Building Confidence
Making Connections:

Continuing the Summer Literacy Learning Project in Ontario Schools

CODE
Council of Ontario Directors of Education

The Literacy and Numeracy Secretariat

Council of Ontario Directors of Education in partnership with
the Literacy and Numeracy Secretariat Ontario Ministry of Education

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Acknowledgements

Summer learning is about enjoyment, being connected and feeling confident while maintaining and achieving new knowledge and skills.

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- Northwest Catholic District School Board
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Executive Summary

Since 2010, the implementation and organization of a Summer Literacy Learning Project to support students with literacy learning needs and to minimize summer learning loss has been coordinated by the Council of Ontario Directors of Education (CODE) and supported by the Literacy and Numeracy Secretariat, Student Achievement Division of the Ministry of Education.

The 2010 and 2011 reports identified two significant conclusions. First, the research indicated that students who were involved in the program *did* minimize their loss of literacy skills over the summer and, in some cases, increased their level of literacy achievement. Second, that an engaging and well-planned summer program builds reading self-confidence in students while, in general, effectively connecting parents to school programs.

Complete reports for both the 2010 and the 2011 Summer Literacy Learning Projects are available on the CODE website, as is a Summer Literacy Learning Program and Planning Guide. For more details and a broader understanding of the project, please refer to the reports and Planning Guide located at: www.ontariodirectors.ca/projects-current.html#SLLP

In the 2011 report, four recommendations concerning the summer literacy program were identified. These recommendations formulated the 2012 summer learning goals:

◆ Continue the 2012 Summer Literacy Learning Project within the same parameters and expectations of 2011;

◆ Implement a Summer Numeracy Pilot Project;

◆ Offer a Summer Literacy Learning Program to further support First Nations, Métis and Inuit students; and

◆ Examine levels of parent engagement and identify strategies that most effectively build collaboration between home and school.

A significant recommendation in the 2011 report was the implementation of a Summer Numeracy Pilot Project. Accordingly, six boards were invited this year to participate in a pilot project, and initial results from the first year of the SNPP have proven to be extremely promising. Indications are that students gained numeracy skills and confidence in the area of numeration and number sense.

Also new for 2012 was a summer literacy class to specifically provide support to First Nations, Métis or Inuit students. Although challenges in terms of attendance and parent engagement were identified in this first year of the FNMI program, there were many examples of collaboration and cooperation with local Aboriginal organizations and Centres that led to a more exciting and culturally-rewarding invitational summer program. And while participating students may have reduced the achievement gap, there was insufficient research data to definitely draw that conclusion.

Throughout the three years of the summer programs, the involvement and connections between parents, teachers and students has been a key component of both the research project and the classroom program. The parent engagement aspect of the summer programs was much more extensively examined in 2012, and the results of the study clearly demonstrate the benefits of assisting parents to become actively engaged in their child's learning, including increased support for public education.

Overall, the lead researchers for the project indicated that the three-year study has provided them with sufficient data to confidently state that summer learning programs make a difference for students experiencing literacy challenges, minimizing their summer learning losses and, in many cases, increasing literacy achievement.

This report details the impact and successes of the four goals outlined above, with an emphasis on continued improvement. Challenges are identified, as are suggestions for future consideration. Personal stories, quotes and comments from students, parents, teachers and board leaders are woven into the report to help the reader better understand the positive difference summer learning programs are making on children's lives.

SLLP: By the numbers

Achievement gains for students in summer programs are outlined in the following charts. STAR testing was conducted in late June and early September to establish achievement baselines for students participating in the study.

English Literacy Summer Gains 2010-12 (months)
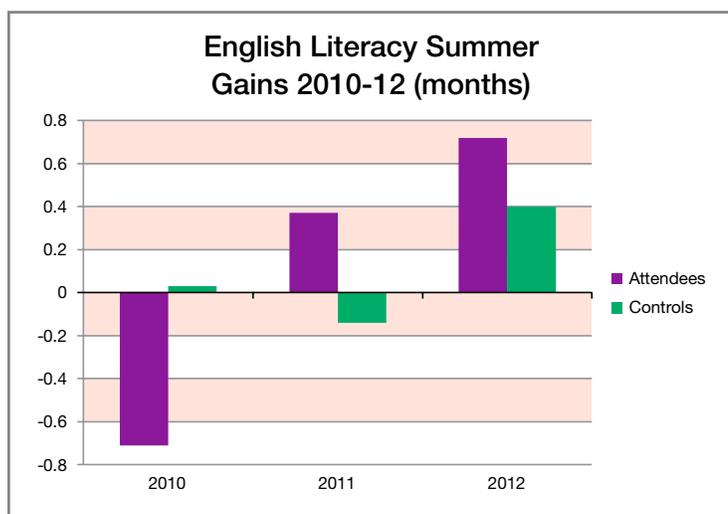
This chart illustrates the achievement growth of summer students attending the literacy programs in comparison to the control group that did not participate in summer learning. **It is noteworthy that the achievement gains are more significant in 2012 than in previous years**.

Reducing Gaps in 2012
(% Spring Gap Reduced by Fall)
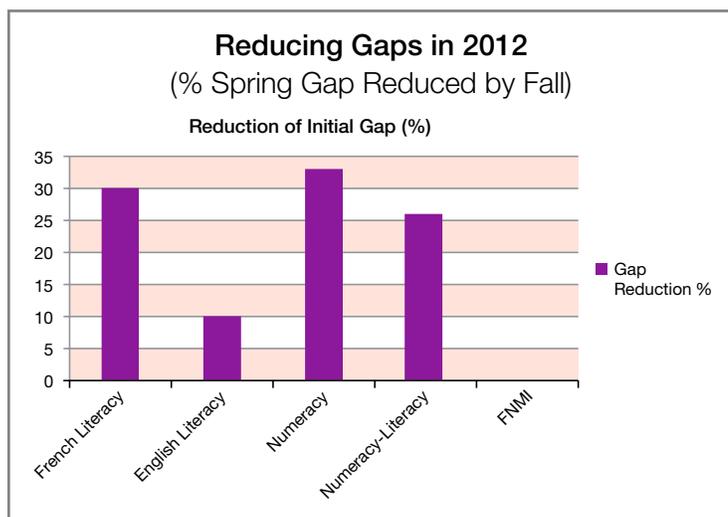
This chart is a representation of gap reduction for all summer programs. Notably, all summer programs with sufficient numbers successfully reduced the gap*. (For more detailed information see Appendix B: Technical Report on the Quantitative Research Study Summer 2012 on page 44.)

* There was limited data for the FMNI program. While participating students may have reduced the achievement gap, there was insufficient data to definitely draw that conclusion.

About the 2012 research study

A significant component of this report is the **2012 Research Study**, which includes both a qualitative and a quantitative study.

The quantitative component covers:

◆ pre and post assessments

◆ existing student demographic and achievement data

◆ parent surveys

◆ report card comments

◆ PM benchmarks and DRA results

◆ STAR testing

The qualitative study (outlined in the sections on SLLP site visits and teacher feedback and parent engagement) involved a more in-depth look at parent engagement and class-room programs through:

◆ individual parent engagement case studies

◆ onsite observations by teachers and board leads

◆ teacher and parent interviews

◆ classroom visits and onsite observations by regional leads

◆ teacher questionnaires

◆ teacher discussions with regional leads

◆ fall and spring sharing sessions with summer program teachers and board leads

◆ meeting of lead researchers and regional leads to review visits and on site observations

STAR Reading

Literacy measures in this report are based on STAR Reading, a computer-adaptive test. STAR calculates reading achievement based on 25 short comprehension questions that test several sub-skills, including phonetic awareness, general readiness for reading, comprehension and vocabulary. STAR uses Item Response Theory (IRT) to estimate each child's achievement level from her/his pattern of correct and incorrect answers, and from the level of difficulty of each question. STAR correlates highly with other well-known

achievement tests and has been used by hundreds of American school districts to regularly monitor the reading growth of students from kindergarten to the end of high school.

STAR also converts these IRT scores to grade equivalent (GE) scores. These scores are based on national averages that have been established from learning growth patterns of more than 1 million students. Using those norms, STAR charts average reading levels for each grade and month combination. For example, a child scores a 2.2 if she is reading at the level of an average grade 2 student in the second month of the school year (October), according to STAR's database. Similarly, a score of 1.7 equals the level of an average student in April of grade one.

Summer learning growth is calculated by subtracting June GE scores from September GE scores. A score of +.25 would represent a gain of two and a half months of literacy skills over the summer. Conversely, a score below zero would denote a net loss. This GE metric provides the ability to express achievement growth in meaningful month-year units. This metric is also used to estimate literacy gaps between control and summer students, and the amount that summer programs narrowed those gaps. Initial literacy gaps were calculated by subtracting the average spring literacy score of the summer participants from the control group. For example, if the average GE score of the control groups in Spring (June) was 2.5, and the average score of the summer participants was 1.5, then the initial gap is 1.0 (2.5-1.5).

Accordingly, if the average GE scores in the fall (September) are now 2.5 and 1.75 respectively, then the fall gap is estimated to be 0.75 (2.5-1.75), and the original gap was reduced from 1.0 to 0.75 which equals a reduction of 25%.

What this document does

This report provides an opportunity to learn more about the 2012 Summer Literacy Learning Project, with **a special focus on new initiatives added this year**. Included are findings from the 2012 research study along with teacher/parent observations and feedback. Each section of the report outlines goals, details information presented by the participating boards and offers recommendations and suggestions for next steps.

Expectations and requirements for the summer programs remained unchanged for 2012. Details regarding organization of summer programs are outlined in the 2011 report, available at www.ontariodirectors.ca/projects-current.html#SLLP. The *Summer Literacy Learning Program and Planning Guide* (also found at www.ontariodirectors.ca/projects-current.html#SLLP) is a valuable reference document, as it outlines step-by-step planning for a summer program. Suggestions by teachers and board leads as to what made their programs successful are included in the Guide.

It is hoped that this report will provide the impetus for ongoing discussions, support and strategies to minimize summer learning loss and increase student achievement in literacy and numeracy. Successes of previous years are readily available by reviewing the 2010 and 2011 project reports.

Reporting on the findings of the lead researchers and their team continues as a key component of the 2012 project report.

Note: throughout this report, the 2012 Summer Literacy Learning Project (the "project") refers to both the research component and the classroom program. The Summer Literacy Learning Program (the "program" or "SLLP") refers to classroom instruction, teacher professional development, connections with parents and community involvement. For 2012 the project was extended to include a Summer Numeracy Pilot Program ("SNPP"), a literacy program for First Nations, Métis and Inuit students ("FNMI program") and a parent engagement research study.

Introduction

"All students enjoyed coming to the program and we received positive feedback from families about student enjoyment. The students were excited about the field trips and the opportunity to be involved in many different community experiences. We noticed a difference in attitude towards reading for some students and also an increased confidence in reading and writing skills. A few students in the program were not very interested in participating in the small reading groups at the beginning of the program, but did start to read with their groups towards the end. Students also seemed to be more confident in reading in front of their peers and were more engaged in their reading, using expression when reading aloud."

– Teacher

What is the Summer Literacy Learning Project?

As in previous years, the 2012 Ontario Summer Literacy Learning Project includes a research study component in conjunction with the summer programs.

The **purpose** of the Project is to:

(a) Offer a Summer Literacy Learning Program in a number of Ontario boards for primary students; and

(b) Examine and determine the effects of a Summer Literacy Learning Program on the reading levels of invited primary students.

