the standardized regression coefficient or the raw correlation can be used as an effect size measure for the a coefficient, and a partial correlation can be used as an effect size measure for the b coefficient (MacKinnon, 2008; MacKinnon, Fairchild, & Fritz, 2007). Defined this way, the indirect effect usually represents the variances in the criterion variable explained by the predictor through the mediator, partialling out the effect of predictor. We were not keen on partialling out the effect of the predictor, or controlling for the effect of school leadership. Instead, we were interested in the effect of the predictor on the criterion variable through the mediator. Thus, in calculating the Power Index, which denotes the indirect impact of school leadership on student outcomes as well as the indirect effects of district Characteristics on student math achievement, we did not use a partial correlation for b . Rather, we used the raw correlation for b . This study was more interested in the relative rather than absolute

values of Power Indices. That said, it was important to appraise the practical importance of the power indices. So Cohen's conventions on the interpretation of r (*Pearson Product-Moment correlations*) family of effect sizes (i.e., R^2) was used to interpret the importance of size of the Power Indices. That is if small, medium, and large effect sizes are respectively .10, .30, and .50, then the product of ab of .01, .09, and .25 are interpreted as small, medium and large for the Power Index. In this study, a Power Index of .20 or more was considered strong enough to have some practical value and worth further discussion.

Appendix B: Detailed responses to the BC District Survey

Means and Standard Deviations for Responses to the BC District Survey

Nine District Characteristics

		Mean	SD
District Characteristics Aggregate		2.81	.29
Mission, Vision and Goals		3.12	.33
1	My district has developed a widely-shared set of beliefs and vision about student learning and welfare that falls within the parameters set by the province.	3.42	.40
2	My district's beliefs and vision include a focus on closing achievement gaps.	3.36	.39
3	My district's beliefs and vision include a focus on "raising the achievement bar."	3.26	.34
4	My district's beliefs and vision include a focus on nurturing student engagement and welfare.	3.42	.27
5	The elected board has helped to mobilize parents and the wider community in developing and supporting the vision.	2.74	.39
6	The elected board has helped to mobilize teachers and administrators in developing and supporting the vision.	2.70	.47
7	My district's beliefs and vision for students are understood and shared by almost all staff.	2.91	.42
8	My district's goals are supported by almost all of the community.	2.93	.29
9	My district's mission and vision are part of the school culture and they help direct learning initiatives in my school.	3.07	.44
10	My district has given schools the autonomy they need to adapt the district's vision to meet the needs of my school.	3.19	.30
11	My district has developed a shared set of beliefs and vision about how to support Indigenous student learning and success.	3.31	.41
Coherent Instructional Guidance		2.95	.30
12	Strongly supports schools' efforts to implement curricula that foster students' deep understandings about "big ideas", as well as to develop the basic skills students need to acquire such understandings.	3.22	.28
13	Has indigenized approaches to teaching.	3.13	.39
14	Works effectively with schools to help provide all students with engaging forms of instruction.	2.90	.32
15	Works effectively with schools to help establish ambitious but realistic student performance standards.	2.78	.44

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16	Includes teachers in a majority of schools in instructional improvement and assists them in developing sophisticated understandings of powerful instruction for students.	2.94	.42
17	Provides release time for teachers to visit each other's classroom to learn and share instructional improvement strategies.	2.77	.41
18	Provides resources and learning opportunities for principals to help support teachers' instructional work.	2.93	.40
Uses of Evidence		2.48	.44
19	Have efficient information management systems?	2.65	.44
20	Provide schools with relevant data about their performance?	2.55	.58
21	Assist schools in accessing and using data to improve classroom instruction?	2.48	.58
22	Create collaborative structures and opportunities for the interpretation of data in schools?	2.35	.46
23	Call on expertise from outside the district for help with data interpretation and use when needed?	2.11	.36
24	Use appropriate data for accounting to stakeholders?	2.58	.47
25	Uses data to set and monitor district targets for Indigenous student achievement?	2.89	.58
26	Make effective use of existing research to guide policy making and planning?	2.75	.55
27	Train principals and vice-principals in the use of different data collection/assessment tools?	2.12	.45
28	Use data to set district directions and school focus?	2.63	.57
29	Help schools make data manageable and meaningful?	2.24	.46
30	Emphasize the use of both quantitative and qualitative data to help with decision making?	2.42	.48
Professional Development		2.63	.32
31	Very little time is devoted to routine administrative matters in meetings of teachers and principals. Meeting time formerly used for such matters is now devoted almost entirely to professional development.	2.31	.38
32	Most professional development is carefully aligned with district and school improvement initiatives.	2.83	.38
33	Differentiated professional development opportunities are provided in response to the needs of individual schools, administrators and teachers.	2.67	.26

