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Executive Summary
The purpose of the Student Achievement Division Literacy and Numeracy Strategy: Evidence of Improvement Study is to investigate and report on two overarching guiding questions:

1. What initiatives and/or activities have been developed and/or implemented by the LNS since the last evaluation in 2009 to improve student achievement in Ontario elementary schools?

2. What evidence demonstrates the level of impact of LNS initiatives and/or activities in terms of improving student achievement in Ontario schools?

The scope of the study is to examine initiatives and evidence from 2009 to present based on review of documents and data provided by the Student Achievement Division (SAD). Overall, a total of 140 documents were received and reviewed for the Evidence of Impact study. Of note, all Literacy and Numeracy Secretariat (LNS) initiatives identified involve some form of internal LNS monitoring, evaluation and/or research. Encouragingly, key initiatives initiated since 2009 also include externally commissioned evaluations and/or research. This is very significant in terms of demonstrating a commitment to examine evidence of impact by LNS. The LNS is to be highly commended for their commitment to evidence, including the important work of a LNS Research, Evaluation and Data Management Team.

Findings

Question 1: What initiatives and/or activities have been developed and/or implemented by the LNS since the last evaluation in 2009 to improve student achievement in Ontario elementary schools?

The documentary review identified 24 named initiatives which have been part of LNS activities during 2009 to 2013. Of these, eleven initiatives have ended and/or become incorporated into newer and/or larger initiatives by 2012-13. This process is positive evidence of LNS monitoring, refining and adapting initiatives over time to advance the literacy and numeracy strategies. In 2013-14, active key initiatives include:

1. Board Improvement Plan for Student Achievement (BIPSA)
2. Collaborative Inquiry for Learning – Mathematics (CIL-M)
3. Early Primary Collaborative Inquiry (EPCI)
4. Leading Student Achievement (LSA)
5. LNS professional learning resources
6. Ontario Focused Intervention Partnership (OFIP) Tutoring
7. Ontario Focused Intervention Program (OFIP)
8. School Effectiveness Framework (SEF)
9. Schools in the Middle/ System Implementation and Monitoring (SIM)
10. Small and Northern Boards Initiative
11. Student Work Study Teachers (SWST)
12. Summer Learning Programs
13. Tutors in the Classroom

Question 2: What evidence demonstrates the level of impact of LNS initiatives and/or activities in terms of improving student achievement in Ontario schools?

The conclusion of this review is that there is both substantial ‘evidence’ and significant ‘improvement’ associated with the LNS initiatives. As Ontario nears almost a decade since the LNS was first established, it is clear that the landscape of the Ontario education system has changed considerably with increased attention on literacy and, more recently, numeracy, a concern to both raise student achievement and reduce gaps in performance, changes in the professional learning, knowledge, skills and practices of educators, and improvements in students’ engagement, learning and achievements. These are remarkable improvements. Furthermore, international educational change experience suggests that sustaining improvement is rare and precarious. Yet, the evidence reviewed for this study would suggest that, overall, impact of the LNS for improvement has been sustained and on several indicators it has actually increased. Since 2009, LNS’ impact has expanded by involving an increasing number of schools directly in LNS initiatives – now 90% of elementary schools – and deepened by introducing more initiatives focused directly at changing practices in classrooms and supporting all learners to succeed. Results have improved too since 2009 – all French language EQAO assessments have increased and the majority of English assessments have also increased. The majority of elementary schools in Ontario now have 75% or more of their students meeting or exceeding the provincial standard in at least half of the school’s EQAO assessments. Relatedly, there has been a remarkable reduction in the proportion of low performing schools and there has been attention to reducing gaps in performance for lower achieving students.

Of course, there remains more to be done. In instances where areas of impact require attention, the evidence suggests a need for more not less LNS support. Some student groups continue to struggle, school improvement requires continuous attention, and professional capacity building is an ongoing process. The recent declines in mathematics in the English-language system are an important concern. Although a literacy and numeracy strategy, the majority of early initiatives predominantly focused on literacy. The evidence indicates that literacy strategies will not automatically correspond with mathematics improvements. From 2011-12, LNS has acted on this evidence to prioritize a focus on mathematics. Continuing to increase focus on math content, pedagogy and learning is vital.
Below is a summary of evidence of impact and improvement for each LNS initiative reviewed:

**Collaborative Inquiry for Learning in Mathematics (CIL-M)**

*Spread of Initiative:* There has been substantial spread of CIL-M with the initiative expanding from 47 schools in 2008-09 to 1402 schools in 2012-13.

*Impact on Professional Learning and Practices:* CIL-M is contributing to improvements in teachers’ confidence in designing instructional strategies and changes in practices for teaching mathematics.

*Impact on Student Learning and Achievement:* Students participating in CIL-M report improved attitudes, behaviours and learning for mathematics. Students improved their achievement in pre- and post-math tests in the CIL-M evaluation. Provincially, the decline in mathematics results is lower for CIL-M schools compared to all schools overall. However, CIL-M has not yet had a positive impact on increasing math results overall. It is important to ensure a strong emphasis on inquiry in mathematics for CIL-M educators and students and for quality implementation at scale.

**Small and Northern Board (S&NB)**

*Spread of Initiative:* The number of schools participating in the S&NB initiative has increased from 432 schools in 2011-12 to 632 schools in 2012-13.

*Impact on Professional Learning and Practices:* S&NB is contributing to a culture of professional learning and high expectations for student learning. DSBs reported implementation of use of numeracy coaches and supports for professional learning. Participating teachers reported medium impact on their confidence in teaching mathematics. However, full implementation of actions to develop expertise in math content knowledge and pedagogy has not yet been realized and is an important area for attention.

*Impact on Student Learning and Achievement:* Evidence of impact on student achievement is weak and mixed. In 2011-12, schools participating in S&NB improved their overall math results in EQAO assessments at Grades 3 and 6. In 2012-13, the majority of schools participating in S&NB declined in their math results and the overall decline was larger than the overall results for schools not participating in the S&NB initiative. This is not to say that all schools involved in S&NB declined in performance: in 2012-13, 41.1% of schools participating in S&NB improved their Grade 3 math results and 43.4% of S&NB schools improved their Grade 6 math results. Nevertheless, there were not overall positive sustained results.
Early Primacy Collaborative Inquiry (EPCI)

Spread of Initiative: EPCI began in 2009-10 with a focus on K-1. In 2010-11, EPCI expanded to K-2. In 2012-13, 455 schools were involved in EPCI.

Impact on Professional Learning and Practices: Educators participating in EPCI reported very high impact for their professional learning, their understanding of students’ learning, and improvements in their teaching practices.

Impact on Student Learning and Achievement: Participants considered EPCI to have a strong, positive impact on students’ engagement in their learning. By developing K-2 collaboration, transitions between Kindergarten and Primary Division can be supported. Further development of capacity to assess and measure the impact of EPCI on student achievement is suggested – both for educators in classrooms and at the system level.

Student Work Study Teachers (SWST)

Spread of Initiative: The SWST began in 2009-10 with 50 SWS teachers. By 2012-13, 63 SWS teachers were engaging in collaborative learning and practices with host classroom teachers in 532 schools. In 2013-14, the initiative expanded to involve 140 SWS teachers.

Impact on Professional Learning and Practices: The experience of working as SWS teachers is extremely powerful and high impact professional learning. For host classroom teachers, working with a SWS teacher can contribute to improved confidence, knowledge and teaching practices to support student learning and engagement. There was higher engagement and higher impact when the SWS teacher was an experienced teacher, the host classroom teacher was willingly involved in collaborating with the SWST, and there was sustained and consistent involvement in working together.

Impact on Student Learning and Achievement: The SWST contributed to improved understanding of students’ learning and adjusting teaching to meet students’ needs, particularly students who were struggling. Overall, students in SWST classrooms demonstrated increased confidence in their learning, changes in learning behaviours, increased engagement and improved achievements.

Summer Literacy Learning Project (SLLP)

Spread of Initiative: The number of summer learning programs has more than trebled since the launch of this initiative: from 55 classes in 2010 to 171 classes in 2013. The focus has expanded from literacy to also include numeracy and programs for First Nations, Métis and Inuit students.

Impact on Professional Learning and Practices: Educators who participated in SLLP reported that they improved their understanding of students’ needs and developed instructional strategies to support struggling students to learn.
Impact on Student Learning and Achievement: Students identified to participate in SLLP are experiencing academic and/or social disadvantages. The SLLP contributes to improvements in students’ academic and social skills, their well-being, and their confidence in learning. While participants did experience summer learning loss – where disadvantaged students fall behind in their achievement when not in school – the SLLP appears to mitigate the extent of summer learning loss. In other words, students would likely have fallen even further behind without the SLLP support.

School Effectiveness Framework (SEF)

Spread of Initiative: All district school boards (DSBs) and schools are expected to use the SEF to support self-assessment and improvement planning processes. The SEF is widely used but has not reached full implementation in all DSBs and schools. In addition, schools can receive a District Review to support this process. The number of schools participating in a District Review each year has almost doubled – from 722 schools in 2009-10 to 1419 schools in 2012-13.

Impact on Professional Learning and Practices: The SEF is contributing to a culture and practices of self-assessment and improvement planning. District Reviews, in particular, are reported to be helpful for improving school improvement plans. The SEF is considered to be somewhat effective in influencing school improvement, professional learning and changes in practice. The SEF impact is mixed due to high variability in implementation. Additional professional development on the content and processes of the SEF is required to support understanding of the SEF and implementation by SEF Leads in DSBs and principals in schools.

Impact on Student Learning and Achievement: Schools participating in District Reviews demonstrate stronger gains in EQAO achievement results compared to all schools overall. There is a lack of evidence concerning the SEF overall and student achievement results: in large part this is because of difficulties in connecting an improvement planning document and process to measures of student outcomes. Consideration of how to further measure the impact of the SEF is required.

Leading Student Achievement (LSA)

Spread of Initiative: Beginning with 22 DSBs in 2005-06, LSA has expanded considerably. In 2012: for elementary schools, 53 DSBs, 1932 principals and their schools and 103 district leaders were involved in LSA; for secondary schools, 22 DSBs, 70 school administrators in 56 schools, and 29 district leaders participated in LSA in 2012.

Impact on Professional Learning and Practices: Principals reported benefits of participating in Principal Learning Teams at provincial and district levels for supporting their instructional leadership and positive impact of professional learning communities in schools for teachers’ and principals’ learning.
Impact on Student Learning and Achievement: There are examples of LSA participants engaging in, and supporting, practices for improved student learning. However, the material provided for this review of Evidence of Impact did not include analyses of EQAO results or other indicators of student achievement connected to LSA. LNS may want to consider how to use the LSA annual evaluations provided to the LSA Steering Committee as part of LNS monitoring of the LSA and reporting of LNS impact overall, for example in Year in Review reports.

Ontario Focused Intervention Partnership (OFIP) and Schools in the Middle (SIM)

Spread of Initiative: As OFIP targets low performing schools, the substantial reduction in the number of OFIP schools – from 236 schools in 2008-09 to 87 schools in 2012-13 – indicates a significant positive impact. SIM was originally designed for schools in the mid-range of performance but is evolving to a district-wide strategy and involves the majority of elementary schools in Ontario.

Impact on Professional Learning and Practices: OFIP has demonstrated positive impact on professional learning, including substantial attention to and implementation of practices to support school improvement processes, collaborative professional learning and shared leadership, and development of instruction and assessment to support improved teaching practices and student learning. SIM has supported networking between schools and improvements in school improvement planning.

Impact on Student Learning and Achievement: OFIP has had substantial and significant impact on student achievement results. OFIP schools achieve higher percentage point improvements in EQAO assessments compared to all schools overall. SIM has also contributed to improvements in student achievement with SIM schools demonstrating mainly higher percentage point gains in EQAO results compared to all schools overall.

System Implementation and Monitoring (SIM)

Spread of Initiative: A new and expanded SIM was introduced in 2012-13 involving 2426 – or 65% – of elementary schools in Ontario. In 38 of 72 DSBs, SIM was being used as a strategy to include all elementary schools.

Impact on Professional Learning and Practices: DSB and school reports to LNS indicate increased implementation of a range of processional learning and instructional practices connected in 2012-13. For “integrating collaborative dialogue and classroom experiences”, increased implementation of professional collaboration, co-learning and co-planning, and instructional leadership are reported. For “student engagement and learning”, increasing use of analyzing students’ work, improving instructional practices, providing feedback, and incorporating students’ voices are reported. In the area of “building pedagogical content knowledge”, increased implementation of developing learning tasks based on curriculum expectations, literacy content and pedagogy, and use of
coaches are reported. These are important practices and indicate emerging impact of SIM in its first year of implementation. Two areas that may benefit further focused attention are engaging school improvement teams in school improvement work and developing mathematical content and pedagogy. In addition, SIM teams appreciate and would like further professional learning and resources to support their own monitoring of SIM implementation and impact locally.

Impact on Student Learning and Achievement: In 2012-13, overall SIM schools performed at a similar rate to all schools overall. This is understandable given that this was also the year when the new SIM was introduced and expanded significantly to include the majority (65%) of elementary schools in the province. Now that a new SIM approach has been introduced and has expanded to a DSB-wide strategy in many cases, an independent evaluation of the current and evolving impact of the new model of SIM is recommended.

OFIP Tutoring and Tutors in the Classroom (TITC)

Spread of Initiative: In 2012-13, 1418 schools (or 38% of elementary schools participating in EQAO) participated in OFIP Tutoring and 1150 schools (or 31% of elementary schools participating in EQAO) were involved with TITC.

Impact on Professional Learning and Practices: As these initiatives draw on external tutors, measures for school educators’ professional learning have not been included.

Impact on Student Learning and Achievement: DSBs report that tutoring can support students’ engagement, increase confidence, and support positive attitudes to learning. These benefits can assist with learning in class as well as beyond. Tutoring initiatives tend to focus on identifying and supporting students who are struggling and can, therefore, support reducing gaps in performance for lower achieving students. Schools participating in the tutoring initiatives demonstrated stronger percentage point gains (compared to all schools overall) on the majority of EQAO assessments.

LNS Professional Learning Resources

Spread of Initiative: The volume of activity associated with LNS Professional Learning resources is astounding. 2,956,716 unique IP addresses have been tracked accessing LNS webcasts and online resources. For print resources and DVDs, the LNS distribute resource packages on a regular basis to Ministry, education and sector partners (approximately 10,000 packages distributed twice per year). In addition to materials being distributed, individuals can request copies of LNS materials. 527,565 additional LNS materials were distributed in the one year period from April 2013 – April 2014, for example.

Impact on Professional Learning and Student Learning: There is some encouraging evidence within existing evaluations and LNS reports about educators valuing the LNS Professional Learning
resources. The volume of people receiving and/or accessing LNS Professional Learning resources would suggest that they can be important sources for professional learning. However, there has not been specific evaluation of how the LNS resources inform professional learning, changes in practice and/or student achievement. The need for an evaluation of the content, reach, uptake, use and impact of LNS professional learning resources is strongly recommended.

Summary of Overall Impact of LNS

Spread of Initiatives: LNS has substantial reach and spread of impact across the Ontario education system. The spread of direct involvement in LNS initiatives has increased considerably: from 2950 elementary schools in 2009-10 to 3620 elementary schools in 2012-13 being directly involved in at least one LNS initiative. 90% of elementary schools are now directly participating in LNS initiatives. This is a remarkable achievement.

Professional Learning and Practice: LNS initiatives, resources and funding are vital to supporting time and capacity for professional learning and contributing to improved practices. Reviewing actions across the initiatives, there is evidence of substantial impact for professional practices, including: school self-assessment and improvement planning processes; principals’ instructional leadership; and important shifts in teachers’ confidence and capacity with increased use and improvement in a wide range of learning and teaching practices.

Student Learning and Achievement: Overall, there is also evidence of substantial and sustained improvements in raising student achievement and reducing gaps in performance. Between 2002-03 and 2012-13, overall elementary student achievement has increased by 17 percentage points in EQAO assessments. In the period of this review (2008-09 to 2012-13), EQAO assessment results have increased in all assessment results in the French-language system and the majority of assessments in the English language system. The goal of 75% of students achieving the provincial standard or above has been exceeded in all of the French-language EQAO assessments and in the English-language EQAO results for Grade 3 Writing, Grade 6 Reading and Grade 6 Writing. For the first time, in 2012-13, the majority of elementary schools in Ontario have met or exceeded the 75% goal in at least half of their EQAO assessments. Conversely, the percentage of low performing schools has reduced by more than half from 2009 to 2013 – an important indicator of reducing gaps in performance. At the student level, there has been attention also to supporting all students to succeed, including those who are lower performing or struggling. There have been large reductions in the performance gaps for students who are English Language Learners (ELL) compared to all students overall. There have also been improvements for students identified as having special educational needs – although further support for improvement is required. The recent declines in mathematics in the English-language system are also an important concern. From 2011-12, LNS has acted on this evidence to prioritize a focus on mathematics; continued attention on mathematics is required.
Conclusions and Future Suggestions

In summary, this review of Evidence of Impact concludes there is both strong evidence and substantial impact for LNS initiatives from 2009 onwards. The LNS is highly commended for their leadership, strategies and actions in valuing, developing and using evidence to support improvements in Ontario's public education system with tangible benefits for student achievement and equity. In considering the further development of both evidence and impact for LNS, specific recommendations are suggested below:

1. **Expand the review of evidence of impact to include non-LNS sources**

   This current study only reviewed documents and evidence commissioned or produced by LNS. LNS may want to review additional sources of independent evidence with relevance to the LNS activities and impact, for example from national and international assessment data, from research and evaluations conducted in the Ontario elementary system during this period (independent and separate from LNS commissioned research), and from researchers and thought leaders writings and commentary about the Ontario LNS and public education system.

2. **Ensure continuing evaluation of all initiatives**

   a. **Initiatives without current major evaluations**

      Two specific initiatives were identified in this report as requiring dedicated evaluation. First, the impressive volume and activity of LNS Professional Learning resources would benefit from an evaluation of the access, understanding, use and impact of these resources by LNS and in DSBs, schools and classrooms. Second, as Schools in the Middle has become System Implementation and Monitoring (SIM) and is now evolving to a DSB-wide initiative, an evaluation of the implementation of SIM at scale is timely. In addition, I received substantial information about Board Improvement Plans for Student Achievement (BIPSA) but not evidence of impact of BIPSA, suggesting there may be a need for additional monitoring and evaluation.

   b. **Enhancing or updating evaluations of initiatives**

      It is timely for LNS to consider where existing initiatives may require enhanced or updated independent evaluations. Specifically, the evaluations provided for this review included a 2010 report on SLLP (Davies & Aurini, 2010) and 2011 reports for CIL-M (Bruce & Ross, 2011a), S&NB (Bruce & Ross, 2011b), and SEF (Klinger et al., 2011). It may be time for new/updated evaluations of these initiatives, particularly the SEF. With regard to enhancing existing evaluations, LNS are encouraged to give consideration to how to ensure evidence from LSA research and evaluations is included in LNS monitoring and reporting going forward.
3. Evaluating the overall influence and impact of the Literacy and Numeracy Secretariat and Strategy

In addition to – or potentially more realistically, instead of – initiating multiple separate evaluations of individual initiatives, LNS should give strong consideration to whether to commission a new overall evaluation of the LNS. It is over five years since the previous overall evaluation reported (Audet et al., 2009). My advice would be to proceed with scoping, proposing and commissioning an overall LNS evaluation linked to current initiatives and priority themes.

This review of Evidence of Improvement has addressed similar objectives to the previous overall LNS evaluation and the evidence of overall substantial impact is clear. Nevertheless, there are areas that could be more fully and appropriately investigated through a new evaluation design and tailored data collection and analyses. I outline two specific areas for consideration. First, to research the activities, influence and impact of the Literacy and Numeracy Secretariat itself on student achievement policies and programs within the Ministry, and practices and outcomes across the education system. The purpose would not be to evaluate individuals or the organization; rather the purpose is to document and tell the story of the important and significant role of the Secretariat. Without adding evidence of the LNS' own impact, there is missing evidence about the full impact on changes in the Ontario education system’s infrastructure, culture, processes and outcomes. This is important to further enhance Ontario’s reputation as a leading educational jurisdiction globally. Second, an overall evaluation can investigate the implementation and impact of combinations of LNS initiatives to provide a more holistic assessment of the impact for DSBs' improvement processes, schools' improvement and leadership practices, teachers’ professional learning and changes in knowledge, skills and practices, and students' attitudes, engagement, learning, equity and achievements.

4. Furthering a research and development agenda

As well as evaluation activities, I encourage LNS to consider furthering a broader research and development agenda focused on intended impact, promising practices and identification of leading practices and evidence locally and internationally in the areas of system and school improvement, instructional leadership, professional learning, literacy and numeracy teaching and learning, and supporting all students to succeed. For example, some pertinent questions for professional learning and mathematics are:

What professional learning approaches do elementary teachers engage in when seeking to improve their mathematics instruction? Why do they select to engage in these approaches? What approaches appear to be effective for improving teachers' mathematical understanding, efficacy, and changes in practice? What benefits for students' achievements can be identified? What enables or inhibits engaging in effective professional learning?

Or for students’ learning:

How are Ontario schools' supporting students’ to improve their learning and achievements in mathematics? What promising practices can be identified? What is required to support these practices?
Such questions start from a focus on the practices and people intended to be impacted and seek to research how they are – or are not – experiencing access to support to improve practices and outcomes. This moves beyond evaluation of individual initiatives to a wider research and development agenda concerning the experiences, promising practices, impact and future needs of students, educators, schools and DSBs.

5. **Building and strengthening evidence-informed capacity**

As LNS becomes increasingly precise in its use of evidence, there is a need to continue to attend to ensuring capacity for understanding, analyzing and using evidence throughout the Ontario education system and Ministry. Attending to some concerns in the evaluation reports about how to assess collaborative inquiry, how to use the SEF indicators, and my comments about clarity and consistency in DSB and school reporting to LNS is very important. In particular, the DSB and school end of year reports provide a substantial source of evidence for LNS monitoring and reporting. Recent streamlining and enhancements to these reports are to be commended. With implementation of the new end of year reporting format, it is important now to monitor how appropriate the content of the indicators are and how effective the process for understanding and reporting related evidence is. At the system level, concern to appropriate future measures of impact is timely in the context of current performance and the renewed vision for *Achieving Excellence*. LNS is encouraged to give focused attention to what should be appropriate – yet practical – measures to assess future impact on professional learning and student learning. While EQAO is an important and useful assessment, attempting to track initiatives - such as tutoring or summer programs or early learning which do not correspond directly to EQAO assessments and/or to assess a single initiative in isolation when multiple are present in the school - to EQAO is problematic. EQAO benchmarks are only one measurement; they should not be the exclusive measurement.

