Evaluation of the Learning Connections Program 2008-09: Summary Report

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Table of Contents

I. Introduction: Purpose and Methods

The evaluation of the Learning Connections (LC) program over the 2008–2009 school year had two main components: a case study of Algoma District School Board participation in the LC program, and an online survey of the LC community membership. The data that served as the basis for the primary case study report released in March 2009 was collected through a series of on-site interviews held in February 2009; data from additional telephone interviews conducted in June 2009 was used to develop a supplemental report examining the school board's LC–related activities during the remainder of 2009. The online survey was conducted in June of 2009, and a separate research report based on that data delivered to LC management. The present report serves to summarize and integrate the major findings, conclusions, and recommendations presented in these three earlier reports. (Readers are referred to the original reports for detailed presentations and analyses of the data supporting these findings and recommendations.)

This report first briefly outlines the objectives and methodologies for the case study and the LC community survey and then discusses participants' perceptions of the program's benefits and strengths in several critical areas: professional learning outcomes, growth of participant leadership capacity, development of professional learning communities, changes in teaching practices, and improved student literacy and numeracy outcomes. It then examines the obstacles participants reported to effectively using the program's resources and offerings, and its perceived limitations. Suggestions for modifying and further developing the program offered by the membership are described. Finally, based on the findings of both studies the report presents a set of conclusions about the present state of the LC program and offers recommendations for enhancing the value of its offerings.

The report includes as extensive appendix that brings together the major findings of the three prior reports in greater detail than is presented in the main body of the report. A reading of this appendix will make it possible for those interested to develop a much fuller and more situated understanding of the evidentiary basis for the summary statements, conclusions, and recommendations found in the report.

Algoma Case Study

The primary goal of this case study was to create a richly contextualized and nuanced portrayal of the board's uptake and participation in LC as it unfolded over the school year. The background and context of the board's participation, and its history and progress with the program up through mid-February 2009 were studied in depth. In addition, on the basis of the case study findings, a set of recommendations for strengthening and sustaining the LC program's work both within the district and beyond was developed.

In order to better capture the particulars of board and school background and context as well as the perspectives, motivations, and actions of the participants at the classroom, school, and system levels as they engaged with the LC program, a qualitative research design was chosen. It utilized as its primary data source extensive interviews with relevant Algoma board personnel. Group and individual interviews were conducted with the Algoma District School Board Director, the Superintendent of Schools, the superintendent responsible for the elementary schools, two IT managers, a board consultant supporting the LC program, and

the LC-participating principals and teachers from the three schools (Crownstone PS, Anders PS, and Bevone PS[1]) participating in the program. The interviews were conducted on-site in mid-February 2009. They were recorded and transcribed, and then coded and qualitatively analyzed with the aid of Atlas.ti analysis software. In addition, telephone interviews were held in June with the teachers and principals interviewed in February to update the program's progress in the district over the spring. This data was analyzed in the same manner, and served as the basis for the supplemental followup report released in July.

LC Community Survey

The online LC community survey conducted in the late spring had three purposes: to investigate the use that community members had made of LC's professional development offerings, tools, and resources over the past school year; to document their understandings of how and to what extent this use had developed their professional capacity to promote the expansion of literacy and numeracy in Ontario schools, both through its impact it had had on their professional practice and (where applicable) on student outcomes: and finally, to tap their perspectives on the strengths and weaknesses of LC's various program initiatives and resources. The community members surveyed included classroom teachers, lead teachers, and school administrators, as well as those with system-level responsibilities such as coordinators, consultants, regional literacy leaders, and provincial Student Achievement Officers. The survey incorporated multiple choice questions that provided easily quantifiable data on narrowly specified issues of interest, as well as open-ended queries designed to allow for a full range of in-depth responses to key questions. Survey participation was elicited through LC news bulletins as well as e-mail blasts to the community. In order to encourage higher participation levels, potential respondents were offered the opportunity to participate in a draw for portable sound recorders upon completion of the survey.

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[1] To preserve participant anonymity, the names of the participating schools and school/board personnel have been changed in this report.

II. Benefits and Strengths of the LC Program

Effective Professional Learning

Both the members surveyed and the participants in the Algoma case study felt that the strongest and most impactful elements of LC's professional learning offerings were the face-to-face sessions it ran, both on-site and off (the Champion's Day conference and the Summer Institute being the primary off-site events). All the Algoma participants who attended (both teachers and administrators) the Champions Day conference found it to be an extremely valuable learning experience, giving them insights into new ways of using technology to promote literacy and numeracy as well as inspiring and giving support to their own efforts to innovate. Survey respondents indicated that the champions day training been successful in advancing their capacity for using technology in literacy [and to a lesser extent numeracy] education. They valued learning about new technologies and their applications, and had made moderate or extensive use of the new approaches and tools in their practice (see discussion below). Most had thought these uses to be effective and several had shared what they had learned with colleagues or "client teachers".

The Algoma teachers and principals who participated in the two on-site LC planning and orientation meetings held in the district in the fall of 2008 by found the sessions to be a valuable introduction to LC and its potential for helping them achieve their literacy teaching goals. Survey respondents who had participated in site-based visits made to their region by LC management generally found these to contribute in a significant way to their development of literacy and/or numeracy teaching strategies. Most also found that strategies, approaches, and/or tools presented at a moderate or high level of applicability to their teaching or consulting needs.

It is important to note that strong support for fostering teacher professional development through LC coming from both senior board administrators and principals was found to be critical to the success of the Algoma LC initiatives. These administrators were actively involved in developing plans for integrating the use of LC resources and offerings in ways that best supported the TLCP initiative under way in the board at the junior level, and principals encouraged and supported the LC teachers at all stages in their efforts to develop and promote change. They listened carefully to their teachers, sought out and responded to their needs and suggestions, shared strategies and ideas for literacy improvement and technology infusion learned at LC meetings with teachers, had LC teachers provide professional development leadership in their schools, shaped the scope of endeavours to maximize the chances for success, and provided psychological support for risk-taking.

Another form of professional growth opportunity the LC program sponsored in Algoma (in conjunction with the school board) was the provision of a total of 2 full days of release time awarded to the four LC teachers from the three participating schools, which allowed them to meet together to learn about podcasting and develop their strategies for using it within the TLCP literacy work each school was undertaking in the 2008-09 school year under the board's direction. These sessions, largely led by the one LC teacher who had advanced much further than his colleagues in the use of podcasting and other digital storytelling tools, proved highly effective in helping teachers master the operation of the podcasting tools and understand how they can be effectively used to achieve specific literacy learning objectives in teaching. The teachers reported that the availability of this time was crucial to their successes over the year.

Growth of Leadership Capacity and the Development of Professional Learning Communities

As a consequence of their participation in LC three teachers in the Algoma district had assumed leadership roles with their colleagues, leading or co-leading sessions professional learning sessions on integrating technology into literacy teaching activities. These sessions have been held for fellow teachers both within the leaders' own schools and on a few occasions in other LC schools in the district. These leadership efforts (sometimes arranged and always encouraged by school administrators) have been effective in promulgating the use of podcasting by a number of the teachers in two of the three LC schools in the district (the remaining school ran into technology limitations over the year that impeded any significant use of podcasting).

One teacher in particular took a major leadership role over the course of the year, leading sessions for teachers on podcasting at both the Champions conference and within his own board (one of which was videotaped for LNS use as a training resource), and regularly posting the resources he had developed on the LC portal. He also directly tutored the other junior division teachers at his school in strategies for incorporating podcasts into their critical pathways work. In addition, he developed strong collaborative relationships with three colleagues he had met at the Champions conference; he went on to co-develop and implement a major cross class service learning project using technologies to support literacy development with one of these teachers.

Most of the surveyed teachers reported that LC participation had led to greater collegial collaboration with colleagues in similar positions, and an increased sense of efficacy as a leader in literacy and/or numeracy. They also noted that their participation had made them feel part of a larger community of learners. In the Algoma district, the provision of the time for face-to-face meetings by LC teachers from three different schools fostered the beginnings of a strong new teacher learning community, one which should provide an effective vehicle for advancing the infusion of new teaching strategies in the district.

Growth in Teacher Professional Practice

LC participation led teachers to assimilate new and innovative technology-enriched practices into their teaching repertoires and teacher leaders to infuse new strategies and content into their leadership activities. The large majority of teachers surveyed felt that their participation had led them to learn and apply new literacy teaching strategies. A number of them recounted cited specific instances in which they applied their new knowledge in their teaching or leadership roles (a few examples are found below). Participation in LC activities including portal use and professional learning events were reported to have lead substantial numbers of teachers (up to 56% of those surveyed) to increase their use of a broad range teaching strategies that LC works to promote, including a focus on nonfiction writing, ongoing assessment and feedback, greater student technology use, gradual release of responsibility to students, the integration of media literacy into the literacy program, and several other strategies specific to literacy and numeracy teaching. The majority of teachers consistently reported growth in knowledge and changes in perspective in directions LC was working to foster, such as developing deeper knowledge of how to use technology to facilitate literacy and numeracy development, shifts in perceptions of student abilities, heightened concern about assessment and evaluation, and greater professional satisfaction with teaching and sense of efficacy as a teacher.

The most frequently reported usage of LC resources by survey respondents was of the "robust thinking tasks" materials and resources, which were employed by consultants, coordinators, and other teacher leaders in their professional development leadership activities These resources and activities were also made use of in the classroom by several teachers, and served as a resource for professional discussions within teacher groups. Resources related to "Making Connections" and the "four roles of the literate learner" were also used by several respondents both in the classroom and in leadership activities. A few representative examples of reported uses of LC resources and knowledge gained are quoted below (more can be found in Appendix 1):

> I have used the resources, articles, and activities around Making Connections. Specifically I have been involved in helping teachers create more robust thinking tasks and have used the materials from the web conferences to support this work.