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34	Extensive opportunities are provided for both teachers and administrators to further develop their expertise.	2.70	.46
35	Almost all schools provide time for collaborative work on instructional improvement initiatives. Schools are provided with the resources they need to provide this time and leaders are provided with training in how best to facilitate such work.	2.35	.47
36	District-sponsored professional development is now closely aligned with the best evidence of how people learn.	2.84	.42
37	Guest speakers with professional expertise are made available when needed for PD sessions run by the district.	2.94	.39
38	Schools are given flexibility in the pace at which what is learned through PD is implemented.	2.76	.36
39	District coaches and consultants regularly help improve principals' and staff capacities.	2.27	.56
40	District leaders collaborate with school representatives in determining PD priorities.	2.53	.39
41	When PD is offered out of school, the district provides opportunities for several or more staff from each school to attend.	2.68	.38
Professional Leadership		2.58	.38
42	My district has well-designed and carefully implemented procedures for identifying, recruiting, selecting and appraising school-level leaders.	2.35	.54
43	My district includes principals in the selection process of new school leaders.	2.52	.49
44	My district implements procedures for transferring school-level leaders that does no harm and, whenever possible, adds value to improvement efforts underway in schools.	2.44	.45
45	My district ensures that the most skilled leaders in the system are placed where they are most needed.	2.58	.45
46	My district encourages school-level leaders, when needed, to supplement their own capacities with system-level expertise.	2.59	.44
47	District leaders expect principals to be knowledgeable about the quality of their teachers' instruction. This is a central criterion for selecting school leaders and for their performance appraisal.	2.79	.40
48	District leaders keep the community and central office staff focused on learning; they support principals and teachers in their efforts to improve instruction.	2.80	.40

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49	Most district leaders encourage an instructional focus on the part of school leaders, provide opportunities and resources for improving the instructional leadership skills of school leaders and make this the main focus of their school visits.	2.62	.45
50	My district has a process for continuous leadership development of both new and experienced leaders.	2.47	.57
51	My district has established a formal mentorship process to support newly appointed administrators.	1.96	.65
52	Our elected board expects the behavior of school leaders to reflect BC's Leadership Standards for Principals and Vice-Principals, as well as such other practices as might be deemed critical for local district purposes.	3.22	.39
Extent of District's Alignment		3.00	.42
53	Which one of the following descriptions best captures your district's alignment of its financial resources with the support needed to achieve the Board's goals for student learning?	3.28	.43
54	Which one of the following descriptions best captures your school district's alignment of personnel policies and procedures with the instructional expectations for staff?	2.91	.49
55	Which of the statements below best captures your school district's alignment of structures with the instructional improvement work required of staff?	3.00	.47
56	Which of the following descriptions captures your school district's efforts to align the time and money allocated to professional development with the value of such PD to the district?	2.83	.51

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		Mean	SD
	Elected Leadership	2.74	.44
57	Trustees use the district's beliefs and vision for student learning and well-being as the foundation for strategic planning and ongoing board evaluation.	2.91	.50
58	Trustees focus most policy making on the improvement of student learning and well-being consistent with the beliefs and vision.	2.98	.46
59	Trustees approve and fund policies and programs that provide rich curricula and engaging forms of instruction for all students and eliminate those that do not.	2.72	.56
60	Trustees maintain productive relationships with senior staff, school staffs, community stakeholders and provincial education officials.	2.78	.62
61	Trustees visit schools with visitations pre-planned by principal and trustees. Trustees are visible at school events.	2.32	.52
62	The board of trustees provide systematic orientation opportunities for new trustees and ongoing training for existing trustees.	2.53	.42
63	Individual trustees support and act in accordance with decisions made by the board of trustees, as a whole.	2.88	.45
64	Individual trustees avoid becoming involved in district administration.	2.78	.61
65	Most trustees have an understanding of their role that is consistent with my understanding.	2.82	.46
	Organizational Improvement Processes	2.62	.34
66	My district pursues only a small number of improvement goals at the same time.	2.55	.27
67	We usually proceed in manageable stages and use the early stages as learning opportunities.	2.61	.37
68	My district's approach to improvement is relatively coherent.	2.71	.44
69	My district pursues a small number of key improvement goals over sustained periods.	2.65	.39
70	Schools are not overloaded with excessive numbers of initiatives.	2.29	.44
71	Considerable effort is made to build the capacities needed by school staffs for successful school improvement.	2.58	.49
72	My district has helped me to better understand the goals of the new curriculum (BCEdPlan).	2.87	.37
73	My district has helped me to better understand how to implement the new curriculum.	2.76	.37

