INQUIRY BASED LEARNING DISTRICT REVIEW

December 2017

Program Review Goals

Purpose

The purpose of this program review is to consider various streams that exist within the organization from the context of alignment and coherence. As part of this review, a committee will review the program area through the lens of many different facets in order to determine if the program is aligned and coherent. The committee will make recommendations to the board, senior leadership or district leadership.

Goals

- a) Review programs to determine if it is aligned and coherent and is achieving its mandate.
- b) Review programs to determine if all facets to the program are in place to ensure program efficacy.
- c) Review elements within programs to determine if there are aligned to the correct program or should shift to a different program to ensure program success.
- d) Build capacity of district personnel through involvement on the review teams and by publishing the consolidated report to enable others to review and contribute to the report.
- e) Identify program champions.
- f) Develop presentation to inform board and provide options for future direction
- g) Complete a basic review of revenue/expenditure and consider financial viability and sustainability.

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Inquiry Based Learning Program Review Fall 2017

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Definition: Inquiry Based Learning is learner driven (driven by curiosity, wonder, challenge, identified problems – must be authentic and meaningful to the learner) and follows a pattern of the learner asking questions and then gathering information to respond to those questions. Throughout the process the responses are assessed, questions are refined and directions adjusted accordingly. Ultimately, the findings are shared. A key element of Inquiry-Based Learning is learner metacognition. (Ontario Ministry of Education, 2013)

The essence of inquiry ... "Inquiry ... requires more than simply answering questions or getting a right answer. It espouses investigation, exploration, search, quest, research, pursuit, and study. It is enhanced by involvement with a community of learners, each learning from the other in social interaction." (Kuklthau, Maniotes & Caspari, 2007, p. 2 as cited in Ministry of Ontario, 2012, p. 1)

Helpful Link: http://www.learn71.ca/wp-content/uploads/2015/09/Newsletter-Sept-25-2015.pdf

Key Question: How can we nurture and extend a culture of Inquiry in our school district?

Preamble: Within our district, we have many examples of inquiry based learning, most of which have been developed by passionate individuals who have been encouraged, received support, and have created networks of their own to support the work. We have attempted to create a culture of inquiry in our district beyond isolated projects and classroom work, but many factors have conspired to make this challenging. The primary barriers are lack of time, lack of clear articulation of vision that leads to a lack of long-term commitment to vision, and targeted resources. Where the resources, champions, and commitment align, students have benefited greatly from inquiry-based learning. It should also be noted that inquiry-based learning occurring across our district has many similarities but also many unique features.

The current <u>Strategic Plan of our Board of Education</u> has five goals targeting their aim to strive for educational excellence for all:

- 1. Engage students in relevant and meaningful experiences to inspire a love of learning now and for the future;
- 2. Integrate ways of Aboriginal learning and knowing into our K-12 classrooms ("Learning is holistic, reflexive, reflective, experiential, and relational.");
- 3. Create and support innovative practices and learning environments;
- 4. Broaden student learning through engagement in opportunities which enrich and enhance cognitive, social and emotional capacities;
- 5. Support the alignment of the New Curriculum, instructional strategies, assessment practices, and communicating student learning.

Inquiry-based learning is a key engine to achieve these goals and drives educational excellence.

a. Define the context/history of the program

Inquiry-Based learning has been a powerful catalyst for learning in School District #71. For the past 20 years, or more, there have been examples of Inquiry driven learning guiding students and teachers; however, it is in more recent years that there has been a more conscious, targeted and systemic approach. Prior to 2007, when we hired our first Curriculum Support Teachers, inquiry-based learning was predominantly found in primary classrooms, elective areas, and Professional Partnership projects, but all of these initiatives were very much led and supported by individual teachers. It is from this tradition that inquiry-based learning in our school district has grown and evolved; however, there have been some key accelerants that have helped us move to a systemic approach.

Much like the chicken and the egg, British Columbia's Redesigned Curriculum has been the greatest catalyst for requiring a more cohesive focus on inquiry-based learning; however, the redesign is in response to what educators were already doing with great success. The redesigned curriculum is organized around Core Competencies, Big Ideas, and Curricular Competencies, all of which need to be driven by individual inquiry. (BCED, 2015) Advances in Neuro-Science demonstrating the plasticity of the brain, which has informed our 'growth-oriented' curriculum, further validate this. Finally, set within an increasingly fluid future-context, intellectual flexibility has become tantamount to success. Inquiry based learning is the pedagogy that will support student success. (BCED, 2015, 2016; C21.org, 2017; Couros, 2015; Dweck, 2016; Groff, 2012; Halbert & Kaser, 2103; Ontario Ministry of Education, 2013; Timperley, Kaser, & Halbert, 2014)

Over the years, School District #71 has put importance on supporting individuals who have passionately pursued inquiry-based learning. In recent years, the school district has also taken great strides to support growth and development of inquiry-based learning across the district by hiring Curriculum Support Teachers, by increasing student opportunity through distributed learning, and by maintaining a richly resourced Learning Resource Centre. However, it should be noted that how much of this was by design and how much of it was natural evolution is very much a matter for debate. This underscores the challenges with assessing this as a 'program' as it is not really a program and has not been clearly articulated as such, despite having many examples to point to and catalysts for growth. In a conversation about alignment (a state of agreement or cooperation among persons, groups, etc. with a common cause or viewpoint) and cohesion (the act or state of connecting, uniting, or sticking together) few would argue with the value of inquiry-based learning; however, when overlaid on a quantitative, scarcity model of economics and human resources, the conversations become much more challenging.

b. Inventory of programs and sub-programs residing in program area

This is a challenging inventory to create as there are, likely, examples of inquiry-based learning in most classrooms and schools. Some of the programs/sub-programs we identified were:

- i. Compass K-12
- ii. Curriculum Support Teachers
- iii. Destination Imagination
- iv. ENTER and ENTER2
- v. Fine Arts eCademy
- vi. Hearts and Minds Program
- vii. Heartwood Learning Community
- viii. Hornby Island Community School Learning Hub Model
- ix. iMaker
- x. Independent Learning Centres at all 3 Secondary Schools
- xi. Inquiry 8 taken by all grade 8 students at Highland
- xii. Inquiry Afternoons (Wednesdays) at Isfeld
- xiii. Intergenerational Projects
- xiv. Maker Spaces
- xv. Montessori
- xvi. Pro-Merita
- xvii. Response to Intervention Arden Elementary
- xviii. SD71 Inquiry Fair
- xix. Seven Summits
- xx. STEM/STEAM Activities

c. Current staffing levels and staff development needs by sub-program

- i. Compass K-12
 - 7 teachers
- ii. Curriculum Support Teachers
 - 3 teachers as District Curriculum Support Teachers
 - 1 teacher as District Technology Support Teacher
 - 1 District Teacher Librarian
 - 1 Learning Resource Centre Support Worker
 - 10 Teacher Librarians in our district (@9.0 fte)
- iii. Destination Imagination
 - There is no district staffing attached to this; however, the program requires manager and leader development and support
- iv. ENTER, ENTER2, iMaker
 - 3 teachers as part of Navigate's staffing
- v. Fine Arts eCademy
 - 7 teachers as part of Navigate's staffing

- vi. Hearts and Minds Program
 - There is no district staffing attached to this; however, different initiatives are supported by our CST's
- vii. Heartwood Learning Community
 - 15 teachers
- viii. Hornby Island Community School Learning Hub Model
 - This is part of Hornby Elementary's operations
- ix. Independent Learning Centres at all 3 Secondary Schools
 - 3 teachers
- x. Inquiry 8 taken by all grade 8 students at Highland
 - 1 teacher
- xi. Inquiry Afternoons (Wednesdays) at Isfeld
 - All teachers at Isfeld are involved as part of their teaching assignments
- xii. Intergenerational Projects
 - These are not independently staffed
- xiii. Maker Spaces
 - These are part of individual school's processes and staffing
- xiv. Montessori
 - 2 teachers
- xv. Pro-Merita
 - 1 teacher
- xvi. Response to Intervention Arden Elementary
 - There is no extra staffing attached to this
- xvii. SD71 Inquiry Fair
 - There is no extra staffing attached to this as it is done voluntarily by a steering committee lead by Andrew Ferneyhough
- xviii. Seven Summits
 - 4 teachers
- xix. STEM/STEAM Activities
 - These are part of individual school's processes and staffing

$d. \quad \mbox{Current financial review of total revenue and expenditure}$

As many of the initiatives are part of the general operations of individual schools, creating a financial review is very difficult to provide accurately. Most schools in our district have allocated funds to support and target the development of Inquiry-Based Learning. Navigate has made the biggest investment with 40 fte (@ \$98,169/teacher) over nine programs and partial support of many other initiatives including the ILC's at each secondary school, Hornby Island's Learning Hub, and blended learning opportunities in various schools.