> Greater discussion around "robust thinking tasks" with literacy coaches and other teachers at our board. More opportunities to share student work found on the site. This has also been shared and dialogued with other colleagues in our board.

> Using the information on Podcasts has allowed to me develop lessons in schools throughout my Board. They have used it to promote Silver Birch and Red Maple in many forms: Read Alouds, book reviews and PA Announcements.

Two of the four Algoma LC teachers were able to make use of the strategies they had learned about and developed in their release time collaborations by incorporating podcasting as an activity within their Teaching-Learning Critical Pathways classroom work. (One of the teachers had no classroom responsibilities, as he was a SERT who worked solely with withdrawal students; he had several of his students create podcasts to complete assignments as a means of overcoming severe writing difficulties.) The teacher who led the Champions Day session on podcasting, Steven, made extensive use of podcasting over the winter and spring, adding student podcasts to a "web radio" website that were accessible to parents and the community. He also engaged in several other technology-enhanced learning activities that focused on literacy and (in a few instances) numeracy, such as digital storytelling, as well as the collaborative cross-class service education project incorporating joint wiki authoring that was mentioned earlier. He had taken several teaching strategies from the LC portal and applied them in his classroom and have been very satisfied with the quality and value of these offerings (his activities are discussed in some detail in Appendix 1). The two junior division LC teachers in the other two LC schools had some of their students engage in podcast projects over the course of the winter and spring (in one school, progress had been severely limited by a lack of appropriate technology). In addition, several other junior division teachers at Steven's school had begun incorporating podcasting into their literacy teaching activities, although they had not progressed as far as Steven in this regard.

Improved Student Outcomes

Most of the teachers who participated in either the survey or the case study thought that their introduction of new forms of technology-augmented teaching and learning, which had been stimulated by their LC participation, had had noticeable positive effects on several student

outcomes. Moderate to extensive increases and improvements for a range of desired outcomes were reported on the survey by the majority of teachers, including higher levels of student engagement, greater demonstrated student independence, improved student results, and significantly greater student collaboration. Here is an example of one teacher's reflection on the impact of his LC participation and the effects it has had on his students:

> I participated in three LC webcasts along with our literacy lead teachers and three other classroom teachers from our board. I found that being involved changed the kinds of activities and questions that I asked my students during literacy block. I have noticed since using the four roles of the literate learner to create robust thinking tasks my students are better able to think critically about what they are reading and are better able to formulate their own opinions about different issues.

All of the Algoma teachers noted that as a result of engaging in podcasting and other technology infused learning activities inspired by LC, students were demonstrating higher levels of engagement and persistence. Students' knowledge that their work was to be made available to the wider world through a website proved to be consistently motivating, generating greater self initiative as well as a more mature a tendency to self-monitor and revise their work. The teacher who had made the most substantial use of communicative technologies such as wikis and videoconferencing (Steven) found that these tools promoted collaboration and mutual accountability for work quality. There were also indications that some students had shown improvements in the maturity and depth of their writing, as well as their self-confidence as writers. The persistence of these positive outcomes through the school year suggested that they were not primarily due to the initial novelty of the new forms of learning.

III. Perceived LC Limitations and Suggested Enhancements

Barriers to LC Use

The surveyed teachers were asked what barriers they encounter in their school that limited their use of LC. By far the most common obstacle cited was a lack of available time due to competing priorities; this was mentioned by eight of the twenty teachers replying to the question. One teacher offered a detailed perspective on the time pressure she felt:

> There are too many initiatives happening. Teachers are feeling stressed and as we... begin one initiative another is thrown at us. We do not have enough time to consolidate our learnings. I also feel that every teacher is at different stages in their teaching. Some are ready to take on new challenges and others aren't. This causes a lot of stress on the staff in general.

Time pressures were also mentioned by case study teachers as limiting LC participation, although not to the same extent, as these teachers had had more opportunity provided to work together, during release time provided by LC on several occasions over the winter. However even in the case study a lack of time was the most common explanation given by both administrators and teaching staff for not having explored the LC members portal.

The second most frequently cited limitation to participation in the LC program cited by both survey respondents and case study participants was the usability and/or content of the LC members portal. In response to an open-ended survey question about the specific difficulties that the LC portal imposes on accomplishing desired goals, a total of 24 answers were given. About 10 of the responses cited difficulties in navigating the site and finding what was being looked for. For example, one person answered, "The concept is fantastic but the portal is too bulky and too much to navigate through." Two teachers mentioned that it takes considerable time and commitment to work through the portal and look for information on it. A few teachers noted that given time pressures, if teachers cannot get to what they want on the LC site in about a minute, or within three or four mouse clicks, they will not return to it. The entry page to the portal, with its nine large clickable images leading to different areas, was thought by several case study participants to provide a well designed starting point for the LC portal that made it relatively easy to locate and move to content of interest. But most teachers liked the idea of having a line or two of text accompanying each of the nine images that offered a bit of explanation about the area they led to because the relationship of the images to their respective areas was not always self-evident. The Algoma consultant, who had worked with both the old and updated versions of the portal—it was heavily revised and its interface simplified in the spring of 2008—found the new version much easier to navigate. But even after the redesign, two of the four Algoma teachers reported encountering difficulties when trying to locate content. One stated "I can't always find things that I am looking for. For example, we were trying to find a survey—where was it?" Certain content areas in the portal were thought in need of strengthening by several teachers from both studies (see next section).

A few teachers in the survey mentioned that they had limited access to appropriate technologies with which to participate in LC. Logistical and organizational difficulties encountered in attempting to collaborate with colleagues in a professional community was also raised by a few respondents as a barrier to LC use.

Respondents with system-wide responsibilities were asked on the survey what school board level barriers existed that limited their use of LC. Six indicated there were no such barriers, while a lack of time was cited by six others. The remaining ten responses were largely unique: these included a lack of money for release time, curriculum initiative overload, a board numeracy focus LC did not address, and a lack of workspaces with appropriate technology.

LC Program Improvement

Survey respondents were asked to rate each of a series of possible LC program changes that had been identified by the LC champions over the year for their potential for increasing LC's capacity to support teachers' professional learning and work. Several of the suggestions that had been offered by the Champions group were thought to be extremely valuable potential additions to the LC program by approximately one half or more of the respondents: adding additional portal locations (organized by division) for accessing available non-LC professional resources and websites and for sharing classroom practice; expanding the portal to provide direct access to LNS resources, and to relevant sites at the Ministry and EQAO; increasing the portal's numeracy resources; and scheduling Adobe Connect sessions on high interest topics for professional learning. Most of the other suggestions were considered to be of moderate to high value. The least favored suggestions were for the provision of a synchronous chat tool in the portal, and the creation of a community suggestion box on the portal.

In their write-in responses addressing possible improvements to the LC program, a significant number of those surveyed indicated that the value of LC as a professional development and community-building resource would be enhanced by improving the usability and efficiency of the portal for accomplishing desired objectives ranging from finding new resources to locating partners for collaboration. A few respondents asked that the portal allow for automatic self-registration for upcoming events, and for more links in the portal to numeracy resources. One requested notification for upcoming events and new postings; another, that LC email instructions for downloading materials associated with a scheduled videoconference earlier than two days prior to an event to give more time for preparation. To provide quick access to LC portal orientation materials for new members and infrequent users, it was recommended that a prominent link be added on the LC members portal home page to a page that briefly outlined for community participants what each section of the portal had to offer, described in terms of what it could add to their teaching.

Several suggestions geared towards improving the members portal were also made by case study participants. There were a few requests made for more numeracy resources—numeracy was an area receiving greater attention at the Junior level in the Algoma board as the new mathematics curriculum documents from the Ministry were being implemented. A few teachers wanted to see more work exemplars. The Crownstone SERT stated:

> I would love to see some student work exemplars whether in video format, in text format, anything. Whether it is problem solving, drill, anything like that where you are able to see the actual students doing their work, discussing their problem solving methods, communicating their results to each other. I would love to see more of that and that is something whether I missed it or not, I haven't really seen it.

He also thought there should be more prominence given to resources for special education. He thought if that a link to a special education area was made one of the nine main buttons on the entry page "it would draw resource teachers and those involved in special education to a quick spot to go to."

The one teacher in the case study who had made extensive use of the portal offered many suggestions for improving both its usability and content. Asked about its design and the ease of access it offered to resources, he commented:

> It really works for me because I am on it quite a bit. But if I am quite honest for somebody who doesn't access the portal an awful lot, there are so many good resources on there, how do they know where to find them. For instance, the online library has I think 30 components to it or something like that. So many. And unless you take the time to go through each and every one it is really hard to know what is there.… It is just a matter of checking it out. But for people who don't spend a lot of time on it, would it be the most user friendly? I think you really have to take the time to even spend an hour and just go through and find out where everything is.

He thought it might be valuable to give more prominence to particular areas of the portal that have the greatest utility: "Do you take the time to experiment, just clicking all around, or do we just get the word out that that what we really need to focus on is the online library and the project workspace?" He felt there could a place for a features section that would be periodically changed. "So if you have had a face to face conference, and the two key things talked about were podcasting and voice threads, put links to features on those on the home page."

This teacher saw the portal as needing to provide more resources addressing digital literacy assessment:

> There is definitely a section in the online library for assessment but a lot of it is the basic assessment resources that we have access to on our back counters anyway. As far as extending to 21st century literacy, no we're not up to speed yet on where it should be. But the portal has grown by leaps and bounds just in the last four or five months, so I don't think it will be long until we are there.

He also thought the portal content relating to the educational applications of Wikis and of videoconferencing needed further development, as these tools had "a ton of potential", but he made a point of stressing that this lack of content "is not the fault of LC" as the community itself needed to contribute resources.