6. **Achieving Excellence through an evidence-informed education practices strategy**

LNS is a strongly evidence-informed strategy and uses evidence from ongoing monitoring, evaluation, research and data – as well as professional knowledge and expertise – to adapt, refine and change the strategy overall and specific initiatives as needed. The data reviewed for this report provides considerable evidence of positive impact. Nevertheless, one recurring issue is alignment and coherence. This is a perennial issue in educational change: the need to avoid prescriptive ‘top-down’ mandates that will be overly restrictive and resisted locally; yet the difficulties of ‘bottom up’ autonomy if this results in isolation and polarization of experiences rather than system-wide improvement. LNS has been very attentive to negotiating a balance of provincial direction and support with local flexibility and responsibilities. Yet, the evaluations indicate that schools and DSBs are looking to the Ministry to offer coherence, and the Ministry is indicating the importance of DSBs and schools making their own coherence linked to BIPSA and SEF processes. My suggestion would be to consider how to evolve the LNS to support increased clarity and coherence of implementation in the context of the renewed vision for Ontario’s education system, *Achieving Excellence*. 
As the majority of schools are implementing more than one LNS initiative, it may be time to move away from funding specific individual ‘initiatives’ and move towards supporting identified ‘practices’ for professional learning at the school level and for teaching practices and student learning at the Grade/Division level. In practical terms, the LNS would no longer fund over ten initiatives per year, but would rather fund the development and implementation of identified practices at DSB, school and classroom levels, such as collaborative inquiry adapted to different grades and students’ needs rather than through discrete initiatives currently. While continuing a culture of high expectations and local flexibility, LNS – in partnership with the field – could clarify key minimum expectations for professional learning, teaching practices and students’ learning drawing together curriculum expectations, Growing Success assessment policies, attention to safe, inclusive schools, and LNS resources and supports, including the SEF, BIPSA, activities in the DSB end of year reporting templates, and LNS professional learning resources. The approach could be akin to an Expert Panel report or a ‘teaching and learning’ version of the SEF setting out guidelines and supporting resources for teachers and administrators. As minimum expectations, the stated expectations would clarify and set out key practices for educators at school, division and/or grade levels, alongside higher expectations and support for flexibility and innovation for enhancements and developments locally to build on and extend these practices. The approach is not to mandate specific practices but, rather, to create coherence of understanding key practices across the province and to provide linked resources and support for professional learning and student learning. For teachers and administrators seeking additional support, the proposed approach would provide clarity of expectations and intended practices. Whereas for those teachers and administrators who are already implementing identified practices and leading future practices, this would be a baseline reference point but they would be encouraged to flourish with higher expectations for innovations in promising practices and sharing these with LNS and throughout the Ontario education system. In such an approach evidence from professional practice, combined with evidence from provincial resources and supports, would inform achieving excellence for educators and students.

In summary, this review of Evidence of Improvement concludes there is both substantial evidence and impacts for educational improvements associated with LNS initiatives from 2009 onwards.
Introduction

The purpose of the Student Achievement Division Literacy and Numeracy Strategy: Evidence of Improvement Study is to conduct an analysis of the evidence relating to initiatives associated with the Literacy and Numeracy Strategy and review the impact on improving student achievement in Ontario. Specifically the study is to investigate and report on two overarching guiding questions:

1. What initiatives and/or activities have been developed and/or implemented by the LNS since the last evaluation in 2009 to improve student achievement in Ontario elementary schools?

2. What evidence demonstrates the level of impact of LNS initiatives and/or activities in terms of improving student achievement in Ontario schools?

The scope of the study is to examine initiatives and evidence from 2009 to present based on review of documents and data provided by the Student Achievement Division (SAD) concerning internal research, evaluation and data analyses conducted by Literacy and Numeracy Secretariat (LNS) and commissioned external evaluations and research.

Context: The Ontario Literacy and Numeracy Strategy

LNS was established in 2004 to lead the government’s focus on improving literacy and numeracy in partnership with the Ministry of Education, educators and community members across the Ontario education system. LNS is a key part of the government’s commitment to three priority goals:

- Improved levels of student achievement
- Reduced gaps in student achievement, and
- Increased public confidence in publicly funded education.

In particular, LNS has a mandate to support reaching the government’s target of 75% or more of elementary students meeting or exceeding the provincial standard in literacy and numeracy (measured by Level 3 and above on EQAO reading, writing and mathematics assessments in Grade 3 and Grade 6).

Originally established as a Secretariat, the structure of LNS is importantly different from a traditional Ministry branch. LNS engages educators, government officials and other partners to focus on instructional improvement for student achievement. As LNS explains:

The LNS plays a unique role within a larger strategy—the province’s literacy and numeracy strategy, charged with developing, coordinating and delivering the government’s literacy and numeracy strategy in elementary schools. The LNS is also responsible for ensuring that programs and initiatives result in greater instructional effectiveness at the classroom level leading to improvement in student learning and achievement. The strategic implementation work of the LNS draws from research related to school improvement efforts...
which reflect that successful education systems provide opportunities for teachers and school leaders to learn, develop and own strategies through practice. Also, sustained continuous improvement is built and developed in partnership with classroom, school and district leaders.

The LNS, organized on the basis of seven regional and one French-language teams, works across the province directly with district school boards and schools. Each team consists of educational leaders, Student Achievement Officers (SAOs), who have recent experience as teachers, principals, school consultants/coaches/ coordinators or senior district school board leaders. The teams allow the LNS to support school and district school board improvement efforts in a way that responds to diverse contexts and needs, while further establishing collaborative partnerships focused on student learning and achievement.

The LNS continues to work on building partnerships with district school boards and fostering a climate of trust and collaboration...The LNS continues to work with districts and schools to construct and support precise instructional and assessment practices at the school- and classroom-level. These practices improve learning and achievement for all elementary school students, while also emphasizing improvement of students with the greatest needs. (LNS, 2012a, p. 5).

LNS is organized on the basis of: Regional Teams of SAOs who work in the field; central strategic teams for Leadership and Implementation, Capacity Building, and Research, Evaluation and Data Management; and central operations teams to support the running of LNS. In 2008, LNS became part of a newly established Student Achievement Division (SAD) within the Ministry bringing together the elementary school focused LNS with the high school focused Student Success/Learning to 18 branches for a new K-12 student achievement focus. The ADM of SAD leads LNS and is the Chief Student Achievement Officer for Ontario. LNS collaborates across the Ministry of Education to advance a focus on, and policies and programs, for student achievement in collaboration with the work of Ministry branches, for example in areas of curriculum, assessment, early learning, inclusive education, special education, student well-being, teacher policy, leadership development, French-language education, Aboriginal education, research and statistics.

In LNS’ work with the education field, the ‘Theory of Action’ and way of working developed by LNS involves an approach to school improvement and student achievement which acknowledges that:

- Teachers and students engage in the central work of teaching and learning,
- Principals support teachers and help to create the most optimal conditions in the school,
- Excellence, one school at a time will not lead to equity nor sustainability, but all schools must improve—this is the DSB’s [District School Board] role, and
- A message of urgency and a blend of support and pressure is provided by the Ministry. (LNS, 2011a, p. 6).
Evidence of Impact Study: Methods and Approach

The methods used for this study involved a review of research, evaluation and data reports and materials provided by LNS, including: materials about LNS strategy, activities and operations; commissioned external evaluation and research reports; and internal research, evaluation and data analyses reports. Additional data requests and analyses were also conducted where further evidence was sought, for example on EQAO assessments and on production and distribution of LNS professional learning resources. Website searches were also conducted of relevant information, for example from the Ontario Ministry of Education and Curriculum Services Canada.

The main types of documents and evidence reviewed were:

✓ Background documents concerning LNS strategy, actions and operations (44 documents)
✓ Analyses of EQAO and international assessments (13 documents)
✓ Externally commissioned evaluation reports (10 documents) and research reports (3 documents) on LNS initiatives
✓ SAD developed Logic Models for LNS and K-12 SAD initiatives (14 documents)
✓ LNS Research, Evaluation and Data Management (RED) team authored or co-authored research reports, conference papers and/or presentations (28 documents)
✓ LNS Year in Review reports (5 documents) and initiative placemats (23 documents)

Overall, a total of 140 documents were received and reviewed for the Evidence of Impact study.

A first task was to review all of the above documents and to map which documents contained:
a. evidence of impact; and b. for which specific initiatives. For the purpose of this review, ‘evidence’ was taken to mean empirical information and analyses gathered through the conduct of evaluations, research projects, monitoring and reporting activities involving data (such as the DSB and school reports informing the LNS Year in Review reports and placemats) and other quantitative and/or qualitative data analyses, including EQAO assessments. It is acknowledged that evidence can be interpreted more widely; however, to conduct a meta-analyses across many documents and to assess quantity and quality of Evidence of Improvement, this review prioritized empirical evidence.

Appendix A provides a mapping of the types of evidence – externally commissioned research or evaluation or LNS internal research, monitoring/evaluation and/or data analyses – for each initiative identified in the review of documents. Of note, all LNS initiatives identified involve some form of internal LNS monitoring, evaluation and/or research. Encouragingly, key initiatives initiated since 2009 also include externally commissioned evaluations and/or research. This is very significant in terms of demonstrating a commitment and actions to plan, gather, analyze and use evidence of impact throughout the LNS strategies, initiatives and activities. The LNS is to be highly commended for their commitment to evidence, including the important work of a LNS Research, Evaluation and Data Management Team to produce reports and research papers presenting the evidence for both internal and external audiences.
Findings

Question 1: What Initiatives and/or Activities Have Been Developed and/or Implemented by the LNS Since the Last Evaluation in 2009 to Improve Student Achievement in Ontario Elementary Schools?

A starting point for the review has been to identify relevant initiatives and/or activities developed and/or implemented by the LNS since 2009. Based on review of the documentation provided by LNS, Table 1 outlines LNS funded initiatives and/or activities that have been implemented during 2009-10 to 2013-14. These initiatives have been categorized to identify whether the initiative: existed during 2009-10 but ended by 2013-14; the specific initiative is no longer funded but has evolved, informed or been integrated into a new initiative by 2013-14; the initiative is continuing in 2013-14.
Table 1: LNS funded initiatives 2009-10 to 2013-14

<table>
<thead>
<tr>
<th>Specific funded initiative that has ended by 2013-14</th>
<th>Specific initiative no longer funded but has evolved, informed or been integrated into a new LNS initiative by 2013-14</th>
<th>LNS funded initiatives continuing in 2013-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Leader-to-Leader</td>
<td>2. Math For Young Children (M4YC)</td>
<td>2. Collaborative Inquiry for Learning – Mathematics (CIL-M)</td>
</tr>
<tr>
<td></td>
<td>3. Mathematics Intervention</td>
<td>3. Early Primary Collaborative Inquiry (EPCI)</td>
</tr>
<tr>
<td></td>
<td>4. Pilot Report Back Form</td>
<td>4. Leading Student Achievement (LSA)</td>
</tr>
<tr>
<td></td>
<td>5. Schools Helping Schools</td>
<td>5. LNS professional learning resources</td>
</tr>
<tr>
<td></td>
<td>6. Schools in the Middle (SIM)</td>
<td>6. Ontario Focused Intervention Partnership (OFIP) Tutoring</td>
</tr>
<tr>
<td></td>
<td>7. Schools on the Move</td>
<td>7. Ontario Focused Intervention Program (OFIP)</td>
</tr>
<tr>
<td></td>
<td>8. Student Work Sample Study</td>
<td>8. School Effectiveness Framework (SEF)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. Student Work Study Teachers (SWST)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Summer Learning Programs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12. System Implementation and Monitoring (SIM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13. Tutors in the Classroom (TITC)</td>
</tr>
</tbody>
</table>
Three initiatives – Character development, Leader-to-Leader, and Schools on the Move – were pre-existing initiatives that had been implemented prior to 2009. As part of the LNS’s highly adaptive approach to evolving its strategies and initiatives, these initiatives are no longer a priority focus for LNS. One initiative – Schools Helping Schools – is no longer a specific individual initiative, but the essence of this work has evolved and been incorporated into the more recent System Implementation and Monitoring (SIM) initiative. One initiative – Summer Programs for teachers – was prominent in the early work of LNS but over time the LNS approach to professional learning shifted to an emphasis on job-embedded, locally developed collaborative professional learning. However, for summer 2014, new programs are being funded by the Ministry of Education to support developing teachers’ capacity, for example in priority areas such as mathematics and technology. A further five initiatives were introduced post-2009, but have either completed their work or become incorporated into other initiatives by 2014, specifically: the Student Work Sample Study was a research and development activity that is now informing collaborative inquiry work, such as the Student Work Study Teacher initiative; the Math Intervention, Junior Math Initiative and Mathematics for Young Children funded initiatives to research effective math practices, rather than continuing with multiple separate initiatives, however, this work and funding has now been incorporated into the larger CIL-M and EPCI work; finally, the Pilot Report Back Form initiative completed its work and has informed substantial revisions to the End of Year reports from DSBs and schools to LNS. These initiatives are important for demonstrating LNS’s willingness to engage in pilots, research projects and inquiry to inform future work.

This review of Evidence of Impact focuses on the 13 continuing initiatives identified in Table 1, as these have been substantial areas of funding and focus for LNS during the 2009-13 period and continue in 2013-14.
Question 2: What Evidence Demonstrates the Level of Impact of LNS Initiatives and/or Activities in Terms of Improving Student Achievement in Ontario Schools?

This section addresses this question by focusing on the evidence and impact of major LNS initiatives during 2009 to present. For five initiatives, independent evaluations were commissioned and reported during this time period:

- Collaborative Inquiry for Learning – Mathematics (CIL-M)
- Early Primary Collaborative Inquiry (EPCI)
- Student Work Study Teachers (SWST)
- School Effectiveness Framework (SEF)
- Summer Learning Programs

In addition external research is available for:

- Small and Northern Boards Initiative
- Leading Student Achievement

There are also LNS monitoring, analyses and reporting across all initiatives. This reporting, particularly from the LNS Year in Review reports (analyzing DSB and school reports for LNS initiatives implemented each year) and placemats is included in the review of the above initiatives, and also to review:

- Ontario Focused Intervention Partnership (OFIP) and Schools in the Middle (SIM)
- System Implementation and Monitoring (SIM)
- OFIP Tutoring and Tutors in the Classroom (TITC).

In addition, data was requested from LNS to examine:

- LNS Professional Learning Resources

The initiatives vary in their intended impact – for example, changes at District School Board (DSB), school and/or classroom levels, focus on changes in improvement planning processes and/or professional learning and/or instructional practices, and intended impact for which students. Nevertheless, while recognizing the differences in intended impact, I decided to use a common reporting structure to frame the analysis of each initiative and to facilitate later discussion of impact across initiatives. The analysis for each initiative, therefore, considers:

- Description of the initiative
- Sources of evidence
- Evidence of Impact in three domains:
  - Participants involved and spread of initiative
  - Impact on professional learning and practices
  - Impact on student learning and achievement
Collaborative Inquiry for Learning – Mathematics (CIL-M)

Description of initiative
The Collaborative Inquiry for Learning – Mathematics (CIL-M) initiative was launched in 2008 to strengthen the capacity of DSBs to improve teaching and learning in K-6 mathematics. CIL-M is an inquiry-based approach to professional learning involving teams and networks of classroom teachers, special education teachers, consultants/coordinators, school effectiveness leads, principals and supervisory officers. Key elements of the CIL-M include a focus on:

a) Classroom embedded professional learning in mathematics;
b) Learning and teaching mathematics through problem solving;
c) Building leadership capacity through: i) participants trying a range of instructional strategies appropriate to the content, ii) observing then analyzing student work for demonstrations of mathematical understanding, and iii) discussing and reflecting.
d) Collaboratively developing, teaching and reflecting on lessons that focus on deep student understanding of mathematics; and
e) Collaborations (both structural and pedagogic) within classrooms, schools, district school boards, and with the Ministry of Education personnel help build mechanisms for sharing effective practices in professional learning in mathematics. (LNS, 2012b).

Based on findings from three years of the external evaluation (Bruce & Ross, 2011b), the following program process was developed and suggested to reflect the process of CIL-M and the initiative’s impact (Figure A).

Figure A: Program process theory: Model generated from three years of findings of the external review of the CIL-M professional learning program (Source: Bruce & Ross, 2011a, p.13)
Sources of evidence
An external evaluation of CIL-M was led by Dr. Catherine Bruce, Trent University, and Dr. John Ross, OISE University of Toronto, to examine the implementation and impact of CIL-M during three school years (2008-9, 2009-10, and 2010-11). The CIL-M evaluation Final Report (Bruce & Ross, 2011a) focuses on the following research questions:

1. What is the impact of CIL-M on teachers’ professional beliefs and instructional practices?
2. What is the impact of CIL-M on students’ achievement and motivation?
3. What is the impact of student beliefs on student achievement?
4. What is the impact of teachers’ beliefs and practices on student achievement and beliefs about math learning?
5. How does an explicit emphasis on student beliefs as part of the professional learning process enhance teachers’ pedagogical strategies for supporting students in mathematics and what is the effect on student self-efficacy and achievement?

The evaluation utilized a mixed methods design evaluation, including:

- Teacher surveys (pre and post);
- Student surveys (pre and post);
- Student achievement tests (pre and post);
- Interviews with teachers, principals, consultants and facilitators;
- Field notes of observations of professional learning sessions and between-session activities;
- Classroom observations both during CIL-M professional learning sessions and between-sessions.

In addition, LNS Year in Review reports and placemats include evidence concerning CIL-M financials, numbers of participants, implementation actions, and student achievement results.

Evidence of impact

Participants involved and spread of initiative
CIL-M began in 2008-09 with 12 co-terminous English-language DSBs and three French-language DSBs involving a total of 47 schools. By 2012-13, CIL-M involved 1402 schools (or 32% of Ontario elementary schools participating in EQAO assessments).
Impact on professional learning and activities

The CIL-M professional learning model involves a focus on:

- Mathematics communication in the classroom;
- Teaching and learning mathematics through problem solving using a 3-part lesson format (activation/before; development/during; consolidation/after);
- Enactment in classrooms (where participants try out a range of instructional strategies appropriate to the content, and then analyse student work samples, in discussion);
- Teacher selection of learning goals and development of high quality lessons (with the facilitators) that elicit student communication and problem solving; and,
- Collaborations (both structural and pedagogic) within the classrooms, within the schools, within the district school boards, within the paired district school boards, and with the LNS. (Bruce & Ross, 2011a, p. 12-13).

Bruce and Ross’ (2011a) surveys of teachers’ self-efficacy and practices pre- and post- implementation of the CIL-M indicated substantial and statistically significant improvements in teachers’ self-confidence in designing instructional strategies and in self-reported teaching practices. Case study research indicated shifting teacher beliefs “increasingly to believing that students were capable mathematicians” (Bruce & Ross, 2011a, p.48), including improving beliefs in the ability of struggling students. Teachers were observed making changes and improvements in their teaching practice, for example increased focus on math content, use of a three-part problem-based lesson, and approaches to engage and support students’ learning. Improvements were also identified in survey results for increased teachers’ efficacy in capacities to engage students and for classroom management. Of note, the improvements reported in 2010-11 were larger than in the previous year’s evaluation indicating further strengthening of the CIL-M processes and impact over time.

Based on the LNS Year in Review reports of implementation activities, the most frequently reported
activities for full implementation in 2011-12 were:
   1. Using numeracy coaches/facilitators
   2. Co-planning instruction
   3. Developing learning tasks based on curriculum expectations
   4. Co-teaching
   5. Co-learning through inquiry
   6. Designing and implementing an action plan

The following year (2012-13), LNS analysis of DSB and schools’ end of year reports indicated increased levels of implementation in the following activities:
   • Co-learning through inquiry
   • Using teacher moderation in collaborative inquiry
   • Making decisions collaboratively
   • Building tri-level instructional leadership (classroom, school, system)
   • Analyzing student work to make instructional decisions
   • Designing instruction to engage students
   • Focusing resources on the instructional core (teacher, student, curriculum)
   • Developing students’ meta-cognitive thinking skills
   • Developing expertise in mathematics content and pedagogy. (LNS, 2013a).

**Impact on student learning and achievement**

Bruce and Ross (2011a) surveyed Junior Division students pre and post the CIL-M practices to assess changes in students’ self-confidence in their math ability, their self-reported effort during math class, and students' belief that mathematics is useful. For all measures, there was a positive impact on students’ beliefs and actions over the period that their teachers were involved in CIL-M. Similarly, survey results for Grade 3 students indicated significant improvements in students' confidence in their math abilities, a moderate decline in students' fear of failure in math learning, and a small increase in students self-reported effort in math. In classroom observations, improved student behaviours were identified in tackling challenging mathematics problems, in talking about and sharing their learning, working in groups and problem solving and being more engaged in class.

As well as positive attitudes and action, Bruce and Ross (2011a) investigated whether there were shifts in negative beliefs about math amongst Junior Division students. There was a significant decline in students who believed that math ability is fixed and in students who believed that mathematical knowledge is unique and unrelated to practical knowledge. There was a slight decline in the belief that mathematics is a uniquely male domain.

The above impact on teachers’ efficacy in math instruction and students’ attitudes towards math are important as Bruce and Ross' (2011a) analyses indicates a beneficial impact for student achievement also. In their use of pre- and post-tests of student learning in math: “Students in
classrooms taught by CIL-M teachers improved from pre to post on virtually all measures in all grades" (Bruce & Ross, 2011a, p.5). Improved results in both multiple choice and open ended math tests questions were reported for Grade 3, 5 and 6 students. In Grade 4, there were improved results for open ended questions but a slight decline in results on multiple choice tests. Interestingly, the impacts reported for student achievement in the evaluation findings were larger in 2010-11 than in 2009-10 suggesting increased impact with experience of developing the CIL-M initiative.

As well as the external evaluation, LNS has analyzed EQAO results for schools participating in CIL-M. The year-over-year change in CIL-M results compared to results for all elementary schools is presented in Table 2 for 2011-12 and 2012-13. The results suggest that in CIL-M schools the rate of improvement was above average in 2011-12 Grade 3 Math results. For Grade 6 results, CIL-M results declined but to a lesser rate than average across all schools. Nevertheless, the fact that in the context of a mathematics initiative results declined in Grade 3 in 2011-12 and in both Divisions in 2012-13 is a concern.