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74	District improvement efforts typically focus on one portion of the system at a time (e.g., elementary schools then secondary schools; literacy improvement then numeracy improvement) and a schedule is created to ensure improvement in all parts of the district.	2.41	.40
75	Improvement efforts in schools are guided by explicit and well-tested frameworks, policies and practices, as well as widely shared goals that permit local adaptation. All stakeholders have clearly defined roles to play in this approach to school improvement.	2.51	.43
76	The district integrates new initiatives into existing routines and practices. Established structures and procedures are maintained and built on. Care is taken to ensure continuity and extension of core values.	2.62	.44
77	Schools have considerable autonomy to adapt district improvement efforts to reflect local priorities.	2.86	.46
	<i>Relationships</i>	2.80	.26
78	<i>Central Office:</i> Pick the one statement below which best describes the relationships among staff in your district's central office:	3.39	.71
79	<i>District & School Staff:</i> Pick the one statement below which best describes relationships between central office leaders and most school leaders	1.95	.27
	<i>Parents</i>	2.33	.38
80	Which one of the following statements best captures your district's efforts to help teachers and administrators develop the capacities they need to foster productive parent engagement in the school?	2.69	.50
81	Which one of the following statements best captures your district's efforts to help teachers and administrators develop the capacities they need to assist parents in creating Conditions in the home which support the success of their children at school?	2.37	.49
82	Which one of the following statements best captures how your district holds schools accountable for productively engaging parents?	2.13	.35
83	How extensive is your district's efforts - independent of what schools do - to provide programs and other opportunities aimed at helping parents ensure the success of their children at school?	2.11	.40
	<i>Local communities</i>	2.98	.31
84	Members of the aboriginal community are regularly engaged in schools in our district to serve as mentors and supporters for our staff.	2.93	.36
85	Members of the aboriginal community are regularly engaged in schools in our district to serve as mentors and supporters for our students.	2.98	.38

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86	Community groups are routinely recognized for their contribution and support and consulted on almost all decisions affecting the community. District staff are regularly members of these groups themselves.	2.87	.33
87	Indigenous community/communities are recognized by the school system and involved in school system decisions.	3.15	.35
	<i>Ministry of Education</i>	3.34	.23
88	My district communicates regularly with the Ministry, both formally and informally, about district goals and directions.	3.73	.24
89	My district clarifies with the Ministry how it can be of most help to the district.	3.78	.28
90	My district encourages Ministry collaboration in achieving district goals and directions.	3.80	.27
91	My district provides feedback to the Ministry about the relevance of its initiatives to district goals and directions.	3.84	.37
92	Which one of the following statements best describes how your district typically responds to the province's initiatives.	2.60	.40
93	Your district may choose to supplement government initiatives in order to increase their local impact. Which one of the following statements best captures your district's current approach to this possibility?	3.04	.47
94	Which one of the following statements best captures your district's attempt to leverage the province's initiatives in the interest of the board's priorities?	2.62	.68
Background Variables: Current position: 59% = Principals; 25% = Vice Principals; 6% = Central office staff Number of years in current position: 14% < 1 year; 24% = 1 to 3; 64% = 3+			

A. Appendix C: Detailed responses to the *Leading and Teaching in Schools Survey*

**Means and Standard Deviations for Responses to the
Leading and Teaching in Schools Survey
(*School, Classroom and Family Conditions*)**