Our district Curriculum Support Teachers (3 @ \$98,169 each) support inquiry-based learning in their work and our Teacher Librarians (9 @ \$98,169) are an important engine for inquiry-based learning.

Another challenge to assessing the total revenue and expenditures is the amount of in-kind contributions that are made. Many of these initiatives are led by volunteers and/or are part of learning programs. For example, how would we cost the Isfeld Inquiry project on Wednesday afternoons, or the intergenerational

projects? Finally, many of these programs/sub-programs receive funding from multiple sources as part of different mandates. For example, Destination Imagination receives support from individuals, from schools, and from the Superintendent of Schools. Some of the contributions are cash, some time, and some are facilities.

e. Is the program aligned and does it demonstrate coherence (based on program goals)

As this is not a defined program, we cannot assess whether or not it is aligned and coherent with program goals. However, if we identify what the program goals should/might be, we can begin to do this. If we begin to use these unilaterally identified goals, we can begin this process.

- Each student is able to use inquiry to guide their learning, having participated in an effective process for inquiry.
- Each student is provided the strategies and conditions to learn independently.
- Each student has multiple opportunities to practice and to develop their skills of inquiry.
- Each student is engaged in their learning and has ownership of that learning.

Each sub-program identified above aims to achieve these goals and each offers unique characteristics in order to do this. Much like direct instruction, there is no one 'right way' to develop inquiry-based learning; rather, it takes multiple approaches, exposures, and opportunities throughout a learner's development. One ingredient each sub-program has in common is that an individual identified the opportunity to explore student needs for inquiry-based, experiential learning and shepherded it into fruition. Each of these programs begins with someone asking the question, "What is going on for our learners?" and then doing the work to find out. Next they develop a focus and explore their hunches about what might be contributing to the situation. Rather than wringing their hands, these champions learn what they can do to address the situation, and identify what needs to be different. Next, they take action; in most cases, this is not necessarily alone, but in some cases, it is. Now we are at the stage of looking at what we are doing and whether or not we are making enough of a difference. Each individual sub-program has compelling evidence that it is making a profound difference in the learning lives of its participants; however, there is not a cohesive 'program' to assess.

f. Identification of gaps in alignment, staffing, funding, etc.

- 1. A clearly articulated purpose and goals for Inquiry-Based Learning. Because this is not clearly articulated, it is very challenging to target and to align supports and resources. What are we trying to achieve and why?
- 2. Knowledge, awareness, and understanding of sub-programs, approaches, and rationale do not exist across the district. In most cases, people know about their own program, but not others. Some are able to articulate their goals and objectives, but these are not shared. Consequently, people are very supportive of their initiative or what they are connected to but not of others. There is no central hub of information where one could learn more about all the programs and sub-programs in the district.
- 3. Inquiry-based learning has become so ubiquitous that many are practicing, developing, and supporting inquiry-based learning; however, year to year, teacher to teacher, level to level, we are not building on the expertise of that which has gone before. There are several contributing reasons for this from teacher isolation, to minimal communication beyond buildings, and a lack of cohesive vision.

4. Curriculum Support Teachers are not having their leadership and work informing practice at the Secondary level.

g. Describe the preferred future for the program based on the work completed in the review

Our students leave our schools more curious than when they arrived; owning their learning, knowing how and wanting to learn more.

Inquiry-based learning as a cornerstone of the School District #71 system; it is the way we, as a district, operate, aligning inquiry-based learning across all landscapes. Rather than just looking into classrooms for inquiry, we, as a system, are driven and guided by inquiry. Not only is this proving to be an effective way to drive growth and improvement, it also engages people in meaningful ways. (BCED, 2015, 2016; C21.org, 2017; Couros, 2015; Dweck, 2016; Groff, 2012; Timperley, Kaser, & Halbert, 2014; Zhao, 2012). In arriving at a Strategic Plan, our Board of Education begins with driving questions focused on improving student learning. Our District Leadership Team is driven by questions focused on improving student learning as individuals and as a collective. Our various partner groups are equally driven by questions. Nurturing and extending a culture of inquiry, a system of everyone being learners, at all levels, we improve the learning lives and success for every child.

A commitment of financial support for existing programs builds stability, thus reducing anxiety and allowing for strategic growth. In addition, a commitment of financial support to build capacity in those leading and doing the work pays dividends.

Finally, we support and grow a collaborative mindset in our district. Using inquiry to drive our learning through networking, mentorship, and conscious capacity building across our district, we improve the effectiveness of our work. This approach serves to increase awareness and communication throughout which helps to improve knowledge, understanding, and skills required to increase student curiosity, efficacy, and empowerment.

h. Identify the program area where the program or sub-program belongs (who will champion the work)

This is a very challenging question, as alluded to above, as there is some debate about where the necessary engine resides. Our district has demonstrated that a teacher-led, administrator supported design is an effective, if not efficient, approach to innovation and growth. However, this model does not naturally lead to cohesion across a system without some coordinating initiative. Navigate is a definite engine and leader in inquiry-based learning practice. The LRC (Curriculum Support Teachers and Teacher Librarians) are another powerful engine for improving systemic pedagogy. If our goal is to create an inquiry-driven culture, and we accept the premise that creating that culture needs to be systemic, it makes sense that the Superintendent of Schools should provide the coordinating guidance for this to occur as it will require work with the Board of Education, Senior Administration, District Leaders, Site Based Leaders, Teachers, Students, Parents, and our broader community.

i. Define the risks that the Board must consider in making any decisions about the program

- 1. Alienating existing and potential champions. People have invested themselves passionately in the initiatives they have led and each believes in the voracity and importance of their work to meet the needs of students.
- 2. Overwhelming existing practitioners. Many of our inquiry-based leaders are doing the work off the side of their proverbial desks: asking them for deeper reviews, broader scope, and movement to scale without thoughtful resourcing could be destructive.
- 3. By picking and choosing programs/sub-programs to support, others will be lost. Knowing that we have finite resources, moving funding and support from one initiative to another will have collateral damage that will include students, teachers, parents, and school communities.
- 4. We might not know the answers to the questions we ask; we might not know what to ask: open questioning can be risky. Shifting to a culture of asking questions based on what is going on for our learners requires open dialogue and many of the questions will not have easy answers; therefore, difficult decisions will need to be made.
- 5. How will we measure our success? (Earl & Timperley, 2015 http://dx.doi.org/10.1787/5jrxtk1jtdwf-en)

j. Recommendations for the board to consider

- 1. Alignment and Coherence:
 - Our Framework for Enhancing Student Learning should be structured as an inquiry; for example, following the structure of the <u>Spirals of Inquiry</u>. (Halbert & Kaser, 2013)
 - Align inquiry-based learning throughout the district, i.e. approaches by the Board of Education, District Leadership, Staff Meetings, Partner groups, etc. Use the Inquiring District Network Group Benchmarking Tool for guidance.
 - Develop and support reporting procedures to support inquiry-based learning.
- 2. Clarity:
 - Establish clear goals and objectives for inquiry-based learning to guide assessment, resource allocation, and evidence informed decision-making.
 - Develop our understanding and use of evidence to guide our work with inquiry-based learning.
- 3. Capacity: Invest in capacity and network building in our champions and leaders.
- 4. Support: Continue to support a variety of opportunities for learners (students and educators) to practice inquiry.
- 5. Stability: Provide sustainable and consistent funding to strategic programs and work.
- 6. Communication: Increase the visibility of our inquiry-based learning work. There are several ways to do this including establishing a steering committee (chaired by the district's senior educational leader) that would identify, grow and support inquiry based learning across the district; send a regular newsletter highlighting what is happening around the district with links to capacity building resources; and having a centralized repository of examples, contacts, and resources (such as Learn71 web-site).
- 7. Celebrations: Individual and collaborative excellence in Inquiry should be celebrated widely, i.e. Inquiry Fair, public recognition, public showcases, on-line exemplars, etc.