Table 2: Percentage Point Change in EQAO Mathematics Results

<table>
<thead>
<tr>
<th>Grade</th>
<th>2011-12 CIL-M Schools</th>
<th>2011-12 All Schools</th>
<th>2012-13 CIL-M Schools</th>
<th>2012-13 All Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3 Math</td>
<td>1.0</td>
<td>0.2</td>
<td>-2.1</td>
<td>-1.9</td>
</tr>
<tr>
<td>Grade 6 Math</td>
<td>-0.1</td>
<td>-0.5</td>
<td>-1.1</td>
<td>-1.4</td>
</tr>
</tbody>
</table>

Given the focus of this review on evidence of impact, two observations are suggested. First, use of EQAO data for the CIL-M is an imprecise measure as schools vary in which grades and classes are the focus of the initiative – it is not a Divisional or whole school intervention. Second, in relation to impact, during the time of the external evaluation the maximum number of schools involved in CIL-M was 595. The following year, the number of CIL-M almost doubled and then increased again in 2012-13. There may be challenges of balancing the benefits of spread of impact over large numbers of schools with ensuring depth and quality of impact within each school. The findings of the external evaluation – while positive – urged a need to ensure a focus on inquiry in maths with attention to developing knowledge and capacity in mathematics content at classroom, school and district level. The importance of sharing resources and products to support mathematical thinking, content knowledge and practices more widely may remain pertinent.
Summary of Impact: CIL-M

Spread of Initiative: There has been substantial spread of CIL-M with the initiative expanding from 47 schools in 2008-09 to 1402 schools in 2012-13.

Impact on Professional Learning and Practices: CIL-M is contributing to improvements in teachers’ confidence in designing instructional strategies and changes in practices for teaching mathematics.

Impact on Student Learning and Achievement: Students participating in CIL-M report improved attitudes, behaviours and learning for mathematics. Students improved their achievement in pre- and post-math tests in the CIL-M evaluation. Provincially, the decline in mathematics results is lower for CIL-M schools compared to all schools overall. However, CIL-M has not yet had a positive impact on increasing math results overall. It is important to ensure a strong emphasis on inquiry in mathematics for CIL-M educators and students and for quality implementation at scale.
Small and Northern Boards Initiative (S&NB)

Description of initiative
The Small and Northern Boards (S&NB) initiative involves LNS providing funding to DSBs to select and hire a numeracy facilitator. The numeracy facilitators participated in learning opportunities for mathematics content and pedagogy from LNS and, in turn, work with classroom teachers in their DSB to develop professional learning and mathematics practice in classrooms.

Sources of evidence
Data gathered through the CIL-M evaluation (Bruce & Ross, 2011a) has been further analyzed for respondents in the 17 DSBs in the S&NBs initiative to assess changes in teachers’ efficacy and practices and in students’ efficacy and achievements in mathematics. Survey responses from 588 teachers, 217 Grade 3 students and 206 Grade 6 students is presented and discussed in a research report (LNS, 2011b) produced by the LNS Research, Evaluation and Data-Management Team for the S&NB initiative 2009-10.

The CIL-M analysis was also used to inform the identification of a DSB which reported particularly large improvements in teachers’ professional learning and in student efficacy. This formed the basis of a S&NB case study conducted by the CIL-M evaluation team (Bruce & Ross, 2011b). The overarching research question for the case study was:

- What are the characteristics of the site, the professional learning program, and the mechanisms that enabled teachers and students, within small/northern board conditions, to excel?

Sub-questions were:

- What are the enabling conditions for mathematics professional learning?
- What is the impact of the professional learning on teachers’ beliefs and instructional practices?
- What is the impact of professional learning opportunities and instructional practice on student beliefs about learning mathematics? (Bruce & Ross, 2011b, p.5).

Within the case study DSB, two schools were selected as demonstrating different approaches to mathematics professional learning. The data collection involved: observations of professional learning activities and of classroom mathematics lessons; observations and artefacts from these observations; and interviews. In total, three principals, one vice-principal, 14 teachers, two DSB consultants and one DSB senior administrator participated in the case study research.

In addition, the LNS Year in Review reports and placemats contain evidence concerning the S&NB gathered through DSB end of year reports and analysis of EQAO data.
Evidence of impact

Participants involved and spread of initiative
The S&NB initiative began in 2009-10 with 17 DSBs identified by LNS based on criteria of size and/or location. By 2012-13, the LNS Placemat for the S&NB reports 36 DSBs were involved in this initiative. This represents more than double the number of initial boards. At the school level, the initiative has grown from 432 schools in 2011-12 to 632 schools in 2012-13 (or 16% of elementary schools participating in EQAO) (LNS, 2013a).

Impact on professional learning and practices
The case study of a DSB implementing the S&NB (and two schools within the DSB) concludes that: “a culture of nested positive learning communities in classrooms, schools and the district is an essential condition for growth in mathematics” (Bruce & Ross, 2011b, p.19). At the district level, the case study DSB had developed high expectations that “all teachers can teach” (Bruce & Ross, 2011b, p.15) and provided a range of professional learning opportunities for educators. Importantly, administrators at the school and district level valued and supported teachers engaging in professional learning. At the school and classroom level, this culture of high expectations translated into the belief that “all children can learn” (Bruce & Ross, 2011b, p.10). Classroom observations revealed teachers using instructional strategies to develop students’ confidence in mathematics. An important shift from teachers focusing on “my program” to “a student learning focus” (Bruce & Ross, 2011b, p. 15) was evident. Encouraging indicators of the development of teachers' professional learning and practices were also evident in teachers' responses to surveys. However, while teachers’ reported increased confidence in their teaching abilities and practices, the impact varied. Medium improvement in confidence in the effective use of mathematics and teaching practices and in instructional strategies was reported. Whereas a positive but low impact on teachers’ confidence in engaging students and in classroom management was identified. Furthermore, as the S&NB and the CIL-M were occurring simultaneously within DSBs – although both were not necessarily being implemented in the same classrooms – and the data gathered is also connected to the CIL-M evaluation, it is difficult to disentangle the specific impact of the S&NB on teachers’ professional learning and practices.
More recently, LNS Year in Review reports have included data from DSB and school reports by initiative. In 2011-12, the most frequently fully implemented activities for the S&NB initiative was the use of numeracy/coach facilitators, focusing resources on the instructional core, and co-learning through inquiry. These activities are consistent with the purpose and intent of the S&NB. Between 2011-12 and 2012-13, the activities that were reported as having increased levels of implementation were:

✓ Co-planning instruction
✓ Co-learning among principals and teachers
✓ Learning in networks across schools
✓ Using the School Effectiveness Framework for developing priorities
✓ Analyzing student work to make instructional decisions
✓ Increasing precision in teaching and learning
✓ Focusing resources on the instructional core
✓ Analyzing student data and classroom narrative to make evidence informed decisions
✓ Developing learning tasks based on curriculum expectations
✓ Implementing comprehensive numeracy program
✓ Developing expertise in literacy content and pedagogy. (LNS, 2013a).

While all of these activities are worthwhile, it is unclear why the DSBs did not report increased implementation in more of the math specific activities, for example developing expertise in mathematics content and pedagogy was only reported as being fully implemented by approximately 20% DSBs in 2011-12 and yet it was not reported as an area of increased implementation in 2012-13.

**Impact on student learning and achievement**

The case study of a DSB demonstrating improvements in teachers’ professional learning and students’ learning (Bruce & Ross, 2011b) indicates a potential impact of the S&NB. However, the overall evidence concerning the impact of the S&NB on student learning and achievement is weak, mixed and mostly suggests limited impact.

With regard to student learning, surveys of students in 2009-10 (LNS, 2011b) examined Grade 3 and 6 students’ confidence and their effort in math, Grade 3 students’ fear of failure and Grade 6 students’ belief that mathematics ability is fixed. While there was improvement in attitudes, the effect sizes are very small and not statistically significant, except for Grade 3 students’ confidence in mathematics which did demonstrate impact but at a low level. Analyses by LNS of EQAO results for schools participating in the S&NB in the same year (2009-10) are also discouraging. For the S&NB schools overall, Grade 3 mathematics results declined by -0.3 percentage points and Grade 6 mathematics results declined by -1.8 percentage points (LNS, 2010). Examining the difference in the rate of improvement (or decline) for schools participating in S&NB compared with
all schools overall provides a mixed results: as detailed in Table 3, S&NB schools improved positively in 2011-12 but declined substantially and at a faster rate than all schools overall in 2012-13. This is not to say that all schools involved in S&NB declined in performances: in 2012-13, 41.1% of schools participating in S&NB improved their Grade 3 math results and 43.4% of S&NB schools improved their Grade 6 math results. Nevertheless, the overall conclusion is that S&NB has had a mixed but, overall, not positive sustained impact on student achievement results over time.

Table 3: Percentage Point Change in EQAO Mathematics Results

<table>
<thead>
<tr>
<th></th>
<th>2011-12 S&amp;NB Schools</th>
<th>2011-12 All Schools</th>
<th>2012-13 S&amp;NB Schools</th>
<th>2012-13 All Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3 Math</td>
<td>2.2</td>
<td>0.2</td>
<td>-3.3</td>
<td>-1.9</td>
</tr>
<tr>
<td>Grade 6 Math</td>
<td>0.5</td>
<td>-0.5</td>
<td>-1.9</td>
<td>-1.4</td>
</tr>
</tbody>
</table>
Summary of Impact: S&NB

Spread of Initiative: The number of schools participating in the S&NB initiative has increased from 432 schools in 2011-12 to 632 schools in 2012-13.

Impact on Professional Learning and Practices: S&NB is contributing to a culture of professional learning and high expectations for student learning. DSBs reported implementation of use of numeracy coaches and supports for professional learning. Participating teachers reported medium impact on their confidence in teaching mathematics. However, full implementation of actions to develop expertise in math content knowledge and pedagogy has not yet been realized and is an important area for attention.

Impact on Student Learning and Achievement: Evidence of impact on student achievement is weak and mixed. In 2011-12, schools participating in S&NB improved their overall math results in EQAO assessments at Grades 3 and 6. In 2012-13, the majority of schools participating in S&NB declined in their math results and the overall decline was larger than the overall results for schools not participating in the S&NB initiative. This is not to say that all schools involved in S&NB declined in performances: in 2012-13, 41.1% of schools participating in S&NB improved their Grade 3 math results and 43.4% of S&NB schools improved their Grade 6 math results. Nevertheless, there were not overall positive sustained results.
Early Primary Collaborative Inquiry (EPCI)

Description of initiative
The LNS initiated the Early Primacy Collaborative Inquiry (EPCI) in 2009-10. Every DSB was invited to select a team of educators – ideally including teachers from relevant grades, a principal, an early years curriculum leader or consultant, and a supervisory officer – to engage in a collaborative inquiry into teaching and learning. In 2009-10, the new initiative focused on Kindergarten and Grade 1; in 2010-11, EPCI expanded to include Grade 2.

According to the LNS Placemat for EPCI 2012-13, three main intentions inform EPCI:

- Evidence-Informed Instructional Approaches in Practice. Examine the impact of changes in instructional practices on student learning through collaborative planning, teaching, and assessment.
- Connections amongst Early Primary Professionals. Consider how evidence-informed instructional approaches articulated in ministry documents can be implemented in Kindergarten through Grade Two classrooms.
- Collaborative Inquiry Stance and Skills. Explore how effective teaching is itself inquiry: asking our own questions about teaching, and learning from our students how best to teach them and help them apply their new knowledge. (LNS, 2013b).

EPCI activities include DSB teams submitting a plan for their inquiry to LNS, engaging in the planned inquiry embedded with classroom practice, building connections amongst K-2 educators within and across schools, receiving support from LNS, and documenting their inquiry and learning through submitting a final monograph which is shared with LNS and at a regional session.

Sources of evidence
An external evaluation of the EPCI was commissioned in October 2011. The evaluation – led by Dr. Ruth Kane at the University of Ottawa – produced a Final Report in March 2013. The purpose of the evaluation was to determine:

- the implementation of the EPCI initiative across the province;
- the impact of the EPCI initiative on students and educators;
- the spread, sustainability and fidelity of the EPCI initiative in schools and school boards; and,
- possible links between the EPCI initiative and other collaborative inquiry initiatives.
The research questions were:

1. Implementation of EPCI

   How was EPCI implemented?
   
   What factors enhanced or impeded the implementation of EPCI?

2. Impact of EPCI

   What is the impact of EPCI as a framework for professional learning?
   
   What is the impact of EPCI on educator efficacy, voice, engagement, and changes in practice?
   
   What is the impact of EPCI on student efficacy, voice, engagement, and achievement?
   
   What is the impact of EPCI on leaders as co-learners, planners, and decision makers?
   
   What is the impact of EPCI on classroom and school culture?

3. Spread, sustainability and fidelity of EPCI

   What conditions support or impede the spread and fidelity of the EPCI initiative?
   
   With the spread of EPCI, is fidelity to the foundations of collaborative inquiry sustained?
   
   What connections between and among K to 1 (in 2009-10) and K to 2 (2010-11) have been developed as a result of EPCI in participating schools and boards?

4. Links to other LNS collaborative inquiry initiatives

   What links are there between EPCI and the Student Work Study Teachers (SWST) initiative?
   
   What links are there between the EPCI initiative and the Collaborative Inquiry for Learning – Mathematics (CIL-M) initiative?

   (Kane et al., 2013a, pp. 2-3).
A two-phase evaluation methodology was adopted. In phase one, web-based questionnaires were designed and administered for each of three key groups: educators involved in EPCI; school administrators; and DSB personnel involved in EPCI. 68 DSBs participated in the survey research with completed surveys received from 343 classroom teachers, 21 early childhood educators, 133 school administrators and 116 DSB personnel. In phase two of the evaluation, case studies were completed in nine DSBs (7 English, 2 French) involving interviews and/or focus groups with a total of 119 participants (86 educators, 15 school administrators, and 18 DSB personnel).

In addition, LNS Year in Review reports and placemats include evidence concerning EPCI financials, summaries of evidence from EPCI participant’s monographs, and implementation actions from DSB end of year reports.

Evidence of impact

Participants involved and spread of initiative

EPCI involves teams from all DSBs. By 2012-13, 455 schools (12% of schools participating in EQAO assessments) were involved in EPCI. The initiative has spread from K-Grade 1 in 2009-10 to include Grade 2 also from 2010-11 onwards. The involvement of teams including educators and administrators for K-2 is a positive feature of EPCI for supporting collaboration, shared professional learning and improvements in practices.

While the EPCI has spread to involve more schools and teams directly in the initiative, the evaluation considered whether EPCI practices had also spread beyond the direct initiative. Educators involved in EPCI reported being enthusiastic about sharing their learning, spreading practices more widely, and valuing opportunities to learn from other schools. The majority of survey respondents suggested that the benefits of EPCI - collaboration among educators, professional learning, educators’ use of inquiry to improve practices, and creating an environment of collaborative inquiry and reflective practice - were enhancing school culture and district culture. Nevertheless, when surveyed on the question of whether “the learning from the EPCI had spread beyond classrooms of the educators directly involved”, only a small majority of respondents agreed (51.7% of school administrators, 54.1% of DSB personnel). While the EPCI has formally expanded to more educators, schools and students in a relatively short period of time; to further spread of impact, the evaluation report notes the need to “harness the professional learning currently being enjoyed by those engaged in collaborative inquiry through the EPCI initiative in ways that would foster the spread to colleagues throughout the school and district school board” (Kane et al., 2013a, p.ix). This involves approaches which harness the existing enthusiasm of educators involved in EPCI but goes beyond relying on an individual’s own initiative to integrate and embed EPCI in district and school cultures, processes and practices. Benefits of a more integrated approach between EPCI and Full Day Early Learning Kindergarten Program (FDELKP) are developing and important at a provincial level in the Ministry and locally within schools.
Impact on professional learning and practices

Evidence from the EPCI evaluation indicates the vast majority of participants reported EPCI has high impact for professional learning. For example, in survey responses, 93.5% of administrators and 94.0% of DSB personnel responded that participation in EPCI had a moderate or large impact on classroom educators’ professional learning. Furthermore, 77.6% of administrators and 68.9% of DSB personnel reported that participation in EPCI had impacted their own professional learning to a moderate or large extent. These and related findings point to the high value of collaborative professional learning and inquiry for supporting learning among educators and administrators involving teams combining classroom, school and DSB participants. Positive impacts for the development of collaborative relationships and for professional learning to support improvements in leadership and classroom practice were noted. For educators, the particularly powerful aspects of EPCI are the opportunities to engage in collaborative professional learning and reflective practice (90.0% reported impact of a moderate or large extent), to document and study student learning (89.7% of educator respondents), and to collaborate with colleagues to explore questions related to students’ learning (88.4% of educator respondents). Through the combination of collaborative inquiry which supported professional learning with shifts in pedagogical knowledge and teaching practices, EPCI is an empowering model for educators with impact for improving educational practices to support student learning also, as discussed further below.

A substantial majority (over 85%) of respondents to the EPCI evaluation survey agreed or strongly agreed that the EPCI initiative is successful in engaging educators in changing and enhancing their classroom practice. Over 90% of educators reported, for example, that EPCI had contributed to a moderate or large extent to increasing their capacity to provide children with meaningful feedback to support their achievement and to identifying students’ understanding through their work. These are high impact teaching and learning practices to support student learning and achievement.

Figure C provides the areas of inquiry that EPCI teams reported to the evaluation team. Over three quarters of EPCI foci involved: learning through inquiry (81.7%), integrating learning in real life contexts (77.7%) and creating an environment for a community of learners (75.5%). Other priority areas of foci were: language development and literacy (66.5%), integrating learning in real life contexts (59.7%), and early mathematics development (40.3%). Educators reported high levels of impact of EPCI for developing their knowledge and practices in relation to these priority foci. For each of the main areas of focus identified for EPCI teams (see Figure C), the majority of educators reported that their professional learning and practice had been impacted to a moderate or large extent. The strongest levels of impact on practice in each area of focus were:

- **Language development and literacy**: Building upon the knowledge and understandings that children bring to school.
- **Early mathematics development**: Encouraging children to pose and investigate mathematical questions; and giving children opportunities to demonstrate their mathematical thinking in a variety of ways.
✓ **Assessment and learning:** Encouraging children to question, clarifying their thinking and developing an inquiry stance; and evaluating the impact of educator's assessment practices on students' learning.

✓ **Integrating learning in real life contexts:** Allowing children to share their learning from culminating tasks with a broader audience.

✓ **Learning through inquiry:** Posing open-ended questions that encourage collaborative exploration; and reflecting on questions posed to challenge children’s thinking and learning.

✓ **Creating an environment for a community of learners:** Supporting small-group projects in which children work together; and creating an inclusive classroom environment.

**Figure C:** EPCI Teams’ Areas of Foci for Inquiries (Source: Kane et al., 2013a, p.32)

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**Impact on student learning and achievement**

The majority of educators, administrators and DSB personnel surveyed believed that students in classrooms of educators participating in EPCI were benefiting. Over 90% of administrators and DSB personnel reported that EPCI had enhanced the engagement of children in their own learning to a moderate or large extent. In the EPCI evaluation and in monographs submitted to LNS by EPCI participants, educators reported impact in terms of students’ engagement, voice, efficacy and learning, for example students’ talking, listening and collaborating in class. Student transitions through Kindergarten to Grade 2 could also be enhanced through the collaborative approach of EPCI, which is particularly powerful for bridging and supporting connections between the new Full Day Early Learning Kindergarten Program and the Primary Division.
The majority of EPCI participants were optimistic that EPCI was impacting student outcomes. For example, 85% of educators and 90% of administrators agreed or strongly agreed that “the EPCI initiative will have positive long-term effects on student achievement” (Kane et al., 2013a, p. 53). While encouraging, the challenge is it refers to a desired future – will have a positive effect – rather than specific evidence of impact on student achievement. The available evidence indicates challenges in assessing impact of EPCI on student achievement outcomes. First, there are challenges with available evidence and measures. EPCI focuses on Kindergarten – Grade 2, over time it is possible to suggest that these students will achieve at higher levels in Grade 3 EQAO tests, however measuring current EPCI against EQAO scores is problematic. Alternative measures may be required to build on the documentation and assessment of student work and learning being undertaken within EPCI classrooms. This will require further capacity building – while EPCI has certainly impacted the use of evidence within classrooms and EPCI teams, some participants reported difficulties in knowing how to interpret student work and assess student learning through inquiry. Kane et al. (2013a, p. 103) recommend that, in EPCI, “a more explicit connection be made between inquiry-based learning and assessment practices” with capacity building supports for educators. The second challenge in assessing impact on student achievement is the high variability of foci, processes and practices developed through the EPCI. On the one hand, this is testament to the intention of EPCI to be locally-develop, professionally owned inquiry on priorities identified for students. On the other hand, some of the variety was less through intentional local actions and more a product of lack of clarity, confusion and communication challenges about what the purpose, elements and intended impact of EPCI was. In the case study French-language DSBs, an approach had been taken for clear direction around EPCI connected to assessment and achievement and, in these cases, impact of student achievements could be demonstrated. To further develop the impact of EPCI, more clarity and consistency of purpose and accompanying approaches to assessment and evidence of achievement may be required.

Nevertheless, overall, the evidence of impact for EPCI is strong and the conclusions of the evaluation are pertinent: “there was a universal sense that EPCI is a professional learning opportunity worthy of investment” (Kane et al., 2013a, p. 28).
Summary of Impact: EPCI

Spread of Initiative: EPCI began in 2009-10 with a focus on K-1. In 2010-11, EPCI expanded to K-2. In 2012-13, 455 schools were involved in EPCI.

Impact on Professional Learning and Practices: Educators participating in EPCI reported very high impact for their professional learning, their understanding of students’ learning, and improvements in their teaching practices.