The **objectives** continue to be:

◆ Providing a meaningful, interesting and high-quality Summer Literacy Learning Program for primary pupils who are most in need of this opportunity;

◆ Assisting selected Boards, based on EQAO data, to increase student achievement and close achievement gaps;

◆ Monitoring and evaluating individual student literacy growth over the course of the summer programs;

◆ Determining if participation in a Summer Literacy Learning Program reduced summer learning loss and narrowed literacy gaps for students;

◆ Identifying the components of successful Summer Literacy Learning Programs and sharing best practices;

- Reporting the research and program findings to the Student Achievement Division; and
- Making recommendations and outlining considerations for future implementation of a summer literacy learning project.

For 2012, the Summer Literacy Learning Project undertook a number of significant changes. With the summer literacy program now well established, the 2012 project was expanded to include a Summer Numeracy Pilot Project, literacy classes to support First Nations, Métis and Inuit students, and a parent engagement study.

Why is the Summer Literacy Learning Project important?

There continues to be widespread interest within the education community regarding the impact of summer learning loss on student achievement, and closing the gap for students with lower levels of literacy skill development. In 2010, an initial scan of the literature on summer learning loss indicated that few (if any) major Canadian research studies had been conducted to determine the variables that support summer learning, and the degree to which students benefit through participation in a teacher-instructed summer literacy program.

Accordingly, in the spring of 2010, the Council of Ontario Directors of Education (CODE) was contacted by Mary Jean Gallagher, Chief Student Achievement Officer and Assistant Deputy Minister, Student Achievement Division, to coordinate the organization of a Summer Literacy Learning Program for grades 1, 2 and 3 students in invited Boards.

This project, funded and supported by the Ministry of Education Student Achievement Division, was a research-based initiative to support primary school students in maintaining and/or increasing their literacy achievement levels. It would be the beginning of an ongoing journey to support primary students in becoming more confident and successful literacy learners.

Summer 2012 marked the third year of this exciting project. The 2012 report builds upon the findings of both the 2010 and 2011 Summer Literacy Learning Project reports.

Each year there is further evidence that students, parents and teachers recognize the benefits of the Summer Literacy Learning Program, and the impact it has on student confidence and literacy learning. Notably, the summer program allows teachers to meet more frequently with parents, and students to identify themselves more clearly as successful readers.

SLLP: Voices

Throughout the 2012 summer program, students, teachers, parents – and even grand-parents – shared with the regional leads and lead researchers their thoughts, opinions and suggestions regarding the SLLP. The comments below, which reflect similar feelings expressed by many participants throughout the province, speak to the impact of the summer programs.

Students...

"I don't want this camp to end. I want to keep coming."

"If this camp lets kids in grade four come, I'm going to be here next year."

(Reflecting on field trip to the Art Gallery) *"I think Roy Thomas is the greatest artist in the world."*

Teachers...

"Students…seemed to be more confident in reading in front of their peers and were more engaged in their reading, using expression when reading aloud."

"Empowering students with the skills to be successful is extremely important if students are going to continue to take risks with their learning…I am passionate about this wonderful opportunity to make a difference in the life of a child."

Parents...

"I think the program was great! Lots of different activities and experiences made it very enjoyable for the kids."

"My son really enjoyed this. He did not feel like he was going to school."

"I think it will be a lot easier to keep him reading and doing some writing in his journal for the rest of the summer."

"If they have it in 3 years I'm putting my other kid in."

"She was talking numbers every night for 3 weeks and said normally she doesn't care about math but now she is really into it."

"My child now has much more confidence in her abilities. I think this will stick with her through life."

And Grandparents too...

"At first he didn't want to come but when he was picked up he said not to tell his parents but he loved it!"

Overview: What was new this year

How is the 2012 project different from previous years?

In 2012, the focus of the SLLP was broadened to include a Summer Numeracy Pilot Project (SNPP) and summer literacy classes for First Nations, Métis and Inuit (FNMI) students. The scope of the research component was extended to include an examination of strategies designed to increase and enhance parent engagement and parent involvement in student learning.

In addition, for 2012 the SLLP has:

◆ Increased the number of participating boards from 28 (in 2010) and 36 (in 2011) to 40.

◆ Included more student and parent surveys in the research protocol. Over 4000 students participated in STAR (Standardized Testing and Reporting) programs. In addition, 1750 parent surveys were returned.

◆ Increased the number of classes for summer programs from 55 (2010) and 73 (2011) to 93, including 72 SLLP, 12 SNPP, 7 FNMI and 2 Parent Engagement Research classes. (Note: this number reflects the classes that participated in the research study. A number of boards offered additional classes which did not participate in the research study.)

◆ Included student testing in both literacy and numeracy as part of 2012 STAR testing for the SNPP (There are indications that improvement in numeracy leads to improvement in literacy).

◆ Observed more boards providing planning time for summer teachers. Teacher preparation for literacy instruction was more widespread this year, with a significant number of boards offering planning and assessment opportunities to staff members both during and prior to the beginning of the summer programs.

◆ Inspired a number of boards to report to their Board of Trustees on the success of the summer programs.

Other notable changes included boards generally offering summer programs in identified priority neighbourhoods with lower socio-economic indicators, and exceptionally helpful spring planning and new fall feedback sessions organized by regions. During the spring and fall sessions, teachers and board leads had opportunities to share practices and structures which support successful summer programs.

The length of the instructional program impacts on student achievement and on minimizing summer learning loss. The 2012 three-week program was more substantive and intentional than programs in 2010 and 2011, with a wider range of schedules evident this year. Some programs were offered in July, some in August, and some were split between the two months; included were half-day and/or full-day programs.

The research component of the summer literacy and numeracy programs continued in 2012 with STAR testing as the assessment strategy used to identify student achievement baselines. PM Benchmarks and report card comments extended student profiles and offered a more comprehensive baseline for observing student growth. In the French Language Boards, GB Plus was utilized as a measure to examine student achievement during the summer programs.

With the progression of the summer programs, a number of changes have become evident:

1. In 2010, the majority of questions from boards focused on organization, structure and resources for the SLLP.

2. In 2011, there was a shift towards student instruction and student assessment.

3. This year, a greater degree of program specificity, individual student learning and intentionality was evident. In some cases, boards used technology to engage students in literacy learning and develop their writing and reading skills. Boards also offered a range of learning opportunities, including excursions, guest speakers and presenters, parent volunteers, team teaching, games, interest groups and recreational activities both inside and outside the classroom.

4. Parent involvement and teacher professional development were noted as being more significant and robust.*

5. Boards in 2012 are now more familiar with the STAR testing process and research protocol, with fewer reports of challenges and issues relating to the research component.

* For more detailed information see SLLP 2012 Site Visits and Teacher Feedback on page 28.

There continues to be significant support for the Summer Learning Programs by parents, teachers and students. In discussion with board representatives, there is a clear expectation that summer learning programs will continue and grow.

"Where to start…?!.... Student excitement for the program was extremely high this year. Students (and parents) were inquiring about the program before we had even heard that we had funding to offer it again. Students who were "invited" to come were enthusiastic and thankful. There were also many disappointed students who could not attend (students of all academic levels)".

– Teacher

GOAL #1: Continuing the 2012 Summer Literacy Learning Project

Both the 2010 and 2011 research project and classroom program identified that disadvantaged students who experience greater challenges in literacy also suffer from summer learning loss. Research findings suggested that quality summer literacy programs can:

◆ Minimize these summer literacy losses

◆ Increase levels of literacy achievement

◆ Close literacy gaps in comparison to more advantaged students

Boards, parents and teachers strongly supported the literacy program and saw many benefits, requesting additional funding to offer more sites and ensure that all struggling readers could be included in summer programs.

The 2011 report outlined a recommendation for the continuation of the project as a strategy to support students who are most vulnerable to summer literacy loss. This recommendation formed the basis for the 2012 goal of continuing the SLLP in Ontario schools.

What the Boards Have Told Us About Literacy Learning

Again this year, regional leads (with support from board contacts and teachers) visited SLLP classrooms, facilitated the return of parent surveys and research data and, in consultation with teachers, completed questionnaires that provided the basis for this report.

Noteworthy for the summer of 2012:

◆ Momentum for summer literacy learning for primary students continues to build, both in the schools and in the community. **Many parents are now asking to have their children involved in summer literacy programs**, and boards have waiting lists. Community organizations are more fully involved and trustees are aware of the successes of summer learning.

- Teachers involved in the summer program have described the opportunities for professional development as exceptional. **Many teachers credited the summer learning program for helping them change their practice** and institute innovative classroom strategies during the regular school year. Co-planning, co-teaching and collaboration were more evident this year.

- Teachers and board leads were more clearly able to **identify** the outcomes for the summer program and the **strategies that lead to ongoing literacy improvement**. The conversations among literacy coaches, teachers and system coordinators were continual, reflective and action oriented. There was greater intentionality in the 2012 program than in previous years. This evolution of program richness and individual student support was commented on by teachers, boards and regional leads.

- This year, the influence and impact of the programs became increasingly evident. Boards now are actively looking at how to transition the successes of the summer students into the regular school year and, in some cases, are developing strategies to track the future progress of summer students. There is now a greater understanding that **the project and classrooms learnings can be used to extend and enrich year-round learning**.

Technology: an exciting tool for increasing literacy skills

Primary students participating in the programs were observed using different types of technology to write stories, develop blogs, communicate with each other and their teacher and creatively explore media and photography. The growth of the use of technology in the summer programs was a significant extension for students and provided an opportunity for teachers to work and think differently in the area of literacy learning.

- Summer programs, funded by the Literacy and Numeracy Secretariat, have a significant influence and impact on the growth of other board summer learning programs. A number of boards used the SLLP to lever more student opportunities for summer literacy. It was evident that **the structures of the 2010 and 2011 SLLPs influenced and encouraged boards to expand and enhance their existing summer programs**.

- **Parent engagement and involvement were significantly increased** in 2012. Parents became more active participants in the summer program through volunteering, working individually with students, participating in parenting and information programs, providing food, attending celebrations and extending the classroom learning into the lives of their children – both at home and in the classroom.

◆ **Risk-taking and diversity were more prominent** this year. While there was an emphasis on consistency in terms of outcomes and student achievement, there was a tremendous diversity in how boards approached and implemented the program. The common elements included a "learning can be fun" approach and greater student and parent engagement.

Continued program improvement and innovation were evident in the 2012 project. Boards with programs in place since 2010 benefited from experienced staff, optimal resources, fine-tuned structures and systems and – most importantly – effective and engaging instructional programs. Newer programs instituted in 2012 were able to draw upon the experience of colleagues and use their knowledge and leadership to resolve challenges and develop effective board and school plans.

Feedback from teachers, parents, students and board leads extended and strengthened the 2010 and 2011 findings. Teachers observed noticeable improvements in the children's literacy skills, high levels of parent engagement, and a shift in students' perception about literacy learning. They also acknowledged that one of their greatest successes was forging connections with parents; the latter regularly commented on their children's enjoyment of the program and conspicuous literacy gains.

Concluding Thoughts For This Goal

It is exciting to report the overwhelming popularity of the summer program. As in 2011, some boards had waiting lists while others received enquiries from parents long before the summer program was advertised. In a few cases, students who were not registered in advance arrived at the school with their parents and asked to be part of the summer programs.