Summary: School District #71 is renowned for educational excellence, innovation, and supporting our students. In most cases, our success has come from authentic inquiry. From the early years of the Network of Performance Based Schools, to Professional Partnerships, and most recently our district-wide PLC structure, we have used questions to drive our improvement of meeting student needs. Just as our professionals have used inquiry to drive their learning, our students have used this approach effectively and successfully. Currently, we are undergoing a review of our many, many programs; most of which came from the culture of innovative inquiry. As indicated in this report from the plethora of examples we were able to draw from, we have benefited greatly from our formula of teacher led: administrator supported initiatives. Whatever changes are recommended and sought, we feel it is important honour and maintain that structure. Our committee noted, throughout, that all examples of excellence occurred because of one or more champion that was passionate and supported. Much of the work and growth in our district is attributable to these courageous, visionary, passionate people. However, we also feel that it is important that authentic inquiry goes beyond our classrooms and becomes a driving approach for our operations as a school district. Why would it be good for our students, but not for our system?

We want our students to leave our schools more curious than they arrived; knowing how and wanting to learn more. Having passionate teachers, using inquiry-based learning, is the most powerful way that our school district can achieve this goal for all. From the beginning of this review we, as a committee, have learned a lot and have become increasingly aware of the powerful drivers in our district and the quality of work happening throughout; we know that we are not aware of all of the excellent practices within. The proverbial 'daisy method' of growth has paid significant dividends where the pockets of innovation have taken root; however, to move to scale to truly realize the positive impacts of inquiry-based learning, we recommend these systemic changes; thereby bringing increased focus and clarity to our work. We submit these recommendations as a means to evolving our journey.

Big Ideas in the New Curriculum

1. A description of the program, a brief contextual history, a brief summary of the current application of the program

The Big Ideas portion of the newly designed curriculum is intended to build upon the concepts, principles, and theories as a result of their educational experiences. They are the big picture "lightbulb" moments which are supposed to transcend course content questions. The tie in to Inquiry is that they are supposed to work in tandem with the core competencies and course content in order to help construct conceptual frameworks that will allow students to better understand increasingly complex ideas and promote critical thinking and independence. They are the important questions we ask of our students and optimally, they are cross curricular, creating added relational value for our students. The big ideas portion of the new curriculum is Inquiry in its essence. How can we ask important questions about what we teach and how students learn it. Teachers at the secondary level (grades 10-12) will be expected to incorporate this into their practice and report on it by September, 2018.

2. Does the program provide adequately for a progression of knowledge, skills and competency development?

The Big Ideas are one of the three main components of the new curriculum, thus integral to competency development. Applied correctly, the Big Ideas (or Inquiry model, because essentially that's what we're talking about here) can <u>drive</u> the progression of skills and knowledge.

3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

Yes, as mentioned, the Big Ideas are written into the new documents for Provincial Curriculum. The Know, Do, Understand concepts imbedded within the Big Ideas are essentially what we as a district are hoping emerge from our Inquiry programs. They are completely aligned with Provincial Policy-they ARE Provincial policy in 10 months time. They are aligned most closely with the communication, thinking and personal/social core competencies.

4. Are funding allocations adequate? What are the implications of various funding decisions?

Not totally applicable to this largely conceptual framework. Though the Big Ideas is essentially another way of saying Inquiry, there is not budget line item allocated to it, per se. To do this well, however, and imbed Big Idea (Inquiry) thinking into practice on a large scale, the District will have to allocate resources to train staff and commit to designing new learning spaces for students that promote collaborative work and open concept learning. If you want 21st century learning, you will have to invest in 21st century learning spaces. Traditional classroom space is limiting.

5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

Again, not totally relevant here, but broadly speaking, staffing levels are adequate if time and resources are allocated to traning in existing staff in how to apply these ideas to their practice. Shifting to an Inquiry model with Big Ideas at their centre is a shift that will take time.

6. What are the identified gaps to review?

This question is not really applicable, as Big Ideas have not technically entered practice at the secondary level. Potential gaps are the inconsistencies that might emerge if teachers aren't applying this methodology in a purposeful way. The shift from "how to teach" or "what is important about what I teach" will be a radical shift from traditionalists who cling to "what to teach" (content)

7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

See above-at the secondary level, this hasn't been implemented yet, so it is too early to say whether or not it is meeting intended goals. At the elementary level, Big Ideas and Inquiry style learning has not consistently met the goals set out by the Provincial Government.

8. Should this program be a district or school program? What are the implications of each?

As this is part of a significant shift in practice for many teachers, it should be a district program if consistency is a goal. Big Ideas are very much open to interpretation from content area to content area (i.e.-the Big Ideas don't have to be shared across the District, so much as the Inquiry process that led to the statements created having to be shared) Schools will likely have their own "flavour" on the kinds of questions they ask using this approach, which is fine (actually encouraged under new Provincial policy) but the overall commitment to an Inquiry approach should be managed at a District level.

9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

N/A-it has yet to be universally applied, so too early to make a judgement on this.

10. How does the program align and cohere with other programs?

See #2 and #3 above. The Big Ideas and Inquiry align with many programs in the District-Navigate programs, ILC's, Inquiry Fair, and Destination Imagination.

11. What are the key questions or topics for the Board to consider?

- 1. Should we invest money in training teachers and money into infrastructure to make the Big Ideas a central part of the educational landscape of the Comox Valley?
- 2. How do we ensure accountability that the Big Ideas are implemented and that teachers shift practice to do this well?

Core Competencies

1. A description of the program, a brief contextual history, a brief summary of the current application of the program

The Core Competencies included in the renewed BC Curriculum include Communication, Personal/Social (personal and cultural identity, personal awareness and responsibility, and social responsibility), and Thinking (creative and critical thinking) strands. The competencies are at the centre of the redesign of the curriculum and assessment practices. According to the BC Ministry of Education curriculum website "Core competencies are sets of intellectual, personal, and social and emotional proficiencies that all students need to develop in order to engage in deep learning and life-long learning." (https://curriculum.gov.bc.ca/competencies_as accessed, October 2017)

The personal/social nature of the competencies puts the learner into the driver's seat of their learning. They are cross curricular and lend themselves to the reflective and revision processes within inquiry. Teachers will need to include assessment and evaluation of each of these areas in communicating student learning. Through various conversations and meetings a sense that there is a need for support as teachers create ways to authentically engage learners in these assessment practices on very personal areas of their learning.

2. Does the program provide adequately for a progression of knowledge, skills and competency development?

The Core Competencies are at the centre of the renewal of the curriculum thus putting the learner at the centre of the experience. Each competency shows next steps and examples for what next. If assessment and evaluation practices effectively involve the learner in a cycle of reflection and goal setting the learner can be the driver of his/her personal/social development..

3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

Yes, The Core Competencies are a central part of the revised curriculum for the Province of British Columbia. <u>https://curriculum.gov.bc.ca/competencies</u>. The Competency Profiles "I statements" create the conditions for reflection and revision and action planning for learners. Having the learners inquiring into how they are learning, what they've learned, and what they want/need to learn next fits with our current inquiry processes. The Core Competencies are part of the redesigned curriculum and as such align to current provincial policies. essentially what we as a district are hoping emerge from our Inquiry programs.

4. Are funding allocations adequate? What are the implications of various funding decisions?

Some funding and support to develop capacity for working with the Core Competencies has been allocated through professional development, curriculum implementation time, and at a school level in various depths . To my knowledge, there is not budget line item allocated to the continuation of developing understanding of the competencies and in developing resources to support teachers and learners in authentic assessment and evaluation processes. To have consistency and a well developed assessment and

evaluation platform for competencies, the District will need to provide ongoing opportunities for designing and implementing resources for staff and learners as we work more with the competencies. As teachers and learners become more comfortable with the language and the intention of the Core Competencies revision of assessment and evaluation practices will need to take place.

5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

Not completely applicable in this area, but in relation to implementing assessment and evaluation practices in line with provincial expectations resources need to be allocated to give training time/models for integrating into current practice. As teachers and learners become more comfortable with the curriculum training will need to be ongoing to meet next steps.