Impact on Student Learning and Achievement: Participants considered EPCI to have a strong, positive impact on students’ engagement in their learning. By developing K-2 collaboration, transitions between Kindergarten and Primary Division can be supported. Further development of capacity to assess and measure the impact of EPCI on student achievement is suggested – both for educators in classrooms and at the system level.
Student Work Study Teacher (SWST)

Description of initiative
Launched in 2009-10, the Student Work Study Teachers (SWST) initiative is “a classroom based co-learning model in which two or more educators work towards a progressive understanding of the relationship between instruction, assessment and student learning” (LNS, 2012c). The LNS partners with DSBs to fund the hiring of experienced elementary teachers to become SWS teachers, who then work with other classroom teachers in host classrooms for collaborative inquiry to document, study and learn from student work and learning in four inter-related areas of pedagogy:

✓ Rich and relevant tasks;
✓ Student talk;
✓ Gradual release of responsibility; and
✓ Formative assessment.

The SWS teachers receive support from LNS during the year.

Sources of evidence
An external evaluation of the SWST was commissioned in October 2011. Led by Dr. Ruth Kane at the University of Ottawa, the evaluation provided a Final Report in March 2013. The purpose of the evaluation was to determine:

✓ the implementation of the SWST initiative across the province;
✓ the impact of the SWST initiative on students and educators;
✓ the spread, sustainability and fidelity of the SWST initiative in schools and school boards; and,
✓ possible links between the SWST initiative and other collaborative inquiry initiatives.

The research questions informing the evaluation were:

1. Implementation of SWST
   a) What are the underlying characteristics and/or conditions that support effective implementation of SWST?
   b) How widely spread is changes in practice as a result of the SWST?

2. Impact of SWST
   a) What is the impact of SWST as a framework for professional learning?
   b) What is the impact of SWST on teacher efficacy, voice, engagement, and changes in practice?
   c) What is the impact of SWST on student efficacy, voice, engagement and achievement?
   d) What is the impact of SWST on leaders as co-learners, planners and decision-makers?
3. Spread, sustainability and fidelity of SWST
   a) What conditions support the spread and fidelity of the SWST initiative?
   b) With the spread of SWST, is fidelity to the foundations of collaborative inquiry sustained?
   c) What connections between and among K to 1 (in 2009-10) and K to 2 (2010-11) been developed as a result of SWST in participating schools and boards?

4. Links to other LNS collaborative inquiry initiatives
   a) What links are there between the SWST initiative and the Early Primary Collaborative Inquiry (EPCI) initiative?
   b) What links are there between the SWST initiative and the Collaborative Inquiry for Learning – Mathematics (CIL-M) initiative?

(Kane et al., 2013b, p.2).

A two-phase evaluation design was utilized. The first phase involved designing and conducting surveys involving responses from 251 classroom teachers who hosted SWS teachers, 116 SWS teachers, and 118 administrators. Phase two involved nine case study DSBs (seven English, two French) including interviews with 73 classroom teachers, 12 SWS teacher, 28 principals, three vice-principals and four DSB personnel.

In addition to the external evaluation, SWS teachers write and submit a substantial final study report and DSBs include SWST in the end of year reports to LNS. Both these sources of evidence are analyzed by LNS.

**Evidence of impact**

*Participants involved and spread of initiative*

The SWST began in 2009-10 with 50 SWS teachers working in approximately 250 classrooms. The SWST has grown in number of participants and reach – from 402 schools in 2010-11 to 532 schools (or 13% of elementary schools participating in EQAO) working with 63 SWS teachers in 2012-13. The number of SWS teachers has more than doubled this year to 140 SWS teachers in 2013-14.

SWST is a focused collaborative inquiry between the SWS teacher and host teachers in their classrooms. As discussed below, there can be considerable benefits and impact for the SWS teachers, host teachers and students in the classrooms involved. However, at present, evidence of wider spread of the professional learning and practices from the SWST are limited. Qualitative evidence from the evaluation case studies suggest there can be wider impact through the SWS teacher engaging with other teachers while in a school, through changes in dialogue amongst professionals and with the active support of the school administrator(s). Nevertheless, in the majority of cases, the SWST has not yet spread professional learning more widely within and
across schools. The “lack of spread to other teachers not immediately involved in the SWSTI” was rated as a moderate or large challenge to further impact by the majority of SWS teachers, classroom teachers and principals surveyed in the evaluation. It is important to note the SWST was not designed as a system-wide initiative and therefore evaluating wider impact may not be justified, nevertheless given the positive findings for those directly involved, as the SWST external evaluation recommends, LNS may want to consider “further exploring structures and practices that will support the systematic sharing of the educator professional learning from the SWST initiative at a school, school-board and provincial level” (Kane et al., 2013b, p. xv).

**Impact on professional learning and practices**

The SWST initiative involves close working between a SWS teacher and a host teacher. The evaluation report reveals a wide variety of approaches to implementing the SWST in practice. This variety is to be expected in an initiative that is described as “organic” by the evaluators and one that the LNS wants to be authentic to professional needs and local contexts. Nevertheless, the evaluation indicates that certain criteria and practices resulted in higher impact from the SWST initiative – an experienced teacher who was appointed as the SWS teacher, a host teacher who had volunteered or was at least interested in engaging in the SWST, the development of a trusting and collaborative professional relationships, and involvement of the SWS teacher and host teacher in their classroom working consistently on several occasions during a week over a sustained period of time. The evaluation report concludes “that having a SWS teacher visit the host classroom two to three times per week for the duration of at least three to four months is the ideal SWSTI model” (Kane et al., 2013b, p. 33). The evaluation evidence indicates that higher engagement between SWS teachers and host teachers in their classroom has higher impact for professional learning and changes in practice to support student learning and improved outcomes.

Experienced teachers are hired to become SWS teachers and act as researchers and collaborators working with host classroom teachers. SWS teachers participate in an orientation session by LNS. The majority of SWS teachers (72.4%) reported this session to be quite or extremely useful, particularly for new SWS teachers whereas returning SWS teachers suggested more differentiated orientation based on SWS teachers’ experience. SWS teachers appreciated the resources and support from the LNS for their own professional learning – although they would welcome additional LNS facilitation of SWS teachers’ networking and also feedback on their role and the research studies they submit to LNS. Nevertheless, the experience of working as a SWS teacher with LNS and host teachers is extremely powerful professional learning for the SWS teacher. As Kane et al. (2013b, p. 108) summarize:

> It was very clear throughout the questionnaire and the interviews that SWS teachers viewed their role as the best professional learning opportunity they had experienced throughout their careers.

For example, in responses to the SWST survey, 100% of SWS teachers reported to a moderate or large extent that the SWST had impacted their commitment to critically analyse their teaching practice, 98.6% reported a positive influence on their professional practice, 98.6% improved their
understanding of how students learn, and 97.2% reported positive impact on their valuing of evidence-based learning in raising student achievement. These are extremely positive findings of high impact for SWS teachers.

The evaluation evidence indicates positive impact for host classroom teachers’ professional learning and improved practices also. In particular, where a strong collaborative relationship between the SWS teacher and host classroom teacher was established and combined with shared learning and co-creation of plans and practices, there was high impact for teachers’ learning and practices. For example, 184 (out of 188) classroom teachers reported that having a more collaborative relationship with their SWS teacher and the co-creation and planning of activities was high impact. Positive impact was identified also for the development of teachers’ sense of efficacy and confidence in their capacities and practices to support student learning and achievement. Using a 4-point Likert scale with 1 indicating “no extent” to 4 indicating “large extent”, Table 4 presents the results of host classroom teachers’ confidence in a range of important teaching and learning strategies. All results are statistically-significant positive ratings, with the exception of the item concerning engaging parents in supporting their child’s learning.
Table 4: Influence of SWST initiative on teacher efficacy (Source: Kane et al., 2013b, p. 106)

<table>
<thead>
<tr>
<th></th>
<th>Influence of SWST initiative on teacher efficacy</th>
<th>MEAN [1-4]</th>
</tr>
</thead>
<tbody>
<tr>
<td>I1_1</td>
<td>Build upon the learning and understanding that children bring to the classroom</td>
<td>3.38</td>
</tr>
<tr>
<td>I1_2</td>
<td>Support all children to see themselves as readers, writers and thinkers</td>
<td>3.27</td>
</tr>
<tr>
<td>I1_3</td>
<td>Develop student assessment strategies to support student success</td>
<td>3.27</td>
</tr>
<tr>
<td>I1_4</td>
<td>Identify gaps in student learning</td>
<td>3.33</td>
</tr>
<tr>
<td>I1_5</td>
<td>Adapt my teaching so that children can have opportunities to read and write in authentic contexts</td>
<td>3.23</td>
</tr>
<tr>
<td>I1_6</td>
<td>Influence my students' learning, regardless of their home environment</td>
<td>3.09</td>
</tr>
<tr>
<td>I1_7</td>
<td>Manage time to maximise student learning</td>
<td>3.10</td>
</tr>
<tr>
<td>I1_8</td>
<td>Use a variety of assessment strategies to assess the level of my students understanding</td>
<td>3.19</td>
</tr>
<tr>
<td>I1_9</td>
<td>Adapt my teaching to meet the needs of all students</td>
<td>3.21</td>
</tr>
<tr>
<td>I1_10</td>
<td>Use student assessment data to plan for improved student achievement</td>
<td>3.20</td>
</tr>
<tr>
<td>I1_11</td>
<td>Provide students with numerous opportunities to demonstrate their learning</td>
<td>3.27</td>
</tr>
<tr>
<td>I1_12</td>
<td>Build a classroom environment where all student voices are heard</td>
<td>3.25</td>
</tr>
<tr>
<td>I1_13</td>
<td>Work in partnership with parents to support student learning</td>
<td>2.78</td>
</tr>
<tr>
<td>I1_14</td>
<td>Make a positive difference in the lives of my students</td>
<td>3.26</td>
</tr>
<tr>
<td>I1_15</td>
<td>Work effectively with other teachers in teams to support student learning</td>
<td>3.09</td>
</tr>
<tr>
<td>I1_16</td>
<td>Identify students’ understanding through their work</td>
<td>3.30</td>
</tr>
<tr>
<td>I1_17</td>
<td>Provide students with meaningful feedback to support their achievement</td>
<td>3.25</td>
</tr>
<tr>
<td>I1_18</td>
<td>Adjust my teaching according to students’ learning gaps</td>
<td>3.29</td>
</tr>
</tbody>
</table>

Over 75% of classroom teacher respondents indicated that the SWST initiative had positively influenced their teaching practice. Examples of areas of teaching practices where over 70% of teachers reported the impacts of the SWST were moderate or large, included:

- critically thinking through teaching strategies that support student learning;
- identifying students’ understanding through the products of their work;
- clearly identifying and articulating gaps in student learning; and
- providing students with numerous opportunities to demonstrate the full extent of their abilities.
Impact on student learning and achievement

Not surprisingly given the positive impact reported for SWS teachers and classroom teachers’ professional learning and practices, the evaluation of SWST identified positive impacts for students’ learning and engagement. Both SWS teachers and classroom teachers reported statistically significant positive ratings about observing the following behaviours by students in their classes:

✓ Increased confidence in their learning
✓ Working collaboratively on shared tasks
✓ Increased skills at self-assessing
✓ Improved ability to make choices
✓ Increased ability to work independently
✓ Increased engagement in classroom activities
✓ Enhanced understanding of key concepts
✓ Willingness to take risks

Students appeared to benefit from their classroom teachers’ improving confidence, knowledge, skills and practices to understand students’ learning needs and to plan and use a range of instructional, assessment and classroom strategies to support students’ engagement and learning. Furthermore, the presence of an additional experienced teacher in the classroom who was focusing in detail on specific students identified as being below the provincial standard in achievement to understand and support their learning was positive both for the students and for the teacher. Through the SWST, teachers indicated that they got to know their students better, to understand their students’ learning and make relevant adjustments in teachers’ practices and increase attention to struggling students.

Of particular note, over two-thirds of classroom teachers reported the SWST to be quite or extremely useful in improving student outcomes. Again, caution needs to be taken in applying EQAO test scores to measure the impact of the SWST. The SWST involved work at all grade levels (from JK to Grade 12) rather than focusing on only Grade 3 and 6 and tended to emphasize literacy rather numeracy – although the learning and teaching skills developed can apply across the curriculum. Nevertheless, with these caveats, analyses of the improvements in schools with SWST contrasted with the average improvement across all schools are very encouraging. As detailed in Table 5:

✓ In 2011-12, SWST schools improved at a higher rate than average in five out of six of the elementary EQAO assessment (and at the same rate for one out of six).
✓ In 2012-13, SWST schools improved at a higher rate than average in all Grade 3 and 6 literacy assessments. Although SWST schools declined in mathematics results, the rate of decline was lower than average across all schools.
The overall perceptions of SWS teachers, host classroom teachers and principals were highly positive about the SWST model of professional learning and the benefits for improving classroom practices and student learning and outcomes. As Kane et al. (2013, p. 170) conclude:

As a team of evaluators, we see the SWST initiative as an innovative classroom-embedded professional collaboration that deserves positive acclaim for its impact on pedagogy and student learning. This evaluation demonstrates that the SWST initiative has supported classroom teachers to use collaborative inquiry into student work as the focus of their ongoing instruction and thereby support enhanced opportunities for student learning.

### Summary of Impact: SWST

**Spread of Initiative:** The SWST began in 2009-10 with 50 SWS teachers. By 2012-13, 63 SWS teachers were engaging in collaborative learning and practices with host classroom teachers in 532 schools. In 2013-14, the initiative expanded to involve 140 SWS teachers.

**Impact on Professional Learning and Practices:** The experience of working as SWS teachers is extremely powerful and high impact professional learning. For host classroom teachers, working with a SWS teacher can contribute to improved confidence, knowledge and teaching practices to support student learning and engagement. There was higher engagement and higher impact when the SWS teachers was an experienced teachers, the host classroom teachers was willingly involved in collaborating with the SWST, and there was sustained and consistent involvement in working together (ideally, with the SWS teachers visiting the host teachers classroom 2-3 times per week for 3-4 months).

**Impact on Student Learning and Achievement:** The SWST contributed to improved understanding of students’ learning and adjusting teaching to meet students’ needs, particularly students who were struggling. Overall, students in SWST classrooms demonstrated increased confidence in their learning, changes in learning behaviours, increased engagement and improved achievements.
Summer Literacy Learning Project

Description of initiative
The Summer Learning and Literacy Project (SLLP) was initiated in 2010 with a dual approach of introducing summer literacy learning camps in DSBs and a linked research project to investigate the impact of this project on students’ learning and achievements. The SLLP has continued since 2010 with objectives to:

✓ Provide a meaningful, interesting and high quality SLLP for primary pupils who are most in need of this opportunity.
✓ Assist selected Boards, based on EQAO data, to increase student achievement and close achievement gaps.
✓ Monitor and evaluate individual student literacy growth over the course of the summer programs.
✓ Determine if participation in a SLLP reduced summer learning loss and narrowed literacy gaps for students.
✓ Identify the components of successful SLLP and share best practices.

The SLLP provides summer literacy learning for students in grades 1, 2 and 3 who are most in need of early literacy intervention. Educators in participating DSBs identify and invite students they deem to be struggling with early literacy and who would benefit from a summer literacy program. Participating DSBs are required to offer the equivalent of a three-week half-day program, involves at least 45 hours of literacy instruction in either July or August, and to include a recreational component in the program. In 2012, a Summer Numeracy Pilot Project (SNPP) was introduced to support students with numeracy learning needs.

Sources of evidence
The introduction of SLLP in 2010 used a quasi-experimental design with the piloting of a new SLLP initiative and a linked evaluation of that initiative. The evaluation was led by Dr. Scott Davies and Dr. Janice Aurini at McMaster University. The research questions investigated were:

1. Did expected patterns of summer literacy gains and losses emerge?
2. Did boards successfully attract needy students?
3. Did summer programs narrow literacy gaps?

The evaluation design involved three main sources of evidence: measures of student literacy in June and in September, additional baseline information from DSBs and a parent survey. Students identified to participate in the SLLP and their classmates took literacy tests in June and September. A total of 2,330 English language students and 132 French language students wrote tests in both June and September. From this group, 1729 English language and 60 French language students...
formed a control group – these students did not participate in the SLLP, but were classmates with the students who did. This methodology offered a very important basis to compare learning over the summer period between students who did and did not participate in the SLLP. Further baseline data was collected from DSBs in June, including additional measures of student learning and achievement, gender, attendance and whether the student did or did not attend summer programs. Parents were also surveyed to gather demographic data – for example parents’ educational attainment, income, race and ethnicity, language use at home – and information about how their child(ren) spent out-of-school time, including activities to support education as well as leisure time. 105 French-language and 1601 English language parents provided survey responses.

In addition to the SLLP evaluation report (Davies & Aurini, 2010), LNS uses DSB reports relating to the SLLP to inform the LNS Year in Review and SLLP placemats.

Evidence of impact

Participants involved and spread of initiative

The SLLP has involved substantial increase in spread of DSBs involved and classes offered. As outlined in Figure D, the SLLP started in 28 DSBs in 2010 and had spread to 43 DSBs by 2013. Relatedly, the number of summer learning classes offered has more than trebled from 55 classes in 2010 to 171 classes in 2013 (see Figure E). Of note, a Summer Numeracy Program was introduced in 2012. The 2013 classes include, therefore, 95 summer literacy programs, 44 summer numeracy programs and 15 programs designed to support First Nations, Métis and Inuit students.

![Figure D: Number of participating DSBs, summers 2010-2013 (Source: LNS, 2013c).](image-url)
Impact on professional learning and practices

The emphasis in the SLLP is on students. Nevertheless, teachers participating reported benefits for their professional learning and practices also. The SLLP involved teachers developing a range of literacy instructional approaches. Importantly, the students selected to participate in the SLLP had high levels of academic and/or social disadvantage. Consequently, teachers reported developing understanding of students’ needs and how to support those struggling to learn. Furthermore, the nature of the SLLP also involved developing positive and engaging relationships with parents and community members.

Impact on student learning and achievement

The evaluation of the 2010 SLLP indicates that this initiative met the stated aim of attracting students in need of additional support and at risk of summer learning loss (a concept where disadvantage students fall further behind in their learning over the summer period compared to other students). Children participating in the SLLP were more academically and socially disadvantaged than their classmates. These children were also at high risk of summer learning loss and – even with the SLLP – their academic achievement overall did decline relative to the group of ‘control’ students. However, the SLLP appears to have mitigated the extent of summer learning loss. For French-language participants in the SLLP, their literacy test results improved between June and September with a consequent narrowing of the attainment gap between their results and those of control group students by 35%. For English-language students, the results were more mixed. The overall results for nine English-language DSBs indicated that the SLLP participants’ results reported gains in achievement and closed the literacy gap with other students. Nevertheless, overall, English-language students participating in the SLLP continued to demonstrate summer learning loss. However, while this could be interpreted as not having an impact, the counterfactual
is key as research concerning summer learning loss of disadvantaged students would suggest that participants in SLLP may have had a larger reduction in their literacy results if they had not received support over the summer. While not positive impact of significant improvement, the result of reducing the size of potential decline in achievement over the summer is important, particularly for students who have high levels of social, economic and educational disadvantages.

Of note also is that teachers and parents reported wider learning and social benefits for SLLP students. Four key benefits were identified:

1. Students participating in the SLLP were kept in a routine and developed skills over the summer that supported school readiness and literacy learning in the following academic year.
2. Participating in SLLP camps supported the development of students’ social skills.
3. Children’s health could benefit from the SLLP including meals and physical activity.
4. Students’ engagement in SLLP developed their confidence, including improved attitudes to literacy.

**Summary of Impact: SLLP**

**Spread of Initiative:** The number of summer learning programs has more than trebled since the launch of this initiative: from 55 classes in 2010 to 171 classes in 2013. The focus has expanded from literacy to also include numeracy and programs for First Nations, Métis and Inuit students.

**Impact on Professional Learning and Practices:** Educators who participated in SLLP reported that they improved their understanding of students’ needs and developed instructional strategies to support struggling students to learn.

**Impact on Student Learning and Achievement:** Students identified to participate in SLLP are experiencing academic and/or social disadvantages. The SLLP contributes to improvements in students’ academic and social skills, their well-being, and their confidence in learning. While participants did experience summer learning loss – where disadvantaged students fall behind in their achievement when not in school – the SLLP appears to mitigate the extent of summer learning loss. In other words, students would likely have fallen even further behind without the SLLP support.
School Effectiveness Framework (SEF)

Description of initiative
The School Effectiveness Framework (SEF) was piloted in 2007-08 and then implemented across elementary schools. A revised K-12 SEF was implemented from 2010 onwards. Each DSB receives funding for a SEF Lead to assist with the implementation and integration of the SEF within the DSB and their schools. According to the LNS:

The primary purpose of the SEF (K-12), supported by a SEF Lead in each DSB, is to function as a tool for schools to identify areas of strength and areas requiring improvement in order to reach all students and improve student achievement. The SEF is a tool to support and engage school staff in deep and purposeful dialogue about their school and students through the process of school self-assessment which underlies the development of a school improvement plan. Some schools will also engage in a District Review, whereby educators from outside the school but from the DSB join with the school team to look for evidence of student learning and implementation of the school improvement plan. (LNS, 2011a, p. 72).

Sources of evidence
An external evaluation of the SEF was conducted by a team at Queen’s University, led by Dr. Don Klinger, and reported in November 2011 (Klinger et al., 2011). The evaluation questions were:

✓ What are the theoretical and structural foundations for the SEF?
✓ What are the goals of the Student Achievement Division, the LNS, and the Ontario Ministry of Education for the SEF?
✓ What is the present status (conception, structure, design, etc.) of the SEF?
✓ What changes, if any, have taken place over time from inception to present in the conception and implementation of the SEF?
✓ What are the influences, and the corresponding evidence, of the SEF on: a) school leadership, b) teachers’ professional learning, c) teachers’ instructional practices, and d) student achievement?
✓ What sources of evidence are valued as evidence of successful implementation of the SEF and of improved educational outcomes?
✓ How are educators obtaining and using student assessment information to direct their improvement efforts within the SEF, and use this information to evaluate the success of their efforts?
✓ What do we need to learn, including challenges and opportunities, for the next level of work going forward? (Klinger et al., 2011, p. 2).
The evaluation used five phases and linked methods:

1. Literature review of school effectiveness and school improvement research to evaluate the foundations of the SEF.
2. Interviews and focus groups with LNS staff, including individual interviews with 10 members of the central LNS staff and three focus groups involving 36 LNS Student Achievement Officers (SAOs).
3. Focus groups and surveys of SEF Leads in DSBs, including three focus groups involving a total of 22 SEF Leads and survey responses from 46 SEF Leads.
4. Surveys of school principals which resulted in responses from 627 English-language and 100 French-language principals.
5. Case studies of schools identified by SEF Leads as having been very successful in their use of the SEF. A total of eight schools participated (six English-language, two French-language). Data collection included site visits, observations of SEF activities, interviews with principals or other individuals responsible for school improvement, and group interviews with the school improvement team (SIT) or other school members responsible for school improvement.