Teachers described the range of professional development opportunities afforded by the summer learning program. They were clear that the advantages of early planning and collaboration, team teaching and the learning of new literacy strategies were not only of benefit to the summer programs, but also influenced and impacted their instructional practices during the regular school year.

Board leads/coordinators and literacy consultants continued to be an invaluable resource, greatly enhancing the planning, coordination and quality of the programs. Several teachers referenced their leadership and support and spoke to the role of board leads in arranging teacher-planning and professional-development activities. These included

working with literacy and numeracy coaches, opportunities to co-teach and collaborate with colleagues, communicating with SLLP students' schools and regular visits by the board lead. More details are available in the SLLP 2012 Site Visits and Teacher Feedback report on page 28.

"Each year that I have taught this program I hear parents remark that the confidence level of their child has significantly improved. Empowering students with the skills to be successful is extremely important if students are going to continue to take risks with their learning. (As) for me, I continue to raise the bar as a teaching professional …I am passionate about this wonderful opportunity to make a difference in the life of a child."

– Teacher

What is Next?

Throughout the three years of the SLLP, boards and parents have consistently said that summer programs increase literacy learning, build self-confidence and provide a valuable impetus for children to become engaged and resourceful readers. There is an expectation among them that summer literacy programs will continue. Accordingly, it is suggested that for 2013 literacy programs continue to be funded in boards already participating, and be expanded into ten additional boards. This will bring the total number of boards providing literacy summer programs in Ontario to 50.

The lead researchers for the project have indicated that the three-year study has provided them with sufficient data to confidently state that summer learning programs:

◆ Make a difference for students experiencing literacy challenges;

◆ Minimize summer learning losses; and

◆ In many cases, increase literacy achievement.

It is likely, therefore, that the research protocol in 2013 will be revised and most boards will only collect test data from students enrolled in the summer program; there will be no requirement for either control data and/or parent questionnaires.

With the maturing of summer programs, boards have indicated a desire to have a broader discussion regarding teacher professional development, teaching and learning strategies and the transition of summer learning to year-round literacy programs.

In 2013, boards will be asked to outline future plans that respond to these important questions:

1. What core teaching and learning strategies were effective for learning, and how can boards utilize these strategies within the regular school year for the benefit of more students, teachers and programs?

2. How have summer programs assisted and influenced teachers in their own professional development, specifically in the areas of instructional practices and parent engagement?

3. What processes and plans will be in place to support summer students when they return to school in September, and what strategies prove to be effective in supporting this transition?

GOAL #2: Implementing the Summer Numeracy Pilot Project

Research indicates that summer learning loss in mathematics can be equal or greater than losses in literacy, and is just as much of a concern. Generally, most summer programs focus on literacy only; teachers express greater levels of confidence in providing intervention strategies for literacy than they do for numeracy.

However, there continues to be considerable interest in examining the impact of a summer program on numeracy achievement and increasing primary students' levels of numeracy learning; in addition, a significant recommendation in the 2011 report was the implementation of a Summer Numeracy Pilot Project. Accordingly, in 2012, six boards were invited to participate in a pilot project, the parameters and expectations of which were to be the same as those of the SLLP (including both the research and the student instruction components.) The six boards, in turn, organized 12 classes for the project.

A number of the boards invited to participate in the SNPP were already offering support and assistance to classroom teachers in the area of numeracy instruction. Two areas of support that are noteworthy are the use of numeracy coaches, and participation in the Collaborative Inquiry for Learning in Mathematics (CIL-M) project. In a few cases, boards had already been offering a combined numeracy and literacy summer program.

Some students in the numeracy program were tested in both literacy and numeracy. This decision was based on the possibility that growth in the latter may in fact influence growth in the former. This "spill-over" effect between literacy and numeracy learning is further explained in the Quantitative Reporting section and Technical appendix of this report.

What the Boards Have Told Us About Numeracy Learning

◆ **Student registration in the SNPP was lower than in the SLLP**. Accordingly, a few numeracy classrooms were organized with less than 15 students. This flexibility was important to the organization and structure for this first year of the SNPP.

◆ Teachers also reported some **reluctance on the part of parents to enroll their son or daughter in the numeracy program**. This may be due to the fact that information regarding the SNPP was delayed and many parents had already registered their son or daughter for the literacy program. It is expected that parents will be more familiar with the program – and also have more advance notice – in 2013.

◆ At the conclusion of the program, **a number of parents enquired about the process for registering for summer 2013**.

◆ In all of the six participating boards, **there were very few questions and requests for information** about organizing and scheduling the summer numeracy classes. There were, however, a number of discussions regarding resources, instructional techniques and the focus of the numeracy classes.

◆ A number of boards are taking innovative strides to prepare and distribute manipulative materials and teacher resources, and **explore opportunities to extend numeracy learning outside the classroom**.

Numeracy learning: a lack of familiarity?

Parents of students participating in summer numeracy, while interested, appeared to be less connected to the summer program and school than parents of students in summer literacy. This is not to be interpreted as a lack of interest on the part of parents; more likely it is an indication of parents' lack of familiarity and confidence with numeracy instruction. This lack of confidence in the area of mathematics instruction, however, was not limited just to parents: Teachers as well as board leads indicated a higher level of comfort and confidence in literacy instruction than in numeracy.

◆ In general, **numeracy classrooms featured more boys than girls**.

◆ **Student participation was enhanced when real-life numeracy learning was taking place** with students having an opportunity for one-on-one understanding of mathematical concepts.

- Within the numeracy strands **the majority of summer classes focused on number sense and numeration**.

- In some cases, **boards were very strategic in selecting summer teachers** who already had both interest and experience in the area of math instruction. This approach was very helpful in the design of the instructional program and the assessment of student learning.

- The STAR testing component of the numeracy program was questioned by both board contacts and summer numeracy teachers. They felt **the STAR test did not accurately reflect the Ontario curriculum or everyday use of mathematical terminology**.

"Well I am really glad I came to camp because before I was bad at math but now I am actually really good at it. It was way more fun than I ever thought math could be. Bakery for a day was a real dream come true for me."

– Student

"Last week we played this game and I couldn't do it without a hundreds chart and look at me now Miss T., I can count it all in my head. I can't wait to show my new strategies to my sister when I play against her tonight!"

– Student

What is Next?

Initial results from the first year of the SNPP have proven to be extremely promising, with indications that students gained numeracy skills and confidence in the area of numeration and number sense. Expanding the pilot project in 2013 to include more students and more boards will provide additional data and allow the researchers to conduct a more widespread (and intense) analysis of the summer numeracy programs. Increasing the number of boards participating in the pilot project will provide an opportunity for more students, more discussion and more teacher/parent participation. Such an increase will also help broaden instructional practice and student programming. Accordingly, **it is suggested that for 2013, the number of numeracy classes increase from 12 to 30**. Boards organizing these classes will be identified in early 2013 through collaboration and consultation with the Literacy and Numeracy Secretariat.

The 2012 research protocol will continue for the 2013 numeracy boards.

Further plans include:

◆ As an extension to the 2012 SNPP, the summer numeracy teachers and board leads will come together in the spring of 2013 to share resources and outline both the successes and the refinements in their summer numeracy programs.

◆ There is significant interest in integrating higher levels of problem solving into the summer program.

◆ As with the implementation of summery literacy, it is strongly anticipated that organizational, registration and structural requirements will lessen as the numeracy program continues.

GOAL #3: Support for First Nations, Métis and Inuit students

In 2010, when the SLLP was first being implemented, a few of the invited boards asked for additional funding to organize a summer literacy program for First Nations students. In most cases, these boards had tuition agreements with local Bands and, in a few situations, had very significant urban Aboriginal populations.

These requests were supported by CODE, and boards were encouraged to organize literacy classes to provide additional support for their First Nations students. Upon reviewing these programs, however, boards reported challenges in inviting and recruiting students, and in student attendance. These comments and reports by the boards resulted in further discussion about how to better support Aboriginal students in a summer literacy program.

Accordingly, seven boards were contacted and invited to organize a summer literacy class to specifically provide support to First Nations, Métis or Inuit students. These boards were identified based on having significant urban Aboriginal populations and a Friendship Centre within their jurisdictions and, in many cases, Aboriginal educators and board leads on staff.

What the Boards Have Told Us About FNMI Literacy Learning

◆ **Consistent student attendance was a major challenge** in the FNMI summer program. Teachers and board contacts employed a number of strategies to help increase and sustain attendance. Parents were contacted daily to both encourage attendance and provide them with updates about their child's progress and involvement in the program. In some cases, teachers assisted parents to find options for shared student transportation.

◆ **Regular and ongoing communication was an essential component** of the FNMI program. In some cases, parents appeared hesitant and perhaps anxious about the summer program. Sending home regular communication books, samples of work, stories and activities specific to literacy learning and the Aboriginal community all created a greater link with parents, and provided them with a better understanding of the program. Also notable was the fact that as students became more engaged in the program – more connected to their classmates and teacher, and more enthusiastic about the activities – attendance increased.

◆ A significant number of comments were made by both teachers and board leads about the necessity of providing more advance notice to the board and accordingly to the parents. Board leads noted that the programs were most successful in those situations where arrangements had been made to meet with local Aboriginal organizations and Centres and enlist their support and help. **There are many examples of collaboration and cooperation** that led to a more exciting and culturally-rewarding invitational summer program.

Highlighting FNMI traditions, culture and pride

Another area that led to increased student involvement and attendance was inviting local First Nations, Métis and Inuit leaders/elders into the classroom to talk with students and highlight FNMI traditions, culture and pride. Some boards also organized cultural and artistic endeavours including dance, beading, and Native art and drumming. Many boards already had in place a number of literacy resources focusing on Aboriginal traditions, history, culture and contributions. These resources were expanded and increased during the summer program.

◆ In at least one or two boards, teachers who provided summer instruction identified themselves as Aboriginal; **in most cases programs were supported by an Aboriginal board lead**.

◆ Many of the classroom teachers and board leads also mentioned that having **a safe place for the students to be actively involved during the summer** was extremely important.

◆ Teachers reported that **a member of the extended family often had responsibility for student attendance** and connections to the summer program.

◆ Approximately 60% of participating students identified themselves (or were identified by their parents) as First Nations, Métis or Inuit.

What is Next?

As noted in the research report and technical appendix, there was insufficient data to determine if the FNMI literacy program minimized learning loss and/or increased student achievement. As this is the first year of the literacy program organized specifically to support FNMI students, it is very likely that student and parent (including extended family) participation will increase in 2013. Informal reports and observations from teachers, board leads and parents provided positive feedback on: the summer program; the activities that supported Aboriginal culture, art and history; and the involvement of Aboriginal leaders and elders. While student attendance was not always consistent, board leads designed a number of strategies to reach out to parents and speak with them on a daily basis.

There is great interest in expanding the FNMI program for 2013. A number of boards who have become aware of the program have already indicated an interest in organizing an FNMI class for this summer. In order to successfully plan the 2013 program, it is suggested that a small focus group be organized. This group should include board and regional leads, lead researchers, teachers from the FNMI program, and staff from the Literacy and Numeracy Secretariat and the Aboriginal Education Office. The purpose of this meeting will be to discuss and examine all the possibilities and suggestions for expanding and improving the 2013 FNMI program and research protocol.