6. What are the identified gaps to review?

Identified gaps at this point in the process are:

- What methods of assessment/evaluation will work best to achieve authentic feedback/reflection?
- Consistency of quality of assessment practices in relation to authenticity (e.g. teacher checklist vs learner made checklist of attributes)
- Teacher comfort in "evaluating" personal areas of learner development
- Learners needing time to learn how to evaluate/assess own learning and ways of being
- Parent involvement feedback outside of school activities as a method to "rounding out" view of learner
- Learning language of the competencies
- Strategies for authentic reflection and revision of learning goals teaching learners about their learning with an inquiry approach e.g. "How can I....? I will need to....., then I will...., now I can...." etc.

7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

According to the Ministry website "The ultimate goal is for learners to employ the core competencies every day in school and in life, and for the core competencies to be an integral part of the learning in all curriculum areas." (<u>https://curriculum.gov.bc.ca/competencies as accessed October 2017</u>) The core competencies have the potential to put the learners in the driver's seat of their learning which is also a goal of the inquiry process. It is very early in the implementation process and there may be small pockets, or individual programs/classrooms developing tools/strategies that could be shared to offer a district wide platform in the future.

8. Should this program be a district or school program? What are the implications of each?

Development of Core Competencies and the assessment and evaluation of them should be a district wide program if alignment and consistency is desired. Sharing of "I can" statements has already begun across the district and around the province. Individual schools can still hold autonomy for the content of the I can statements to personalize the learner's experience at a particular school and strategies demonstrating authentic learner participation could be more consistently and openly shared as well.

The Core Competencies are more than checking off attributes on a checklist. If we wish to truly meet the goal of learners knowing themselves as learners and setting goals for learning and ways of being a district wide approach should be a focus while still giving individual schools the chance to tweak the statements for their own learning environments/communities.

9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

The opportunities to develop, identify, and apply resources to report on Core Competencies authentically need to be expanded as implementation occurs.

10. How does the program align and cohere with other programs?

Core Competencies are an integral part (or should be) of ALL programs as per Ministry expectation, but also to meet current knowledge of how people learn and of future needs of our learners as they contribute to the world.

11. What are the key questions or topics for the Board to consider?

- 12. How can we support staff to authentically implement the assessment and evaluation of Core Competencies in practice?
- 13. How can we bring consistency and accountability to assessing and evaluating Core Competencies?

Curriculum Support Teachers

What is inquiry-based learning?

Inquiry-based learning is a dynamic and emergent process that builds on students' natural curiosity about the world in which they live. Inquiry places ideas at the centre of the learning experience.

How do our students describe inquiry-based learning? https://vimeo.com/163555803

An inquiry-based approach encourages students to ask and genuinely investigate their own questions about the world. Teachers facilitate students' learning by providing a variety of tools, resources, and experiences that enable learners to investigate, analyze, reflect, and rigorously discuss potential solutions to their own questions about a topic the class is studying.

(An excerpt from <u>www.naturalcuriosity.ca</u>)

How is inquiry-based learning represented and shared in the work of District Curriculum Support Teachers? We have looked to the article *8 Essentials for Project-Based Learning* to adapt and share a framework for inquiry. The eight essentials include having significant content, establishing a need to know, having a driving question, student voice and choice, core competencies, in-depth inquiry, revision and reflection and authentic purpose.

https://wblnyc.wikispaces.com/file/view/8 Essentials Article v2014.pdf/537836040/8 Essentials Article v2014.pdf



The above framework for inquiry, coupled with the Core Competencies and First People Principles of Learning guide and inform the design of ALL of the new K-7 science kits and teacher guides, redesigned by a team of SD71 educators to align with BC's new curriculum. Explore the following link for more information:

https://portal.sd71.bc.ca/group/wyhzgr4/Pages/default.aspx

Further, this inquiry framework is included in and informs the design of inquiry-based learning kits made available to teachers in Comox Valley School District. Topics includes global issues, poverty, identity, maker space resources and children's rights. Explore the following link for more information:

https://portal.sd71.bc.ca/public/nrrdank4mzsxs4joonqwe33I/Pages/default.aspx

Comox Valley School District Learning Resource Centre purchases:

The district teacher librarian, in collaboration with district curriculum support teachers, have created inquiry kits to support teacher and student inquiry-based learning in grades K-9.

One example, SD71 has purchased a resource called **Issues 21** to support grades 6-9 teachers in exploring inquiry with their students. *Issues 21 is a dynamic literacy series that dares students to imagine a world where change is possible and, when equipped with the right knowledge, skills, and tools, they can make it happen.*

http://education.scholastic.ca/productlist/CUR_ISSUES21

Seventeen **Issues 21** kits have been made available to spark inquiry with learners in SD71. Issues 21 fosters an inquiry mindset by exploring local and global issues. Each student magazine is divided into three parts with articles that: 1. Introduce an issue 2. Offer information about people who have taken action (game changers) and 3. Provide steps for students to explore and be inspired to take action and make a difference.

Each kit comes with 16 student magazines and one teacher's guide. The teacher's guide offers deepthinking questions to prompt thinking forward, along with suggestions for assessment and learning targets. Inquiry topics include biodiversity, children's rights, climate change, digital world, energy, food industry, food, mental health, ocean pollution, overfishing, pandemic, poverty, power of the media, and threats to health.

A resource called **Take Action** has also been purchased. Twelve kits have been made available to support grades 4-6 teachers in exploring inquiry and project-based learning with their students. Each inquiry topic in *Take Action* includes a magazine-style book for students and a teacher guide, designed for whole-class inquiry with students working in small groups. The teacher's guide includes loads of teaching strategies and ideas for engaging learners in deep comprehension, critical thinking, inquiry-based learning. Teachers will also find cross-curricular connections to literacy, social studies, science, arts, health, math, and citizenship These inquiry kits explore ethical citizenship, social justice and sustainability.

. http://education.scholastic.ca/productlist/TAKE-ACTION

More examples of Inquiry Kits created and made available through the District Learning Resource Centre:

Service-learning: combining inquiry with meaningful community service - intermediate kit. Contents include 1 teaching guide and 15 thought-provoking books.

Service-learning: combining inquiry with meaningful community service - primary kit. Contents include 1 teaching guide and 14 thought-provoking books.

I can make a difference, inquiry unit - grade 1 kit. Driving question: *How can my actions make a difference?* Learners identify personal actions they themselves can take to help maintain a healthy environment for living things; they plan and carry out a classroom course of action for minimizing waste; suggest ways to reduce personal energy consumption.

Using Story to Inspire Change: Thinking Globally, Acting Locally - a grade 6 kit. This resource is designed for supporting a grade 6 Social Studies/English Language Arts **global issues inquiry** using thought-provoking books to stir learners to identify issues they are concerned about, to explore these issues, to imagine solutions and take action - thinking globally, acting locally.

https://portal.sd71.bc.ca/public/nrrdank4mzsxs4joonqwe33I/Pages/Global-Issues-Inquiry.aspx

Poverty and Homelessness Inquiry - a grade 6 kit.

This resource is designed for supporting a grade 6 social studies/English language arts poverty and homelessness inquiry.

https://portal.sd71.bc.ca/public/nrrdank4mzsxs4joonqwe33l/Pages/Poverty-Inquiry.aspx

What makes you, you? Exploring Personal and Cultural Identity: grades 2-6.

What stories do your students have to tell? What are their stories of personal and cultural identity? Of family? This kit is designed as an opportunity for teachers to explore the use of story to inspire writing. Focusing on the Big Ideas and Curricular Competencies from English Language Arts combined with the Positive Personal and Cultural Identity core competency strand, explore and consider recommended resources to support writing instruction, beautifully engaging story books and lesson ideas ready for classroom use.

https://portal.sd71.bc.ca/public/nrrdank4mzsxs4joonqwe33I/Pages/Identity.aspx

Assessment for Learning as a framework to support inquiry-based learning:

Making learning visible: sharing and defining clear learning targets with our learners, coconstructing ideas and criteria for success with our learners, asking and inviting deep thinking questions, giving and inviting descriptive feedback, and creating opportunities for peer and selfassessment. Specifically, being mindful of student engagement and students owning their learning.

7 things that happen when students own their learning:

https://www.youtube.com/watch?v=N7S9kyk-odA

Below are some examples of strategies we look to and lessons we have developed in inquiry-based learning (with the Assessment for Learning embedded in lesson design).

Ways to support inquiry-based learning:

Structured Inquiry

The teacher determines the big idea and what the students will come to understand by the end.

The teacher provides the guiding questions.