After requests to improve the portal, the second most commonly made recommendation made by survey respondents was for the provision of more opportunities (through release time) for face to face professional learning sessions and collaboration. Respondents also sought professional learning sessions on several individual topics; for example, there were individual requests for sessions and resources addressing specific student population teaching needs (such as those of autistic students), and a session on school and board improvement planning. More primary level resources were requested by a few respondents. (It is important to note that there was a substantial minority of respondents who expressed satisfaction with LC "as-is".)

Finally, those in leadership roles were asked on the survey what would be required in order to extend and increase their district's participation in the LC program. A few respondents thought raising awareness of the program among teachers through better communications and marketing was needed. Several cited a need for supply coverage for groups of teachers so that they would have the time available to participate in professional learning and collaboration in a meaningful way, as local funds were not available for this purpose. Training for "all staff in our schools" was requested, as was time to provide a board's literacy coaches with the training they needed to share how LC can be used with school staff. A need for better notification of upcoming events and resources was mentioned by two respondents. Administrators saw a need for resources and offerings in the portal that would support principals' leadership development around literacy and numeracy education.

IV. Conclusion and Recommendations

Uses and Outcomes: Algoma District

The Algoma District School Board has clearly made a strong second start with LC this year. Support for and commitment to the district-LC partnership, from teachers through to senior administrators appears strong. The alignment between the Ministry, district, and school policies and plans for literacy and (to a lesser extent) numeracy improvement and LC objectives and methods is well-honed, participation in the LC program has clearly begun to facilitate the district's efforts to improve the level of student literacy and introduce new tools to support that process. Significant progress was made over the 2008-09 school year in introducing podcasting as a pedagogical tool for fostering literacy into the practice of a number of teachers at two of the three schools participating in the LC program. With Steven's guidance the four LC teachers had made effective use of release time provided by LC to work together in developing their knowledge and skill in the application of technology (primarily podcasting) to the curriculum and in particular to the literacy teaching strategies being applied by the board to implement the TLCP Ministry initiative. At Crownstone PS (Steven's school) it had been possible through well-planned application of available release time to extend the use of this technology beyond Steven's classroom to several other teachers as a result of exceptional leadership on the part of both Steven himself and the school's principal. Steven continued through the year to make appropriate and effective applications of technology in his teaching for a range of purposes in ways that promoted high levels of student initiative and engagement as well as collaborative problem solving. He extended a collegial collaboration he had initiated at the Champions Conference, working with a teacher from another district to develop and implement a major cross-class service education project that made considerable use of technology. Both Steven and his principal indicated that the new learning activities he had introduced were effective in further developing students' traditional and digital literacies. The SERT teacher at Crownstone had also made effective use of podcasting working with individual LD students. And Ken, the LC teacher at a second LC school, had done podcasting work with many of his students with apparent success, and had presented on its use to fellow teachers at his school.

However the schools had not been as successful as hoped in the latter part of the year in their integration of podcasting into the TLCP initiative at the schools. This was attributed to a lack of focus in the implementation of the initiative itself, as well as to the fact that two of the schools did not receive their laptops until mid-April, inhibited the extent of podcasting at these two schools. This latter factor was especially problematic at Bevone PS where the lack of appropriate technology essentially stymied any meaningful use of podcasting by the participating teacher. And, as Steven himself pointed out, the undertaking by the schools of a major new programmatic initiative like TLCP while simultaneously attempting to integrate new technology tools into teachers' practices may have been overly ambitious, and appeared to impede the adoption process. But in spite of these partial setbacks, the participating teachers and administrators were far from discouraged, and had the full intention of extending their participation in LC and the use of technology over the coming year, taking the lessons they had learned to guide them in their next steps. They continued to express their commitment to integrating digital tool use into the literacy and numeracy teaching strategies employed in their classrooms.

Uses and Outcomes: Provincial Survey

The survey respondents had used a range of LC's tools and resources for various purposes, the most common being the application of the "robust thinking task" materials LC provided either directly to classroom teaching or in consulting or professional leadership activities. The other resources most frequently used related to the "Making Connections" initiative and the "four roles of the literate learner" teaching model. Consultants and leaders brought resources and ideas back to their local PLCs and schools through a number of channels and approaches, and teachers reported using several LC-derived strategies and resources in their classrooms and to a lesser extent collaborating with colleagues around these.

The large majority of teachers surveyed felt that their participation in LC had (to a greater or lesser degree) led them to learn and apply new literacy teaching strategies, and many in their open-ended responses cited powerful examples of applying their new knowledge in their teaching or leadership roles. Significantly less learning and application of new numeracy strategies took place, however, with about half reporting a moderate level of application and one quarter a slight application. A substantial majority of survey respondents did indicate that there had been a significant degree of professional knowledge gained, as well as changes in perspective and outcome in the directions LC was working to foster, such as an expanded knowledge of technology use to facilitate literacy and numeracy development, greater observed levels of student collaboration, and improved student results. A large set of Ministry-endorsed teaching practices actively promoted by LC were reported as being used more frequently by 30 to 60% of responding teachers. A majority indicated that they were making more use of cognitively demanding tasks, collaborative learning, critical inquiry, and ongoing assessment and feedback. Most of those in leadership roles had found LC effective in developing their literacy and/or numeracy teaching leadership abilities.

Professional Learning Opportunities

The LC members who took advantage of the face-to-face learning opportunities provided by the LC program over the 2008-09 year generally found them valuable and effective. Both the LC members surveyed and the Algoma case study participants who had participated in the Champions conference reported making use of the strategies and tools they had learned about in their teaching or leadership activities. Algoma teachers and administrators thought the sessions there had given them valuable knowledge of new digital tools and strategies for their use. While already familiar with podcasting to varying degrees, they felt the conference had deepened their understanding of what could be done with it, and they also appreciated being able to explore the pedagogical potential of other tools such as Voicethreads and the opportunity to discuss experiences with colleagues from different school districts. Algoma staff at all levels also found the two onsite visits made by the LC managers extremely valuable in helping them learn more about the program's affordances, as well as plan for the alignment and integration of LC program resources and offerings into the board's professional learning initiatives for the year. The survey respondents who had participated in the site-based sessions run by LC management typically reported that these had contributed to their knowledge of literacy and/or numeracy teaching strategies and had applicability to their teaching or leadership/consulting activities.

The LC Portal

The LC members portal had been significantly improved as a consequence of a redesign the prior year, and a majority of the survey respondents who had used the portal in 2008-09 found it to be effective for accomplishing a range of tasks. Most respondents had employed it

to download resources; however, only about one half of those surveyed had used the portal for tasks such as sharing resources or seeking out collaborators, and only a minority made several uses of it for any purpose. Of the case study participants, only one individual—Steven—made any substantial use of the portal over the year. Lack of use was typically attributed to either lack of time or a lack of knowledge of what the portal had to offer.

The portal was still seen as having less than optimal usability by a significant proportion of community members, and additional online resources were sought from it by some. Both the case study participants and survey respondents made a number of recommendations for enhancing its functionality and enriching its resources (see the earlier discussion). The recommendations developed in the next section of the report incorporate some of their suggestions.

Recommendations

The recommendations offered below are derived from the findings of both the case study and the survey, and are directed at enhancing the effectiveness of LC as a program for developing teacher capacity to promote student literacy and numeracy. The recommendations address areas of the program that are currently underdeveloped and/or underutilized, such as the members portal, resource sharing options, and the provision of opportunities for collegial collaboration, as well as areas that are more fully realized and effective, such as LC's professional learning offerings and its rich set of learning and teaching tools. The recommendations present program alternatives and suggest new or enhanced implementation strategies that should help further strengthen the LC program and its professional community of members as facilitators of meaningful school-based change, and expand the program's reach to bring its evident benefits to a significantly larger group of educators in the province. If implemented, they should enable LC to better meet its capacity-building objectives for its current membership while at the same time ensuring that if and when it expands its audience it can build new partnerships in ways that enhance the likelihood of continued success.

1. The effectiveness and success of LC in any school district is predicated in large part on its receiving active support and supplemental resources from the district leadership. While the intent of LC is to promote teacher professional development that is primarily participant driven, research by Michael Fullan and others has shown that meaningful systemic change requires both bottom-up and top-down initiative and leadership. Building and maintaining administrator support and leadership remains critical to the program's ongoing success, escepeially when it looks to bring the benefits of its program to new school districts. The selection of a school district for participation in the LC program should have as a critical criterion an explicit commitment on the part of senior district administrators to having their curriculum support and IT staff work together to support the new modes of professional learning LC facilitates. LC program management must also ascertain that the board leadership is pedagogically aligned with and fully endorses the types of collaborative, embedded, and practice-focused professional growth that LC enables, and can provide the technology infrastructure needed to ensure success within the board's participating schools.
   In all districts, employ several complementary strategies to build the necessary administrative support for LC. Work to ensure that the professional development resources and activities available to each district are closely aligned with the district's improvement plans, tailoring the activities and resources offered to effectively

support the board's most pressing priorities in literacy and numeracy improvement. Demonstrate to administrators how LC's goals and professional development offerings support district improvement objectives in literacy and numeracy, Help administrators leverage what LC has learned about effective practices and applications in its prior work in other districts and through its research and evaluation studies to more quickly build literacy and numeracy teaching capacity in the district.

2. When bringing the LC program into a new school district (or reinvigorating the participation of a current member district), LC managers in conjunction with board administrators should select several schools within the board to begin working with simultaneously, rather than focusing on just one school. Developing professional networks for teacher collaboration and mutual collegial support is nearly always an essential element in the building of school and district capacity, and this network building is most effectively done first at the local (board) level rather than at the provincial level. There are several reasons for this: the greater opportunities to utilize shared release time for face to face teacher collaboration within a board due to common schedules, shared funding priorities, and the geographical proximity of teachers; the existence of a set of common, board-wide improvement objectives and strategies; and (more broadly) a shared educational culture. Once district-level practices of cooperation and innovation have been institutionalized through the establishment of district PLCs, efforts to build inter-board and provincial PLC's will have a much greater probability of success, as teachers will then only be required to extend their existing professional learning practices into a larger domain.