There continues to be some discussion among the board leads and teachers as to whether the program should be designed to support *only* students who self-identify as Aboriginal, or be open-ended and accommodate any student who wishes to participate in a program that includes curriculum and content connected to Aboriginal literature, history and culture. There was no general consensus as to which approach would provide the most supportive and engaging literacy learning environment.

It is recommended that the FNMI literacy program continue for 2013, and that additional boards be invited to indicate their level of interest in offering this program. All of the current 2012 boards will be invited to participate again in 2013.

GOAL #4: Increasing Parent Engagement

(Note: the following is a summary of the parent engagement study Meeting Parents 'Where they Are': Conceptualizing the Continuum of Parental Engagement and Parent Engagement Strategies. The complete report is attached as Appendix A on page 36.)

Throughout the three years of the summer programs, the involvement and connections between parents, teachers and students has been a key component of both the research project and the classroom program. And for 2012, the parent engagement aspect of the summer programs was much more extensively examined. In addition, two Boards provided more thorough information through an intensive review of parent engagement involving individual case studies. The lead researchers, research assistant and regional leads were onsite on a regular basis, interviewing both parents and teachers.

What the Boards and Research Have Told Us About Parent Engagement

◆ Educators identified varying levels of engagement. **Increased parent engagement involves trust, communication and intimacy between schools and parents** and opportunities to share specific literacy and numeracy learning strategies.

◆ **Parents at the beginning stages of parent engagement tend to have uneven levels of visibility and trust**. These parents are more likely to describe their own schooling experiences as unhappy or disappointing. They articulate a distinct division of labour between families and schools with the former taking responsibility for more basic care and the latter taking more responsibility for education. They often rely on the school to initiate contact.

◆ **Parents at intermediate and higher levels of parent engagement see themselves as partners** and regularly attend school events, support the completion of homework and have ongoing communication with their child's teacher.

◆ Parents at **higher levels of parent engagement are also proactive and hands-on**. These parents activity seek out information about programs and policies, and understand how to navigate institutional processes.

Evolving Parent Engagement Strategies

The parent engagement strategies speak not only to meeting parents "where they are", but also to a particular kind of partnership that will eventually be generated:
- Symbolic Partnerships: This approach builds relationships and trust with parents.
- Administrative Partnerships: This approach supports schools and facilitates communication.
- Learning partnerships: This approach connects parents to literacy and numeracy objectives.

◆ If a parent community has low levels of trust and communication with teachers, the creation of symbolic partnerships is a critical first step.

◆ Parents at the intermediate levels of engagement want to help their children succeed at school, but need additional resources to learn how to incorporate literacy and numeracy learning at home.

◆ Once symbolic and administrative partnerships are achieved, strategies can be modified to move parents along the continuum of parent engagement.

◆ Conceptualized on a continuum, as schools transition from low, intermediate to high levels of parent engagement, opportunities to share specific literacy and numeracy enhancing strategies increase. Parents, particularly at the intermediate stages of parental engagement, are willing to incorporate additional literacy and numeracy supports at home, but need more direction from schools.

◆ Parent engagement strategies vary between schools. This variation creates an unequal engagement experience for parents – and an unequal opportunity for staff to develop parent engagement strategies.

◆ Parent engagement that is based solely on the leadership of a school's senior administration is more likely to be impacted by staffing changes, such as a principal leaving. Efforts to build parent engagement/involvement capacity for teachers can be similarly affected.

◆ Equalization does not mean mandating the same set of practices for every school. Rather, it refers to creating a policy framework and directing resources toward schools that need additional support to move parents along the continuum.

Based on a review of the parent interviews, it is suggested that optimal parent engagement strategies should:

◆ Reflect where parents are on the continuum of parent engagement

◆ Be adopted with a clear understanding of goals and limitations

◆ Evolve with increasing levels of parent engagement

◆ Equalize the parent engagement experience for parents

What Is Next?

Based on the 2012 study, there is no doubt that further exploration of successful strategies to engage parents and promote literacy and numeracy learning is warranted. The results of this year's study demonstrate the benefits of assisting parents to become actively engaged in their child's learning, including increased support for public education. The two Boards that participated in this more intensive study are both interested in furthering parent engagement research. It is suggested that a total of five Boards be considered for participation in the *Meeting Parents* study described in this report.

SLLP 2012 Site Visits and Teacher Feedback

As we leave the third year of the SLLP, board and staff commitment to continued program improvement is evident. The most experienced programs have well-developed systems, seasoned staff, and optimal resources and programming in place; newer programs have benefitted from drawing on their knowledge and leadership.

Similar to last year, this feedback extends and strengthens the 2010 and 2011 findings. Teachers and parents observed noticeable improvements in children's literacy or numeracy skills, high levels of engagement and increased confidence. Teachers provided both hard evidence (e.g., increased PM benchmarks between the first and last days of the program) and more anecdotal testimony, including wholesale shifts in students' perceptions of literacy and numeracy learning.

Success Stories

When asked about their "greatest success," many teachers described forging connections with parents (or guardians) and receiving positive feedback from them. Boards have increasingly formalized their interactions with parents: daily meet and greets, making regular phone calls, holding parenting information sessions both before and during the SLLP, creating handout and information boards, and embedding parental participation in the SLLP. Parents regularly commented on their children's enjoyment of the program, and made reference to noticeable literacy or numeracy gains.

Teachers described parent inquiries about the SLLP long before it was advertised; in some cases, waiting lists were necessary to accommodate the overwhelming demand. The growing popularity of the SLLP is a testament to parental support for the program. This support was, in many cases, informed by their child's experience with the program in 2010 or 2011, and how it benefited their child socially and academically.

Planning and Professional Development

Teachers also described professional development opportunities afforded by the SLLP. Overall, teachers discussed the advantages of early planning and collaboration, team teaching, and learning new literacy and numeracy strategies. As two teachers explained:

"Team teaching has provided great opportunity for professional sharing and discussions to enrich future teaching. Working in a different school with different students and parents provides ideas to return to our own schools and classrooms."

"I found that this program gave me the opportunity to gain experience teaching in a truly differentiated classroom where the needs of the students were the basis for their groupings and instruction. I will be able to apply this to the upcoming school year because I will be teaching a grade 1&2 class."

The role of the district school board lead/coordinator and literacy and numeracy consultants proved to be invaluable resources, greatly enhancing the planning, coordination and quality of the programs. Several teachers described these individuals as their "go to" person and gave examples of how various challenges were readily resolved because of their leadership and support.

Moving forward, many experienced boards are increasingly embedding professional development opportunities in the SLLP. Some boards have a comprehensive menu of PD for their staff that includes not only planning and scheduling the SLLP, but also providing time for their teachers to work with literacy and numeracy coaches. During these sessions, teachers learned new strategies (e.g., how to use leveled readers) and effective progress monitoring tools. One board, for example, offered their teachers 2 days of training on "Feedback for Effective Instruction."

Another board held information and planning sessions with the literacy personnel from the board. The sessions included an overview of literacy strategies, the Board Improvement Plan and Smart Goals for the year. Additionally, they provided all of their SLLP teachers with data on the summer program students. Teachers then had the opportunity to use these strategies in the program, and connect their planning and programming to the Board's Improvement Plan and Smart Goals.

As the programs evolve, a handful of boards have made a concerted decision to communicate with the SLLP students' schools. One board, for example, sent the students' SLLP progress reports to their fall 2012 teachers.

Parental Engagement

Programs varied in their approach to initial parent engagement and subsequent activities. Conceptualized on a continuum, these activities ranged from "outreach" initiatives that served to make connections with parents (e.g., daily meet and greets) and strengthen information flows and communication (e.g., newsletters, information nights) to expanding the role of parents in the program (e.g., volunteers) and more directive forms of parental engagement aimed at modeling specific literacy and numeracy strategies (e.g., including parents in read-alouds). Teachers described crafting one or more of these forms of parental engagement based on their parent community needs.

The programs with the most comprehensive parental engagement strategies truly showcase what is possible to achieve in the context of the SLLP. One board, for example, had parents stay for daily read-alouds. During this activity, teachers modeled optimal literacy learning strategies and then provided parents with the opportunity to practice these strategies with their children. This same program gave children copies of the books teachers had selected for the program. This way each child left the SLLP with the start of a home library. During the program, parents were expected to read these books with their children, utilizing the skills they had gained during the read-alouds.

Another board had parents participate for thirty minutes at the beginning *and* end of the day. In the morning, teachers modeled literacy strategies and parents then had the opportunity to practice these strategies with their children. At the end of the day, parents and their children co-created a take-home activity that was related to that day's focus or strategy. Parents also helped their children select "just-right" books. During the last day's celebration teachers presented a slide show of the camp, and students shared their work with parents and took them through a series of stations that allowed the students to demonstrate various literacy skills and strategies.

One board held "Family Math Fridays" during which parents were invited into the classroom to "co-teach." At this same program, parents were debriefed during drop-off and pick-up times on their child's progress. At the end of the program the teacher sent home a math activity calendar and report card. Some boards created activities that were geared more toward parent or family needs, including information sessions (e.g., nutrition, fire safety) and family yoga.

Challenges and Opportunities For Improvement

The SLLP has continued to evolve and grow – not just in size, but in terms of the richness and depth of the program. And with a focus on continued improvement, some of the ongoing challenges continue to be:

- **Attendance**

  While most programs enjoyed high levels of support – with some boards even reporting waiting lists – a few continue to have problems attracting and retaining students. This suggests that poor attendance is not a function of the relative content or quality of the program, but is instead attributable to other factors. Attendance did seem to increase as students and parents became more involved and committed to the summer program. Boards speculated that, for some students, poor attendance patterns may have been established early on, long before the summer. Parents in some communities still viewed the program as "summer school", were unaware that the program was free, or had already made plans to go away. Similar to last year, teachers made a concerted effort to connect with parents, holding information nights, sending home information letters and making personal phone calls to parents. During these interactions, many teachers made a point of articulating the importance of regular attendance.

- **Transportation**

  Transportation continues to be an issue for some boards, particularly smaller boards and those in rural communities. These boards typically offered only one or two pro-grams, and had to draw students from many schools located over a wide geographic area. Teachers discussed how this arrangement was difficult for parents, and in some cases prevented children's participation.

  To overcome this challenge, some boards used alternative funding sources to provide transportation in the form of buses or bus tickets. Beyond cost considerations, some teachers worry that such arrangements compromise their ability to connect with parents.

  Some teachers theorize that a full-day program may be less burdensome for parents than a half-day version. Full-day programs allow parents to drop-off and pick-up children before and after regular working hours. When the site is far from home, mid-day pick-ups are particularly difficult for some parents.

The Research Report

What the Quantitative Research Told Us

◆ Students participating in this year's programs, on average, had more academic challenges than students in the control group.

◆ Summer programs (literacy, numeracy and First Nations, Métis and Inuit) with sufficient numbers of students in their research protocols demonstrated average learning gains significantly greater than those of their control groups.

◆ As in previous years, French literacy programs in 2012 had statistically powerful impacts on their students.

French summer learning

The *French Summer Literacy Learning Program* was also successful in 2012. Despite recruiting a more diverse student body with lower pre-existing literacy levels and school grades, the programs managed to reduce existing gaps with the control group by 30%. In fact, it was the third consecutive year that French programs narrowed the achievement gaps between the summer attendees and the controls. This gap shrank because the summer program attendees gained more literacy on average than the control students. Summer students gained 1.2 points on average on the GB+ scale, while control students gained only 0.4 points, for a difference of 0.8 points.