		Mean	SD
	Conditions Aggregate	3.71	.17
	School Conditions	3.74	.15
	School Leadership	4.02	.15
	<i>Moral Stewardship</i>	4.30	.16
1	Contribute to staff's sense of overall purpose.	4.25	.17
2	Help clarify the reasons for implementing school improvement initiatives.	4.28	.17
3	Provide useful assistance to staff in setting short-term goals for teaching and learning.	4.04	.27
4	Demonstrate high expectations for teachers' work with students.	4.24	.27
5	Model a high level of professional practice.	4.61	.20
6	Ensure that the school's contribution to student success is the central criterion in making all decisions.	4.39	.22
	<i>Instructional Leadership</i>	3.69	.18
7	Effectively encourage teachers to consider new and promising ideas for their teaching.	4.08	.21
8	Effectively encourage teachers to use data effectively to improve their instruction.	3.68	.24
9	Regularly observe classroom activities.	3.48	.35
10	Work effectively with teachers following classroom observation, to help them improve their instruction.	3.30	.28
11	Buffer teachers from distractions to their instruction.	3.78	.19
12	Provide individual teachers with help in improving their instruction.	3.78	.26
13	Ensure productive use of appropriate technologies for teaching and learning.	3.60	.28
14	Provide the resources teachers need to improve their instruction.	3.84	.28
	<i>Relational Leadership</i>	4.20	.14
15	Recognize my own emotional responses and how those emotional responses influence the actions of my colleagues.	4.38	.22
16	Discern the feelings and emotions of my colleagues.	4.35	.18
17	Keep negative feelings from creeping into interactions in my school.	4.09	.26
18	Control my temper and handle difficulties handle difficulties calmly and with consideration of the other person.	4.57	.22

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19	Identify staff development needs and provide effective professional development to meet those needs.	3.85	.33
20	Promote leadership development among teachers.	4.10	.22
21	Persuade my colleagues to think carefully about issues that elicit strong emotions on their parts.	3.81	.19
22	Help my colleagues calm down when they get upset.	4.22	.19
23	Develop trusting relationships with and among staff, students and parents.	4.55	.20
24	Provide structures and processes that enable collaborative work among staff.	4.07	.29
25	Coordinate staff participation in decisions about school improvement.	4.15	.21
26	Create relationships with teachers that encourage our ongoing discussion of educational issues.	4.23	.21
	<i>Organizational Leadership</i>	3.90	.25
27	Make teachers' expertise of paramount importance in staffing.	3.66	.47
28	Ensure that the staffing process in my school is fair and equitable.	3.92	.47
29	Place staff in their areas of competence and expertise.	3.81	.34
30	Align school policies and procedures with our mission, vision and goals.	4.11	.21
31	Plan and work productively with community representatives.	3.97	.27
32	Incorporate community characteristics and values in my school's operations.	4.02	.29
33	Engage parents in my school's improvement efforts.	3.79	.30
	Academic Emphasis	3.70	.18
48	My staff and I set high standards for academic success.	4.07	.23
49	Most students respect others who get good grades.	3.97	.20
50	Students seek extra work so that they can be successful.	3.08	.27
51	Students try hard to improve on previous work.	3.44	.31
52	Academic achievement is recognized and acknowledged by the staff and I in my school.	3.97	.29
	Disciplinary Climate	3.78	.19
53	Students start working soon after lessons begin.	3.84	.23
54	Students are rarely absent except for good reasons.	3.21	.38
55	Students rarely get into fights.	4.32	.25
56	There are not many conflicts among students in my school.	3.76	.31
	Teacher Collective Efficacy	3.91	.19
67	Most of my teachers believe that most of our students come to school ready to learn.	3.59	.40
68	Most of my teachers are confident they will be able to motivate their students to learn.	3.88	.21
69	Most of my teachers are able to get through to even the most difficult students.	3.70	.28

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70	Learning in this school is made easier because students feel safe and welcome.	4.34	.15
71	Most of my teachers truly believe every child can learn.	4.07	.23
	Organization of Planning and Instructional Time	3.57	.28
72	Teachers in my school have common planning times to discuss teaching and learning.	2.92	.52
73	Teachers have regular opportunities to meet together for their professional learning.	3.43	.46
74	The school's timetable maximizes instructional time for students.	4.09	.27
75	Teachers ensure that there are very few disruptions to student instructional time.	3.86	.22
	Safe and Orderly Environment	4.21	.15
76	The learning environment in my school is safe and orderly.	4.33	.17
77	Teachers in my school make serious efforts to promote an inclusive school.	4.30	.18
78	My school emphasizes the prevention of youth violence in schools rather than suspensions.	4.34	.22
79	My school uses threat assessment rather than violence surveys to assess the safety of the school.	4.20	.42
80	My school provides mental health services for those students who need it.	3.97	.44
71	School staff, parents and communities work together to promote school safety.	4.11	.21
	Collaborative Cultures and Structures	3.62	.23
82	In my school teachers adjust instruction on the basis of feedback from other colleagues in the school.	3.22	.41
83	Teachers in my school interact frequently with trusted colleagues outside our school in efforts to improve instructional practices.	3.39	.34
84	Teachers in my school often challenge one another's beliefs about education.	3.15	.37
85	Teachers in my school collaborate with one another to develop common assessment tools for measuring students' progress.	3.48	.36
86	Teachers share instructional strategies that work.	3.94	.26
87	Teachers and I ensure the collaborative efforts on student data analysis leads to changes in instruction in classrooms.	3.33	.33
88	Our school celebrates the achievements of staff and students.	4.08	.16
89	Teachers' conversations are primarily focused on teaching and learning when they meet together for professional learning.	3.82	.27
90	Teachers in my school have sufficient autonomy to make collaborative decisions about teaching and learning.	4.17	.22
	Classroom Conditions	3.78	.15