3. The schools chosen for initial participation in LC within a district should have on staff at least two and preferably more teachers who are enthusiastic about participating in LC to further their professional growth, and are open to using technology to support advanced learning in their classrooms. In addition, these schools need to have principals who will be supportive of LC's methods and goals. Meeting these prerequisites will greatly increase the likelihood that LC participation can facilitate capacity building that extends beyond the one or two staff formally involved in the program and begins to change the pedagogical culture at the school level.

4. Provide a high level of direct, embedded support to new schools during the first year of new or renewed LC participation. At least two half-day face to face professional development sessions with school administrators and participating teachers should be held on-site at each board during its initial year in the program. Face-to-face sessions of this type have shown themselves to be invaluable (both in the present case study and other technology infusion research) in building initial confidence and comfort in using new technologies, developing teacher willingness and capacity to experimenting with new pedagogical practices, and establishing the kinds of personal and professional relationships essential for sustainable online PLCs .

5. The initial LC-supported projects in which teachers are involved should be tailored to maximize the likelihood of success. To that end, they should be relatively small in scale, incorporate the use of technologies in a manner that a comparative novice can master fairly quickly, and are thought likely to have a significant impact payoff in higher student engagement and improved quality of work (both as process and product).

6. Increase LC program awareness outreach, communication, and marketing to teachers as well as leadership and support staff in those school boards that are currently participating in the LC program. Several of the survey respondents were not well acquainted with the program, and there were many who wanted to see LC managers extend their efforts to expand the knowledge of the program's offerings and resources to consultants, literacy coaches, and classroom teachers within their boards. It also seems that some LC members are not fully aware of the opportunities LC provides in conjunction with their districts for teacher release time funding to support collaboration and participation in LC initiatives. It is recommended that more prominent notifications and reminders of this availability be presented on a regular basis to the membership.

7. Build the capacity for LC schools to support teacher and student participation in videoconferencing and to provide easy access to multimedia resources, as this is likely to be critical to LC's long-term effectiveness in building inter-school PLCs and promoting change. Work with school board and provincial IT departments to address the lingering reliability and usability issues related to the use of Adobe Connect Pro for videoconferencing. Because this software is provincially licensed, school boards (and LC) are adopting it as a videoconferencing solution, but it has proven to be unreliable for connecting multiple groups together for conferencing due to an interaction of software limitations and networking/firewall constraints. Videoconferencing has proven itself be a powerful medium for building strong PLCs in other contexts, as it helps to establish the critical personal connections required for success, but in its current state of functionality it can only play a very limited role in the LC program. Steps should be taken when bringing LC to a new district to ensure that (to the extent technically possible) schools will be able to reliably make use of these central technologies. District IT managers should continue to be an integral part of the planning team, and IT personnel need to be tasked to test and (if necessary) upgrade network architecture and set firewall exemptions to allow teachers easy and reliable connectivity. Given the general lack of reliability of inter-district, multipoint educational videoconferencing in Ontario at present, it is suggested that schools begin their LC participation with activities that are not dependent on the use of videoconferencing for success.

8. Simplify and reorganize the LC portal to provide easier, more rapid access to resources and discussions of interest. The survey results indicate that the portal redesign undertaken two years ago, while considerably improving its usability, has not fully resolved the difficulties many LC members encounter while trying to quickly locate and navigate to desired resources and forum areas. Members should be able to arrive at any desired resource or forum in three or four clicks. A simple how-to guide for navigating the portal and performing tasks such as uploading teaching resources should be prominently linked to the portal's home page. The two suggestions for portal change coming from the LC Champions' group that were considered extremely valuable by a majority of survey respondents should be implemented—a reorganization by division of the portal area dedicated to the sharing of classroom practice by members, and the provision of a well-indexed, hierarchically organized area of the portal for accessing current professional teaching resources and websites. It is strongly recommended that iterative usability reviews be included as an integral part of any further portal design and development work in order to ensure that any significant structural and organizational weaknesses or usability impediments are identified and rectified early in the process.

9. Provide easy access through the portal to the rich set of documents, video exemplars, and other professional development resources being released by the Literacy and Numeracy Secretariat. This access was requested by several survey respondents. These high-quality materials are fully aligned with Ministry's priorities and expectations, and provide teachers with a powerful professional resource for change, especially if they can be used as a basis for teacher discussion and collaboration in PLCs, either through the portal or in face to face sessions. Targeted LC activities could be built around key documents to support this learning further. In addition, links to EQAO testing materials such as practice test items which are frequently used should be provided. The prominent presence of these resources will increase the value of the portal to end users, draw more traffic through the site, and possibly entice more LC members to explore LC's other offerings more thoroughly.

10. Make streamed media that are currently accessible through the members portal available for download as well (usage rights permitting). School district firewalls commonly prevent access to many streamed media. Providing the option of downloading these resources in advance of need, while perhaps a less convenient option for the teacher as it requires more preparatory work, will make it possible to circumvent this frequently encountered limitation.

11. Increase the quantity of LC resources and professional development activities directed at enhancing teaching for numeracy development. The recent release of a new Junior division mathematics curriculum has brought increasing attention to numeracy development across the province. Both Algoma staff and administrators as well as several survey respondents saw LC as lacking sufficient numeracy resources and professional learning options to optimally facilitate numeracy development.

12. Implement on an occasional basis additional synchronous, live professional learning sessions on topics of high interest to the membership. If available videoconferencing technologies are not reliable enough to properly support two-way multipoint videoconferencing, a one-to-many model of one-way delivery could be employed in conjunction with an IM chat channel for asking questions and interacting with the presenter. A majority of those surveyed thought that sessions of this type would be highly valuable. LC members should be asked to submit potential topics for these sessions and then, once a list of topics is compiled, it should be subject to a vote by the community, with the most popular topics being selected for sessions to be run over the year.

13. Address the issues respondents raised in the survey related to the process of signing up new members. If possible, implement an automated registration system for those e-mail address domains associated with school boards and provincial educational agencies and departments. A registration system similar to those used by many online forums, which require an applicant to provide a valid e-mail address to which is sent a web link that must be used for access verification, might be sufficient to avoid inappropriate portal access. Direct access to the ABEL portal for LC community members without the necessity of a manual e-mail request should also be considered and implemented if feasible, as this was frequently sought.

14. The LC program is no longer automatically providing computing hardware to new member schools, but (according to a program manager) it does work to augment school equipment when a lack of available technology severely impedes program

participation. Rather than purchasing and delivering hardware which may not meet the recipient board's requirements around disk imaging or networking, it is recommended that LC should look to subsidize the board's own purchase of appropriate equipment, allowing the board the flexibility to acquire hardware that best meets its needs.

15. Finally, research and evaluation has been a central component of both the LC and ABEL programs for several years. It has been of critical importance in informing and guiding iterative program improvements that better meet the professional development needs of participants, advance classroom practice, and enhance student outcomes. It has served to document program successes, illuminate programmatic concerns and implementation issues, and provide empirically-grounded recommendations that have helped shape implementation strategies and program offerings. Research and evaluation needs to continue to be an integral part of program design and be budgeted appropriately in order to further advance LC's effectiveness, scalability, and sustainability.

V. Appendix 1: Summary of Findings

Algoma Case Study

Planning and Implementation

The Algoma District School Board (ADSB) first joined the LC program in 2006/2007. It had a challenging and often frustrating time through its first year of participation. Technical difficulties encountered when using videoconferencing technologies seriously impeded videoconferencing connectivity which was either essential or important to effective participation in many of the LC events that teachers and administrators from the district attempted to join, as for example an online book study which drew participation from many LC members province-wide. These impediments led the LC teachers and the principal in the one elementary school involved with LC that first year (Crownstone PS) to take a hiatus from LC participation in the following year when the connectivity issues remained unresolved. It was anticipated that upgrades to the district's wide area network capacity, in place by the start of the 2008/09 year, would make it possible for the board to resume its participation free of the prior problems.

As a result, two face-to-face meetings were held in the district offices with the LC management team in October and December 2008 to reintroduce LC to the board and explore how LC could support two new district initiatives. The first of these initiatives was a technology deployment to support the new media literacy expectations found in the revised Ontario Language Arts curriculum, grades 1-8; and the second, the distribution of (and inservicing around) new web and print-based literacy support resources that were being released by the Literacy and Numeracy Secretariat (LNS) of the Ministry of Education. ADSB senior administrators decided to formally bring two additional elementary schools (Anders PS and Bevone PS) into the LC program for the current year in addition to the school that had participated before. It was anticipated that teachers in these schools could leverage the tools, resources, and network within the LC community to collaborate around efforts to teach students how to "make inferences", "express personal opinions", and "identify a point of view"—all key outcomes for the Teaching-Learning Critical Pathways (TLCP) strategies being promoted by the LNS and which had been adopted board-wide in the Algoma district. The administrators also saw high value in the embedded, blended, and learning community-centred model of professional development that LC employed in its program, and thought LC could provide strong support for the district's focus on the TLCP initiative. LC's professional development strategies were ones they fully endorsed and had started to implement in their own internal programs; they had already made considerable use of teacher professional learning communities (PLCs) to foster professional change.

The elementary superintendent noted that the junior-level teachers in her board were generally not well advanced in their numeracy teaching skills and needed support in implementing the new numeracy curriculum initiatives being released by the Ministry, and was hopeful that LC could provide support for the PLCs that would be addressing this area.

The participating teachers and principals from the three participating Algoma schools saw LC as making available professional growth opportunities, resources, and tools that were well aligned with their own goals for student literacy enhancement. Keith Woods, the consultant who served as the board's liason to the program, saw LC as giving a focus to extant efforts to advance students' digital literacies, and providing supports to teachers using

the related technologies with their students. He also thought that through its support of such activities as podcasting, LC was advancing teacher perceptions of what student literacy entailed. The effective use of technology tools could he felt lead to the development of more differentiated learning, since "students have multiple entry points and comfort levels that they can get into with whatever project they are working on....That just opens an amazing number of doors for students".