◆ Attendees of the English literacy programs also had significant gains. In fact, the 2012 gains were the largest in the 3 years of the SLLP. These achievements, however, are somewhat obscured by the unprecedented gains of the control group.

◆ Numeracy programs produced gains that were very solid and quite promising.

◆ Numeracy program attendees also tested for the possibility of "spill-over" gains in literacy. These effects, while sizeable and promising, were not statistically significant due to the small number of attendees in the research protocol.

◆ Teachers reported growth in literacy skills and confidence among participants in the First Nations, Métis and Inuit summer programs. The quantitative data, however, was too limited to detect significant effects and draw meaningful conclusions about the impact of these programs.

As in previous years, students invited to participate in the English *Summer Literacy Learning Programs* entered the summer program with greater academic challenges than the control group. Summer program attendees had significantly lower: spring literacy scores; grades in reading, writing, oral comprehension and math; and spring PMB/DRA scores. There were also higher proportions of students with IEP's. The summer attendees left school in June with substantially lower literacy scores compared to the control students.

During the summer, the attendees gained a little more than the controls, 0.72 months versus 0.4 months. However, estimates increase when group differences in the compositions of students are taken into account. In particular, accounting for student's previous grades and literacy scores doubled the estimated effect from 0.32 months to 0.65 months, which is statistically significant. While smaller than last year's summer literacy learning effect, the 2012 programs *were* successful – especially considering that the 2012 control group had slightly more literacy gains than did the 2010 and 2011 control groups.

Students recruited into the *Summer Numeracy Pilot Project* tended to have more academic difficulties than the control students. Summer attendees had significantly lower numeracy scores in June, along with lower grades in reading, writing, oral comprehension and math, and lower spring PM Benchmark / DRA scores. In terms of demographics, the summer program attendees and control groups were similar, with no statistically significant differences in their gender composition, grade level or proportion with IEP's.

The numeracy programs were also successful. Attendees gained an average of more than 2 months of numeracy, essentially learning at school-year rates. The attendees began the summer 3 months behind the control group in numeracy. However, over the summer attendees reduced that gap to 2 months, representing a narrowing of the numeracy gap by 33%.

In general, there were insufficient numbers of *First Nations, Métis and Inuit Program* attendees to draw any reliable statistical conclusions about the impact of these programs.

There is substantial confidence that data collection for the numeracy and First Nations, Métis and Inuit literacy programs will increase as the programs progress and mature. It is anticipated that future results for numeracy and FNMI will confirm initial observations of the success of the 2012 program.

In terms of a connection between literacy and numeracy learning, a small number of summer numeracy program attendees had full literacy test data. The "spill-over" effects of numeracy programs on literacy appeared to be sizeable, but not statistically significant due to the small numbers.

Overall, the 2012 Summer Learning Programs were successful in minimizing summer learning loss and increasing student achievement in both literacy and numeracy.

For more information on the quantitative component of the 2012 research study, see Appendix B Technical Report on the Quantitative Research Study Summer 2012.

What is Next?

Three years of data collection, analysis, classroom visits, parent surveys, teacher questionnaires and interviews and board collaboration all confirm this fact: **summer programs do make a difference for students who are experiencing greater challenges to literacy learning**. In their reports, the research team stated with confidence that summer learning programs reduce achievement gaps and, in many cases, increase literacy achievement. The question that remains unanswered, however, is whether this change influences future learning and stays with the students during their school career.

In 2013, it is suggested that the research protocol be modified to include a longitudinal study designed to determine if the SLLP does indeed make a difference over time. The lead researchers have suggested that five boards be included in the study, which will be much more intensive in terms of both board and parent involvement. The five boards will be identified through consultation and collaboration with the Literacy and Numeracy Secretariat and CODE. As part of the process to begin a longitudinal study, it is expected that participating boards will be engaged at the initial stages and become active partners in the study. The longitudinal study will continue until 2015.

Conclusion

◆ **Boards involved in the literacy program have asked that the program be extended for 2013. They have an unwavering expectation that SLLP will continue.**

◆ Some boards have expressed interest in becoming SNPP participants; other boards strongly suggested they would rather offer more summer literacy classes.

◆ Clearly, the SLLP is having an impact on other summer programs for students, and in terms of teacher professional development.

◆ In some cases, transportation was identified as a concern, primarily in more rural areas. However, all boards agreed having the parents present on a daily basis led to greater parent involvement and support.

◆ In all cases, earlier notice of the SLLP was strongly recommended to assist with student invitation and parent contact.

◆ No boards reported concerns about funding; resources for the literacy program appeared to be readily available. However, the need for additional supports for numeracy and FNMI students was identified as a concern. Supports could include: additional literacy resources reflecting Aboriginal cultures; manipulatives; technology; and hands on learning and community experiences connected to the development of literacy and numeracy skills.

Appendix A

Meeting Parents "Where they Are": Conceptualizing the Continuum of Parental Engagement and Parent Engagement Strategies

Introduction:[1]

Throughout the three years of the summer programs, the involvement and connections between parents, teachers and students has been a key component of both the research project and the classroom program. For 2012, the parent engagement aspect of the summer programs was much more extensively examined. In addition, two boards provided more thorough information through their involvement in a very intensive review of parent engagement. The lead researchers, research assistant and regional leads were onsite on a regular basis interviewing both parents and teachers. In total, 61 participants were interviewed including 38 parents, 23 teachers, site principals, board leads and support staff.

Location	Parents	Teachers and Support Staff
Board 1	24	7
Board 2	14	11
TOTAL	38	23

The summer literacy programs encapsulate the opportunities and challenges associated with strengthening parent engagement. Captured in these programs is the philosophy of parent engagement held by teachers and parents, and a strategy or approach that is generated by these understandings. The following questions were used to frame the discussion with parents and teachers:

◆ Levels of Parent Engagement: Where are parents on the continuum of parent engagement – low, intermediate or high?

◆ Differentiating Symbolic, Administrative and Learning Partnerships: What are the parent engagement goals? What strategies facilitate the realization of these goals? How do we move parents along the continuum of parent engagement?

◆ Creating Continuity: How can we equalize the parental engagement experience across schools and boards?

Identifying Levels of Parent Engagement:

Educators identified varying levels of engagement. One educator captured what we heard from many parents and teachers when she stressed the importance of meeting parents "where they are" on the continuum of parent engagement. Moving from one level to the next signifies increasing levels of trust, communication and connection to literacy and numeracy learning.

Parents at the beginning stages of parent engagement tend to have uneven levels of visibility and trust. Teachers described the challenges of making even basic connections with these parents (e.g., phone calls or conversations on the playground). These parents were more likely to describe their own schooling experience as unhappy or disappointing. While feelings of trust and connectedness with professionals – not just teachers, but doctors and social workers too – are tenuous at best, these parents are dependent on them. This dependency is rooted in their philosophy of parenting, which conceptualizes a distinct division of labour between families and schools, with the former taking responsibility for more basic care (e.g., shelter), and the latter taking responsibility for education. Any additional support at home is their way of adding value to their children's cognitive development. These parents may miss early warning signs (e.g., a poor report card) since they often rely on the school to initiate contact.

Parents at intermediate and higher levels of engagement see themselves as "partners," dutifully checking their child's agenda, attending school events and ensuring that homework is complete. They describe ongoing communication with their child's teacher, and are physically present and cognitively aligned with schools. What differentiates these two groups, however, is that parents in the higher parental engagement category are also extremely proactive and hands-on. These parents actively seek out information about programs and policies, and understand how to navigate institutional processes. This approach reflects a philosophy of parenting that has been coined "concerted cultivation". These parents respect teachers, but by their very definition of parenting expect to take charge of any matter that involves their children. Since parents at the intermediate level of engagement exhibit many of the same outward behaviours as parents who are farther along the continuum (e.g., faithfully attending parent-teacher meetings) it is easy to assume that these parents have the same capacity to effectively engage children's literacy and numeracy at home. As one parent at the intermediate level of engagement explained:

"There's a lot of information out there that is not easily accessible, that we don't know about, that we don't even know where to go to gain access. The principal or the teachers should direct us to where we could find it and then we could access it on our time. They would have a better idea than we would".

Evolving Parent Engagement Strategies: Differentiating Symbolic, Administrative and Learning Partnerships:

> "There are many tiers. I would use that model parent engagement tier 3, 2 and 1. We work backwards. Tier 3 is the bottom. And parent engagement serves different purposes according to what tier. A school can offer a general 'come in and let's do a fun fair together'. That's the lowest level of parental engagement because it's just coming in, meeting and greeting. Parents are having fun, but they are not actually engaged in their children's progress. And especially here, that that is our focus, to have parents engaged in their student's progress. So then our level 2 parents, we select students who we feel need a little additional support and we provide after school programming for them. Then those parents that we can get in to support. I would call that tier 1. It's a very targeted intervention to support those students".

The parent engagement strategies that are adopted speak not only to meeting parents "where they are", but also to a particular kind of parent engagement that will eventually be generated. When conceptualizing parent engagement strategies, identifying the aims of any particular strategy – and its limitations – is critical. Once a particular level is reached, strategies need to be ratcheted up to move parents along the continuum of parent engagement. Described below, parents and educators identified three levels of parent engagement and parent-engagement strategies covering the range of partnerships:

◆ Symbolic Partnerships: This approach builds relationships and trust with parents. Strategies include daily "meet and greets" and hosting of various non-academic events (e.g., potlucks).

◆ Administrative Partnerships: This approach supports schools and facilitates communication. Strategies include asking parents to volunteer (e.g., for school trips), help out in the classroom (e.g., photocopy materials) and daily agendas.

◆ Learning partnerships: This approach connects parents to literacy and numeracy objectives. Parents learn specific skills that they can use at home (e.g., guided reading), and participate in literacy and numeracy enhancing activities at school. Activities include watching a teacher model a read-aloud, and then practicing that strategy in the classroom.

In summary, part of "meeting parents where they are" is also recognizing that while parents may express similar levels of commitment to helping their children succeed in school, they vary greatly in how they translate those values into action. Conceptualized

on a continuum, as schools transition from low, intermediate to high levels of parent engagement, opportunities to share specific literacy and numeracy enhancing strategies increase. Parents, particularly at the intermediate stages of parental engagement, are willing to incorporate additional literacy and numeracy supports at home, but desire more direction and instruction from schools.

Equalizing Parenting Engagement Strategies:

Parents and teacher interviewees hailed from a number of schools that surrounded the summer program site. This arrangement illuminated how much parent engagement strategies vary between schools that are literally a few kilometers apart. Some parents described their inability to make even basic contact with teachers, agendas that were not read, and meetings that would take weeks to schedule. In contrast, parents from other schools described the presence of staff at drop-off and pick-up, opportunities to talk to teachers before and after class, and feeling welcome to work closely with teachers to improve their children's literacy and numeracy outcomes.

This variation creates an unequal parental engagement experience for parents and an unequal opportunity for staff to develop parent engagement strategies. Parent engagement that rests on the charismatic leadership of a school's administrative staff is highly unstable (e.g., it may disappear if the principal leaves) and it has limited capacity building potential (e.g., staff may not be able to take parent engagement skills to a new school). Equalization does not mean mandating the same set of practices for every school, but rather creating a policy framework that allows schools to create practices that reflect low, intermediate and high levels of engagement, and that direct resources toward schools that need additional support to move parents along the continuum.