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	Classroom Instruction	3.52	.24
34	Teachers' instruction is explicitly guided by the goals that they intend to accomplish with their students.	3.73	.28
35	Teachers monitor students' progress to make sure that they are actively engaged in meaningful learning.	3.76	.24
36	Teachers provide prompt, informative feedback to students.	3.58	.29
37	Student achievement results are carefully analyzed for differentiated instruction.	3.20	.37
38	Instructional strategies enable students to construct their own knowledge.	3.42	.29
39	Significant opportunities are provided for students to learn collaboratively.	3.78	.27
40	Data are used to identify weaknesses in students' academic skills and to develop interventions to remediate or reteach.	3.51	.39
41	Teachers supplement face-to-face instruction in schools with technology-facilitated assignments reinforcing what has been learned in class.	3.17	.36
	Uses of Instructional Time	3.66	.17
42	Teachers' classrooms are free from distractions to student learning.	3.45	.25
43	Teachers minimize time lost due to student lateness and absence.	3.44	.31
44	Students are on task.	3.80	.28
45	Conditions in teachers' classes allow for an appropriate pace of instruction.	3.81	.19
46	Most teachers begin classes promptly.	3.94	.22
47	Most students are capable of taking charge of their own learning in age-appropriate ways.	3.52	.25
	Teacher Trust in Others	3.99	.19
63	Most teachers trust their students to do their best work.	3.72	.32
64	Most teachers in this school can count on each other for support.	4.32	.18
65	Most teachers in my school trust me to provide the support they need to do their work well.	4.32	.20
66	Teachers can count on support from most students' families.	3.59	.28
	Teacher Commitment	3.96	.18
57	Most teachers in my school believe very strongly in the school's values and goals.	4.14	.17
58	Most of my teachers are willing to devote considerable effort to help accomplish the school's goals.	3.96	.26
59	Most of my teachers are willing to adapt to changes that are aligned with school goals.	3.83	.25
60	Most of my teachers are willing to "go the extra mile" to help students.	4.20	.21
61	Most teachers refine their instructional strategies based on evidence.	3.53	.29

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62	Most teachers volunteer to help their school colleagues when they think they can be useful to them.	4.10	.27
	Family Educational Culture	3.61	.25
91	Help parents to develop high but realistic expectations for their children's success at school and beyond.	3.40	.30
92	Help parents develop effective forms of communication with their children in the home about their children's academic work at school.	3.28	.31
93	Encourage parents to participate in school events.	3.94	.30
94	Help parents to learn how to assist their children's learning at home.	3.50	.31
95	Encourage parents to discuss their children's progress at school with teachers.	3.94	.25

Background data from individual respondents

- Your current position: more principals than vice principals (68% p, 29% v-p)
- Number of years working as a principal/vice-principal: mean = 3.5 (at least 6-10)
- Number of years worked in this school as a principal and vice-principal: mean = 2.10 (less than 5)
- Including yourself, number of principals assigned to this school in the last 10 years: Mean = 3.6
- Number of teachers on your staff: mean = 2.7 (about 21)
- Number of teaching and non-teaching staff in your school: mean = 3.76 (about 30)
- What levels of education are currently offered in your school: elementary = 58%; middle = 21%; high = 29%

Appendix D: Does District Size Matter?

Does size matter? was not a question motivating this study at the outset or one suggested by the framework for the study. So our interest in pursuing the question is limited primarily to satisfying the curiosity of those who introduced it in the early stages of our work. Aside from concerns about the effects of district consolidation, it is not a malleable variable open to improvement efforts by district leaders.