In addition, LNS Year in Review reports for 2009, 2009-10 and 2010-11 include sections with information about SEF expenditures, participation and activities. The 2011-12 and 2012-13 LNS Year in Review reports do not include a SEF specific section but do include mention of the SEF within a list of implementation actions that DSBs and schools report on to the LNS in their end of year reports for other initiatives.

**Evidence of Impact**

**Participants involved and spread of initiative**

The SEF is intended to be used throughout the Ontario education system including all DSBs having a SEF lead and all schools being expected to engage in self-assessment and improvement planning utilizing the SEF. The LNS Year in Review 2010-11 report indicates that 3285 elementary schools (or 80% of all elementary schools) conducted a self-assessment during that year. The following year (2011-12) the LNS Year in Review reporting format changed and did not include data on number of schools conducting SEF self-assessments. However, DSBs and schools did report to LNS on implementation actions across other LNS initiatives, including being asked to report on the extent of implementation of “Using the School Effectiveness Framework for developing priorities”. The results indicated that 21.3% of respondents reported full implementation, 43.5% reported some implementation and 35.4% reported no implementation of the use of the SEF for developing priorities. The LNS may want to consider future ways to track the implementation – or not – of the SEF within schools in order to have clearer evidence of use and impact.
Within the SEF initiative, schools can be selected for a District Review where a team of educators from outside the school (but from the school’s DSB) reviews the school's plans for improvement, visits the school and conducts classroom observations, and provides feedback and a written report on observed areas of strength and needs identified to support the school’s improvement. As indicated in Figure F, the number of schools participating in District Reviews has increased over time, from 722 schools in 2009-10 to almost double that number of schools (1419) in 2012-13. By 2012-13, over a third (35.4%) of elementary schools participated in a District Review that year.

![Graph showing the number of elementary schools participating in SEF District Review, 2009 – 2013]

**Figure F**: Number of elementary schools participating in SEF District Review, 2009 – 2013

**Impact on professional learning and practices**

Working with the SEF can involve professional learning for staff directly involved. A key role is the SEF Lead in each DSB who acts to align and integrate the SEF at the district level and support schools with use of the SEF connected to Board Improvement Plans and School Improvement Plans. Another key role is the school principal with responsibility for use of the SEF within their schools, particularly connected to school self-assessment, review and improvement planning processes. Figure G indicates the reported frequency of SEF Leads and principals in SEF related activities at the school level. The majority of SEF Leads and principals indicate frequently engaging in:

✔ Reviewing and analyzing assessment data
✔ Determining actions to achieve SMART goals, setting targets, planning instruction
✔ Reviewing indicators and determining areas requiring attention in School Improvement Plan (SIP)
The SEF could have a positive influence on board and school improvement planning processes. Evidence of impact includes schools’ developing a culture of self-assessment and improvement planning, which was reflected in conversations and practices to identify, review and monitor goals and actions. School improvement planning could also become a process for shared leadership and professional learning, as School Improvement Teams were engaged and teachers were involved in opportunities to engage in discussion of priorities, analysis of data and indicators, and identification of goals. In the SEF evaluation surveys, just under 90% of SEF Leads responded that they believed the SEF has changed school improvement planning and over 70% of principals reported that engaging in school self-assessment had improved the quality of School Improvement Plans (SIP) (Klinger et al., 2011).

However, while respondents were positive overall about the SEF, its full potential impact has not yet been realized. The majority of SEF Leads and principals responded that the SEF was “somewhat effective” (Klinger et al., 2011, p. 28) in influencing school capacity building and change. Notably, less than 25% of principals identified the SEF as having a “very strong influence” on key indicators of impact, including: increasing the staff’s skills at identifying indicators of learning and achievement; informing intentional and precise improvement planning through consensus building and professional learning; promoting inquiry focused on student learning; and increasing shared instructional leadership around student achievement. The external evaluation identifies positive
The process of school self-assessment and District Review can be powerful. For example, as indicated in Figure H, self-assessment was perceived as having a positive impact for school improvement. Principals whose schools had undergone a District Review process – involving an external team reviewing the school's self-assessment, conducting a site visit with classroom observations, and providing a feedback on strengths and areas for improvement - were generally positive about its impact: 84% of principals found the process to be helpful and useful (including 39% who reported “very useful”) (Klinger et al., 2011, p.34). Furthermore, for principals who had the experience of serving on a District Review team to provide feedback to other schools, this was a powerful professional learning experience (91% responded the process was valuable) (Klinger et al., 2011, p. 34).

Nevertheless, while the focused school self-assessment and the District Review process appear to be impactful, the impact of the broader SEF document appears mixed. There is evidence of impact on a culture of improvement planning in boards and schools, yet there is also evidence of principals and teachers not using the SEF explicitly in their schools. The SEF evaluation indicated SEF Leads and principals belief that the SEF was somewhat effective in promoting teachers’ professional learning and instructional practices, but concluded that “the direct influence... is difficult to gauge” (Klinger et al., 2011, p. 31). This is perhaps unsurprising given that measuring a direct link between a SEF document to a school improvement process to changes in instructional...
practices is challenging. More concretely, however, to improve impact further attention to supporting the professional learning of SEF Leads and principals in understanding and using the SEF appears to be needed. In the SEF evaluation, the majority of SEF Leads and principals expressed a need for more professional development and opportunities for sharing experiences to support understanding of the SEF for themselves and also for teachers.

**Impact on student learning and achievement**

The SEF evaluation concludes that “it is difficult to ascertain the influence of the SEF and school improvement efforts on student achievement” (Klinger et al., 2011, p. 31). In terms of student learning more broadly, there was case study evidence of schools engaging students in school improvement planning processes as part of developing a school culture and shared leadership for improvement. This is a positive impact. There was also a strong belief that school improvement efforts should contribute to student achievement and that the SEF could contribute to such outcomes. For example, “70 to 90% of SEF Leads and principals [were] in agreement that the SEF was at least somewhat effective in promoting student achievement, lowering achievement gaps or engaging staff in efforts to improve achievement” (Klinger et al., 2011, p. 31). More tangibly, analyses by LNS of the EQAO results for schools participating in District Reviews indicates these schools overall demonstrated higher increases in EQAO scores in the year of their District Review (LNS, 2009, 2011a; Gallagher et al., 2011). Between 2007-08 and 2008-09, schools participating in District Reviews overall achieved higher percentage point increases in all EQAO Grade 3 and 6 assessments compared to all schools overall. Between 2009-10 and 2010-11, schools participating in District Reviews overall achieved higher percentage point increases in EQAO Grade 3 and 6 literacy results and a smaller decrease than average in mathematics scores compared to all schools overall.

Overall, the SEF appears to have impacted an infrastructure and culture of improvement planning, through the role of the SEF Lead and processes for board and school self-assessment, review and improvement planning. Where there is focused self-assessment supported by external review, such as the District Review, there appears to be stronger impact for improvements in plans and actions to contribute to improved student achievement. Nevertheless, the overall evidence of impact is mixed and the SEF may not have yet realized its full potential. Areas for attention include that the SEF document is not always integrated or aligned with board and school improvement planning and there is need for further training and capacity building on the SEF specifically and accompanying processes for indicator development and analyses of data to inform specific goals, plans and actions. A caution on this interpretation for this review of the Evidence of Impact, however, is that the most recent evidence provided for the review was from 2011 (the external evaluation, LNS Year in Review 2010-11 and a LNS conference paper). Subsequently, the SEF and District Review have not been included in the LNS Year in Review or placemat reporting and analyses as a specific individual initiative. Rather DSB and school End of Year reports include a question about whether the SEF framework is being used to develop priorities as part of a list of implementation activities. The reported findings for 2011-12 would suggest that the SEF impact
has not increased substantially: for example, 21.1% of respondents reported full implementation of using the SEF for developing priorities, contrasted with 35.4% of respondents reporting no implementation. These are concerning findings. Nevertheless, it is difficult to discern what specific SEF impact has occurred from 2011 onwards. LNS are encouraged to develop future ways of monitoring and reporting use and impact of the SEF.

Summary of Impact: SEF

Spread of Initiative: All DSBs and schools are expected to use the SEF to support self-assessment and improvement planning processes. The SEF is widely used but has not reached full implementation in all DSBs and schools. In addition, schools can receive a District Review to support this process. The number of schools participating in a District Review each year has almost doubled – from 722 schools in 2009-10 to 1419 schools in 2012-13.

Impact on Professional Learning and Practices: The SEF is contributing to a culture and practices of self-assessment and improvement planning. District Reviews, in particular, are reported to be helpful for improving school improvement plans. The SEF is considered to be somewhat effective in influencing school improvement, professional learning and changes in practice. The SEF impact is mixed due to high variability in implementation. Additional professional development on the content and processes of the SEF is required to support understanding of the SEF and implementation by SEF Leads in DSBs and principals in schools.

Impact on Student Learning and Achievement: Schools participating in District Reviews demonstrate stronger gains in EQAO achievement results compared to all schools overall. There is a lack of evidence concerning the SEF overall and student achievement results: in large part this is because of difficulties in connecting an improvement planning document and process to measures of student outcomes. Consideration of how to further measure the impact of the SEF is required.
Leading Student Achievement

Description of initiative
In 2005, the Ontario Principals’ Council (OPC), the Catholic Principals’ Council of Ontario (CPCO), and l’Association des directions et directions adjointes des écoles franco-ontariennes (ADFO) submitted a proposal to LNS for the Leading Student Achievement (LSA) initiative. This initiative has been implemented from 2005 onwards in partnership between the three principals’ councils, LNS and Curriculum Services Canada (CSC). LSA involves principals working in teams at three levels – provincial, district and school – to develop instructional leadership. Principals involved in the LSA:

✓ attend provincial LSA professional learning events and have access to an online community and resources;
✓ participate in a district Principal Learning Team with other principals to develop their instructional leadership and capacity across the district; and
✓ develop Professional Learning Communities within their schools focused on teaching and learning to improve student achievement.

The LSA’s emphasis on instructional leadership has become increasingly aligned with the Ontario Leadership Framework (see Leithwood, 2010). The focus of LSA has shifted over time from a priority emphasis on school-wide learning conditions to increasing attention to classroom-based practices for improving instruction and student achievement (Leithwood, 2010).

Sources of evidence
This review of Evidence of Impact draws on three research papers that were provided by LNS. First, a paper by Professor Kenneth Leithwood describing the evolving theory of action for LSA (Leithwood, 2010). Dr. Leithwood has been contracted as the lead researcher for investigating and informing the work of LSA since its beginning in 2005. The 2010 research paper outlines a proposed ‘theory of action’ drawing on leadership research rather than providing an empirical evaluation of the actual LSA. Second, a conference paper co-authored by a member of the LSA Steering Committee, Dr. Massey, and a member of the LNS, Dr. Kokis (Massey & Kokis, 2010). This paper includes analyses of elementary principals’ responses to a survey about their experiences and perceptions as participants in LSA. The survey was administered in October 2009. From 1803 principal participants, 907 responded to the survey. Third, an edited collection of “successful stories” written by LSA participants discussing their involvement in the LSA and use of this to support improvements at classroom, school, network and/or district level (Leithwood, 2012).

It is noteworthy that the Massey & Kokis (2010) paper and Leithwood (2012) report refer to an annual evaluation process for LSA led by Dr. Leithwood and involving surveys of principals, teachers and system leaders, plus interviews with a sample of participants, and analysis of LSA connected to EQAO data. This evaluation data is used to inform the LSA Steering Committee; however, evidence from the LSA research and evaluation does not appear to be widely reported through
LNS reporting mechanisms, for example, the LNS Year in Review and placemat reports do not include LSA. Given that evidence appears to be being collected and that a recurring priority theme in the LNS Year in Review recommendations is the need to develop instructional leadership, an approach to reviewing the LSA evidence in the context of LNS goals, activities and impact is suggested. This may already be occurring through the LSA mechanisms, however a more integrated approach of considering LSA not only in its own right but in the context of developing instructional leadership across the literacy and numeracy strategies is worthy of review.

**Evidence of impact**

**Participants involved and spread of initiatives**

22 DSBs participated in the first year of the LSA initiative (2005-06). Over time, the LSA has expanded considerably and has extended from elementary schools to include secondary schools also. In 2012, for elementary schools, 53 DSBs, 1932 principals and their schools and 103 district leaders were involved in LSA. For secondary schools, 22 DSBs, 70 school administrators in 56 schools, and 29 district leaders participated in LSA in 2012.

**Impact on professional learning and practices**

Central to the LSA is the work of principals in district level Principal Learning Teams (PLTs) to develop and share their instructional leadership and at the school-level in developing Professional Learning Communities (PLCs) focused on effective practices for raising student achievement. Massey & Kokis’ (2010) analysis indicates that LSA principals evaluate high effectiveness of both PLTs and PLCs. Using a seven point rating scale (1 = strongly disagree, 7 = strongly disagree) principals rated the overall effect of PLCs as 6.04 with benefits for teachers’ professional learning and practice and particularly for the principals’ learning (see Table 6). Principals were even more positive about the value of PLTs for their professional learning and development of their instructional leadership capacities (see Table 7) with the value of PLTs being rated as 6.19 overall. These are very high impact ratings. The 13 “success stories” profiled for LSA speak also to the benefits of LSA for developing principals as instructional leader supporting improvements at classroom, school, network or district levels. Interestingly, several of the stories reference connecting development of their instructional leadership with implementation of other LNS initiatives, such as collaborative inquiry and school improvement planning.
Table 6: Professional Learning Communities: Effect (Source: Massey & Kokis, 2010, p.11)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td><strong>Professional Learning Community: Effect</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influences your school's improvement planning processes</td>
<td>896</td>
<td>5.97</td>
<td>1.13</td>
</tr>
<tr>
<td>Helps you monitor your school's progress in improving student learning</td>
<td>896</td>
<td>6.01</td>
<td>1.11</td>
</tr>
<tr>
<td>Helps teachers learn about and reflect on their instructional practices</td>
<td>892</td>
<td>6.04</td>
<td>1.08</td>
</tr>
<tr>
<td>Informs you about areas in need of improvement through your own participation</td>
<td>893</td>
<td>6.15</td>
<td>1.04</td>
</tr>
<tr>
<td>Helps align teacher's efforts across the school</td>
<td>895</td>
<td>6.05</td>
<td>1.09</td>
</tr>
<tr>
<td>Helps align the school and board improvement plans</td>
<td>896</td>
<td>5.91</td>
<td>1.22</td>
</tr>
<tr>
<td>Provides direction to your improvement processes</td>
<td>893</td>
<td>6.15</td>
<td>1.06</td>
</tr>
</tbody>
</table>

Table 7: Principal Learning Teams: Value (Massey & Kokis, 2010, p. 13)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td><strong>PLT Value</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation in a principal learning team is beneficial to me.</td>
<td>884</td>
<td>6.37</td>
<td>1.03</td>
</tr>
<tr>
<td>Participation as a principal learning team leader is beneficial to me.</td>
<td>678</td>
<td>6.00</td>
<td>1.41</td>
</tr>
<tr>
<td>Participation in a principal learning team has improved my own instructional leadership capacities.</td>
<td>861</td>
<td>6.16</td>
<td>1.15</td>
</tr>
</tbody>
</table>

Impact on student learning and achievement

The “successful stories” of LSA (Leithwood, 2012) include narratives of LSA participants engaging in and supporting practices for improved student learning, for example collaborative inquiry, teaching and learning critical pathways and CIL-M. The narratives include mention of attention to EQAO results. However, the material provided for this review of Evidence of Impact did not include analyses of EQAO results or other indicators of student achievement connected to LSA. Such analyses is suggested to be conducted as part of the LSA annual evaluation (Leithwood, 2012), therefore LNS may want to consider how to bring the LSA evaluations into future monitoring of the LSA specifically and, importantly, consideration of impact of the LNS overall.
Summary of Impact: LSA

Spread of Initiative: Beginning with 22 DSBs in 2005-06, LSA has expanded considerably. In 2012, for elementary schools, 53 DSBs, 1932 principals and their schools and 103 district leaders were involved in LSA. For secondary schools, 22 DSBs, 70 school administrators in 56 schools, and 29 district leaders participated in LSA in 2012.

Impact on Professional Learning and Practices: Principals reported benefits of participating in Principal Learning Teams at provincial and district levels for supporting their instructional leadership and positive impact of professional learning communities in schools for teachers’ and principals’ learning.

Impact on Student Learning and Achievement: There are examples of LSA participants engaging in and supporting practices for improved student learning. However, the material provided for this review of Evidence of Impact did not include analyses of EQAO results or other indicators of student achievement connected to LSA. LNS may want to consider how to use the LSA annual evaluations provided to the LSA Steering Committee as part of LNS monitoring of the LSA and reporting of LNS impact overall, for example in Year in Review reports.
Ontario Focused Intervention Partnership (OFIP) and Schools in the Middle (SIM)

Description of initiatives

The Ontario Focused Intervention Partnership (OFIP) was launched in 2006 as a targeted intervention to support schools that are lower performing to improve and also to develop DSB capacity to support all schools to improve. The design of OFIP involves criteria linked to performance on EQAO results. With positive improvements in EQAO results for OFIP schools, the OFIP criteria have been modified over time. In essence, OFIP identifies schools with ‘low’ performance for targeted intervention and ‘average’ performance for DSB attention and support. Figure I outlines the transitions in the OFIP criteria and program.

![Figure I: Evolution of the OFIP Strategy](image)

Features of the strategy for OFIP (OFIP 1 and 2) schools are:

Targeted strategies are developed at the school level in coordination with the DSB, and articulated in an action plan adapted to the needs of each school. All schools and DSBs involved in the OFIP program receive funding and consultation support with centrally located LNS leaders and staff, directors of DSBs and senior DSB officials, as well as opportunities for coaches and principals to work with members of the LNS Capacity Building Team.

Schools and districts involved in the OFIP program ensure:

- Completion of a self needs assessment involving a school team to establish specific goals for schools,
- Participation of a supervisory officer and principal in learning opportunities,
• Participation of educators in school-based professional learning communities (PLCs),
• Participation of OFIP teams in formal and informal networked learning opportunities,
• Completion of an action plan, including LSN support as requested. (LNS, 2012d).

Sources of evidence
As the OFIP initiative began in 2006, it was included as a substantial area of investigation in the previous overall evaluation of LNS which reported in 2009 (Audet et al., 2009). This current review of Evidence of Impact examines evidence from 2009-2013 through analysis of LNS Year in Review Reports (2008-09, 2009-10, 2010-11, 2011-12, 2012-13) and placemats for OFIP and SIM in 2011-12 and 2012-13. These reports draw on End of Year reports from DSBs and schools concerning LNS initiatives, plus analyses of EQAO data.

Evidence of impact

Participants involved and spread of initiatives
As OFIP is a targeted strategy for schools identified as low performing on EQAO criteria, a pattern of impact would be for reduced numbers of schools to be involved. This is exactly what has happened (see Figure J). The reduction in OFIP schools is even more impressive when account is taken that the criteria have been expanded over time (from schools with EQAO results of less than 34% in Reading to schools with results of less than 50% in 4:6 EQAO assessments). By 2012-13, only 87 schools (or 2.3% of elementary schools participating in EQAO) meet the criteria of ‘low performing’. This is remarkable impact of the LNS through the OFIP strategy.

![Number of OFIP Schools](image)

*Figure J: Number of schools identified to participate in OFIP*
In contrast, the number of schools in the middle level of performance has increased (as has the number of schools at the highest level of performance). Evolving from OFIP 3, the Schools in the Middle (SIM) was launched in 2009-10 to provide DSBs with support for improving schools in the 50-74% performance range. The LNS identified schools meeting the criteria – however, DSBs tended to expand the initiative to include a larger number of schools in the board. For example, in 2009-10, LNS identified 919 SIM schools, yet DSBs expanded the initiative locally to include 1426 schools. This is evidence of positive impact, as the LNS and DSBs were building on a successful initiative – OFIP – to expand the number of participants and spread of impact. Figure K below charts the number of schools participating in SIM.

![Number of SIM Schools](image)

**Figure K: Number of SIM schools**

**Impact on professional learning and practices**

The evidence suggests high impact of OFIP for focusing on professional learning and practice. The specific focus of OFIP work and reporting has evolved over the eight years of this initiative. Evidence from the 2008-09 and 2009-10 LNS Year in Review reports suggests that professional learning included the development of professional learning communities, use of collaborative inquiry through Teaching and Learning Critical Pathways and school networks, plus, to a lesser extent, demonstration classrooms and principal networks. The focus on instruction and use of assessment, student work data and moderated marking appears to have increased in OFIP schools. In the 2010-11 LNS Year in Review, the most frequently mentioned literacy, numeracy and instructional leadership actions for OFIP schools, included:

- ✔ Analyzing student work and assessments to make instructional decisions and to improve practice
- ✔ Co-learning among principals and teachers
- ✔ Developing learning tasks based on curriculum expectations
- ✔ Use of success criteria
✓ Co-planning instruction
✓ Implementing comprehensive literacy program in blocks of learning time
✓ Using manipulatives in math

By 2011-12, the End of Year reporting format had changed and introduced new categories of implementation actions. OFIP schools reported notably high levels of implementation for:

✓ Engaging School Improvement Teams in school improvement work
✓ Using literacy coaches/facilitators
✓ Designing and implementing an action plan
✓ Developing learning tasks based on curriculum expectations
✓ Focusing resources on the instructional core
✓ Using learning goals
✓ Making decisions collaboratively
✓ Using the School Effectiveness Framework for developing priorities
✓ Using data from common assessments

Taken overall, these reported actions suggest substantial attention to, and implementation of, practices to support professional learning, school improvement processes, collaborative practices and shared leadership, and development of instruction and assessment to support improved teaching practices and student learning.

Although the number of schools involved in OFIP has declined substantially – a positive sign – LNS is encouraged to continue to monitor impact of practices and outcomes in these schools both to inform other low performing schools and, even more so, to spread these practices across all schools. Relatedly, it will be important to monitor the effective practices in the recent movement to board level SIM encompassing a large number of schools (discussed in the next section). The Schools in the Middle strategy effectively emphasised actions for school improvement planning and development of networks across schools. These remain keys for the SIM, hence monitoring of board and school improvement will be vital.