Based on a review of the interviews, it is suggested that optimal parent engagement strategies:

◆ Reflect where parents are on the continuum of parent engagement

◆ Are adopted with a clear understanding of goals and limitations

◆ Evolve with increasing levels of parent engagement

◆ Equalize the parent engagement experience for parents

The following chart summarizes the continuum of parental engagement and parental engagement strategies, and provides an example of a parent who exemplifies each level of engagement.

Conceptualizing the Continuum of Parental Engagement and Parent Engagement Strategies

Description	Type of Partnership	Goals	Examples:
LOW Uneven visibility and trust Infrequent or no contact Uneven alignment Reactive	**Symbolic** Daily meet and greets Potlucks, BBQs, plays, concerts Parent information sessions	Build relationships and trust Build parents comfort level and confidence Create a school community Connect students and parents to appropriate supports or services Provide parents with basic tools to align with educational goals	**"Pam"** is a stay-at-home mother of 3 young children. Pam struggled in school, and left one year shy of graduating high school. Pam and her partner struggle financially, and social service has been involved intermittently since she had her first child. Recognizing the consequences of her choices, she hopes her children will finish high school. She tries to embed literacy and numeracy learning in fun activities at home. Pam believes she has a good relationship with the staff. Yet, this June she felt "at a loss" when her daughter's teacher told her that "Mary" is significantly behind in reading and writing. When asked how she interpreted earlier warning signs (e.g., poor report cards), Pam explained that she thought the school would initiate contact. When asked about how she plans to address her daughter's literacy difficulties next school year, she told us that she is waiting to hear back from the school.
INTERMEDIATE Medium to high visibility and trust Frequent contact Reactive and Proactive	**Symbolic and Learning Partnerships** Above, plus: Alignment with administrative routines (e.g., filling out agenda) Support learning objectives	Capitalize on parents willingness to take ownership for their children's learning Teach parents how to help their children at home Communicate concrete literacy and numeracy strategies	**"Meghan"** is a married mother of 3 and is expecting a 4th child. A self-described rebellious teenager, she left home and dropped-out of school at 17. She desperately wants her children to finish high school, something she eventually did in her early 20s. She aspires to go to college to better her family's financial position and to be a good role model for her children. Meghan is an involved parent, and is attuned to her children's social and cognitive development. She attempts to incorporate tips from a range of professionals including teachers, speech therapists and public health nurses. She gave us examples of how she uses these resources at home, including reading to her children every night, using flashcards and daily speech therapy exercises. She reviews her children's agenda, makes sure homework is complete, volunteers, goes on class trips and has daily conversations with her children's teachers.

She is aware that there are better methods for helping her children at home, and is sometimes frustrated by her inability to more effectively engage her children. Meghan attempts to follow through with the materials that are sent home (e.g., speech therapy exercises), but doesn't always understand how to utilize them appropriately or how to find high-quality resources. As she explained:

"I think teachers are really parents away from home. But for them it's easier because they have the knowledge and education on how to make it fun. I would definitely love to learn techniques so I can make it fun and so they are not realizing they are sitting down doing A, B, C. I know a lot of other parents, my friends, who are having a lot of issues right now too, with their kids where it's not fun at home, it's not engaging. Their kids are shutting down just like my kids and we are like what we do? We don't have those tools to teach them in an easier manner".

"Sandy" is a college educated working mother of "Chris", a student who is entering grade 2 next year. She has participated in several community-based organizations and parent-school committees.

Recognizing that her child has special needs, she actively sought out additional supports for her child within the first few months of grade 1. Alarmed by a change in her son's behaviour, she felt strongly that she had to act fast.

She quickly learned that the type of program her son needs is not available for very young children. Unfazed, she worked with the school to create an optimal set of supports for her child. She has a sophisticated understanding that "there is an institutional structure that exists" and, according to her, her job was to figure it out and "work within that structure". She sees herself as an active partner in her child's education, along with teachers. Armed with this understanding, she was able to effectively work with the school and is very happy with the support her son now receives. Her son is thriving and loves school.

Learning
Above, plus:
Facilitate and initiate pedagogical goals
Hands-on and directive

Capitalize on parent resources and communicate concrete literacy and numeracy strategies

In some cases redirect parents' resources to more appropriate strategies or tools

HIGH
Medium to high visibility and trust
Frequent contact
Administrative and Pedagogical alignment
Proactive

Description of Programs and Parent Engagement Strategies:

Board 1:

Board 1 hosted a 3 week, half-day literacy learning program for 90 children. Each class-room was led by one teacher and one support staff. The program provided children with a healthy breakfast and snack, and each child received a water bottle and t-shirt. Board 1 also organized several special activities for the children. One morning, for example, Board 1 arranged to have an experienced music teacher lead an instrument-and-singing activity. The main parental engagement strategies were:

◆ Scheduled events

◆ Drop-off and pick-up, meet and greet

◆ Parent volunteers

◆ Parent feedback mechanism

Board 1 created an information booklet that contained an easy-to-follow calendar. Activities included a "Parent Orientation" session on the first day, a "Healthy Choices" nutrition information session, "Yoga for Parents" and a "Last Day" celebration. The Parent Orientation included a video of a teacher reading to her child and a discussion of simple ways to effectively engage children in a reading activity. The first and last day events were well attended.

At drop-off and pick-up, teachers welcomed parents and required them to sign their children in and out. Teachers were also present on the playground and made a concerted effort to talk to parents before and after the program. Board 1 also asked parents to volunteer with varying degrees of success. Classes with younger students had the most parent volunteers, while classes with older students had few or no volunteers. Every night teachers sent home a book bag containing a book the child had read that day, and a feedback form for parents to fill out.

Board 2:

Board 2 hosted a 2 week, full-day literacy program for almost 90 students. The site housed 4 literacy and 1 FNMI classrooms. Children began their day with a homeroom teacher for a one-hour literacy activity that included a read aloud, journals, scrapbooking or oral language activity.[ii] After recess, children began the first of three half-hour rotations that included activities with iPads or iPod touch devices and literacy games

(e.g., BrainPOP). Each classroom, including the FNMI class, rotated. This arrangement exposed all students to traditional stories and songs led by the FNMI teacher. At lunch, Kiwanis staff took responsibility for 2 recreational units. One of these units included a book and art or drama activity led by the afternoon FNMI teacher. During this time, the staff also gathered 24 of the students with greater literacy needs into six groups of 4 for leveled reading. Teachers had 45 minutes of preparation time during the afternoon. At 2:30 students and staff went to the gym for a "community campfire" that included songs and a play. A healthy morning snack and a substantial hot lunch were provided each day, along with a water bottle that was left on site for daily use. Each student received a t-shirt. On the last day, students also received a backpack and school supplies.

The main parental engagement strategies were:

◆ Drop-off and pick-up, meet and greet

◆ Parent Engagement Sessions

The staff met parents at 8:50 a.m. on the playground each morning, and made a concerted effort to talk with the parents. At 3 p.m., parents were required to pick-up their children in the school gym during the last few minutes of the community campfire. The second strategy was a 1 to 1.5 hour "Parent Engagement" session offered four mornings per week by a social worker and speech pathologist. Topics were generated from a survey of last year's parents and included sibling rivalry, budget friendly meals, educational apps and strengthening children's literacy skills. Coffee, snacks and child care were provided during these sessions. Attendance varied, but approximately five to eight parents attended each day. The school's principal often attended and was a real asset, having intimate knowledge of the school community and a comprehensive understanding of parental engagement strategies.

Endnotes:

i   This project has a number of limitations, most importantly self-selection bias. Parents' decision to participate in the program and an interview are likely correlated with traits that affect the study. Self-selection bias was most apparent by the similar values expressed by participating parents. Interestingly, this shared value system did not translate into a similar set of parental engagement strategies, school experience or outcome. This variation is mediated by parents' and teachers' understanding of the former's role, and how these understandings intersect with the specific parent engagement strategies adopted by their home schools.

ii The journal activity was very special. Each morning the site principal would provide children with pictures she had taken the day before. The children would select a picture, add it to their "journal" and write about the picture on a recipe card. The journal was a simple photo book purchased from the dollar store, and housed a picture and recipe card on each page. Each child took home his/her journal on the last day.

Appendix B
Technical Report on the Quantitative Research Study Summer 2012

Introduction:

The Ontario Summer Literacy Learning Program continues to be the largest ongoing study of summer learning conducted outside of the United States, providing an unprecedented source of information about student learning during the summer months. The SLLP also describes the impact of summer program interventions on student learning. As in previous years (2010 and 2011), the report draws on high-quality data and valid measures of summer learning. It is important to note that by reporting on non-random samples that are not representative of Ontario as a whole, the results cannot be reliably generalized to the entire province; rather, they should be viewed as solid evaluations of particular interventions, and as good illustrations of the probable summer learning experiences for many students.

Due to the additional number of summer programs in the SLLP, the 2012 research protocol was more complex than in previous years. However, the research protocol retained the same aims as in previous years.

This report is designed to:

1. Capture changes in student learning over the summer months; and
2. Compare these changes among summer program attendees to those of a control group, which was comprised of the school year classmates of the attendees.

The logic of this comparison is to contrast the learning gains and/or losses of groups of students who attend the same schools and live in similar neighbourhoods. Since students who were invited to summer programs tended to have more academic challenges than their classmates, a wide range of report card and demographic data was collected on both groups in order to make statistical adjustments that enhance the comparability of the two groups.

Specifically collected from both summer attendees and control groups were the following types of data:

(a) French-language program students' spring and fall GB+ scores, school-year grades, attendance and grade level from report cards, and a range of demographic information from report cards and parent surveys.

(b) Similar information was collected for English language programs, but test score data was used from STAR Learning (an online provider of standardized tests).

(c) All 2012 students had just finished grades 1, 2 or 3.

This technical appendix presents further details about the data collection conducted for the 2012 SLLP research protocol, and offers statistical analyses of this data. As in previous years, the effects of summer programs are estimated using comparisons of means tests, ordinary least squares regression, and propensity score matching.

For each of five sets of analyses, the tables that follow present:

1) t-tests of differences of means between summer attendees and control groups; and

2) coefficients that estimate the effect of summer program attendance on learning using multivariate techniques.

The multivariate analysis begins by first estimating the 'total effect' of summer program attendance on learning without controlling for any other variable. It then proceeds by re-estimating that effect after adding successive blocks of variables, which include each student's test intervals, board, gender and grade level, and their grades, literacy measures, and attendance from the previous school year. It is very important to adjust estimates of the effects of summer programs using these variables because of key differences between the summer program attendees and the control groups. Ordinary least squares regression is used for most of these estimates, but propensity score matching techniques are also used.

Effect sizes are calculated by dividing the estimated coefficient by the pooled standard deviation in summer learning. Since effect-size estimates vary somewhat across models, the range of these estimates is reported. It is particularly important to keep in mind that estimates can change across models, both by the introduction of new variables and by reductions in the sample size due to listwise deletion. In future analyses, multiple imputation techniques will be used to minimize the impact of the latter.

French Literacy

Data Collection:

There were 180 summer attendees and 172 control students in this year's French data set, for a total of 352 students. Of these, 318 had full test data (172 summer attendees and 146 control students). These were greater numbers than in previous years: in 2010 there were 132 students; in 2011 there were 232. Surveys for 158 students were received, which is a response rate of 45%. Board and survey data for 153 students was merged. Of those, 140 had full test data, which leaves 44% of the original sample intact. Reported below are the results both for the larger sample (with board data) and the smaller sample (also with survey data).