The principals from the three LC schools, together with four junior division teachers from these schools (volunteers invited to participate by their principals), attended the second of the two meetings with LC managers. During this face-to-face meeting in December 2008, they were introduced to what LC had to offer, and explored ways in which LC could support new activities by these teachers. The teachers and principals who attended found these sessions to be a valuable introduction to LC and its potential for helping them reach their literacy goals in their classes and schools, although they were also aware that they still had much more to learn about it. By that point in the year, Steven Cornell (an LC teacher at Crownstone) had already begun his work using an audio editing program called Audacity to address some of the new media literacy strand expectations in the Language Arts 1-8 curriculum, having students create podcasts that were linked to a custom "radio station" class web site, and he had been posting related teaching resource contributions such as lesson exemplars and rubrics to the LC community portal. His students had also done some digital story development using Photo Story software.

The three principals from the participating schools as well as their designated LC teachers travelled to Toronto to participate in the Champions Day training session run in January. Without exception they reported that they found the day extremely valuable, opening their eyes to new ways of using technology to promote literacy and numeracy, inspiring and giving support to their own efforts to innovate, and starting their induction into a new, province-wide PLC. Steven took a leadership role at the event, leading a podcasting workshop session and joining with three other experienced teachers to develop a collaborative sub-group with its own web site.

Following the face-to-face event, the LC principals and teachers made the joint decision to focus their initial collaborative planning and implementation efforts solely on the use of podcasting, rather than pursue the consultant's original suggestion of specializing in a unique technology tool at each school. The choice to pursue only podcasting during the initial months of LC participation was made for several reasons: to better leverage the knowledge and leadership that Steven had developed around podcasting; to make it possible for the other LC teachers who were less experienced and to some extent less comfortable with technology use in teaching to learn collaboratively and provide mutual support to each other as they took on new risks; and to maximize the likelihood that this first step in technology-based innovation in literacy teaching would be a strong success. It was also thought that by developing a core group of teachers who were successful in the use of one tool, a strong foundation would be created for scaling up that tool's use in the board, and for a later expansion of the teachers' repertoire to encompass other strategies and technologies. The teachers and principals involved decided to fully integrate all podcast development activities within one of the Teaching-Leaching Critical Pathways goals that each school had independently chosen to focus on this year, both to strengthen the impact of these activities on identified critical literacy needs in each school, and to better promote their full integration into teaching practice.

LC funded two half-days and one full day of release time for the four LC teachers to work collectively on podcasting and its integration into the junior literacy program. These days were found to be extremely valuable by all involved. Steven took the lead in the first sessions, guiding the others through the operational aspects of podcast creation and addressing the pedagogical aspects of its use in relation to literacy development as he demonstrated what he had done with his class. The last full day session was filmed for use as a LC professional learning module; in it teachers (including several from Crownstone as well as the designated LC teachers from the other two participating schools) were guided by Steven through the steps required to create the custom web "radio" web sites for the posting of student podcasts and populating the site with these podcasts. The teachers considered these face to face sessions extremely valuable for advancing their knowledge of podcasting and its uses, as well as enhancing their comfort level with technology applications in teaching more generally. Bringing all these teachers together to see a successful implementation "allowed them to see the real connections to teaching from somebody who teaches the same curriculum as they do", noted the Crownstone principal.

Subsequently, all of Crownstone's participating classroom teachers had their students create podcasts "using the information from the critical pathways, so that it became the culminating activity" for their pathway work. Each had developed a website for their students' podcasts that paralleled Steven's. Ken Soames, the LC teacher from Bevone PS, had not advanced to that stage yet, but planned to do so as his own culminating activity. Some of his students had created initial podcasts incorporating music as a background to their narration of their own short stories but had not developed their work fully, and he had yet to create a web site for podcast posting. (When he told his class that their podcasts would be going up on the internet eventually and that people around the world will be listening to it, they immediately went back to fix any errors in their work.) Jeff Sims, the LS teacher at the third participating school, Anders PS, had also begun to use podcasting with certain groups of his students (Jeff had not been able to attend the February interviews due to a family emergency, and his school colleague who came in his stead was vague about the specifics of that implementation).

Mark (the Special Education Resource Teacher at Crownstone, and the second LC teacher at this school) had implemented the use of Audacity to a different end. He employed it as a tool to help individual LD students who had trouble using voice to text software bypass difficulties with written expression by orally recording their assigned classwork rather than writing it out.

Over the spring, a few of the other junior and intermediate division teachers at Crownstone had incorporated podcasting into their teaching, but the implementation had not been as deep as the schools had hoped for. The school principal commented on the problems that had arisen around technology infusion into the Teaching-Learning Critical Pathways initiative taking place at her school:

> We had some meetings and talked about where things went wrong and what we could do better. I think one of the big issues this year as far as Critical Pathways is that we really didn't have a clear set of expectations to begin with so we were almost working against ourselves from the get go. If we had a chance to redo this next year we would probably tackle it from a different point of view. We would still use technology with it. We would still do it in the same order, but I don't think we were really focused. And when you have three teachers sitting down within a division and not really going by the

same set of expectations, and then not asking the same set of focused questions with the students, then maybe you aren't setting yourself up for success the way that you can.

Steven had taken the lead in showing the two other junior division teachers at his school how to incorporate podcasting into their Critical Pathway work, and he had also showcased his podcasting work on the LC portal. He mentioned that having staff and students in the other two classes who were not yet fully comfortable with the podcasting technology trying to make use of the technology when they were also feeling their way through the TLCP strategies for the first time "probably wasn't the best combination" as too many novel practices were being attempted simultaneously. However he stated that the teachers were not discouraged by the experience and were very ready to pursue the use of technology again in the future: "We agreed that when we do this again, here is what we have to do to make sure that it works. Not only were we not discouraged but there is already pretty much a plan in place, a strategy for next time."

The second major collaborative effort in process over the winter was initiated by Steven together with the three non-Algoma teachers he had met at the Champions Day in Toronto. As mentioned earlier, this group of four teachers had created its own "personal learning network", which they named *Connected Classrooms*, with its own web site (which is linked to in the LC portal). Steven worked primarily with Rudy Candela from that group over the next few months to develop and implement a shared cross-class project that incorporated service learning into the classroom:

> What Rudy and I are doing is basically taking on a project across the world where we are trying to provide basically some energy efficient lighting to a third world country that doesn't have access to it. A lot of it is cross-curricular, but most of it is going to be tied into a science theme. A lot of it is a science curriculum. Like from my end it is going to work into the grade 5 science.... We're talking about renewable energy, but we also tied into language because of the posts back and forth, oral communication, written communication, character education. There are a number of cross curricular links.

Both teachers started independently but in parallel, having their classes examine and look for savings in energy use at home and in their local communities. In February, Steven and Rudy were still determining how they could best apply technology to the project:

> We're just trying to work through the technology to figure out how we can possibly use Adobe Connect here, as long as we are working in Ontario, to connect our classrooms with the video conference. How we can post wikis on the internet so that our classrooms are actually able to collaborate. How we could respond to each other's blogs. And that is where our connected classroom website comes in. That's still a little ways down the road but it is coming.

The two teachers were engaging in their collaboration through both the LC portal and email. They were hoping to be able to use videoconferencing to hold meetings both between themselves and with the other two teachers to see if and how their two colleagues would be involved in the project.

When interviewed in June, Steven indicated that he had made no further use of the release time that LC makes available for professional development since the February interviews, and in fact there had been no further meetings between the three Algoma LC teachers over the latter part of the school year. He did lead a half-day training session on podcasting at

Bevone PS on a board PA day for about ½ of the school's staff. This had led one teacher at the school to being using podcasting (with a little support from Ken, the school's LC teacher) with a special needs student. The teacher was one the principal thought would "have been the last teacher to try out technology"; but she had found it easy to work with, and her student had picked it up readily and to good effect.

Steven had continued to expand his use of technology over the spring term, however. He has his students engage in digital storytelling using Windows MovieMaker and Photo Story 3. Students created digital stories on their own topics as well as on topics he assigned. Towards the end of the school year, students were introduced to the process of creating their own wiki spaces. Steven has taken units in language arts such as poetry as well as a social studies unit on early sunrise nations, and had students do research on these topics, posting their findings in a wiki that he had set up. "So it is basically a way for the students to do the research collaboratively, learn with partners, and they are able to work at school or at home. I can look at it from home myself, and I can give them feedback." Steven had also connected virtually with two teacher candidates from the University of Regina using Skype, and these student teachers have been giving his students feedback on their wiki work. Steven thought at first that each wiki would just consist of text but he found that his students were starting to take videos from YouTube and Google related to their topics and embed them in their wikis. Another group used Photo Story to embed a digital story in their wiki.

Steven had continued his collaborative partnership with Rudy over the spring. Rudy had already started a service curriculum initiative in his class that connected to the "Light up the World" global initiative. Rudy agreed to have Steven's class work with his class on this project, and Steven had his students begin to research and create digital stories to learn more about Light up the World. "Some stories were outstanding, some maybe not so, but again it was really good learning to focus on improvements for later", Steven remarked. Steven and Rudy had been using Adobe Connect to get familiar with the technology and for joint planning sessions. Just prior to the June interview, the two classes connected this way and were planning to do so again later in the week with Tania's participation. Steven's class planned to present the results of their fundraising efforts to Rudy's class at this video conference. Rudy's class in turn will present the video they have created on the work they have done for this initiative. Steven's students have collectively decided how they are going to use the money they have raised: to assist in providing power for medical facilities in New Guinea. Steven has posed a question for Rudy's students to answer: "What is it about this initiative 'Light up the World' that you will hang onto it or remember for years down the line?" Rudy has left the same question with Steven's students, and this will give all the students an opportunity to reflect on their learning in the video conference. Steven saw this project as tied to both the science curriculum and the provincial media literacy expectations.