Impact on student learning and achievement

OFIP has had high impact on student learning and achievement. In Table 8 below, green highlighting indicates where OFIP and/or SIM results are better than the results for all schools overall. “Better” is defined as a higher achievement result and/or a smaller decline in result than the overall average for all schools. Orange highlighting indicates where SIM schools achieved the same percentage point improvement (or decline) as all schools overall. As indicated in Table 7, based on 6 EQAO assessments per year over the period from 2009 to 2013, OFIP schools had better results than the average for all schools in 23 out of 24 assessments. The difference in results can be substantial, for example OFIP schools’ results overall were up to eight percentage points higher than all schools overall in 2012-13. This is remarkable impact.
Table 8: Comparison of annual EQAO results for all Schools, OFIP and SIM 2008-09 to 2012-13

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<tbody>
<tr>
<td></td>
<td>All schools</td>
<td>OFIP SIM</td>
<td>All schools</td>
<td>OFIP SIM</td>
</tr>
<tr>
<td>Gr 3 Reading</td>
<td>1.5 6.0 2.6</td>
<td>2.2 6.5 2.7</td>
<td>1.6 3.9 2.5</td>
<td>1.2 8.5 1.2</td>
</tr>
<tr>
<td>Gr 3 Writing</td>
<td>2.5 8.2 3.2</td>
<td>2.7 7.3 3.6</td>
<td>2.7 7.6 3.8</td>
<td>0.2 8.3 0.2</td>
</tr>
<tr>
<td>Gr 3 Math</td>
<td>0.8 5.9 0.9</td>
<td>-2.4 2.6 -1.8</td>
<td>0.2 -0.2 1.1</td>
<td>-1.9 6.2 -1.9</td>
</tr>
<tr>
<td>Gr 6 Reading</td>
<td>1.6 8.1 2.4</td>
<td>2.6 5.6 3.5</td>
<td>1.3 4.6 1.6</td>
<td>1.4 5.4 1.4</td>
</tr>
<tr>
<td>Gr 6 Writing</td>
<td>2.3 5.6 3.3</td>
<td>2.7 6.5 2.7</td>
<td>1.5 4.5 1.8</td>
<td>1.6 7.0 1.7</td>
</tr>
<tr>
<td>Gr 6 Math</td>
<td>-2.4 0 -2.0</td>
<td>-2.9 1.5 -2.4</td>
<td>-0.5 3.3 -0.4</td>
<td>-1.4 2.6 -1.3</td>
</tr>
</tbody>
</table>

SIM schools also demonstrate improved achievement results overall. In Table 8, SIM schools perform at a better level of achievement in 18 out of 24 assessment results, plus perform at the same rate of improvement as all schools in three additional assessments, over the 2009 – 2013 period. Notably, in 2011-12, SIM schools achieved better improvement results compared to all schools in all six EQAO assessments.
Summary of Impact: OFIP and SIM

Spread of Initiative: As OFIP targets low performing schools, the substantial reduction in the number of OFIP schools – from 236 schools in 2008-09 to 87 schools in 2012-13 – indicates a significant positive impact. SIM was originally designed for schools in the mid-range of performance but is evolving to a district-wide strategy.

Impact on Professional Learning and Practices: OFIP has demonstrated positive impact on professional learning, including substantial attention to and implementation of practices to support professional learning, school improvement processes, collaborative practices and shared leadership, and development of instruction and assessment to support improved teaching practices and student learning. SIM has supported networking between schools and improvements in school improvement planning.

Impact on Student Learning and Achievement: OFIP has had substantial and significant impact on student achievement results. OFIP schools achieve higher percentage point gains in student achievement compared to all schools overall SIM has also contributed to improvements in student achievement with SIM schools demonstrating mainly higher percentage point gains compared to all schools overall.
System Implementation and Monitoring (SIM)

Description of initiative

Evolving from the Schools in the Middle strategy, the System Implementation and Monitoring (SIM) initiative was launched in 2012-13. SIM involves DSBs identifying a System Implementation and Monitoring Team who participate in LNS professional learning sessions, design a district SIM Implementation Plan, and work with school improvement teams to support schools to network and to develop and implement improvement plans focused on improving instructional leadership, pedagogy and student achievement.

As detailed in a Memorandum from LNS to DSBs in September 2012:

- The Schools in the Middle initiative has evolved over the years and has resulted in a change in name and focus. The System Implementation and Monitoring team commits to implementing and monitoring a piece of the board improvement plan for student achievement thus connecting the work of the district with the family of schools and all classrooms.
- School Districts will identify a system implementation and monitoring team to support the work of school improvement teams as they work within networks of schools in order to improve instructional effectiveness within and across schools and to further develop instructional leadership.
- Through professional dialogue and study, teams will further develop their capacity to:
  - Observe, describe, and analyze student work
  - Set specific goals and targets for student learning
  - Plan and implement specific teaching and learning strategies
  - Monitor student achievement results and adjust strategies as needed
  - Support the professional learning required to raise achievement
  - Align resources to meet achievement goals
  - Engage students and parents in school improvement
- The School Effectiveness Framework provides a focus for the work of the system and school leadership groups as share and develop processes for collaborative goal setting, distributed leadership and shared accountability within school improvement teams.
- For the purpose of evaluating this strategy, school districts will be asked to provide evidence of the impact of this work on system improvement and school improvement efforts.

Hence, DSBs are required to form a System Implementation and Monitoring (SIM) team with up to ten members, including teachers/consultants, principals, superintendents and the DSB’s SEF Lead and Student Success Lead. This SIM team participates in three regional professional learning sessions per year (supported by the Ministry’s Student Achievement Division) and provides leadership and support within their DSB for clusters of schools focused on their school improvement teams and plans.
Funds allocated to DSBs by LNS for SIM are to be used for:

- release time for capacity building including release time for networking with colleagues across networks of schools
- purchase of LNS recommended professional materials
- travel costs for the System Implementation and Monitoring Team to attend regional learning sessions
- travel costs for School Improvement Teams to attend learning sessions facilitated by the System Implementation and Monitoring Team.

Sources of evidence
Memoranda and professional resources concerning SIM were provided to inform the above description of the purpose and actions involved in the SIM initiative. Specifically, regarding evidence of the impact of SIM, I draw on the 2012-13 LNS Year in Review, the 2012-13 LNS Placemat for SIM, a proposed logic model developed by the Student Achievement Division, and an example of collated feedback from participants attending a regional SIM session. It is important to note that, at the time of this review of evidence, there was only evidence from the first year of implementation and no independent evaluation of SIM had been commissioned. While LNS and DSB monitoring is in place, given the large-scale nature of SIM, it is proposed that an independent evaluation of SIM will be important.

Evidence of impact

Participants involved and spread of initiative
In 2012-13, 2426 elementary schools – accounting for 65% of all elementary schools in Ontario – were involved in SIM. In 38 of 72 DSBs, SIM was being used as a strategy to include all elementary schools.

Impact on professional learning and practice
Provincial and regional capacity building activities and resources to support the implementation of SIM place a strong emphasis on the importance of gathering data, engaging in feedback loops, and monitoring impact for both professional learning and student learning.

For example, the System Monitoring through Implementation (K-12): Collaborative Inquiry Process begins by asking SIM teams to monitor and reflect on educator learning by:

- Share and analyze evidence of educator learning, discuss progress, challenges and possible solutions. Revise plan as needed.
- What is working/not working?
- What are the educator learning needs?
- What is the depth and consistency of implementation? How do we know?
What factors enabled successful implementation?
What evidence might affirm that spread is occurring?
What adjustments do we need to make? What additional support is required?
What are our key learnings?
How well did the professional learning of leaders meet their needs?

The SAD logic model for SIM proposes a theory of action for SIM to develop approaches which are asset based, coherent and aligned, involve collaboration and inquiry, are relevant and engaging experiences, and promote understanding of impact through precision and personalization. A range of desired outcomes are suggested; however, it will be important to develop specific indicators to research, monitor and evaluate the impact of SIM in practice.

Based on DSB and school reports analyzed for the LNS Year in Review for 2012-13 and the SIM Placemat (LNS, 2014), the following professional practices for integrating collaborative dialogue and classroom experiences are reported to have increased compared to 2011-12:

- Making decisions collaboratively
- Building instructional leadership capacity among system leaders
- Co-learning among principals and teachers
- Learning in networks across schools
- Co-learning through inquiry
- Co-planning instruction

These are encouraging reported findings for the first year of implementation of the expanded SIM. Curiously, however, there was not reported increase in practices to use the SEF or to engage school improvement teams in school improvement work; however, this is an area of continuing attention in the ongoing development of SIM. Relatedly, feedback from SIM regional sessions indicates positive responses to these sessions and resources plus a desire for more support to assist SIM teams in designing, conducting and analyzing approaches to monitor the implementation and SIM.

**Impact on student learning and practice**

The System Monitoring through Implementation (K-12): Collaborative Inquiry Process begins by asking SIM teams to observe and reflect on evidence concerning student learning, specifying:

- Share and analyze evidence of student learning, discuss progress, challenges and possible solutions. Revise plan as needed.
- What do students identify as their strengths and needs?
- What is the role of the student in the instructional process?
- What adjustments do we need to make?
• What is the depth of learning? What is our evidence?
• What evidence might affirm that spread is occurring?

Evidence collected from DSBs and schools for the LNS Year in Review indicates a considerable range of practices connected to supporting student learning that are reported to have increased in 2012-13 linked to SIM, compared to 2011-12 (LNS, 2014). In the category of “Student Engagement and Learning”, the following practices are reported to have increased:

✓ Analyzing student work to make instructional decisions
✓ Analyzing student work to improve practice
✓ Analyzing student data and classroom narrative to make evidence informed decisions
✓ Increasing precision and personalization in teaching and learning
✓ Providing students with descriptive feedback
✓ Gathering data through observation of students
✓ Incorporating student voice, perspectives and interests

In the category of “Building Pedagogical Content Knowledge”, linked to SIM, the following practices are reported to have increased in 2012-13 compared to 2011-12:

✓ Developing learning tasks based on curriculum expectations
✓ Developing expertise in literacy content and pedagogy
✓ Using numeracy coaches/facilitators
✓ Using literacy coaches/facilitators

Therefore, a range of professional practices to support student learning and achievement are reported to have increased implementation in 2012-13. As indicated in Table 8, in 2012-13, overall SIM schools performed at a similar rate to all schools overall. This is understandable given this was also the year when the new SIM was introduced and expanded significantly to include the majority (65%) of elementary schools in the province. Now that a new SIM approach has been introduced and has expanded to a DSB-wide strategy in many cases, an evaluation of the current and evolving impact of the new model of SIM is recommended.
Summary of Impact: SIM

Spread of Initiative: A new and expanded SIM was introduced in 2012-13 involving 2426 – or 65% – of elementary schools in Ontario. In 38 of 72 DSBs, SIM was being used as a strategy to include all elementary schools.

Impact on Professional Learning and Practices: DSB and school reports to LNS indicate increased implementation of a range of processional learning and instructional practices connected in 2012-13. For “integrating collaborative dialogue and classroom experiences”, increased implementation of professional collaboration, co-learning and co-planning, and instructional leadership are reported. For “student engagement and learning”, increasing use of analyzing students’ work, improving instructional practices, providing feedback, and incorporating students’ voices are reported. In the area of “building pedagogical content knowledge”, increased implementation of developing learning tasks based on curriculum expectations, literacy content and pedagogy, and use of coaches are reported. These are important practices and indicate emerging impact of SIM in its first year of implementation. Two areas that may benefit further focused attention are engaging school improvement teams in school improvement work and developing mathematical content and pedagogy. In addition, SIM teams appreciate and would like further professional learning and resources to support their own monitoring of SIM implementation and impact locally.

Impact on Student Learning and Achievement: In 2012-13, overall SIM schools performed at a similar rate to all schools overall. This is understandable given that this was also the year when the new SIM was introduced and expanded significantly to include the majority (65%) of elementary schools in the province. Now that a new SIM approach has been introduced and has expanded to a DSB-wide strategy in many cases, an independent evaluation of the current and evolving impact of the new model of SIM is recommended.
OFIP Tutoring and Tutors In the Classroom (TITC)

Description of initiatives

As described in the LNS Placemat for OFIP Tutoring and Tutors in the Classroom (TITC), 2011-12:

The OFIP Tutoring initiative provides support for all DSBs to initiate or expand before – and after – school tutoring programs, including summer programs to improve and close gaps in student achievement. The purpose of this initiative is to support student learning and motivation by providing reinforcement of previously taught concepts.

The Tutors in the Classroom initiative uses volunteers and other trained non-professionals as tutors to be effective resources in improving children’s learning and achievement. DSBs and/or schools hire university or college students to tutor students under the guidance of school staff during the school day. DSB’s apply to participate in this cost-sharing initiative, providing 50% of tutors’ salary while the LNS provides the other 50%. (LNS, 2012e).

Sources of evidence

The Year End reports from DSBs include information on the two tutoring initiatives. LNS use these data to inform reporting in their Year in Review reports and placemats.

Evidence of impact

Participants involved and spread of initiatives

The reporting of the tutoring initiatives has evolved over time. The 2009 LNS Year in Review included counts of DSBs, of tutors hired, of estimated number of students. From 2009-10 onwards, LNS have asked DSBs to include the names of schools involved in each tutoring initiative as part of their End of Year report. In 2012-13, it is reported that 1418 schools (or 38% of elementary schools participating in EQAO) participated in OFIP Tutoring and 1150 schools (or 31% of elementary schools participating in EQAO) were involved with TITC. Therefore, approximately a third of elementary schools are involved in each of OFIP Tutoring and TITC.

Impact on professional learning and practices

Participants in TITC are non-professional tutors who receive training as a tutor. It can be anticipated that this contributes to their learning. Further, reports from tutoring initiatives suggest these can also extend to engaging parents. Given the nature of the tutoring initiatives, specific measures for educators’ professional learning have not been included.
Impact on student learning and achievement

DSBs report that tutoring can support student engagement, increase confidence, and support positive attitudes to learning. These benefits can assist with learning in class as well as beyond. Tutoring initiatives tend to focus on identifying and supporting students who are struggling and can, therefore, support reducing gaps in performance for lower achieving students.

There are considerable cautions to assessing the impact of OFIP Tutoring and TITC solely based on EQAO results. The tutoring initiatives take many different forms, they do not exclusively focus on literacy and/or numeracy, they cover a range of grade levels, and involve individual students rather than an entire classes or grades.

Nevertheless, LNS has analyzed the EQAO results for schools participating in each of the tutoring initiatives and the overall findings are positive:

✓ Comparing 2011-12 results to 2010-11, OFIP Tutoring schools demonstrated stronger percentage point gains in achievement results in 5:6 EQAO assessments.
✓ Comparing 2011-12 results to 2010-11, TITC schools demonstrated stronger percentage point gains in achievement results in 5:6 EQAO assessments.
✓ Comparing 2012-13 results to 2011-12, OFIP Tutoring schools demonstrated stronger percentage point gains in achievement results in 4:6 EQAO assessments.
✓ Comparing 2012-13 results to 2011-12, TITC schools demonstrated stronger percentage point gains in achievement results in 5:6 EQAO assessments.

Summary of Impact: OFIP Tutoring and TITC

Spread of Initiative: In 2012-13, 1418 schools (or 38% of elementary schools participating in EQAO) participated in OFIP Tutoring and 1150 schools (or 31% of elementary schools participating in EQAO) were involved with TITC.

Impact on Professional Learning and Practices: As these initiatives draw on external tutors, measures for school educators’ professional learning have not been included.

Impact on Student Learning and Achievement: DSBs report that tutoring can support student engagement, increase confidence, and support positive attitudes to learning. These benefits can assist with learning in class as well as beyond. Tutoring initiatives tend to focus on identifying and supporting students who are struggling and can, therefore, support reducing gaps in performance for lower achieving students. Schools participating in the tutoring initiatives demonstrated stronger percentage point gains (compared to all schools overall) on the majority of EQAO assessments.
LNS Professional Resources

Description of initiatives

The LNS produces and distributes a range of professional resources intended to:

... support educators in their professional learning and address current issues and thinking in the field of education. Expert voices of researchers and practitioners highlight effective classroom, school and board practices that benefit and give voice to all members of the learning community. http://www.curriculum.org/k-12/en/

Print resources include:

- **What Works? Research into Practice**
  This series is developed in partnership between the LNS and Ontario Association of Deans of Education (OADE). The purpose is to provide summaries of research on evidence-based ideas and practices for educators. 52 What Works? monograph titles are currently available on the Ministry of Education website.

- **Capacity Building Series**
  This series is produced by the LNS with the intent of supporting leadership and instructional effectiveness in Ontario schools. 37 Capacity Building series titles are currently available on the Ministry of Education website.

- **Other Print Resources Developed By LNS and Curriculum Services Canada (CSC)**
  In addition to the above two series, LNS in partnership with Curriculum Services Canada (CSC) provide additional resources as needed, for example instructional resources, research monographs, informational resources about LNS, and a range of supports for parents’ engagement in their child’s education. There were 89 titles of resources in this category available during 2013-14.

- **Webcasts and Media Resources**
  LNS, in partnership with CSC, produce a range of webcasts, podcasts, video and multi-media resources. 69 Webcasts for Educators are currently hosted on the CSC website. Over the period 2007-14, a total of 94 webcasts or podcasts have been made available, plus video from LNS events and a YouTube channel. In addition to online availability, LNS produces DVDs that are distributed to DSBs and educators in Ontario.

Sources of evidence

The LNS Year in Review reports and the evaluation reports were analyzed to examine any mention of the LNS Professional Learning Resources. In addition, I requested data concerning the distribution and accessing of LNS from the Student Achievement Division. This data included: number of unique IP visitors to LNS webcasts and online media, number of print and DVD resources requested via Service Ontario, and distribution of materials to DSBs and educators by the LNS.
Evidence of impact

Participants involved and spread of initiatives
The volume of activity associated with the LNS professional learning resources is astounding.

Taken together the total number of unique IPs that has visited the LNS Webcast for Educators, podcasts, YouTube resources and online videos of LNS events is:

✓ 2,766,795 English language
✓ 189,921 French language
✓ Combined total of 2,956,716

These figures are based on unique IP addresses for each LNS resource. An IP address may involve multiple viewers, for example when a Webcast is watched by a group of educators together or – as is the case – webcasts are used in staff meetings or professional learning events with large numbers of people. However, it is important to remember that the count is per resource, so the same IP visitor could be counted for each resource they access, e.g. once for visiting X resource, and again for visiting Y resource. Nevertheless, the numbers are extremely high and indicate that LNS webcasts and online resources have been viewed at least three million times.

Four of the LNS webcasts have each been watched by over 100,000 unique visitors:

✓ High Yield Strategies to Improve Instruction (February 26th, 2008).
✓ Kindergarten Matters: Building Blocks for Learning (January 30th, 2007).
✓ Differentiated Instruction (March 29th, 2006).
✓ Teacher Moderation: Collaborative Assessment of Student Work (September 10th, 2007).

As well as online resources, the LNS distribute packages of new print resources and DVDs. Generally, a package of new resources is distributed each Spring and Fall involving a total of 8000 packages of resources in English-language and 2000 package of resources in French-language. Each set includes multiple new resources, for example the 2014 Spring Resources package included supports for mathematics (two print reports and one DVD of a webcast for educators), literacy (two Capacity Building series monographs and one DVD of a webcast for educators) and four What Works? Research into Practice monographs. These packages are mailed to the Ontario education system, including to:

- Directors of Education
- Supervisory Officers
- School Effectiveness Leads
- Student Success Leads
- Student Work Study Teachers
- Coordinators – Literacy and numeracy coaches
- Researchers
In addition, a set is mailed to the Ontario Deans of Education (OADE) and the Association of Education Researchers of Ontario (AERO). The resource packages are also distributed to the LNS’ Student Achievement Officers and to Ministry of Education colleagues, including Directors of Ministry branches and Ministry Regional Offices. Members of the Student Achievement Division Working Table also receive a set.

In addition to individuals and organizations that are mailed or provided with a resource package directly by LNS, people can contact Service Ontario to request copies of individual resources. Therefore, in addition to the LNS resource packages directly distributed by LNS, in the one year period from April 2013 to April 2014, Service Ontario received requests for and distributed:

- 61,624 What Works? Research into Practice monographs
- 147,001 Capacity Building series monographs
- 8656 DVDs of Webcasts for Educators
- 248,660 other LNS resources, including materials for parents
- In total: 527,565 LNS print and DVD resources

**Impact on professional learning, practices and student achievement**

The volume of people receiving and/or accessing LNS Professional Learning resources would suggest that they can be important sources for professional learning. However, while a logical assumption, there has not been specific evaluation of how the LNS resources do – or do not – inform professional learning, changes in practice, and/or student achievement.

There is some encouraging evidence within existing evaluations and reports about educators valuing the LNS Professional Learning resources. The LNS 2011-12 Year in Review report notes that in DSB Year End Report Back forms:

... well over half of respondents expressed specific sentiments regarding the usefulness of LNS resources with specific mention to LNS sessions, webcasts, and monographs. Boards referenced a need and desire for LNS to continue to provide current and critical ideas and research with regards to elementary school pedagogy. (LNS 2012a, p. 43).

Similarly, in both the EPCI evaluation (Kane et al., 2013a) and the SEF evaluation (Klinger et al., 2011), LNS resources – specifically the DVD to support the SEF and Capacity Building series monographs on collaborative inquiry and mathematics – were noted as very helpful by interviewees, particularly when they were not sure what was required to implement the new initiatives and practices.