Recruitment:

As in previous years, students with lower levels of literacy were recruited into the summer programs. Attendees entered the summer months with spring GB+ scores that were significantly lower on average than those of the controls (8.24 versus 12.03, for a difference of 3.79, $p<.0001$). These two groups had similar proportions of students in grades 1-3 and boys and girls.

The summer attendees had a larger proportion of students with IEP's in reading, but the difference was not statistically significant. However, the summer attendees had notably lower grades in language (reading, writing, oral comprehension) and math during the school year. There were no significant differences between the groups' days absent/late during the school year. The controls had significantly longer test intervals than the controls.

In terms of survey responses, parents from the control group reported higher levels of parental education and income; group differences for the latter were, in fact, statistically significant. Otherwise, there were no statistically-significant differences between the groups in terms of the age of parents, sizes of their families, immigration status, or aspirations for their children's future education.

However, the control group was significantly more likely to speak only French at home, while the summer attendees were more likely to mix French at English at home.

Table 1 – French Literacy: Comparing Summer Attendee and Control Means and Standard Errors

Variable	Summer Attendees	Control Students
Spring GB+	8.24*** (.448) n=179	12.1 (.734) n=155
Fall GB+	9.35*** (.495) n=173	2.21 (.051) n=146
Summer GB+ Gain	1.19*** (.178) n=172	.384 (.122) n=146
Reading Grade	68.4** (.592) n=172	70.9 (.745) n=148
Writing Grade	67.9*** (.504) n=172	72.0 (.636) n=148
Oral Grade	71.6** (.538) n=172	74.1 (.571) n=148
Math Grade	72.5*** (.538) n=180	76.4 (.535) n=172
Proportion on IEP's	.083 (.021) n=180	.041 (.015) n=172
Days Late	5.70 (.734) n=180	4.63 (.595) n=172
Days Absent	7.82 (.471) n=180	8.37 (.466) n=172
Proportion Male	.511 (.037) n=180	.465 (.038) n=172
Grade Level	1.56 (.056)n= 180	1.52 (.052) n=172
Test Interval (days)	104*** (1.66) n=180	113 (1.78) n=172
Board 1	.144 (.026) n=180	.157 (.028) n=172
Board 2	.089 (.037) n=180	.093 (.022) n=172
Board 3	.144 (.026) n=180	.180 (.029) n=172
Board 4	.044 (.015) n=180	.087 (.022) n=172
Board 5	.172 (.078) n=180	.198 (.030) n=172
Board 6	.086 (.021) n=180	.074 (.009) n=172
Board 7	.206** (.030) n=180	.105 (.234)n=172
Parent Education	5.30 (1.80)n= 90	5.81 (.207) n= 54
Other Parent Education	4.80 (1.94) n= 87	5.07 (.268) n= 58
Household Income	4.78* (.248) n=82	5.54 (.253) n= 48
Parent Age (years)	36.9 (.667) n=76	36.6 (.654) n=55
Child Age (years)	7.58 (.103) n=90	7.49 (.082) n=60
# of Siblings	2.50 (.099) n=90	2.62 (.128) n=55
Educational Aspirations	4.05 (.128) n=85	4.28 (.148) n=53
Proportion Born in Canada	.830 (.040) n=88	.879 (.043) n=58
Speak French Only at Home	.230** (.045) n= 87	.482 (.067) n=56
Speak English Only at Home	.402 (.053) n=87	.357 (.065) n=56
Mix French-English at Home	.161 (.040) n=87	.054 (.030) n=56
Speak Other Language	.092 (.031) n=87	.071 (.035) n=56

Note: *denotes 1-tailed T-test P<.05, **p<.01, ***p<.001

Effects of Summer Programs

For the third consecutive year, the French programs narrowed achievement gaps between the summer attendees and the controls. Attendees began the summer behind the controls by an average of 3.8 GB+ points, but by fall they were only 2.7 points behind. The summer programs thus reduced the literacy gap by almost 30%. The gap shrank because the summer program attendees gained more literacy on average than the control students. Attendees gained 1.2 points on average while control students gained only 0.4 points. This difference of 0.8 GB+ points represents an effect size of 0.4, which is quite impressive in comparison to a host of other early interventions.[1]

The summer attendees differ from the control group in many respects. Because of this, it is important to account for a host of other variables when estimating the effects of the summer programs, including:

◆ Any differences in test intervals;

◆ Composition across 7 boards;

◆ Student grade and gender; and

◆ Academic profiles, as measured by their grades in the previous school year.

When taking into account these variables, the estimated effect remains at almost .8 GB+ points, with an effect size of approximately 0.4.

Adding the survey items to the statistical models has the effect of both greatly reducing the sample size and increasing the estimated effect of the summer programs. These changes are likely due to a combination of altering the sample composition and adding important control variables. Effect sizes in these models range from .55 to .63. It is best to be cautious and rely on the estimates from the larger sample.

It should also be noted that the average summer learning gain was less for both attendees and control groups than in previous years. One likely reason is that the newly participating boards brought more disadvantaged students into the research protocol. Nevertheless, the summer programs were able to maintain similar effect sizes as in previous years, despite teaching students with a greater range of academic preparation. That result should be considered a success.

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[1] Meta-analyses by Hill et al (2007) and Konstantopoulos and Hedges (2005) suggest that successful randomized interventions in elementary schools have effect sizes that range from .23 to .33; effect sizes of .50 can be considered to be very large.

Table 2 – Estimated Effects of Summer Programs on French Literacy, measured by greater gains in GB+ scores by summer attendees over control students, using OLS Regression

Controlling for...	Summer Effect in GB+ points	Effect Size
No variables	.808*** (n=318)	.40
Add Test Interval	.902*** (n=318)	.44
Add Above & Boards	.794*** (n=318)	.39
Add Above & Gender, Grade	.797*** (n=318)	.39
Add Above & Report Card Info	.796*** (n=318)	.39
Parent Survey Information:		
Add Above & Parent Education	1.01* (n=131)	.50
Add Above & Other Parent Ed	.984* (n=130)	.48
Add Above & Family Income	.910* (n=115)	.45
Add Above & French at Home	.985* (n=110)	.49
Propensity Score Matching		
Caliper .01, ATT	.880** (n=318)	.43
OLS on common support	.780** (n=271)	.38

Note: *denotes 1-tailed p<.05, **p<.01, ***p<.001. Effect size is calculated by dividing the coefficient for summer program attendance by the standard deviation in summer learning gains, sd= 2.03). To avoid listwise deletion, mean imputation was used to calculate some test intervals and report card data.

Propensity Score Matching:

PSM techniques were also run on the larger sample of board data (n=318). Using caliper matching (.01), the estimate treatment effect on the treated is .88, which is statistically significant (p<.001). The effect size is .43. OLS regression was then re-run on the region of common support. The estimated effect was .780 (n=271, p=.002) for an effect size of .38. Thus, the PSM results are very similar to those reported for OLS regression. PSM was also used for the survey data, and served to double the estimated summer effect to 1.42 (n=95, p<.01), though caution is needed because of the huge reduction in sample size. OLS regression on the region of common support returned an estimated summer program effect of .956 (n=57, p=.09). Again, it is wise to rely on the estimates from the larger samples.

Conclusion

The French Summer Literacy Learning Program was again successful in 2012. Despite recruiting a more diverse student body that had lower pre-existing literacy levels and school grades, the programs managed to reduce existing gaps with the control group by 30%. A variety of statistical models estimate effect sizes ranging from .4 to .5, which are quite strong in comparison to other elementary-level interventions.

English Literacy

Data Collection:

There were many participants in the English Literacy research protocol. Full literacy and report card data was collected for 3,487 students (2,657 controls and 730 summer attendees). Due to some problems in the identification numbers used in the parent survey, it was not possible to confirm the total number of survey matches in the English Literacy protocol.

Recruitment:

As in previous years, student recruits into the summer literacy programs had greater academic challenges than the controls. Attendees had significantly lower spring literacy scores, lower grades in reading, writing, oral comprehension and math, lower spring PMB/DRA scores, and higher proportions with IEP's.

Table 3 – English Literacy: Comparing Summer Attendees and Controls: Means and Standard Errors

Variable	Summer Attendees	Control Students
Spring Literacy (GE)	1.52*** (.030) n=822	2.10 (.022) n=3,220
Fall Literacy (GE)	1.56*** (.034) n=793	2.16 (.025) n=2,950
Summer Literacy (GE)	.072 (.174) n=730	.040 (.174) n=2,657
Reading Grade	68.0*** (.267) n=924	72.9 (.267) n=3,815
Writing Grade	67.3*** (.235) n=920	70.8 (.235) n=3,812
Oral Grade	70.9*** (.214) n=926	73.3 (.117) n=3,811
Math Grade	70.3*** (.255) n=923	73.5 (.132) n=3,813
Spring PMB/DRA	15.2*** (.284) n=938	19.1 (.143) n=3,779
Proportion on IEP's	.124*** (.011) n=941	.064 (.004) n=3,986
Days Late	7.35 (.459) n=876	6.86 (.211) n=3,737
Days Absent	10.5 (.398) n=890	11.0 (.194) n=3,786
Proportion Male	.521 (.016) n=966	.533 (.008) n=3,960
Grade Level	1.70** (.012) n= 969	1.80 (.012) n=4,013
Test Interval (days)	79.0 (3.45) n=730	78.3 (1.80) n=2,657
Cluster 1	.064*** (.008) n=969	.120 (.005) n=4,013
Cluster 2	.205* (.012) n=969	.270 (.015) n=4,013
Cluster 3	.185 (.012) n=969	.176 (.006) n=4,013
Cluster 4	.422*** (.016) n=969	.325 (.007) n=4,013
Cluster 5	.105 (.010) n=969	.119 (.005) n=4,013
Cluster Numeracy	.004 (.002) n=969	.009 (.002) n=4,013

Note: *denotes 1-tailed T-test P<.05, **p<.01, ***p<.001

Effects of Summer Programs:

The summer attendees left school in June with substantially lower literacy scores compared to the control students. Controls had an average GE score of 2.10, while the attendees averaged 1.52, for a gap of approximately 6 months – more than one half of a school year. During the summer, the attendees gained a little more than the controls, 0.72 months versus 0.4 months. Thus, on the surface, the attendees narrowed the gap by 0.3 months, which is approximately 5% of the initial literacy gap.

However, this estimate grows when taking into account these groups' differing composition of students, particularly their previous grades and literacy levels. This adjustment doubles the estimated effect from 0.32 months to 0.65 months, and is statistically significant with an effect size of .11. While this effect is not huge in magnitude (and is smaller than last year's), it represents a success.

The 2012 summer attendee gain of 0.72 months is actually the largest in the 3 years of the SLLP (in 2011 the gain was 0.37 months, and in 2010 they had a net learning loss). But the 2012 control group gain of 0.4 months was also the largest among control groups in the 3 years of the SLLP (-0.14 months in 2011, and 0.03 in 2010). Thus, even though the 2012 summer attendees gained more than in the previous years, the 2012 effect is smaller because of the unprecedented gains among the controls.