The students will help create the plan and guide the inquiry with their questions, interests, ideas, analysis, reflections and understandings.

Guided Inquiry

The teacher comes up with the big idea or topic and the students and/or the teacher come up with the questions.

The students are responsible for designing and following their own procedures to test the question and then communicate their results and findings.

Open Inquiry

The students determine the purpose and formulate their own questions.

The students design the procedures, gather the materials and communicate their findings.

The teacher facilitates, supports, asks questions and redirects the investigation.

Adapted from Michelle Hikida, mhikida@sd38.bc.ca ~ BCPTA Fall Conference, 2016

A Guided Inquiry EXAMPLE 1: What is kindness? What does it look like?

A lesson series created in the Comox Valley School District can be found at the Heart-Mind Online website. <u>http://heartmindonline.org/resources/capturing-kindness</u>

Originally created for intermediate grades (5-7), these sequenced lessons culminated in students photographing their own interpretations of what kindness looks like. The resource contains both the story behind the project's success and the instructions that allow educators to replicate and/or adapt the activities for their classes. "We" refers to a group of teachers in the Comox Valley School District (along with their students) who collectively designed and implemented the project.

https://www.youtube.com/watch?time_continue=4&v=cWtJ3OCN6qs

A Guided Inquiry EXAMPLE 2: What is compassion?

https://portal.sd71.bc.ca/public/nrrdank4mzsxs4joonqwe33l/PublishingImages/Pages/Global-Issues-Inquiry/What%20is%20compassion.pdf

Students in two grade 6/7 classes at Queneesh Elementary participated in an inquiry exploring sympathy, empathy and compassion; delving into what these words mean, and how they are closely entwined. The inquiry zoomed in specifically on developing a deeper understanding of compassion, asking, "What does it mean to be compassionate? What does it look like?" Using video clips, story, and photographs, students investigated and attached meaning to this variety of media with a 'lens' of compassion. Further, students explored and discussed evidence of compassion they see in their daily lives, why it matters and how to find, or foster it.

Learning about capturing compassion in a photograph was guided by Comox Valley photographer Karen McKinnon. Karen shared about how compassion feeds her passion for photography, identifying the importance of connecting and getting to know the people she photographs. She also inspired students to consider 'compassion to self' and 'compassion to others', what this looks like, and how to capture it. Karen shared two photography techniques for students to consider. Students were invited to seek out authentic, living moments of compassion, found and displayed by self and others, and were encouraged to capture these moments in photographs.

As a final thread, students spent time working with singer/songwriter Will Stroet and music producer Corwin Fox to collectively co-write, perform, and record a song that speaks to what they have discovered about compassion through their photography and shared learning experiences. The shared writing process was an incredible learning experience; it clearly reflected back what students have noticed and internalized from this inquiry into compassion. Another highlight of this learning experience was a visit to work in the recording studio of Corwin Fox in Cumberland.

Students' captures of compassion and their song "*Compassion is our Passion*", have been combined into a final presentation to share with others.

https://vimeo.com/153812949

A Guided Inquiry EXAMPLE 3: What is gratitude?

https://portal.sd71.bc.ca/public/nrrdank4mzsxs4joonqwe33l/Documents/What%20is%20Gratitud e.pdf

https://vimeo.com/159567220

Guided Inquiry in Math:

The Three Acts of a Math Lesson

https://portal.sd71.bc.ca/group/I7lwzs1/intermediatemath/numbersenseinterm/Documents/Three%20Ac t%20Taks%20Explained.pdf

An example of a Collaborative 3 Act Task

https://portal.sd71.bc.ca/group/I7lwzs1/intermediatemath/numbersenseinterm/Documents/Arraybow%20of%20colors%20.pdf

Guided Inquiry in Aboriginal Education:

A Residential Schools Inquiry

Driving Question: How can what we learn about residential schools help us to be more compassionate in our daily lives?

https://www.sd71.bc.ca/School/abed/resources/teacher/Pages/Residential-School-Inquiry.aspx

Inquiry as a Framework for exploring and supporting reading comprehension across the school district:

An Inquiry Approach to Determining Importance

In our work supporting reading assessments across the district, our curriculum support team have noticed a trend. Assessment findings across the district reveal that many students lack confidence in showing what they know (representing their understanding) after reading a selection of text.

During this district scanning, we wondered what was going on for our learners. Because this is a foundational skill, we knew it needed attention.

We asked ourselves why this was happening for our learners and what was contributing to this situation. Wanting our learners to be independent and pursue topics that speak to their hearts and minds, we realized our focus needed to be on making meaning and determining importance. Our hunch was students could name and identify text features, but had difficulty using them to support comprehension. We asked ourselves, what should we do differently? We decided to slow down the pace of instruction and explicitly teach note-making to help students build confidence and independence in determining importance and comprehending non-fiction text.

More information about this inquiry can be found at the following link:

http://www5.sd71.bc.ca/literacy/wp-content/uploads/2015/09/A-Note-Making-Lesson-Sequence.pdf

Main Ideas ~ Explicit Instruction for Primary Classes

http://www5.sd71.bc.ca/literacy/wp-content/uploads/2015/09/Primary-Transparency-Lesson-Plan-for-Kit-<u>1.pdf</u>

This page shares many examples of inquiry lessons and ideas to spark curiosity, wonder

If the kits are not available, these are meant to help teachers have access to the teacher guides and then hunt and gather print resources...

https://portal.sd71.bc.ca/public/nrrdank4mzsxs4joonqwe331/Pages/default.aspx

Destination Imagination

- 1. A description of the program, a brief contextual history, a brief summary of the current application of the program
 - a. A program that is present in 31 countries and reaching more than 2 million youth. Focus is on critical and creative thinking, collaboration, communication, resilience, project management, and innovation.
 - i. Program is open to students in pre-school through to University
 - ii. There are several ways to access the program: in classrooms; as an extra-curricular activity; preparing for and presenting at tournaments
 - iii. In teams, students are provided with a challenge that they work to solve and then compare their solution to the solutions others create. Challenges tend to be very open-ended.
 - b. Our district started working with this program in 2010 when a team from Isfeld first presented a solution at the Provincial Tournament in Surrey. Since then we have had teams from elementary, middle, and secondary levels present, and do quite well, at regional and provincial tournaments and have done well. Many of our teams have qualified for Global Finals (top 3 placement in the Provincial Tournament) and we have had ten teams finish in the top ten Globally over the past 7 years.
 - c. Currently, Navigate, Hornby, Brooklyn, Valley View, Lake Trail, Vanier, Highland, and Isfeld are participating in the Tournament Program. Last year more than 60 students and 20 adults from our district travelled to the Provincial Tournament in Surrey after participating with more than 250 others at our Regional Tournament which was organized by Jeff Taylor. Brooklyn, Navigate, Valley View, Lake Trail, and Highland have some form of the program either embedded in their classes or as an extra-curricular club.
- 2. Does the program provide adequately for a progression of knowledge, skills and competency development?
 - a. Yes, this program helps students develop their skills, understanding, and application in the areas of creative and critical thinking, innovation, communication, collaboration, resilience and project management.
- 3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?
 - a. In addition to being completely aligned with the Core Competencies, different challenges require core curricular competencies and understandings as well including ELA, Sciences, the Arts, and ADST
- 4. Are funding allocations adequate? What are the implications of various funding decisions?
 - a. Currently the district contributes \$20,000/year to the program plus site based contributions that come to another \$10,000. This allows for all teams that want to attend the Provincial Tournament in April to attend and covers the team manager's expenses for Global Finals. If these subsidies did not exist our participation at both the Provincial Tournament and the Global Tournament would be greatly reduced, thus losing a valuable engine needed to support the growth of this work.
 - b. Where funding could be improved would be in purchasing materials for Instant Challenges, but having the time to prepare them would be even more valuable.