Mark (the Crownstone SERT) had been observing and learning from Steven's experiences over the winter and spring but had not been able to apply much of what he saw because of his different teaching context. He found that some of the technologies that worked very well with Steven's students had been too challenging for some of his special needs students who would "give up and won't try it". He reported by June that he was making more use of technology however as he now had in his resource room two additional laptops (laptops that had formerly been used for the ABEL program) to supplement the two desktop computers he already had. Students continued through the winter and spring to independently use (with his guidance) assistive technologies such as the Kurzweil text reader, Premiere Tools, Dragon NaturallySpeaking (for speech to text), and Audacity as a means of overcoming specific reading and/or writing disabilities. The addition of the two laptops has extended

what he has been able to do to support these students since they can be taken with students into their home classrooms as needed. Four of the students he taught did their EQAO testing using computers. Mark continued to find that the students' use of these tools was often quite effective; a number of students had demonstrated increased engagement and a greater capacity for autonomous work.

Mark's principal had been quite impressed with Mark's use of technology with special needs students. She recounted attending an IEP meeting with the school psychologist and the parents of a child with learning difficulties which Mark also attended. Mark described the different forms of assistive technology that were being used to support the student's literacy growth. The principal said that the school psychologist had been extremely impressed with Mark's efforts and had stated that what Mark was already doing with the student covered all of his recommendations.

The LC teacher from Anders PS, Jeff, had begun to explore the use of podcasting with his class over the winter, but had been severely limited in what he could do as the school's computer lab was not equipped to support podcasting and the two LC-provided laptops he expected to have were held up in the board's IT department until mid-April, at which time at which Jeff left the school upon the return of a permanent staff member (see discussion below). As a consequence, according to his principal, Jeff did not extend his initial explorations of podcasting through the spring.

Ken, the designated LC teacher at Bevone, had been more active in continuing his exploration of teaching strategies incorporating podcasting activities and in promoting the use of podcasting at his school through the spring. Ken had set up an area in his classroom for doing podcast work. At the time of the February interview, he was only use podcasting with a handful of his students; over the remainder of the year he introduced it to a number of other students, although he still had not worked with it with the entire class. The principal reported that Ken had told her that his students were very interested and engaged when working on podcasts.

Ken had talked about podcasting with his fellow teachers at a PLC session held at his school, giving them an overview of the work he had been doing with Steven thus far. He discussed what he had learned at the January conference, and the steps he had taken to develop the use of podcasting with his students.

Like Jeff, Ken's progress had been inhibited by the missing LC laptops, although not to such a drastic degree, as there were a few school computers on which he could load Audacity. He received the laptops by mid-April. Ken's principal noted that as Ken continued to develop his competencies in using technologies for extending student literacies, he had begun to diffuse his practices to some of her other teachers. She had already seen evidence of a few other teachers beginning to "dabble" in podcasting and she was certain it was because of Ken's influence. "Ken is a good leader. People follow him naturally." It was her intention that once Ken had a number of students who were fairly competent at podcasting, he would make them available to mentor their peers in other classes on podcasting. "We do a lot of that with their kids anyway, so it would just be another way to have the older kids mentor some of the younger kids", she noted.

Student Outcomes

By mid-February, podcasting had been used for several weeks in some classes, and teachers had observed that students were already demonstrating higher levels of self-confidence in their writing. And while the teachers' assessment of their students' response to these new initiatives were preliminary, they consistently reported that students were highly motivated in their efforts by the knowledge that their work was to be available to anyone on the internet. Students worked with enthusiasm, high engagement, and greater self initiative, and demonstrated a greater tendency to self-monitor and correct production errors.

Steven, the teacher who had made by far the most use of technology in his teaching, had found his students' responses to technology use to be extremely positive. Students appreciated being able to work at home to add to their wikis and to communicate with others. They also found working with the student teachers from Saskatchewan highly engaging. Students demonstrated higher levels of persistence, engaged in more self- and peer monitoring, and showed a greater willingness to take the initiative in these new forms of project work:

> As a matter of fact they are keeping each other accountable, more than I have ever seen. It is absolutely amazing to watch one student get up and come over to another one and say "You need to go back to this paragraph, and recheck it and put it in your own words because it sounds like it has been copied and pasted from the internet". Sure enough it probably was. It really keeps them honest. That I wasn't expecting.

Steven's students had responded very well to the cross-class service project. They were strongly engaged by the opportunity to talk to students in another classroom in real time by means of videoconferencing, and in addition the focus of the service curriculum with its fundraising component had been very motivating. "The students are extremely proud and pleased about their efforts, every single one of them", Steven noted.

Steven's principal corroborated Steven's reporting of high levels of student engagement. She observed that his students loved coming to school, had a high level of involvement, and that there was no evidence of a novelty effect from technology use as student interest had been sustained through the year. She also saw evidence for the students' development of specific literacy skills, describing one example in which Steven's grade 5 class had interviewed a visiting Maple Leafs hockey player in conjunction with a grade 6 class at the school. The grade 6 teacher involved had reported to the principal that because of the experience Steven's students had had conducting interviews in videoconferences, the questions coming from his grade 5 students were far superior to those asked by the grade 6 students.

Use of the LC Portal

Neither the administrators nor the LC teachers made much use of the LC members' web portal (the one exception being Steven, who participated in portal discussions and contributed podcasting and other resources – see below). Their primary reason for not using the portal was a lack of time in the face of other pressing priorities. While nearly all of those interviewed had only explored small sections of the portal, what they had seen they generally considered useful and of value. One principal noted that it served the purpose of "keep[ing] us on our toes when there are others, not just within our own building but now within three schools and with some of the other boards, that are involved. So I think that is good for the teachers involved, and for me."

Steven made extensive use of the portal over the year, and shared a great deal of what he had done in his classroom with the LC community. He had uploaded teaching plans and resources related to his use of podcasting as well other materials. And in response to requests from other teachers posting on the portal, he had provided a few rubrics for assessing podcasts.

He indicated in June that he checked the literacy and numeracy areas of the portal a few times a week "to see if there is anything new". He noted that new additions were not made on a weekly basis, but when something new does show up he tries to pick out at least one key idea that he can bring into the classroom. As someone who spends more time on the portal than casual users, he especially appreciated the "What's New" column as it allowed him to quickly ascertain what changes and additions had been made since his last login.

Steven mentioned two resource types that were of particular interest to him in the previous few months, one a science-related resource involving David Suzuki, and the other a group of problem-solving numeracy resources. He indicated that he had learned and applied more strategies for literacy than numeracy teaching, and he thought numeracy was still not as thoroughly covered off in the portal as it ought to be (although he noted that this area of the portal was expanding).

Steven had been very satisfied with the teaching strategies that he had taken from the portal and applied in his classroom: "I could say without doubt it has been successful 100% of the time." He attributed the high level of success to the fact that "when something gets to the portal it has already pretty much been peer reviewed... it is already set in as a best practice so I am just happy to pick up on what others are doing". He gave an example of one literacy teaching strategy that he had taken from the portal that was directed at getting students to write their ideas down and getting them to focus on one key concept as they narrowed down their writing topic through the use of a writing tree. The experience had led him to reconceptualize his teaching of writing:

> We were basically getting away from that core writing concept and because I was teaching it from the technological point of view, I needed to basically revisit that and back up my mini-lessons a bit and really get back to basics on the writing. It wasn't something that I was really thinking about, but sometimes when it is right there in front of you and you use what the other champion districts are doing it is right there. It is like a bomb goes off. It really allowed us to refocus and reshape what we were doing. I'm really confident that it not only improved the technological aspects, but it improved the writing.

Administrative Leadership

The leadership and support of administrators was seen by the teachers as being essential to ensuring the success of the LC initiative in fostering new teaching practices. To a large extent this support was provided over the year. Senior board administrators involved themselves in meetings and decision making with LC management, kept themselves informed about the podcasting and other new practices teachers were experimenting with through conversations and on a few occasions direct observation, and let it be known to staff that the LC partnership was viewed by them as a significant support for their district improvement plans, and one they wished to see flourish. For their part, school principals listened carefully to their teachers, sought out and responded to their needs and suggestions, shared strategies and ideas for literacy improvement and technology infusion learned at LC meetings with

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teachers, had LC teachers provide professional development leadership in their schools, shaped the scope of endeavours to maximize the chances for success, and provided psychological support for risk-taking. The highest level of principal awareness and support for LC-grounded initiatives was demonstrated by Karen, the Crownstone principal. A few direct quotes from her comments provide a clear picture of her awareness and commitment to fostering change in her school:

> I think Steven may be able to talk about his successes, but I don't know if he is good about bragging about himself. Things are definitely happening. One of the things that's happened is that the Will Richardson[2] website now has a little bit about Steven and what he's doing in his classroom. He's now connected to schools all across the world. His class really feels a part of the world. So people in Australia and Europe and the states are all listening to the kids in the grade 5 class. So that's a success. And the LNS has asked a group of people in LC to videotape their classrooms and put it on their webcast, and Steven's is one of the classrooms that is going to be videotaped. So there are successes and I think those kinds of successes generate interest in other people who are saying "Well this must be something interesting. I'd like to see what you are doing".