Table 4 – Estimated Effects of Summer Programs on English Literacy, measured by comparing changes in STAR Reading scores for summer attendees and control students using OLS Regression

Controlling for...	Summer Effect in GE (years)		Effect Size
No variables	.032	(n=3,387)	.05
Add Test Interval	.030	(n=3,387)	.05
Add Above & Boards	.027	(n=3,387)	.05
Add Above & Gender, Grade	.027	(n=3,360)	.05
Add Above & Report Card Info	.065*	(n=3,044)	.11
Parent Survey Information:			
Add Above & Parent Education			
Add Above & Other Parent Ed			
Add Above & Family Income			
Add Above & French at Home			
Propensity Score Matching			
Caliper .01, ATT			
OLS on common support	.063*	(n=3,025)	.11

Note: *denotes 1-tailed p<.05, **p<.01, ***p<.001. Effect size is calculated by dividing the OLS coefficient for summer program attendance by the overall standard deviation in summer learning gains, sd=.586).

Table 5 – Comparing English Summer Literacy, Average Learning Gains/Losses 2010-12

	2012	2011	2010	Significant Change
Summer Attendees	.072 (.471) n=730	.037 (.520) n=617	-.071 (.578) n=601	2011-12: no 2010-12: yes
Controls	.040 (.616) n=2,657	-.014 (.685) n=1,993	.003 (.664) n=1,729	2011-12: yes 2010-12: no

Note: Mean gain/loss, sd in parentheses. Significant change based on 2-tail p<.05.

Overall, the 2012 English Literacy programs can be considered to have been a success. They produced an unprecedented amount of literacy in the 3 year history of the SLLP. However, this success is partly masked by yearly fluctuations in the fortunes of the control group.

English Numeracy

Data Collection:

Board and STAR data were matched for 898 students (737 controls, 161 attendees). Of these, 528 controls and 126 attendees had full STAR test score data, for a total of 654 useable cases.

Recruitment:

Recruits into the summer numeracy learning program tended to have more academic difficulties than did control students. Attendees had significantly lower STAR numeracy scores in June, lower grades in reading, writing, oral comprehension and math, and lower spring PM Benchmark/DRA scores. In terms of demographics, the summer program attendees and control groups were similar, with no statistically-significant differences in their gender composition, grade level or proportion with IEP's. These groups did come from different boards, with a disproportionately higher number of students in summer programs coming from two boards, and a disproportionately higher number of controls coming from two other boards.

Table 6 – Numeracy: Comparing Summer Attendees and Controls: Means and Standard Errors

Variable	Summer Attendees	Control Students
Spring Numeracy (GE)	1.82** (.096) n=145	2.13 (.050) n=636
Fall Numeracy (GE)	1.99* (.097) n=142	2.21 (.051) n=629
Summer Numeracy (GE)	.221* (.054) n=126	.081 (.027) n=528
Reading Grade	69.6*** (.592) n=175	72.3 (.592) n=860
Writing Grade	68.5** (.535) n=177	70.0 (.257) n=879
Oral Grade	70.8** (.505) n=177	72.5 (.250) n=878
Math Grade	70.8** (.590) n=177	72.7 (.289) n=877
Spring PMB/DRA	17.8** (.761) n=162	20.0 (.336) n=817
Proportion on IEP's	.111 (.023) n=180	.082 (.009) n=914
Days Late	7.18 (.947) n=177	8.75 (.505) n=868
Days Absent	10.2** (.878) n=177	13.5 (.500) n=870
Proportion Male	.557 (.037) n=183	.527 (.016) n=934
Grade Level	2.04 (.056)n= 185	1.98 (.027) n=936
Test Interval (days)	76.7 (4.34) n=126	77.2 (1.71) n=528
Board 1	.141 (.026) n=185	.141 (.011) n=936
Board 2	.438*** (.037) n=185	.270 (.015) n=936
Board 3	.195*** (.029) n=185	.344 (.016) n=936
Board 4	.119** (.024) n=185	.050 (.007) n=936
Board 5	.022*** (.011) n=185	.121 (.011) n=936
Board 6	.086 (.021) n=185	.074 (.009) n=936

Note: *denotes 1-tailed T-test P<.05, **p<.01, ***p<.001

Effects of Summer Programs

The attendees began the summer 3 months behind the control group in their average numeracy scores. However, that gap shrank over the summer. Attendees gained 2.2 months, while the controls gained 0.8 months. The attendees' gains matched school-year rates and served to shrink the numeracy gap from 3 months to 2 months, a reduction of 33%. Without taking other variables into account, the summer numeracy programs effect size was 0.23, which is quite solid.

Table 7 – Estimated Effects of Summer Programs on Numeracy, measured by comparing changes in STAR Math scores for summer attendees and control students, using OLS Regression

Controlling for...	Summer Effect in GE (years)	Effect Size
No variables	.140* (n=654)	.23
Add Test Interval	.146* (n=654)	.24
Add Above & Boards	.155* (n=654)	.25
Add Above & Gender, Grade	.173** (n=654)	.28
Add Above & Report Card Info	.220*** n=576)	.36
Parent Survey Information:		
Add Above & Parent Education		
Add Above & Other Parent Ed		
Add Above & Family Income		
Propensity Score Matching		
Caliper .01, ATT	.228*** (n=519)	.38
OLS on common support	.245*** (n=519)	.40

Note: *denotes 1-tailed p<.05, **p<.01, ***p<.001. Effect size is calculated by dividing the OLS coefficient for summer program attendance by the overall standard deviation in summer learning gains, sd=.608).

Since summer attendees differ from the control groups in many respects, however, it is important to re-estimate these effects after accounting for a host of other variables. Accounting for group differences in test intervals, compositions across boards, gender compositions, grade levels, and record card profiles raises the estimated effect of summer programs to 2.2 months, which is an effect size of .36. Propensity score matching estimates boost the net summer learning gain to 2.4 months for an effect size of .40. Overall, the numeracy pilot can be considered a success. It shows much promise and should be scaled up next year.

Numeracy Programs: "Spill-Over" Effects on Literacy?

Numeracy students were also tested for literacy to inspect whether or not summer numeracy programs had effects that "spilled over" into literacy.

Data Collection:

308 students across the numeracy board data base and the STAR literacy data set were matched. Of those, 221 had both spring and fall tests: 38 summer attendees and 183 controls.

Recruitment:

The sample of summer numeracy program attendees had significantly lower spring literacy scores. They began the summer 5 full months behind the control sample. Numeracy Program attendees also had significantly lower grades in reading, writing, oral comprehension and math, and had low spring PMB/DRA scores. These groups had similar compositions of students by gender and grade level.

Effects of Summer Programs:

It is unfortunate that only 38 summer numeracy program attendees had full literacy test data. As Table 8 shows, the spill-over effects of numeracy programs on literacy were sizeable, but not statistically significant due to small numbers. Summer attendees gained almost 0.8 months more of literacy on average; taking various variables into account, this estimate rises to over a full month. The effect sizes across these models range from .11 to .18, and doubles to .36 in a matching model. But as noted above, none of these effects are statistically significant owing to small sample size for the summer programs. Nevertheless, these effects are noteworthy. The summer attendees reduced the initial literacy gap of 5 months to 3.7 months, which reduced the gap by 26%. The numeracy program attendees gained almost 2.5 months of literacy.

However, the gain by the control group was 1.7 months, which is very large. If one compares this summer program effect to the broader English literacy gain of 0.4 months, the difference is statistically significant ($p<.05$). Looking only at those with full test data, the initial gap of 5.9 months shrank to 5.1 months, a shrinking of 14%.

Table 8 – Estimated Effects of Summer Numeracy Programs on Literacy, measured by comparing changes in STAR Reading scores for summer attendees and control students, using OLS Regression

Controlling for...	Summer Effect in GE (years)		Effect Size
No variables	.076	(n=221)	.11
Add Test Interval	.078	(n=221)	.11
Add Above & Boards	.101	(n=221)	.15
Add Above & Gender, Grade	.110	(n=221)	.16
Add Above & Report Card Info	.108	(n=217)	.16
Parent Survey Information:			
Add Above & Parent Education			
Add Above & Other Parent Ed			
Add Above & Family Income			
Propensity Score Matching			
Caliper .01, ATT	.244	(n=191)	.36
OLS on common support	.120	(n=191)	.18

Note: *denotes 1-tailed p<.05, **p<.01, ***p<.001. Effect size is calculated by dividing the OLS coefficient for summer program attendance by the overall standard deviation in summer learning gains, sd=.685).

Overall, these data suggest that it is quite possible that numeracy programs do indeed have spill-over effects on literacy. It is recommended that larger numbers of numeracy attendees be tested in literacy next year.

FNMI English Literacy

Data Collection:

While sufficient numbers of control students were included in this sample, unfortunately there were not enough summer attendees to draw any statistically reliable conclusions. There were 63 summer attendees in the research protocol, but only 29 wrote 2 STAR tests (325 control students had 2 STAR tests).

Recruitment Into FNMI Programs:

The FNMI summer literacy programs tended to recruit students with greater challenges in comparison to the control group. The summer attendees had lower spring literacy scores (though not statistically significant) and lower grades in reading, writing, and

math (though the latter was also not statistically significant) along with lower PBM/DRA scores in the spring.

Importantly, 60% of the summer attendees self-identified as FNMI, compared to only 10% of the controls. The sample sizes for the survey items were too small to detect statistically significant effects – with the exception of language used at home, in which 91% of the controls reported speaking only English at home, compared to 64% of the summer attendees.

Table 9 – Estimated Effects of FNMI Summer Programs on Literacy, measured by comparing changes in STAR Math scores for summer attendees and control students, using OLS Regression

Controlling for...	Summer Effect in GE (years)		Effect Size
No variables	-.038	(n=354)	-.08
Add Test Interval	-.015	(n=354)	-.03
Add Above & Boards	-.052	(n=354)	-.11
Add Above & Gender, Grade	-.049	(n=354)	-.10
Add Above & Report Card Info (including self identified FNMI)	-.041	(n=323)	-.09
Parent Survey Information:			
Add Above & Parent Education	.461	(n=126)	
Add Above & Other Parent Ed	.473	(n=123)	
Add Above & Family Income	.604	(n=105)	
Add Above & English only at Home	.602	(n=102)	
Propensity Score Matching			
Caliper .01, ATT			
OLS on common support			

Note: *denotes 1-tailed p<.05, **p<.01, ***p<.001. Effect size is calculated by dividing the OLS coefficient for summer program attendance by the overall standard deviation in summer learning gains, sd=.472).

Effects of FNMI Summer Programs:

As Table 9 shows, the initial models using only board data yield estimates of non-significant negative effects. Merging the survey data has the impact of both dramatically reducing the sample size by 60%-70% and greatly boosting the estimated summer effect (from a negligible negative effect to a sizeable positive effect that is almost statistically significant). However, tests (not shown) demonstrated that this dramatic shift was due to changes in sample composition, rather than to the impact of the survey variables. Overall, it should be concluded that there were insufficient numbers of FNMI summer attendees to draw any reliable conclusions about the impact of those programs.

Discussion:

The analytic technique of adding successive variables to estimate the effects of summer programs offers a trade-off. On the one hand, it makes comparisons between attendees and controls more valid, because it adjusts estimates for these groups' different student compositions. But on the other hand, it can make these comparisons less reliable since adding more variables tends to reduce sample sizes due to missing data. Here it is important to recognize two different processes: using board/report card data only, it is unlikely that sample bias emerges greatly from missing report card data; however, introducing survey data can lead to sample bias since attendees are more likely to have better survey response rates.

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