- c. Another area where funding can be improved is in the purchase of materials for Team Challenges as each challenge allows teams to spend approximately \$200 on materials.
- d. There are other skills that are developed by having to raise money for evens/activities that are deemed worthwhile.
- 5. Are staffing levels adequate (show historic and current staffing levels or ratios)?
 - a. No staffing has been allocated to this work other than Gerald Fussell was given a bit of District Release time, periodically, to run this program. All other work on this has been through teacher and admin volunteer time. If time was given, the program would grow and strengthen as it does take a lot of time, energy, and skill to support student growth in these areas.
- 6. What are the identified gaps to review?
 - a. Predictable and consistent funding for the program
 - b. Needs more champions, i.e. 1/school
 - c. More teacher leaders that can attend Global Finals will increase support and understanding for the program
 - d. Having time for involved staff to collaborate and share resources.
- 7. Is the program achieving stated goals? What are our stated goals? Where are they stated?
 - The program has no stated goals other than: "to teach students the creative process and empower them with the skills needed to succeed in an ever-changing world." – https://www.destinationimagination.org/mission-vision/
 - b. Unofficially it has been our goal to grow the program every year.
 - c. We have human examples that show how the program has achieved the goals outlined students that have been involved for multiple years also sight DI in many of their applications, cover letters, and presentations.
- 8. Should this program be a district or school program? What are the implications of each?
 - a. Currently the program is run mostly as a school program with three core people developing it at the district level: Jeff Taylor, Greg Kochanuk, and Gerald Fussell
 - b. Having it run as a district program brings schools together and students have a shared interest, passion, and connection.
 - c. Having it run as a school program keeps things in-house which allows for more control, but limited resources; however, it is very much dependent on the school and whether or not that school has a champion for the program.
 - d. I believe that the current model of a balance between school program with district support is effective. It could be more effective if involved staff had time to meet and to exchange information.

- 9. Should this program remain unchanged, expanded, reduced or eliminated? Why?
 - a. I believe that this program should be expanded because:
 - i. It is suitable for all age ranges
 - ii. It teaches and supports the development of the Core Competencies
 - iii. It integrates multiple curricula
 - iv. It teaches and supports the development of skills, attitudes, and aptitudes necessary for success in a fluid world
 - b. There was a DI Ambassadors program that ran for three years that was very successful at increasing the skills and aptitudes of the participants at all levels, including those in the program.
- 10. How does the program align and cohere with other programs?
 - a. In addition to the Core Competencies, many other curricular areas are enriched through this program such as Sciences, ELA, ADST, the Arts, and Leadership
 - Based on our definition of Inquiry Based Learning, the Recognize, Imagine, Initiate and Collaborate, Assess, Evaluate and Celebrate model used in DI is very complimentary and aligns with many of our Inquiry Based Programs.
- 11. What are the key questions or topics for the Board to consider?
 - a. How important is the financial support for Tournament travel to the overall growth and development of the program?
 - b. What are the spin-offs/benefits students involved in the program offer?

ENTER and ENTER 2 or E2 Programs

(eCademy of New Technologies, Engineering and Robotics)

1. A description of the program, a brief contextual history, a brief summary of the current application of the program

a. "The ENTER Program is a fully inclusive, three day face-to-face and two day distributed learning program designed for middle years students (grades 6-7) who have a passion for computers, technology, engineering, math and science and thrive in a "hands on" learning environment. The program is housed in a large, converted industrial arts classroom that provides flexible and dynamic instructional space. While focused on STEM (science, technology, engineering and mathematics) curriculum, the program utilizes project based learning and subject integration as the over arching instructional approach. ENTER is structured around the Navigate "Learning Cycles Calendar" that breaks the year into four distinct instructional sessions, each supporting rich opportunities for community integration and assessment conversations with parents. The students utilize blogs and e-portfolios to demonstrate, co-construct and share their learning and achievement. Enrolment is limited to 24 students (per cohort) where students and the teacher support a "family like", team atmosphere that ensures a safe and welcoming environment.

b. The success of the ENTER program catalyzed the creation of a secondary program; ENTER 2 or E2 designed for grades 8 – 10 students. E2 is a multi-grade junior secondary program that is designed to provide another access point for students who have a passion for all things computers, technology, science and math. The two significant shifts that take place within E2 are that the curriculum moves more significantly towards embracing the concepts of "MAKER SPACE", as well as embracing more advanced design and development work with technology such as 3D printers and VEX robotics. Here, risk taking and failure are embraced as essential tools within the learning process. There is also a greater emphasis on solving "real world" problems and challenges within the community. The students in E2 are integrated into the regular life of the secondary school with opportunities for peer mentorship built around sharing their skills with other students. Likewise, the students seek out and structure work experience type placements with adult mentors, businesses and agencies within the broader community. Like ENTER, E2 also uses the "Learning Cycles Calendar" to structure project based, personalized learning during the academic year."

2. Does the program provide adequately for a progression of knowledge, skills and competency development?

a. ENTER provides learners that possess a technical mind an outlet to explore their ideas in a hands-on approach, sometimes systematic and embracing the engineer's perspective and design cycle, while other times a more experimental "let's see what works" approach.

b. ENTER allows students to apply their academic concepts such as Math & Science to hands-on, real-life problems/projects such as robotics, building, and various other mediums.

c. ENTER allows the opportunity for the creativity of learners to sometimes choose areas of interest (Spark) as a way to display their curricular learning. Sometimes learners are given specific topics from their teacher to learn but are also given the individual choice on how to present that learning.

d. Because learners are often working either at different places or on different things within the class at the same time, learners develop necessary life skills such as independence and self-awareness. They learn what they need when they need and develop the ability to advocate for their needs.

e. In terms of Inquiry, The ENTER program has students planning, designing, building and then reflecting and re-designing. This represents inquiry in its truest form.

f. The hands on skills that students acquire in this program are directly related to the job shortages that are predicted in the near future for the design and coding industries.

3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

a. ENTER was designed to embrace 21st Century learning and reflect the personal learning journey behind both 21st C and personalized learning approaches. Jeff Stewart and his leadership team were provided the latitude from district leaders, particularly the Superintendent of Schools, to shape the program and capitalize on several unique conditions that exist in both the school district and province at this time.

4. Are funding allocations adequate? What are the implications of various funding decisions?

a. The ENTER programs are currently in the unique situation of being connected to a DL school with a multitude of students and is able to benefit from the advantages of that relationship.

5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

a. ENTER class sizes are based on contract language for multi-grade classes – size is based on the lowest pod grade. If any classes have lower than average numbers, this is only a reflection of registration.

b. As with the FAe program, the ENTER programs attract many students with special needs. Therefore, though the student to teacher ratios may look reasonable, the low levels of EA support for both the designated, and the undesignated students in the class can make for a challenging learning/teaching environment.

6. What are the identified gaps to review?

a. The ENTER programs live in isolation from other Navigate programs.

b. The program attracts students that tend to need more one-on-one assistance that the current system allows for.

c. The program is very dependent on teachers with a very specific skill set.

d. support of a dual cohort program; smaller class sizes to accommodate diverse learning needs & opportunities of students and larger workload on teachers; more teacher training opportunities (paid) and/or release time for teachers to take training that occurs during regular school hours; release time for collaboration and mentoring; release time/training to keep up with new

technologies; creation of a position that researches new trends, technologies, etc. and learns them, comes up with implementation ideas/project and then trains teachers

e. open houses; advertisement; host events (Girls to Code); pay teachers or provide incentive for teachers that are doing events/promotion outside school hours

f. take into account: some home schooled learners may not be adequately assessed and therefore may have diagnosed conditions coming into a classroom; social/emotional complications that can arise with learners coming in to a school for the first time and the need for additional support; clarify funding ... does our LST/EA funding come from Navigate or host school? How is it divided? It is adequate?

7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

a. There are no stated goals for this program

8. Should this program be a district or school program? What are the implications of each?

a. As with many NIDES programs, ENTER is a mixture of both.

9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

a. The program has been expanding since the day it was born and should continue to lead to other opportunities around the district.

b. The considerable wait lists for the program prove that this program is solidly backed by the students and parents that are spreading the word.

10. How does the program align and cohere with other programs?

a. The ENTER Programs are a part of the family of Blended learning programs that have emerged out of the Navigate NIDES community over the last few years.

b. They, more than other NIDES' programs have been integrated into other schools in the district due, in part, to the facilities that those buildings have to offer.

c. In terms of Inquiry, the ENTER programs are an easy fit into the annual Inquiry Fair. Students in this program could take almost any project that they have been working on and verbalize the 'scientific-like' process that they have used to get to their destination.

11. What are the key questions or topics for the Board to consider?

a. How can the ENTER program be better integrated into the High-School communities?

b. How can the students in the program be better supported?

c. How can the teachers in the ENTER programs be better supported so that they are not forced down a path toward 'burn out'.