Network capacity and videoconferencing. With the upgrade of the district's wide area network over the prior year, its capacity to effectively utilize videoconferencing had been considerably strengthened. Internally, the board had begun to make broader use of videoconferencing to support remote class attendance, allowing them to offer specialized courses to small remote schools. However there were still technical issues arising from the inability of Adobe Connect Pro (the software predominantly used for LC videoconferences) to deliver high-quality and reliable videoconferencing over the provincial network that connected school districts that led the IT managers to recommend the use of teleconferencing for audio delivery, and relying on Connect for desktop sharing only. Their preferred videoconferencing solution which they found to be much more robust was to use hardware bridging in conjunction with VSee software—a practice that LC was attempting to move away from due to the high cost of VSee software licensing and the free availability of Connect Pro because of provincial Ministry licensing.

February and June: Perspectives and Plans

In their discussions and reflections in February, the participating teachers and school and board administrators were enthusiastic about what they saw as the strong start and building momentum behind the Algoma-LC partnership. Integrating LC-supported initiatives into the TLCP program being instituted board-wide was viewed as being of critical importance by the principals, to ensure that teachers do not come to see LC as yet another add-on to their workload but rather as an effective strategy for meeting TLCP objectives.

The principals and senior administrators praised the quality of leadership and support provided by the LC management team. They were hopeful that the changes being effected in the LC schools would demonstrably improve the levels of student literacy and numeracy once the repertoire of advanced practices being utilized by a few of the participating teachers are more fully developed and diffused through the teaching staff. Karen, the principal at Crownstone who was the key administrative leader at the school level (she had worked to

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[2] Will Richardson is a popular educational technology author, columnist, inservice leader, and blogger.

recruit the other two principals into the program), talked about where she saw the LC program in her district as of mid-February:

> Now I feel like we are on a roll. We've brought some other schools in that are actually taking part.... Now we have the equipment, we have people who are all excited about it; they have all met with each other. I really feel that we are going in the right direction now, and it wasn't until this point where everything kind of all came together and everything was aligned. But now I think we are going to really move along with it....

By the end of the year, further progress had been made in expanding the integration of advanced technology use to support literacy and numeracy in two of the schools, but (setting aside the exceptional work undertaken by Steven) overall progress was thought by the principals to not been as significant as anticipated back in February. Ken had extended his use of podcasting to some degree at Bevone but still had not involved his entire class in this activity, and Jeff had been able to extend his earlier work before he left. As mentioned earlier, Karen had noted that their implementation of the TLCP initiative (which incorporated podcasting) had not been as successful as hoped at her school, and this sentiment was echoed by the other two principals who also thought the focus of the TLCP implementation had not been targeted sharply enough to foster success. She had also been somewhat disappointed by the lack of cross-school projects in the current year. "We didn't connect as much with other schools as I thought we would or should. The LC projects tended to be very school-based... I don't know what to do about it because there is just not the time for it."

In addition, the major delays in receiving the LC-provided laptops back from the board's IT department had seriously impacted the implementation of technology-augmented teaching strategies at both Anders and Bevone. (This equipment was only received at the schools in the later half of April after the principals negotiated its "release" from the IT department, which had been unable to fit the standard board hard drive image on the LC-provided computers due to their age.)

Despite these setbacks in the current year, in June Ken's principal (Cathy) expressed optimism about the LC program's prospects at her school the following year; she saw Ken's work as having already primed interest in several other teachers at her school and had been relieved to find out towards the end of the year that Ken would be able to return to her school in the fall to build on his work with his colleagues. Cathy had begun to formulate some plans for the use of podcasting in the next school year. She expressed interest in studying the gains made by students that were using Audacity for their work responses compared to those who were not: "Getting to see which kids make the most gains with whatever expectation we are looking at, whether it be making inferences, stating personal opinions, whatever. I'd be interested in seeing, comparing that." Cathy could think of no other supports needed from the LC program beyond what is currently being received.

The principal at Anders was retiring at the end of the school year and so had not articulated any plans for further LC involvement over 2009-10, but she had plans to inform the new principal about the program and encourage continued participation when she met with the new designate at the end of the school year. She felt that the teacher who had returned from maternity leave (and whom Jeff had been replacing) would be prepared to assume the LC teacher role in the school.

Karen, the Crownstone principal, was losing Steven from her staff at the end of June, but she hoped that he would remain part of the board's LC program team and continue to provide leadership within the board when he took up a position elsewhere (this did in fact happen, as Steven brought his new school into the LC project in September 2009). She was looking to Mark to assume the mantle of LC lead at her school; she thought that the fact that he was not a classroom teacher would not be a severe drawback as he had been an active partner in the LC activities in 2008/09, had made use of podcasting with a number of his withdrawal students, and had co-led (with Steven) a board PA day workshop in using technology to promote literacy. She had two other current staff in mind to induct into LC in the upcoming school year, as well as a teacher coming over from Anders who had been inspired to pursue technology use by Jeff this year.

LC Community Survey

Respondent Characteristics

 Sixty-one respondents completed the survey. Thirty percent of those responding indicated that they were regular teachers; approximately 15% categorized themselves as being a lead teacher, 15% as a consultant, and 15% as a resource teacher; and about 8% of respondents were in each of several other categories used (coordinator, administrator, and/or a regional literacy leader). Only two Student Achievement Officers completed the survey. Of the 43 respondents in leadership roles, two thirds were providing leadership for 30 or more teachers; 12% were responsible for 20 to 30 teachers; and the rest were responsible for less than 20 teachers. Forty percent of the respondents were members of the Learning Connections Champions group.

Of the 27 respondents who were teachers, one half taught in the Primary division, and 40% taught in the Junior division. There were three Intermediate division teachers; no high school teachers participated. As a whole, the teachers responding to the survey had considerable experience. There were no first or second year teachers, and only two third or fourth year teachers. Forty percent of the teachers had been teaching for 13 or more years, and another third for 7 to 12 years.

LC Professional Learning

Nine respondents had participated in the Champions' Day Training held in January. The day was reported to be successful in advancing the participants' capacities for effectively using technology in literacy (and to a lesser extent numeracy) education. Few of the nine respondents who participated offered detailed descriptions of the impacts of the session on their teaching practice, but not all champions have direct teaching responsibilities, and all the responses that were received were uniformly positive. The most detailed response given is worth quoting in full:

> I used three intensive yet separate ideas that I gleaned from Learning Connections: 1. Connected classrooms and blogging regarding social justice issues 2. Webcasting and videoconferencing 3. Math 'Bansho'. Each of these concepts in their own right offered significant improvement in the teaching/learning within my class. Engagement was very high with the students. Learning Connections helped shift the learning environment for myself and my students by moving us towards more inquiry based learning (incorporating digital literacies) that is more reflective of the

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real skills that will be needed for success. LC pushed us more into a realm of a 'collective learning lab' instead of a traditional classroom.

The attending teachers appreciated learning about new technologies, and one valued the professional connections he made with other teachers, which were extended following the session. All those who reported learning new technology-enhanced strategies at the session indicated that they made either moderate or extensive use of the new approaches and tools in their practice; most had thought these uses to be effective, and four had shared what they had learned with colleagues or "client teachers". One teacher reported sharing podcasting and VoiceThread extensively; another reported using VoiceThread to do inter-school Bansho problem-solving to "fantastic" effect. A third indicated that VoiceThread was being used "everywhere" now, and that "people love it." A final respondent talked about sharing a PowerPoint presentation with the teacher and principal from every school in her district. She reported that her presentation was well received and the teachers were excited about the quality of the work done with students.

Eight of the respondents indicated that they had participated in site-based visits made to their region by LC management team members. Three of these individuals thought that the site visit had contributed slightly to their development of literacy and/or numeracy teaching strategies; three that it had contributed moderately to this development; and two that it had contributed greatly. Six of the eight stated that it had made them slightly more aware of how LC can connect them to colleagues for co-developing or sharing projects resources and teaching strategies. Two respondents thought the visitors provided strategies, approaches, and/or tools that had very limited applicability to their literacy/numeracy teaching or consulting needs; four respondents indicated that the strategies had some applicability; and two indicated that the strategies had very significant applicability.

As only three Student Achievement Officers participated in the survey, and just two of these respondents attended the LC New Designs for Professional Learning sessions held for SAOs in the fall, it is impossible to draw any firm conclusions about the impact of the session on SAOs generally. But two of the three SAOs responding had no idea as to how LC could complement or facilitate their professional work, which may suggest that more work needs to be done by the LC program in clarifying the benefits LC offers with this audience.

All survey participants were asked about the quality of the e-mail notification they received regarding new activities, resources, and projects in the LC community. Twenty percent considered the notification insufficient; 72% thought it appropriate; and 8% found it not sufficiently focused on personal interests.

Learning Connections: Application and Impact

Respondents were asked to indicate the most significant use they had made of LC resources and/or professional learning opportunities in the past year and to describe the resulting outcomes. A number of responses were quite vague, with respondents making comments such as "used resources" or "participated in online learning". The most commonly cited use (eight citations) was of the "robust thinking tasks" materials and resources which appear to have been used by consultants/coordinators and possibly other teacher leaders in their professional development leadership activities, and to facilitate professional discussions amongst teachers. A few teachers mentioned implementing these tasks in their classrooms. Resources related to "Making Connections" and the "four roles of the literate learner" model were also used by several respondents. Other uses of LC resources and professional

learning options mentioned by individual respondents included getting handouts ready for Web conferences, incorporating materials and ideas learned into professional development presentations, sharing gained ideas with teachers, using VoiceThreads, sharing student work with other teachers and consultants, collaborating with fellow teachers, bringing ideas back to professional learning community groups, and downloading exemplars of student work. All but one of those surveyed had participated in LC-facilitated videoconferences over the year, and most had done so multiple times. While about half reported some form of technical difficulties with these conferences, less than 10% indicated that these seriously impeded the conferencing.

The outcomes associated with the most significant uses were almost universally positive, and primarily related to either teaching strategy changes or the building of reflective collaborations, but they are not easily summarized. A sample of the more detailed responses provided illustrates the range of impacts respondents reported:

- I have used the resources, articles, and activities around Making Connections. Specifically I have been involved in helping teachers create more robust thinking tasks and have used the materials from the web conferences to support this work.