Table 9 lists the “top five” LNS print and DVD resources requested from Service Ontario during April 2013 to April 2014. This gives an indication of the topics that were of most interest during this time. As well as supporting professional learning, what is particularly notable is the large volume of request for resources to support parents engaging in their child(ren)’s education: well over 60,000 requests for each of Reading and Writing with your Child and Doing Math with your Child.
Table 9: Top 5 LNS print and DVD resources requested from Service Ontario, April 2013-April 2014 (Source: LNS)

<table>
<thead>
<tr>
<th>What Works? Series</th>
<th>Capacity Building Series</th>
<th>LNS Webcasts</th>
<th>Other LNS/CSC Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Quantity</td>
<td>Title</td>
<td>Quantity</td>
</tr>
<tr>
<td>Assessing Text Difficulty for Students</td>
<td>12016</td>
<td>Pedagogical Documentation, K-2</td>
<td>15087</td>
</tr>
<tr>
<td>Fostering Literacy Success</td>
<td>11805</td>
<td>The Third Teacher: Designing the Learning Environment for Mathematics and Literacy, K to 8</td>
<td>13681</td>
</tr>
<tr>
<td>Supporting Families as Collaborators in Children’s Literacy Development</td>
<td>11239</td>
<td>Culturally Responsive Pedagogy</td>
<td>11376</td>
</tr>
<tr>
<td>Using a Professional Learning Community to Support Multimodal Literacies</td>
<td>10863</td>
<td>Collaborative Teacher Inquiry</td>
<td>10529</td>
</tr>
<tr>
<td>Supporting Early Language and Literacy</td>
<td>2064</td>
<td>Getting Started with Student Inquiry</td>
<td>8910</td>
</tr>
</tbody>
</table>

Given the volume of activity and spread of LNS professional learning resources, it is important that this area of substantial LNS work is evaluated. There are three main considerations:

1. **The appropriateness and usefulness of the content of LNS resources:** Anecdotal evidence suggests that these resources are useful, however the SEF evaluation (Klinger et al., 2011) also cautions about ensuring the evidence base is as strong and appropriate as possible. The proposed introduction of an Editorial Board and internal review process – outlined in LNS Year in Review 2012-13 – is a welcome addition. A process of peer review and editorial oversight for publications and materials is standard practice to ensure continued high quality.
2. **The reach, dissemination and uptake of LNS resources**: With advances in analytics for tracking and understanding website access and use, LNS and CSC may want to consider more advanced ways for monitoring, tracking and understanding hits, views, visitors and use of their online resources. Relatedly, evaluation of how LNS print resources and the materials distributed by LNS to the education sector are accessed is worth further evaluation. Again, the LNS Year in Review 2012-13 report also identifies this as an area for further attention and maps out the following schematic (Figure L), plus the initiation of an evaluation of the dissemination, use and usefulness of mathematics resources.

3. **The mobilization, use and impact of LNS resources for professional learning, informing practice and student achievement**: The schematic in Figure L and the current review of mathematics resources are important developments. However, to evaluate impact, I encourage the LNS to consider a more developed approach to reviewing the uptake, use and impact of LNS resources. Figure L refers to the creation and dissemination of products, it outlines how products reach users but not necessarily how they are then used – or not – by users. Research on research use indicates important distinctions in behavior of users between each step of receiving a research report (the end point of current Figure L), actually reading the report, understanding what is read, discussing and sharing the research with other people, and acting on or using that research in decisions and/or actions. All stages in this process are important but not all happen in practice. In my own work, I distinguish between finding, understanding, sharing and acting on research for knowledge mobilization. Furthermore, individuals and organizations can play an important role in sharing and mobilizing research. For example, when SAOs, SEF Leads, SWST and other key education leaders and partners receive LNS resource packages, how do they share and use these resources to support professional learning, parent engagement and/or student learning. I would encourage LNS to evaluate the latter three stages – understanding, sharing and acting on LNS resources – which are critical to professional learning, collaborative inquiry and evidence-informed practice.
Figure L: Schematic of LNS professional learning resource production and dissemination (Source: LNS 2013a, p. 36).

**Summary of Impact: LNS Professional Learning Resources**

**Spread of Initiative:** The volume of activity associated with LNS Professional Learning resources is astounding. 2,956,716 unique IP addresses have been tracked accessing LNS webcasts and online resources. For print resources and DVDs, the LNS distribute resource packages on a regular basis to Ministry, education and sector partners (approximately 10,000 packages distributed twice per year). In addition to materials being distributed, individuals can request copies of LNS materials. 527,565 additional LNS materials were distributed in the one year period from April 2013 – April 2014.

**Impact on Professional Learning and Student Learning:** There is some encouraging evidence within existing evaluations and LNS reports about educators valuing the LNS Professional Learning resources. The volume of people receiving and/or accessing LNS Professional Learning resources would suggest that they can be important sources for professional learning. However, there has not been specific evaluation of how the LNS resources do – or do not – inform professional learning, changes in practice and/or student achievement. The need for an evaluation of the content, reach, uptake, use and impact of LNS professional learning resources is strongly recommended.
Overall Impact of LNS

The previous evaluation of The Impact of the Literacy and Numeracy Secretariat reported in 2009 that:

> The consistent finding across all components of the study is that over its brief history, Ontario’s Literacy and Numeracy Secretariat has had a major, and primarily highly positive, impact on Ontario’s education system. Overall, the level of activity associated with and generated by the LNS is very high. (Audet et al., 2009, p.11).

The meta-analyses of LNS research, evaluation and data for the period 2009 to present conducted for this review of Evidence of Improvement leads to the conclusion that the high impact and activity of the LNS has not only sustained but expanded in spread across increasing numbers of schools. Furthermore, the LNS starting point was a focus on district and school capacity. Over time, while this focus has continued, there has been increasing attention to initiatives targeted at improvements at the classroom level, for example the EPCI, SWST and CIL-M work of recent years, suggesting increased depth of impact and improvement for professional learning, instructional practices, student learning and achievement.

Participants involved and spread of initiatives

By 2012-13, 90% of elementary schools in Ontario are reported to be directly involved in at least one LNS initiative. Furthermore, the majority of these schools are involved in more than one LNS initiative suggesting multiple points of potential impact.

![Number of Schools Participating in At Least One LNS Initiative](image)

*Figure M: Number of schools participating in at least one LNS initiative, 2009-13*
Although it is a Literacy and Numeracy Strategy, the majority of initiatives during the early stages of LNS had a stronger literacy focus. In 2011-12, in light of declining mathematics achievement results on EQAO assessments, LNS affirmed mathematics as “the primary student achievement priority” (LNS 2012a, p. 12). Subsequently, there has been increased attention to mathematics in LNS initiatives and resources and, relatedly, increased numbers of schools are involved in these initiatives. In 2011-12, 28% of elementary schools were involved in at least one LNS mathematics initiative; by 2012-13, this proportion had risen to at least 35% of elementary schools. This is an important increase in mathematics activity, yet still represents a minority of schools overall. The further expansion of a focus on math and math activities by LNS in 2013-14 is a welcome development. In addition, other LNS initiatives, such as the SEF and SIM work may include numeracy alongside literacy.

**Impact on professional learning and practices**

A key feature of LNS has been providing resources to support educators to develop their knowledge, skills and practice. In particular, funding for teachers’ release time and funding for staffing to support LNS initiatives, such as SWST teachers and SEF Leads, have been vital features of the LNS strategies. For example, from the total expenditure on LNS initiatives in 2011-12, 63% of funding was used for teacher release time and 23% for salaries. Across the evaluation reports, it is clear that this funding was very much appreciated – as time and resources continue to be both the largest enabler and challenge for implementation of LNS initiatives.

The research and evaluations of specific LNS priority initiatives – detailed above – suggests that each LNS initiative has had a substantial impact on professional learning and practice. The SEF evaluation (Klinger et al., 2011) indicates improvements in DSB and school self-assessment and improvement planning processes. The LSA research suggests the development of principals’ instructional leadership. And taken together, the CIL-M, EPCI and SWST evaluations plus research on OFIP, SIM and S&NB, indicate important shifts in teachers’ confidence and capacity with improvements in a range of learning and teaching practices, including:

- Increasing collaborative inquiry and learning amongst educators,
- Improving instructional strategies,
- Developing higher expectations of students,
- Studying and understanding students’ work to develop and adapt teaching strategies to meet students’ learning needs,
- Developing and using assessment and feedback to support all students to achieve,
- Building on the learning and understanding that students bring to the classroom to connect to their further learning and application of learning,
- Supporting children to see themselves as readers, writers, mathematicians and thinkers,
- Increasing abilities to identify gaps in student learning and to adapt teaching to meet address those gaps,
✓ Providing students with opportunities to demonstrate their learning,
✓ Increasing student voice and engagement,
✓ Developing classroom tasks and activities focused on effective instruction and the
  Ontario curriculum expectations, and
✓ Improving educators’ ability to adapt, understand and assess their teaching strategies
  and students’ learning and achievement using the above.

This summarized list of my review of the evidence conveys the substantial range of impacts and
improvements for professional learning and practices connected with LNS initiatives and activities. There are further detailed impacts for each initiative.

The LNS are to be highly commended for their own work to monitor, review and assess the impact
of LNS initiatives individually and collectively. The LNS Year in Review reports provide very useful
syntheses of evidence from DSB and school reports at the end of year. Analyzing evidence across
these reports is helpful for identifying substantial shifts connected to LNS initiatives. For example,
the LNS 2010-11 Year in Review report identifies the most frequently reported actions across
initiatives (from DSB and school end of year reports) as including:
  ✓ Developing learning tasks based on curriculum expectations
  ✓ Analyzing student work to make instructional decisions
  ✓ Analyzing student work to improve practice
  ✓ Designing instruction to engage students
  ✓ Developing expertise in learning about learning
  ✓ Using math manipulatives
  ✓ Making decisions collaboratively
  ✓ Analyzing student data and classroom narrative to make evidence-informed decisions
  ✓ Focusing resources on the instructional core. (LNS 2011a).

The general congruence between these priority actions – identified by DSB and school reports –
and the evidence of impact in the independent evaluation reports is highly encouraging in indicating
that such changes in practice are occurring.

From 2011-12 onwards, DSBs and schools participating in LNS initiatives have been asked to
report on implementation of actions connected to three main areas of impact:
  1. Integrating collaborative dialogue and classroom experience
  2. Pedagogical content knowledge
  3. Student engagement and learning
Table 10 presents the responses to each of the items for these categories in 2011-12. Encouragingly, the majority of actions are reported as having at least some implementation. The fullest levels of implementation are reported for:

- ✔ Developing learning tasks based on curriculum expectations
- ✔ Using numeracy/coaches facilitators
- ✔ Designing and implementing an action plan
- ✔ Learning networks across schools
- ✔ Engaging School Improvement Teams in school improvement work
- ✔ Using the School Effectiveness Framework for developing priorities
- ✔ Gathering data through observation of students
- ✔ Focusing resources on the instructional core
- ✔ Co-learning through inquiry
- ✔ Using literacy coaches/facilitators

Conversely, the majority of respondents reported no implementation actions for: engaging parents in setting high expectations for students; engaging parents and community in student learning; using literacy/coaches facilitators; and implementing literacy programs. A lack of high impact for engaging parents has been noted throughout the LNS Year in Review reports. Evidence from the Summer Literacy Learning Program and the Tutoring initiatives suggests that when there are targeted strategies to reach out and engage vulnerable children and their families, this can be a positive experience for engaging parents also. The lower reported literacy actions may be interpreted differently; from all of the other evidence reviewed, it appears that there has been considerable activity for literacy. Therefore, it may be that these two specific actions – literacy coaches and literacy programs – are used fully or somewhat in some DSBs but not others. Their absence does not mean that literacy actions are not occurring, simply that these specific forms of resources are not being utilized in all cases.
Table 10: Actions reported as full implementation across all core LNS initiatives (Source: LNS Initiatives 2012a, p.38)

<table>
<thead>
<tr>
<th>Integrating collaborative dialogue and classroom experience</th>
<th>% Full</th>
<th>% Some</th>
<th>% None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning in networks across schools</td>
<td>25.0%</td>
<td>53.1%</td>
<td>21.9%</td>
</tr>
<tr>
<td>Engaging School Improvement Teams in school improvement work</td>
<td>21.3%</td>
<td>39.9%</td>
<td>38.8%</td>
</tr>
<tr>
<td>Using the School Effectiveness Framework for developing priorities</td>
<td>21.1%</td>
<td>43.5%</td>
<td>35.4%</td>
</tr>
<tr>
<td>Co-learning through inquiry</td>
<td>20.5%</td>
<td>73.3%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Using data from common assessments</td>
<td>19.9%</td>
<td>48.9%</td>
<td>31.2%</td>
</tr>
<tr>
<td>Making decisions collaboratively</td>
<td>17.4%</td>
<td>57.9%</td>
<td>24.7%</td>
</tr>
<tr>
<td>Co-planning instruction</td>
<td>17.1%</td>
<td>73.9%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Building instructional leadership capacity among system leaders</td>
<td>15.2%</td>
<td>60.4%</td>
<td>24.4%</td>
</tr>
<tr>
<td>Using teacher moderation in collaborative inquiry</td>
<td>14.0%</td>
<td>65.7%</td>
<td>20.2%</td>
</tr>
<tr>
<td>Co-teaching</td>
<td>11.8%</td>
<td>72.8%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Building tri-level instructional leadership (classroom, school, system)</td>
<td>11.2%</td>
<td>57.0%</td>
<td>31.7%</td>
</tr>
<tr>
<td>Co-learning among principals and teachers</td>
<td>11.0%</td>
<td>74.4%</td>
<td>14.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pedagogical content knowledge</th>
<th>% Full</th>
<th>% Some</th>
<th>% None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing learning tasks based on curriculum expectations</td>
<td>29.5%</td>
<td>59.0%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Using numeracy coaches/facilitators</td>
<td>28.9%</td>
<td>37.1%</td>
<td>34.0%</td>
</tr>
<tr>
<td>Using literacy coaches/facilitators</td>
<td>20.2%</td>
<td>26.4%</td>
<td>53.4%</td>
</tr>
<tr>
<td>Implementing comprehensive literacy program</td>
<td>9.6%</td>
<td>40.2%</td>
<td>50.3%</td>
</tr>
<tr>
<td>Developing expertise in learning about learning</td>
<td>8.7%</td>
<td>83.4%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Developing expertise in literacy content and pedagogy</td>
<td>7.6%</td>
<td>45.5%</td>
<td>46.9%</td>
</tr>
<tr>
<td>Developing expertise in mathematics content and pedagogy</td>
<td>6.7%</td>
<td>69.9%</td>
<td>23.3%</td>
</tr>
<tr>
<td>Implementing comprehensive numeracy program</td>
<td>5.1%</td>
<td>62.4%</td>
<td>32.6%</td>
</tr>
</tbody>
</table>
Nevertheless, the high proportion of DSBs and school reports indicating level of implementation as “none” for a range of activities is confusing, particularly activities which have been significant in other evidence of impact of the LNS initiatives, such as school improvement work or the use of manipulatives in math. LNS refer to actions that are reported at both the higher and lower levels of implementation (in different DSB reports) as polarizing actions. My question would be whether this an issue of lack of “impact” or of difficulty or lack of clarity in reporting the relevant “evidence”?

With regard to evidence, the development, adaptations and refinement of the DSB and school end of year reports to LNS are commendable and valuable. For example, moving from 18 separate report back forms for initiatives in 2009-10 to the current practice of one consolidated, online reporting format is an excellent improvement. However, as LNS becomes increasingly precise – a positive impact – in their reporting and analyses, it is important to ensure the capacity of DSB and schools to understand the items in the reports, gather and analyze relevant evidence, and report with some consistency becomes equally precise. In evaluation reports of LNS initiatives,
the need to develop capacity for educators to understand, gather, interpret and report evidence is identified as an area for growth – for example, in how to assess student inquiry (Kane et al., 2013b) and how to develop and monitor indicators for the SEF and SIP goals (Klinger et al., 2011). For the evidence reported and analyzed, it is important that it is of the highest quality. There may be a need for additional capacity building and LNS support resources to enhance DSB and school reporting to the LNS following changes in the reporting format and action items included. As with teacher moderation of student work, developing common understanding of the items, of relevant evidence, and how to rate the actions is vital. Do all DSBs and schools know and understand what “full” versus “some” versus “none” implementation of each action looks like in practice, what evidence would be used, and how would this be interpreted and reported? This leads to how to ensure evidence of impact and improvement that can be reported with reliability and consistency across initiatives and over years. It is not simply the presence of an action that needs to be monitored; importantly, it is also the quality of action and impact. This is challenging to measure and report on a large-scale across a system; however, it does require further consideration. The range of data, evaluation and research conducted, commissioned, analyzed and reported by LNS is highly impressive. Moving forward it will be important to determine which indicators the LNS wants to report on annually and on a longitudinal basis, as well as areas for new evaluation and research.

**Impact on student learning and achievement**

LNS was established with a mandate to improve student achievement connected to two of the government’s priority goals:

- ✔ Increase student achievement
- ✔ Reduce gaps in student achievement

Overall, considerable impact is evident for both goals.

**Increased student achievement**

The combined overall results for literacy and numeracy in elementary schools (EQAO Grade 3 and 6 assessments, English and French language) has increased by 17 percentage points from 2002-03 to 2012-13. In the period covered in this review of Evidence of Improvement (2009 to present), the results improved by four percentage points. To have sustained growth in student achievement results is unusual and remarkable in large-scale educational improvement.
Figure N: Overall combined elementary results for EQAO assessments (Percentages calculated for combined and weighted English and French language results).

While the goal of 75% of students achieving at or above the provincial standard (Level 3 and above in EQAO results) has not yet been reached overall, it has been reached in the majority of assessment areas taking into consideration results for English and French language students for Reading, Writing and Mathematics in Grades 3 and 6. Notably,

✓ The goal of 75% of students achieving the provincial standard or above has been exceeded in all of the French-language EQAO assessments
✓ The goal of 75% of students achieving the provincial standard or above has been exceeded in the English-language EQAO results for Grade 3 Writing, Grade 6 Reading and Grade 6 Writing.

Tables detailing the annual EQAO assessment results for each assessment area are included in Appendix B. In summary, comparing results over the past decade from 2002-03 to 2012-13 for English-language students:

✓ Grade 3 Reading results have improved by 18 percentage points
✓ Grade 3 Writing results have improved by 22 percentage points
✓ Grade 3 Math results have improved by 10 percentage points
✓ Grade 6 Reading results have improved by 21 percentage points
✓ Grade 6 Writing results have improved by 22 percentage points
✓ Grade 6 Math results have improved by 4 percentage points

Comparing results over the past decade from 2002-03 to 2012-13 for French-language students:
✓ Grade 3 Reading results have improved by 31 percentage points
✓ Grade 3 Writing results have improved by 25 percentage points
✓ Grade 3 Math results have improved by 31 percentage points
✓ Grade 6 Reading results have improved by 31 percentage points
✓ Grade 6 Writing results have improved by 23 percentage points
✓ Grade 6 Math results have improved by 15 percentage points

Overall, these are highly impressive improvements in student achievement.

Considering impact within the period of this review (2009-13), two notes are important: first, we are considering impact over a shorter time frame; and second, achieving sustained and further increases once performance reaches higher levels can be particularly challenging. Nevertheless, as detailed below, all assessment results continued to improve in the French-language system and all Reading and Writing results improved in the English-language system. In summary, comparing results from 2008-09 to 2012-13 for English-language students:
✓ Grade 3 Reading results have improved by 7 percentage points
✓ Grade 3 Writing results have improved by 9 percentage points
✓ Grade 3 Math results have declined by 3 percentage points
✓ Grade 6 Reading results have improved by 8 percentage points
✓ Grade 6 Writing results have improved by 9 percentage points
✓ Grade 6 Math results have declined by 6 percentage points

Comparing results from 2008-09 to 2012-13 for French-language students:
✓ Grade 3 Reading results have improved by 12 percentage points
✓ Grade 3 Writing results have improved by 7 percentage points
✓ Grade 3 Math results have improved by 12 percentage points
✓ Grade 6 Reading results have improved by 12 percentage points
✓ Grade 6 Writing results have improved by 7 percentage points
✓ Grade 6 Math results have improved by 1 percentage point

Overall, these results indicate substantial impact on raising student achievement overall and, particularly, in the French-language system and for English-language literacy results. The recent declines in mathematics in the English-language system are a serious concern. However, as from 2011-12, LNS is acting on this evidence to prioritize a focus on mathematics.
Evidence from previous analyses indicate that participation in LNS initiatives can contribute substantially to student achievement results. For example, Table 11 contrasts the overall percentage point gains of schools participating in at least one LNS core initiative with schools not participating in LNS initiatives. Evidently, the gains in achievement are higher in literacy and the declines in performance are lower in mathematics. However, the fact that math results still decline is a concern. Even with a renewed focus on mathematics, differential impact between literacy and numeracy initiatives for student achievement remains a concern currently. As indicated in Figures O, P and Q, LNS initiatives in 2012-13 continued to have strong positive impact on literacy but not yet in numeracy. Evidence from the CIL-M evaluation would suggest the importance of ensuring a strong focus on mathematics content knowledge, as well as processes for inquiry and learning. The LNS actions during 2013-14 to support summer programs for teachers, review of mathematics resources, and additional emphasis on mathematics are very important.

Table 11: Mean change in achievement for schools that participated in core LNS initiatives
(Source: LNS Initiatives 2010-11: Year in Review)

<table>
<thead>
<tr>
<th>Initiatives for 2010-11</th>
<th>Number of Schools</th>
<th>Mean Overall Achievement of Schools in 2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>G3R* G3W* G3M* G6R* G6W G6M*</td>
</tr>
<tr>
<td>Any Core LNS Initiatives</td>
<td>2183-2298</td>
<td>2.99 3.64 -1.40 3.09 2.98 -2.41</td>
</tr>
<tr>
<td>No Core LNS initiatives</td>
<td>1217-1279</td>
<td>.86 .90 -4.15 1.66 2.15 -3.73</td>
</tr>
</tbody>
</table>

*Note: Statistically significant with 95% confidence. The change in achievement represents the average of the change in achievement of schools not the difference in overall achievement, which is calculated using individual student results.

Figure O: Average schools changes in EQAO mathematics achievements by number of LNS mathematics initiatives
Figure P: Average schools changes in EQAO reading achievements by number of LNS literacy initiatives

Figure Q: Average schools changes in EQAO writing achievements by number of LNS literacy initiatives

Note: The values within the above charts represent the average achievement of participating schools. However, publically reported EQAO results represent the average achievement of students across all provincial schools, which explains any discrepancies in the values. Furthermore, English- and French-language schools are combined in the chart above.

(Source of Figures O-Q: LNS 2013a).
Reducing Gaps in Performance

The government’s goals for education include reducing gaps in performance. Sometimes education test scores can be increased by focusing on high performance to the detriment of students and schools who struggle. By contrast, the LNS strategy is to both raise achievement and reduce gaps in performance. Indeed, Ontario is gaining international accolade for supporting both excellence and equity, for example in analyses of international assessment results by the Organisation for Economic Cooperation and Development (OECD).