Fine Arts eCademy

1. A description of the program, a brief contextual history, a brief summary of the current application of the program

a. Under the guidance of Principal Jeff Stewart, and with the help of several district teachers, FAe opened its doors in 2012. It currently consists of 145 students and is based out of the Navigate Tsolum campus. It is grade K-8 and is broken down into six classes with 3 multiage grade groupings: K-2, 3-5 and 6-8. There are two pods of each grade level. Students attend the program face-to-face three days a week from Tuesday to Thursday. Families are expected to complete the home learning portion of the program between Friday and Monday. The program consists of 6 classroom teachers, one specialist music teacher and reports to Vice-Principal Marieke Holtkamp.

b. An important philosophical pillar of the FAe program is that curriculum is taught "through the arts". This is different than other arts based program that focus on perfecting certain disciplines such as visual, musical and dramatic arts. The program has adopted a 'whole student' approach based on Dr. Martin Brokenleg's 'Circle of Courage' (Belonging, Mastery, Independence, and Generosity) that is focused on creating a better human being versus simply a better student.

c. The program's connection to inquiry lies in its connection to exploratory and project based learning.

i. Students in the younger grades are allowed to explore content through multi-modal forms of art.

ii. Collectively, the staff selects a theme for each year and develops that theme over 4 learning cycles. Each topic is explored through music, dance, literature, visual art, drama, and digital arts.

iii. Each learning cycle culminates in a showcase of learning where students perform for families and guests and display the projects on which they have been working (art projects, inquiry projects, and spark projects). As a community, the whole school presents song, digital art, dance, and dramatic performances.

iv. Weekly, students are given the opportunity to work in alternate multi-age groups for mini-electives which allow exceptional learning opportunities for them to explore topics that appeal most to their individual sparks.

v. Students are encouraged to ask questions, wonder, and express themselves thought their artwork.

vi. Students in the older grades are led through a variety of guided and individual inquiry projects, some of which focus on their personal 'Spark' and others on topics suggested by the teachers.

vii. Students in the grade 6-8 pods have attended the district "Inquiry Fair" or its predecessor the "Heritage Fair" in each of the last four years.

viii. The program also has Destination Imagination teams as well as integrated classroom components of the D.I. program.

2. Does the program provide adequately for a progression of knowledge, skills and competency development?

a. The FAe program is very good at developing confident, independent, and creative thinkers who possess the capacity to demonstrate their learning in creative ways.

b. As with any distributed learning program the development of competencies can vary greatly between students based on the level of commitment from the family.

c. The FAe student population is diverse and the reasons families select the program for their children are as diverse as the children. Many students have come from a traditional 'brick and mortar' school where things 'just weren't working'. There are also a significant number of homeschoolers who are coming to a building for the first time in their grade 7 year. The independent inquiry method allows for these students to work at their own level while pursuing subjects that they are interested in.

3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

a. At the beginning of each year the parents and students sign a 'Student Learning Plan' that is created by the FAe teachers. This learning plan states which resources (I.e. Math program, learning journals, and home reading program) will be used throughout the year. It also has each subject broken down into Big Ideas and Learning outcomes as stated in the ministry documents.

b. Teachers know these outcomes are being met as they meet with each family at least three times throughout the year, at what are known as 'Spark' meetings, to review these outcomes.

4. Are funding allocations adequate? What are the implications of various funding decisions?

a. FAe is currently in the unique situation of being connected to a DL school with a multitude of students and is able to benefit from the advantages of that relationship.

5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

a. FAe class sizes are based on contract language for multi-grade classes – size is based on the lowest pod grade. If any classes have lower than average numbers, this is only a reflection of registration.

b. Learning Support is an area of concern as many students at FAe have come in from homeschooling, or an 'unschooling' environment, and have not received the type of testing that the district provides. The program therefore has a large number of undiagnosed students without the funding to support them. 6. What are the identified gaps to review?

a. How can the district help to promote and expand the type of learning that is happening in the FAe program?

b. How can the district help increase the profile and general awareness of what is happening in the blended learning programs at NIDES?

c. How can more support be added to the LA, LST support at NIDES?

7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

a. There are no stated goals.

8. Should this program be a district or school program? What are the implications of each?

a. The program is currently available to students both inside and outside of the district.

b. The program is classified as a 'Special Academy' program and parents are charged a fee per child to attend. The fee is waived if families require financial assistance.

9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

a. The program has continued to grow each year, however, there has been a great deal of discussion about the benefits and challenges of growing beyond a certain size.

b. Everyone involved with the program would love to see an articulation of the program into the secondary schools.

10. How does the program align and cohere with other programs?

a. FAe is one of several blended programs offered by Navigate. ENTER, PACE, and COMPASS are other blended program options.

b. Staff, parents and even students have spent a great deal of time discussing how this program could grow into some form secondary model.

11. What are the key questions or topics for the Board to consider?

a. In what ways can the Board continue to support the innovative teaching and learning that is happening at the Fine Arts eCademy?

b. What is the best way to share FAe's innovative practices with other schools and programs?

d. How can the Board move toward meeting the need for a secondary model of the current FAe program?

Hearts and Minds Program Summary

Inquiry based Learning Program Overview.

Question 1. Provide a description of the program, a brief contextual history, a brief summary of the current application of the program

The Hearts and Minds program is an ongoing collection and series of impactful Inquiry projects designed and facilitated by a small team of Comox Valley educators (and students) to enhance student engagement, develop empathy and social responsibility, and create awareness of local and global issues and take leadership roles in solving these issues; its projects and programs fully encompass and cover the BC Curriculum Core Competencies and First Peoples Principles of Learning. These projects have brought respect and positive attention to the Comox Valley District at multiple provincial, national and international conferences.

Within the Hearts and Minds program there are multiple Inquiry projects. For the purpose of this report, we will be featuring four Inquiry projects: (1) Design for Change (DFC); (2) Everybody Deserves a Smile (EDAS); (3) Residential Schools Inquiry; and (4) the Intergenerational Project.

There are common themes in all **four projects**. First and foremost, they all rely on using an Inquiry model. The teachers involved started with the Spirals of Inquiry (Kaser & Halbert, 2013) fundamental questions: what is going on for our learners? How do we know? And why does this matter? To answer these questions, the teachers collaboratively scanned, made observations, and followed their instincts. Through a variety of inputs and discussions, they developed a hunch: *service learning and compassion based projects will engage students*.

Over the years, these teams set up various projects that involved students doing the work. The students bought into the different projects for a variety of reasons, initially; now they do this work because of the satisfaction and value they felt in helping others. They are taking on real projects, designed by themselves, to help others locally and globally. This paper will focus on just four of those projects.

History/context of the overall design and intention of Hearts and Minds Learning

Over four years ago a professional learning community team involving nine teachers from across School District 71 (Comox Valley) was brought together by a **shared concern for student engagement and how to empower learners with a greater sense of meaning and purpose in school.** They wondered if setting aside time for an inquiry would increase student engagement, better prepare students to be self-directed learners, and increase their personal and social responsibility. A teacher involved in the collaboration shared a link to the TED talk *Kiran Sethi teaches kids to take charge* (https://www.ted.com/talks/kiran_bir_sethi_teaches_kids_to_take_charge?language=en) and encouraged the others to view it. Kiran's words filled them with inspiration and a project was born.

This team of 9 classroom teachers, with incredible support from Curriculum Support Teachers and encouragement from our Superintendent and District Elementary Principal, developed Inquiry projects that were student centered and teacher guided inquiries addressing concerns in the world. They have encouraged K-12 students to think deeply about real issues, guiding them with examples of young people being *change makers* in their own communities, both locally and globally; empowering their students to identify issues that students were concerned about, to

imagine solutions, and to take action. This paper will explore some of those stories using four exemplars in an attempt to answer the "Inquiry based Learning Program Overview" questions.

Details of each exemplar project: (past and current applications)

Project 1: Design for Change http://www.dfcworld.com

In early 2013, one year after we had been using Kiran Bir Sethi's design thinking model to support this inquiry, a key catalyst for the Hearts and Minds program, Doug David, reached out to Kiran Bir Sethi, founder of Design for Change, and shared with her stories and evidence of our collaborative inquiry work. Kiran was so inspired to hear about what we were empowering our learners to explore, she invited Doug to attend the *Be the Change* celebration and *Global Partners Meet* in Ahmedabad, India in September 2013. This annual celebration is an opportunity to reach out to children, teachers and school leaders and inspire them to believe that children are not helpless, that change is possible and they can drive it.