- Using the information on Podcasts has allowed to me develop lessons in schools throughout my Board. They have used it to promote Silver Birch and Red Maple in many forms. Read Alouds, book reviews and PA Announcements.

- I watched the webcasts of differentiated instruction and was interested in the discussion group. I was reticent to post a comment however, because no one else had posted one. I also used the Audacity links to download great music for multimedia projects.

- Teaching in kindergarten does not always give me the opportunity to discuss activities with other adults. The LC gave me the opportunity beyond my school to broaden my thinking about teaching literacy.

- Greater discussion around "robust thinking tasks" with literacy coaches and other teachers at our board. More opportunities to share student work found on the site. This has also been shared and dialogued with other colleagues in our board.

- Making Connections webconferences led to rich discussions at our board level and I found the strategies discussed very helpful in the classroom.

- I have enjoyed seeing projects from other educators. The most successful part has been for me to work in collaboration with other motivated teachers—we often feel like we are in isolation in our small classroom.

- I participated in three webcasts along with our literacy lead teachers and three other classroom teachers from our board. I found that being involved changed the kinds of activities and questions that I asked my students during literacy block. I have noticed since using the four roles of the literate learner to create robust thinking tasks my students are better able to think critically about what they are reading and are better able to formulate their own opinions about different issues.

- While this may sound silly, the most significant impact that LC has had is the understanding of the underlying concept—the idea that teachers can and should design

their own professional learning instead of waiting for someone to "feed" it to them. The whole concept is empowering in ways that are immeasurable! Also, the idea of moving beyond one's own classroom and connecting (in a blended way – by e-mail, face-to-face, and video) somehow creates a great community feel. I also think that one of the most important factors is that this community is supported by the LNS—that way, I feel that the ideas and conversations are more centered around Ministry initiatives. The impact for me has been very significant as I have become connected with leading educators in the province in ways that could never have happened if I was not part of this community.

Those in leadership roles were asked how effective their participation in LC over the past year had been in helping them develop their literacy and/or numeracy teaching leadership competencies. Of the 41 respondents, 20% indicated it had been ineffective; 10% slightly effective; 34% moderately effective; 17% very effective; and 30% extremely effective. SAOs were asked the same question independently. One SAO thought LC participation over the past year had been ineffective in developing his leadership competencies in literacy and/or numeracy; one thought it had been moderately effective; and one, extremely effective.

Consultants, coordinators, and resource teachers were asked to describe specific instances of how LC participation had impacted their practice. A few offered no description at all; some gave vague or broad responses, such as "The learning has broadened my professional understanding, challenged my thinking and supported the work that I do within our schools"; "It has provided me with direction in certain areas, has led to some deeper understanding of certain strategies and concepts"; and "It is helpful to support the work of the teacher in the field". Two respondents offered more specific exemplars reflecting their professional growth which were unique:

- My participation has reinforced my understanding that learning has to be seen as meaningful and connected to the learner. It has increased my sense of efficacy considerably because that belief was reinforced, due to what I saw as a disconnected experience.

- I was able to implement some new technologies to increase the participation of students with special needs in the regular classroom, where they were seen as the "experts".

Regional and provincial leaders were asked the same question. Three responses were received:

- It has confirmed my thinking around what Making Connections is really about.

- Having 4 teachers prepare robust thinking tasks was a great project; too bad that there was not enough funding for a proper follow through to honour the teachers.

- When guiding teachers to creating initial and final tasks for their Teaching-Learning Critical Pathways I am always thinking about the "robust task" question that could be created for the piece of text the teacher is working with.

These leaders were asked what changes or additions could be made to the LC offerings that would enhance LC's capacity to develop leaders in literacy and numeracy teaching. A number of the respondents had no suggestions but of those that did, several talked about the need to meet the LC members portal site more user-friendly and to make the information

resources available through the portal more readily accessible. A few wanted LC to provide more training including training for school principals. Individual leaders offered suggestions for specific professional learning topics and new resources.

All teachers were asked a series of Likert-scale questions about the effects of their participation in LC activities—including portal and learning resource use, community participation, and participation in LC professional learning events—on their use of a range of advanced teaching practices that LC has been working to promote. The strategies asked about were: Teacher moderation; ongoing assessment and feedback; gradual release of responsibility; focus on non-fiction writing; project-based learning; student-initiated learning; collaborative learning; discovery learning; critical thinking and inquiry; 3-part problem solving based lesson (math); use of appropriate math learning materials; developing a math learning community; integration of media literacy into literacy program; use of cognitively demanding tasks; student use of technology; and use of external learning resources. The reported effects of LC participation on the use of these 17 teaching strategies was remarkably consistent across the different strategies (with a few exceptions discussed below). Between one third and one half of the respondents indicated that there had been no change in the use of these strategies; a substantial minority of between approximately 20 to 35% indicated that there had been slightly more use of the strategies; and a proportionately smaller minority for each strategy indicated there had been substantially more use of the strategy in question. Very low percentages of respondents indicated either slightly or substantially less use of the strategies. Overall these results suggest that participation in Learning Connections has led a substantial minority of teachers (from 22% to 56%, depending on the teaching strategy) to make more use of a range of advanced teaching practices considered desirable by both the provincial Ministry of Education and boards of education.

In response to another question, most of the teachers indicated that as a result of their LC participation, they had learned an applied new literacy teaching strategies (25% doing so to a slight extent, 30% to a moderate extent, and 22% extensively). A parallel question asking about the application of numeracy teaching strategies showed substantially less teaching change, with 44% of the teachers indicating that no new strategies have been learned and applied, 22% indicating a slight application, 22% reporting a moderate application, and only 11% stating that they had extensively applied new numeracy teaching strategies.

A further series of questions asked respondents to indicate if and to what extent their LC experiences have led to gains in knowledge, and to shifts in a number of teacher and student perspectives and behaviors. The specific LC effects inquired about are among the major professional development objectives of the LC program. The outcome statements respondents rated for level of change were:

It has increased my sense of efficacy as a teacher.

It has led to a greater professional satisfaction with teaching.

It has made me feel part of a larger community of learners.

It has altered my perceptions of student abilities.

It has given me a greater opportunity to differentiate learning.

It has heightened my concern about student assessment/evaluation.

It has increased levels of student engagement with learning.

It has increased student collaboration in the classroom.

It has increased levels of student independence

It has improved student results.

It has expanded my knowledge of literacy and/or numeracy teaching strategies.

It has expanded my knowledge of how technology can be used to facilitate literacy/numeracy development.

It has led to greater collaboration with colleagues in similar positions in other schools/boards.

It has increased my sense of efficacy as a leader in literacy and/or numeracy.

Taken as a whole the findings for this series of questions were remarkably consistent and very encouraging. In every case, a substantial majority of respondents indicated that there had been some degree of attitudinal shift or change in practice or behavior in the desired direction. And of those respondents reporting a change, on average more than twice as many indicated that the change was moderate or extensive than indicated that it was slight. In several cases, more respondents indicated extensive as opposed to moderate or slight change. The most widely reported changes concerned two shifts in teacher perspectives— feeling part of a larger community of learners, and developing a greater professional satisfaction with teaching—and two shifts in student behaviors—increased student engagement, and increased student collaboration. A majority of teachers also indicated that their LC experiences had moderately or extensively expanded their knowledge of literacy and/or numeracy teaching strategies. Even the item reflecting the least amount of change, relating to the degree of collaboration with colleagues in similar positions in other schools or boards, still had the majority of respondents indicating some increase in this type of collaboration.

Portal Use

Approximately half of the survey respondents indicated that they had used the LC members portal to share teaching projects, lessons, unit plans, activities, teaching strategies, or assessment strategies with the LC community on at least one occasion, but only a small minority had done so several times. Of those that had shared, about two thirds had received some feedback from other community members; the feedback was generally found to be useful.

Slightly less than half of the respondents used the portal for identifying and getting connected with LC members for collaborative work. About two thirds of those responding had downloaded learning projects or other resources posted by LC community members; of those that had, most had done so more than once. When those who did not download any resources were asked why they did not do so, the most commonly selected response, selected by a third of the respondents, was "I do not have time to search for resources".

Lack of knowledge of the portal site and its resources was the second most common reason given. Of those that had downloaded resources about 50% indicated that they had made moderate use of these resources in their teaching, consulting, or leadership roles. A further 37% had made slight use of these materials, and 12%, extensive use. Only a third of the downloaders provided any feedback to the resource's posters.

Survey respondents were asked to rate the effectiveness of the LC portal for accomplishing a number of tasks: for accessing literacy or numeracy project posting areas of interest; downloading interesting and relevant project materials and other professional learning resources; facilitating engagement in online dialogues around other teachers' posted projects; and learning more about a posted project. Response patterns for each of these task questions were similar, with a substantial majority who had undertaken the specific task rating the portal as either very effective or moderately effective for accomplishing it. For two other tasks, identifying and getting connected with LC members for collaborative work, and using the portal to share projects and unit plans, a significantly larger and substantial minority of users found the portal to be ineffective or of limited effectiveness.

Policy Alignment

 As was found in the Algoma district case study, there was almost universal consensus among the teachers responding to the survey that the resources and professional learning offerings of LC aligned very well with their schools' literacy goals. Several cited commonalities with school and board initiatives on the development of robust thinking and the acquisition of digital literacy skills. Also mentioned were a shared focus on TLCP work and general technology integration. Just one teacher commented on the alignment of the LC program with a board's numeracy initiatives; he mentioned LC had been of limited value to him as a source of numeracy teaching resources that he could use to meet his district's new expectations in this area.

Board-level leaders saw a similarly high degree of conjunction between their board's improvement goals and plans, and LC's resources and offerings. However two respondents commented that they did not find much to support numeracy development which was an area of greater need in their boards as literacy had been dealt with over the past several years.