Considering improvements in school achievement results indicates a very high impact trend of reducing the proportion of low performing schools and increasing the proportion of high performing schools (as indicated in Figure R). This is exactly the types of changes in the distribution of school achievement results that are desired in large-scale system improvement. LNS is to be highly commended for this evidence of impact on changing the distribution of school performance in Ontario. In summary, from 2005-06 to 2012-13:

- The proportion of low performing schools reduced by 7 percentage points from 13% to 6% of elementary schools
- The proportion of high performing schools increased by 22 percentage points from 29% to 51% of elementary schools

Of particular note to this review, the largest shifts in the proportion of high performing and low performing schools occurred during the period after 2008-09. In summary, between 2008-09 and 2012-13 specifically:

- The proportion of low performing schools reduced by 4 percentage points
- The proportion of high performing schools increased by 14 percentage points
- Therefore over half the impact of improved performance on distribution of school performance occurred during this period
- For the first time, in 2012-13, the majority of elementary schools in Ontario have 75% or more of their students meeting or exceeding the provincial standard in at least half of the EQAO assessments.

This is clear and strong evidence of impact on the distribution of school performance.
Low achieving: Fewer than 50 per cent of their students meet/exceed provincial standard on more than half of the assessments in the school

High achieving: 75 per cent or more of the students meet or exceed provincial standard on at least half of the assessments

Middle achieving: All other schools.

Figure R: Distribution of elementary schools by EQAO achievement category (2005-06 to 2012-13) (Source: LNS Analyses of EQAO Results, 2012-13).

There is also important evidence of impact for addressing lower performance and reducing gaps in performance at the student level. For English Language Learner (ELL) students, there have been remarkable gains in achievement results and a very significant reduction in the performance gap compared to all students overall. Figure S shows the percentage point difference in the results for ELL students compared with students overall – the performance gap – at three time points, 2002-03 (the year prior to the initiation of a LNS strategy), 2008-09 (the year prior to the evidence of improvement being reviewed for this study) and 2012-13 (the most recent EQAO results). In these charts, positive impact is indicated by the size of the bar in the chart decreasing. Of note for this review of Evidence of Improvement from 2009 to present, the performance gap for ELL students reduced by more than half in all EQAO assessments during this period.
There have also been improvements in achievements for students identified as having Special Educational Needs (SEN) and reductions in the gap between their performance overall compared to all students overall. Figures T and U chart the changing performance gap between students identified as having SEN and all students overall for each EQAO assessment in the English-language system and the French-language system respectively. While there remains a need to further improve achievement for students identified with SEN, of note for the current review is that between 2008-09 and 2012-13:

- The gap in performance between students identified as having SEN and all students overall reduced in all EQAO assessments for English language elementary students
- The gap in performance between students identified as having SEN and all students overall reduced in five out of six EQAO assessments for French language elementary students
Figure T: Percentage point difference in achievement between SEN and all students in EQAO assessments (English Language)

Figure U: Percentage point difference in achievement between SEN and all students in EQAO assessments (French Language)
While there are differences in details for each of the different assessments (Grade 3 and 6, Reading, Writing and Mathematics) and for different students, schools and DSB systems; the overall evidence suggests that the LNS has had considerable impact on both raising student achievement and reducing gaps in performance. And where impact has been less or is declining, analysis of the LNS Year in Review reports and plans for action indicate that LNS has been responsive to adapting its strategy and initiatives to target attention on areas of lower performance, including the increasing focus on mathematics and ongoing attention to supporting all students to succeed.
Summary of Overall Impact of LNS:

**Spread of Initiatives:** LNS has substantial reach and spread of impact across the Ontario education system. The spread of direct involvement in LNS initiatives has increased considerably: from 2950 elementary schools in 2009-10 to 3620 elementary schools in 2012-13 being directly involved in at least one LNS initiative. 90% of elementary schools are now directly participating in LNS initiatives. This is a remarkable achievement.

**Professional Learning and Practice:** LNS initiatives, resources and funding are vital to supporting time and capacity for professional learning and contributing to improved practices. Reviewing actions across the initiatives, there is evidence of substantial impact for professional practices, including: school self-assessment and improvement planning processes; principals’ instructional leadership; and important shifts in teachers’ confidence and capacity with increased use and improvement in a wide range of learning and teaching practices.

**Student Learning and Achievement:** Overall, there is also evidence of substantial and sustained improvements in raising student achievement and reducing gaps in performance. Between 2002-03 and 2012-13, overall elementary student achievement has increased by 17 percentage points in EQAO assessments. Sustaining improvements is a challenge in large-scale educational system change. Importantly, in the period of this review (2008-09 to 2012-13), EQAO assessment results have increased in all assessment results in the French-language system and the majority of assessments in the English language system. The goal of 75% of students achieving the provincial standard or above has been exceeded in all of the French-language EQAO assessments and in the English-language EQAO results for Grade 3 Writing, Grade 6 Reading and Grade 6 Writing. For the first time, in 2012-13, the majority of elementary schools in Ontario have met or exceeded the 75% goal in at least half of their EQAO assessments. Conversely, the percentage of low performing schools has reduced by more than half from 2009 to 2013 – an important indicator of reducing gaps in performance. At the student level, there has been attention also to supporting all students to succeed, including those who are lower performing or struggling. There have been large reductions in the performance gaps for ELL students compared to all students overall. There have also been improvements for students identified as having special educational needs – although further support for improvement is required. The recent declines in mathematics in the English-language system are also an important concern. From 2011-12, LNS has acted on this evidence to prioritize a focus on mathematics; continued attention on mathematics is required. Although a literacy and numeracy strategy, the majority of early initiatives predominantly focused on literacy. The evidence indicates that literacy strategies will not automatically correspond with mathematics improvements; the increasing focus on math content, pedagogy and learning is vital.
Conclusions

The purpose of the Student Achievement Division Literacy and Numeracy Strategy: Evidence of Improvement Study was to conduct an analysis of the evidence relating to initiatives associated with the Literacy and Numeracy Strategy since 2009 and to review the impact on improving student achievement in Ontario. The conclusion of this review is that there is both substantial ‘evidence’ and significant ‘improvement’ associated with the LNS initiatives. As Ontario nears almost a decade since the LNS was first established (in late 2004), it is clear that the landscape of the Ontario education system has changed considerably with increased attention on literacy and, more recently, numeracy, a concern to both raise student achievement and reduce gaps in performance, changes in the professional learning, knowledge, skills and practices of educators, and improvements in students' engagement, learning and achievements. These are remarkable impacts.

Furthermore, international educational change experience suggests that sustaining impact is rare and precarious. Yet, the evidence reviewed for this study would suggest that, overall, impact has not only been sustained, it has actually increased. Since 2009, LNS impact has expanded by involving an increasing number of schools directly in LNS initiatives – now 90% of elementary schools – and deepened by introducing more initiatives focused directly on changing classroom practice and supporting all learners to succeed. Results have improved too – all French language EQAO assessments have increased and the majority of English assessments have also increased from 2009 – 2013. The majority of elementary schools in Ontario now have 75% or more of their students meeting or exceeding the provincial standard in at least half of the school's EQAO assessments. Relatedly, there has been a remarkable reduction in the proportion of low performing schools and there has been attention to reducing gaps in performance for lower achieving students.

In terms of the evidence reviewed, LNS is to be highly commended for the volume of evidence associated with the initiatives. For the period reviewed (2009 to present), all initiatives have some form of internal LNS monitoring, evaluation, research and/or analyses. Independent evaluations or research have also been commissioned and conducted for new, major initiatives. From this, LNS is not only drawing on evidence, but has the capacity to continue to develop as a major contributor to evidence-informed policy and practice – as well as educational research more broadly – both for Ontario and of international interest. For example, the impact of OFIP and other initiatives on reducing the number of low performing schools is remarkable and an issue of persisting concern internationally. The combined initiatives, evaluations and analyses of collaborative inquiry place LNS as a key source of latest evidence and knowledge on these approaches to professional learning and student learning. LNS is to be strongly encouraged to continue to develop and value the generation and use of evidence for impact.
Of course, there remains more to be done. Recent declines in English-language mathematics results are a cause for serious concern. Some student groups continue to struggle, school improvement requires continuous attention and, as new educators enter the Ontario system or change responsibilities, professional capacity building is of ongoing importance. Within the evidence reviewed for LNS initiatives, there are details of areas requiring attention. Often these concern more explicit attention to developing content knowledge to inform improvement, including in school effectiveness and improvement processes and in subject knowledge for curriculum, instruction and assessment, particularly in mathematics. In these instances, the evidence suggests a need for more not less LNS support. This is a balancing act as LNS seeks to emphasize and enable local ownership and adaptation of initiatives. Educators appreciate this professional respect and flexibility. However, they are also seeking LNS direction, resources and supports about the purpose, content, implementation and intended impact of initiatives and approaches to alignment and coherent across initiatives.

In considering the further development of both evidence and impact for LNS, specific recommendations are suggested below:

1. **Expand the review of evidence of impact to include non-LNS sources**

   This current study only reviewed documents and evidence commissioned or produced by LNS. To consider further evidence of impact, LNS may want to review additional sources of independent evidence with relevance to the LNS activities and impact, for example from national and international assessment data, from research and evaluations conducted in the Ontario elementary system during this period (independent and separate from LNS commissioned research), and from researchers and thought leaders writings and commentary about the Ontario LNS and public education system. The purpose of this review would be to further expand discussion of the wider impact and current status of professional capacity and student achievement in the Ontario public education system. It is important that LNS consider independent reviews and evidence, as well as the vital role of in-house and commissioned research and evaluation.

2. **Ensure continuing evaluation of all initiatives**

   **a. Initiatives without current major evaluations**

   Two specific initiatives were identified in this report as requiring dedicated evaluation. First, the impressive volume and activity of LNS Professional Learning resources would benefit from an evaluation of the access, understanding, use and impact of these resources by LNS and in DSBs, schools and classrooms. Second, as Schools in the Middle has become System Implementation and Monitoring (SIM) and is now evolving to a DSB-wide initiative, an evaluation of the implementation of SIM at scale and the impact for DSBs’ approaches to school improvement, schools’ own improvement plans and processes, and student achievement outcomes is timely. In addition, for this review, I received substantial information about Board Improvement Plans for Student Achievement (BIPSA). While informative about the purpose,
process and content of BIPSA, I did not receive evidence of monitoring or evaluation of the impact of BIPSA. This may be a third initiative requiring additional approaches to monitoring impact and/or an independent evaluation.

b  Enhancing or updating evaluations of initiatives

LNS monitors and reports on initiatives each year through the Year in Review and placemats process including, for example, end of year reports from DSBs and schools. This is an important process and should continue. In addition, commissioned research and evaluation provides an opportunity for a substantive in-depth investigation of a specific initiative and associated impact. As part of considering the findings and recommendations from this Evidence of Improvement review, it is timely for LNS to also consider where existing initiatives may require enhanced or updated independent evaluations. Specifically, the evaluations provided for this review included a 2010 report on SLLP (Davies & Aurini, 2010) and 2011 reports for CIL-M (Bruce & Ross, 2011a), S&NB (Bruce & Ross, 2011b), and SEF (Klinger et al., 2011). It may be time for new/updated evaluations of these initiatives. In particular, the SEF is no longer featured as a specific initiative reported in the LNS Year in Review and placemats reports; yet, the SEF is a major initiative and the previous evaluation suggested need to further monitor, support and enhance implementation. With regard to enhancing existing evaluations, the LSA appears to include annual evaluation reported to the LSA Steering Committee, yet this information is either not available or not included in LNS Year in Review reports. Given the importance of leadership development to support student achievement and that LSA receives funding from LNS, consideration should be given as to how to ensure LSA evidence is included in LNS monitoring and reporting going forward.

3. Evaluating the overall influence and impact of the Literacy and Numeracy Secretariat and Strategy

In addition to – or potentially more realistically, instead of – initiating multiple separate evaluations of individual initiatives, LNS should give strong consideration to whether to commission a new overall evaluation of the LNS. One previous overall evaluation was commissioned in 2007 and reported in 2009 with the following objectives:

➢ To identify and evaluate the LNS initiatives;
➢ To determine whether and in what ways Ontario’s education system has changed as a result of these initiatives;
➢ To determine the extent to which these changes have benefitted students and educators; and
➢ To draw lessons from these findings, as a guide to ongoing improvement of Ontario’s educational system. (Audet et al., 2009, p. 10).

The resulting report presented evidence in relation to the following themes: capacity building; focused intervention; school improvement planning and the School Effectiveness Framework; student achievement; research and evaluation; partnerships; character development; and
general impact of the LNS. It is over five years since the previous overall evaluation reported; this current review of Evidence of Improvement provides a timely opportunity to consider whether a new overall LNS evaluation is warranted.

My advice would be to proceed with scoping, proposing and commissioning an overall LNS evaluation linked to current initiatives and priority themes, for example: LNS strategy, initiatives and actions; DSB and school improvement planning and SEF; capacity building (including focused intervention, collaborative inquiry and professional learning) and improved leadership and teaching practices; student achievement and equity; and overall impact of LNS.

This review of Evidence of Improvement has addressed similar objectives to the previous overall LNS evaluation and the evidence of overall substantial impact and improvement is clear. Nevertheless, there are areas that could be more fully and appropriately investigated through a new evaluation design and tailored data collection and analyses. I outline two specific areas for consideration. First, to document the activities, influence and impact of the Literacy and Numeracy Secretariat itself on student achievement policies and programs within the Ministry, and practices and outcomes across the education system. The purpose of such an approach would not be to evaluate individuals or the organization; rather the purpose is to document and tell the story of the important and significant role of the Secretariat, as it is a unique and important organizational arrangement with high visibility and impact for advancing a focus on student achievement within the Ministry, across the Ontario education system and internationally. Without adding evidence of the LNS’ own impact, there is missing evidence about the full impact on changes in the Ontario education system’s infrastructure, culture, processes and outcomes. This is important not only for demonstrating the importance of LNS within Ontario, it is also of value to profile the importance of such an approach to governments internationally and to further enhance Ontario’s reputation as a leading educational jurisdiction globally. Second, an overall evaluation can investigate the implementation and impact of combinations of LNS initiatives to provide a more holistic assessment of the impact for DSBs’ improvement processes, schools’ improvement and leadership practices, teachers’ professional learning and changes in knowledge, skills and practices, and students’ attitudes, engagement, learning, equity and achievements. Both pieces – the influence of the Secretariat and the combined changes in classrooms, schools and DSBs – are important to demonstrating the overall impact to date and for identifying areas of strength and/or for attention.

4. Furthering a research and development agenda

As well as – not instead of – monitoring and evaluation activities, I would encourage LNS to continue to further a broader research and development agenda, including reviewing, commissioning, conducting and contributing to leading evidence about system and school improvement, instructional leadership, professional learning, literacy and numeracy teaching and learning, and supporting all students to succeed. As LNS continues to strive for further impact, it is important to look out for new and emerging local and international research, as well as looking inward to the LNS evidence.
To give an example, while collaborative inquiry can be powerful professional learning, I have a concern that the current evidence could become overly self-referential; for example, the Kane et al. (2013b) study of EPCI’s literature review on collaborative inquiry only refers to LNS documents, and then LNS reports refer to the Kane et al. (2013b) study as positive evidence of the need for collaborative inquiry. Yet there is a substantial body of research literature on effective professional learning, including meta-analyses and syntheses which suggest the need for multiple professional learning approaches and opportunities for individual and shared learning and for engaging leaders and external experts in collaborative learning with teachers (e.g. see Timperley, 2008). An evaluation of collaborative inquiry will, by design, focus on only this initiative for professional learning and practice. It is possible that a teacher participating in CIL-M, for example, becomes enthused about math learning and then decides to use LNS professional learning resources, attend an OTF summer institute and/or complete a related AQ – yet, none of this would be picked up without asking broader questions about professional learning in general rather than specific initiatives. Therefore, I encourage LNS to consider also furthering a broader research and development questions about intended impact, promising practices and identification of leading practices and evidence locally and internationally. For example, some questions that come to mind for professional learning and mathematics are:

What professional learning approaches do elementary teachers engage in when seeking to improve their mathematics instruction? Why do they select to engage in these approaches? What approaches appear to be effective for improving teachers’ mathematical understanding, efficacy, and changes in practice? What benefits for students’ achievements be identified? What enables or inhibits engaging in effective professional learning?

Or for students’ learning:

How are Ontario schools’ supporting students’ to improve their learning and achievements in mathematics? What promising practices can be identified? What is required to support these practices?

Such questions start from a focus on the practices and people intended to be impacted, for example teachers and students, and seek to research how they are – or are not – experiencing access to support to improve practices and outcomes.

5. Building and strengthening evidence-informed capacity

As LNS becomes increasingly precise in its use of evidence, there is a need to continue to attend to ensuring capacity for precision in understanding, analyzing and using evidence throughout the Ontario education system and Ministry. The LNS emphasis on evidence is extremely important; therefore attending to some concerns in the evaluation reports about how to assess collaborative inquiry, how to use the SEF indicators, and my comments about clarity and consistency in DSB and school reporting to LNS is very important. In particular, the DSB and school end of year reports provide a substantial source of evidence for LNS monitoring and reporting. Recent streamlining and enhancements to these reports are to be
commended. With implementation of the new end of year reporting format, it is important now to monitor how appropriate the content of the indicators are and how effective the process for understanding and reporting related evidence is. My review of the DSB reporting format would cause me to pause and ask whether the 38 actions reported (see Table 11) in the DSB end of year template are the key actions that LNS wants to monitor and whether they can be effectively reported at DSB level. Relatedly, what are current priorities to support appropriate capacities for evidence collection, analyses, and reporting at classroom, school, DSB and system level moving forward and how can these be supported?

At the system level, concern to develop appropriate future measures of impact is timely in the context of current performance and the renewed vision for Achieving Excellence. While the overall goal of 75% of students achieving the provincial standard has not yet been reached, many schools and DSBs are meeting and exceeding this target. In this context and in wider discussions of measures of education, LNS is encouraged to give focused attention to what should be appropriate – yet practical – measures to assess future impact on professional learning and student learning. While EQAO is an important and useful assessment, attempting to track initiatives - such as tutoring or summer programs or early learning which do not correspond directly to EQAO assessments and/or to assess a single initiative in isolation when multiple are present in the school - to EQAO is problematic. EQAO benchmarks are only one measurement; they should not be the exclusive measurement.

6. Achieving Excellence through an evidence-informed education practices strategy

LNS is a strongly evidence-informed strategy and uses evidence from ongoing monitoring, evaluation, research and data – as well as professional knowledge and expertise – to adapt, refine and change the strategy overall and specific initiatives as needed. The data reviewed for this report provides considerable evidence of positive impact. Nevertheless, there are some areas for attention identified in each specific evaluation and in my report. One recurring issue is alignment and coherence. The evaluations of CIL-M (Bruce & Ross, 2011a), EPCI (Kane et al., 2013a), SEF (Klinger et al., 2011), and SWST (Kane et al., 2013b) all suggest the need for attention to clarity of alignment and coherence at provincial, DSB and school levels. This is a perennial issue in educational change: the need to avoid prescriptive ‘top-down’ mandates that will be overly restrictive and resisted locally; yet the difficulties of ‘bottom up’ autonomy if this results in isolation and polarization of experiences rather than system-wide improvement. LNS has been very attentive to negotiating a balance of provincial direction and support with local flexibility and responsibilities. Yet, the evaluations indicate that schools and DSBs are looking to the Ministry to offer coherence, and the Ministry is indicating the importance of DSBs and schools making their own coherence linked to BIPSA and SEF processes. My suggestion would be to consider how to evolve the LNS to support increased clarity and coherence of implementation in the context of the renewed vision for Ontario’s education system, Achieving Excellence.
To be specific, 90% of Ontario’s elementary schools are directly involved in implementing at least one LNS initiative. The majority of schools are implementing more than one LNS initiative. It may be time to move away from funding specific individual ‘initiatives’, which may or may not be implemented coherently in schools and classrooms, and move towards articulating and supporting identified ‘practices’ for professional learning at the school level and for teaching practices and student learning at the Grade/Division level. In practical terms, the LNS would no longer fund over ten initiatives per year, but would rather fund the development and implementation of identified practices at DSB, school and classroom levels, such as collaborative inquiry adapted to different grades and students’ needs rather than through discrete initiatives currently. The approach could be akin to an Expert Panel report or a ‘teaching and learning’ version of the SEF setting out guidelines and supporting resources for teachers and administrators. While continuing a culture of high expectations and local flexibility, LNS – in partnership with the field – could clarify key minimum expectations for professional learning, teaching practices and students’ learning drawing together curriculum expectations, Growing Success assessment policies, attention to safe, inclusive schools, and LNS resources and supports, including the SEF, BIPSA, activities in the DSB end of year reporting templates, and LNS professional learning resources. As minimum expectations, the stated expectations would clarify and set out key practices for educators at school, division and/or grade levels, alongside support for flexibility and innovation for enhancements and developments locally to build on and extend these practices. The approach it not to mandate specific practices but to create coherence in understanding practices across the province with linked resources and supports for professional learning and student learning. For teachers and administrators seeking additional support, the proposed approach would provide clarity of expectations and intended practices. Whereas for those teachers and administrators who are already fully implementing identified practices and leading future practices, this would be a baseline reference point but they would be encouraged to flourish with higher expectations for innovations in promising practices and sharing these with LNS and throughout the Ontario education system. In such an approach evidence from professional practice, combined with evidence from provincial resources and supports, would inform achieving excellence for educators and students.

In summary, this review of Evidence of Improvement concludes there is both substantial evidence and impacts for educational improvement associated with LNS initiatives from 2009 onwards. The LNS is highly commended for their leadership, strategies and actions in valuing, developing and using evidence to support improvements in Ontario’s public education system with tangible benefits for student achievement and equity.
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Bruce, C. and Ross, J. (2011b). *Small and Northern Boards case study – Establishing a learning community: Characteristics that enable teacher learning and efficacy at one district school board.* Trent University.


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## Appendix A: Mapping Types of Evidence for LNS Initiatives and Impact

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Appendix B:

**Table A: Percentage of Grade 3 Students at or Above the Provincial Standard – Primary Division (English-Language Only)**

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**Table B: Percentage of Grade 3 Students at or Above the Provincial Standard – Primary Division (French-Language Only)**

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**Table C: Percentage of Grade 6 Students at or Above the Provincial Standard – Junior Division (English-Language Only)**

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