In response to this question, correlations were calculated between district size and the nine district characteristics, the 12 school, classroom and family conditions, as well as all cognitive and socio-emotional outcomes serving as dependent measures for the study.

There were no significant relationships between district size and the nine district characteristics and only two Conditions were significantly related to district size: Instructional Leadership (.42) and Organization of Planning and Instructional Time (.63). However, as Table 11 indicates, there were 13 significant correlations (only significant relationships shown) between district size and most of the study's cognitive and socio-emotional outcomes.

While these results suggest larger districts are associated with superior student outcomes, district size is typically associated with a host of variables confounding explanations of size effects alone as, for example, student characteristics, poverty, ethnicity and parental education. Previous research about district size effects controlling for variables such as these, typically reports a negative (e.g., Chingos, Whitehurst & Gallaher, 2013; Driscoll, Halcoussis & Svorny, 2003) or curvilinear relationship between district size and student achievement, with some groups of students thriving better in relatively small districts.

Table 1

Relationships Between District Size and Survey Scales and Student Outcomes

Measure	Significance Level
Grade 10 Mathematics 2016	.50*
Graduation Rates in 2016	.46*
Grade 4 Cognitive Student Engagement	.53*
Grade 7 Cognitive Student Engagement	.58**
Grade 10 Cognitive Student Engagement	.57**
Grade 10 Student Engagement Aggregate	.47**
All Grades Cognitive Student Engagement	.63**
All Grades Student Engagement Aggregate	.51**
Grade 4 Language 2017	.43+
Grade 4 Mathematics 2016	.43+
Grade 7 Well-Being	.38+
Grade 4 Student Engagement	.37+
Grade 12 Student Cognitive Engagement	.37+

Legend: ** $p < .01$; * $p < .05$; + $p < .10$

Appendix E: Comparison of BC and Ontario Data

Findings Common to the British Columbia and Ontario District Studies

We were asked to compare BC and Ontario data. It is, after all, a replication study. And while there are things that we have learned that inform Strong Districts, comparison is something we do with some reluctance. Comparisons are always fraught with ‘buts’ or ‘not so’s,’ exceptions and oversimplifications. Ontario and BC are provinces with many similarities, but also many differences. Just as every school leadership situation is slightly different, every district, every province... every reality is “unique in all the world” to quote *The Little Prince* (Exupery). We will, with this hesitation in mind, offer some considerations that might serve some purpose. However, before we provide this comparison, we do want to contextualize.

Context matters. British Columbia and Ontario both have significant education histories, some of it is brilliant, some of it is not; some of it is similar, some of it is not. We encourage consideration of context in all research, without negating the information the research provides about “next steps” informed by the data itself. Critical consideration is not circumvented by research, but it should be informed by that research.

We think of both provinces as progressive, economically successful, and diverse. The Table below provides enough information to assist with clarifying some data that is considered relevant when saying the provinces are “the same, but different”.

Table 1
Relating the Context of British Columbia and Ontario by the Numbers

Topic of Comparison	British Columbia	Ontario
Population (2016)	4,648,055	13,448,494
	2.5 million reside in the Greater Vancouver area (GVA)	6.418 million reside in the Greater Toronto area (GTA)
Immigration Description	GVA: 712,000 people reported speaking an immigrant language most often at home	GTA: 1,800,000 people reported speaking an immigrant language most often at home
<i>Ranking in Canada as Immigration destination</i>	Vancouver (GVA): #2	Toronto (GTA): #1
<i>Other cities in Top Five Immigration Destination cities in Canada</i>	None	Ottawa (256,000) Hamilton (177,000)
Area of Province	944,735 km ²	1,076,000 km ²
	364,764 miles ²	415,598 miles ²
Population identified as living in a rural/remote location in 2011	609,363 (14% of the population)	1,806,036 (14% of the population)
# of publically funded provincial district organizations	One	Four (plus one) <ul style="list-style-type: none"> • Public, English (31) • Public, French (4) • Public, English Catholic (29) • Public, French Catholic (8) • Ministry, other (4)
# of district school boards	60	76
GDP per capita (C\$)	47,579	48,971
Indigenous population	232,290; 5.4% (First Nation; Métis) of total provincial population	301,425; 2.4% (First Nation, Métis, Inuit) of total provincial population
# First Nation communities	198	126
Official Language	English	English
Largest School District	Surrey (+70,000)	Toronto (+250,000)
Smallest School District	Stikine (+200)	Moose Factory (+300)*
*The Ministry/other school districts may be smaller than Moose Factory		