We are now a part of the global partnership with *Design for Change* (DFC), the largest global movement designed to give children an opportunity to express their own ideas for a better world and *put them into action*. We, Comox Valley School District, are the DFC Canada partner, representing Canada among more than 30 country partners worldwide. As a partner, we communicate and share resources with DFC Global and partners worldwide. We have attended the annual *Be the Change* celebration and *Global Partners Meet* both in 2013 and 2015, in Ahmedabad, India and Monterrey, Mexico, respectively, and hope to attend future events.

Our work connects us to Maria LeRose, Director of Programs at the **The Dalai Lama Center for Peace and Education** <u>http://dalailamacenter.org.</u> Established in 2005, the Dalai Lama Center for Peace and Education is a secular, non-political, not-for-profit organization, inspired by the Dalai Lama's belief in the importance of balancing the education of children's minds with that of educating their hearts.

"We educate the hearts of children by informing, inspiring and engaging the communities around them. By sharing current research, scientific knowledge and best practices related to social and emotional development, we support the adults who can help children feel secure and calm, approach situations with curiosity and confidence, solve problems peacefully, and get along with others. All of our programs aim to create supports and environments to enable positive human qualities in children and youth."

 "Prepare our children for this world. Educate the heart. It's already happening around the world with astonishing results." A short video narrated by Shane Koyczan: <u>https://www.youtube.com/watch?v=SOYOa4FIj-Y</u>

Team leaders: The key educators involved in planning this project and exploring this work at the ground level with learners in classrooms include: Doug David, Robert Atkinson, Jaki Braidwood, Jay Bridges, Patricia Hart, Heidi Jungwirth, Cheryl Ann Kelly, Catherine Manson, Debbie Nelson, Jan Smith, Chantal Stefan, Christine VanderRee, and Carol Walters.

"Design for Change was born out of the conviction that children are not helpless, the optimism that change is possible and the belief that children can drive it. Through a simple design process of Feel-Imagine-Do-Share, the team asks children to identify and transform anything that bothers them in their community – shifting their mindset from Can I? to I Can!" (Kiran Bir Sethi).

Supporting Resources used in Design for Change/ Hearts and Minds Program

Feel, Imagine, Do, and Share <u>http://www.dfcworld.com/file2015/toolkit_global.pdf</u> Following the inquiry design-thinking model of Feel, Imagine, Do and Share, the project participants empower their learners to identify issues they are concerned about, to imagine their own solutions, to take action, and then to share their stories to inspire others. The appreciative inquiry approach is summed up in the statement "I CAN..."

Embracing the *I CAN* motto, Kevin Reimer, former Principal (current President of BCPVPA), supported a school wide *I CAN* theme/mindset at École Puntledge Park Elementary School. This theme still exists at École Puntledge. Years later, children and adults alike are acknowledged and celebrated for their *I CAN* spirit and growth at school wide assemblies, both in terms of *I am capable* and *I can make a difference*.

8 Essentials for Project Based Learning http://bie.org

The founding group looked to the Buck Institute for Education article called 8 Essentials for Project-Based Learning as a framework for inquiry, which aligns well with the Design for Change (DFC) design thinking model. The Buck Institute for Education identified eight essential elements of meaningful projects: having significant content, establishing urgency, a need to know, having a driving question, student voice and choice, core competencies, in-depth inquiry, critique and revision and a public audience. A description of The Buck Institute for Education model: http://bie.org/blog/why we changed our model of the 8 essential elements of pbl

Heart-Mind Online http://heartmindonline.org

Heart-Mind Online is an interactive and intuitive online learning resource. The collection of resources builds capacity in individuals and communities to support the Heart-Mind well-being of children, and promote the development of competencies related to their social and emotional development. Heart-Mind Online is for all who care for or about children and are searching for evidenced-informed resources about bullying, anxiety, making friends, peaceful problem solving, sharing and many other core heart-mind competencies.

A lesson series created in the Comox Valley School District can be found at the Heart-Mind online website. Originally created for intermediate grades (5-7), these sequenced lessons culminate in students photographing their own interpretations of what kindness looks like. The resource contains both the story behind the project's success and the instructions that allow educators to replicate and/or adapt the activities for their own classes. http://heartmindonline.org/resources/capturing-kindness

Issues 21_http://education.scholastic.ca/productlist/CUR_ISSUES21_

Comox Valley School District purchased a resource called Issues 21 to support teachers of grades 6-9 in exploring this work. Issues 21 is a dynamic literacy series that dares students to imagine a world where change is possible and, when equipped with the right knowledge, skills, and tools, they can make it happen. Issues 21 offers teachers the resources they need to meet content and literacy needs while making learning provocative and meaningful.

Students have opportunities to discover innovative ways of understanding, confronting, and addressing issues they really care about and to develop core competencies: critical thinking, creativity, communication, collaboration, character, and ethical citizenship. Following is a link to a video introduction to Issues 21, featuring Series Editor Jeffrey D. Wilhelm: http://www.scholastic.ca/education/professional resources/video-issues21.html

Spirals of Inquiry: for equity and quality (Kaser

& Halbert, 2013). <u>http://bcpvpa.bc.ca/spirals-of-inquiry-for-equity-and-quality/</u>

This inquiry model has been used in projects in the district; École Puntledge Elementary used *Spirals of Inquiry* to frame their DFC inquiry on kindness and compassion **"curriculum for caring"** as one of their Professional Learning Community projects (See Insert).

Project 2: EDAS (Everybody Deserves a Smile) http://edas.ca

"Everybody Deserves a Smile" (EDAS) is a Not -For Profit Organization that began as a grassroots project in Edmonton, Christmas 2003, under Chantel Stefan's leadership. It involved putting 88 homemade care packages of socks, cookies, and essentials on garbage bins in backstreets of downtown, with written messages that those living on the streets and shelters were not alone and not forgotten that Christmas.

Chantel brought this initiative to the Comox Valley 5 years ago, when she introduced it to Kevin Reimer, her principal as a school based project. Since then, we have handed out thousands of care packages, run the project in 10 different communities, and worked with 8 different school districts. All care packages are made by students from kindergarten to grade 12 in both of our official languages. EDAS in the Comox Valley alone, now involves 10 schools in seven weeks of creating over 2000 care packages, which will create heartfelt smiles in seven different communities.

There is a great impact in the people receiving the packages and the people creating them. There is a school based curriculum, 10 weeks long, that supports and informs this initiative. What began as a one day, feel good project, has developed into a deeper program that develops empathy and citizenship at a fundamental level throughout our district and beyond.

Examples of how this program enhances social responsibility through district wide participation are shared in the following summary by Chantel:

Ecole Puntledge Elementary Spirals of Inquiry (Kaser & Halbert, 2013) **Curriculum for Caring** *Driving question:*

Will nurturing a 'curriculum for caring' increase our students' sense of social responsibility and engagement in their learning?

Scanning - What's going on for our learners?

- many students are disengaged at school
 many seem to lack a sense of purpose in school / lack ownership
- many come to school hungry and tired (survival mode)
- □ many have very complex lives outside of school

Focusing: What does our focus need to be?

- to provide opportunities for service learning - teaching empathy, responsibility and concern
- to promote a growth mindset /selfempowerment / self-care / ownership
- to empower a sense of community and an interest in making the world a better place
- □ to make real-world connections
- □ to use common language

Developing a Hunch... How are we contributing to this situation?

- □ maybe we aren't putting enough time into community building
- maybe we haven't paid enough attention to social emotional learning in our haste to cover curriculum
- we wonder if we are creating the kinds of conditions where children really feel connected
- perhaps we aren't making empathy, compassion, and kindness enough of a priority. Are we modelling these values ourselves?

Learning - How and where can we learn more about what to do?

- Reclaiming Youth at Risk: Our Hope for the Future
- □ Creating and Changing Mindsets: Movies of the Mind

Taking Action - What will we do differently?

- □ service learning
- \Box 'good news' phone calls home
- \square "two by ten" strategy
- talking circles, class discussions, journal reflections

Checking - Have we made a difference?

- pre- and post-assessments using the BC Social Responsibility Performance Standards
- □ student self-assessment
- □ student journal reflections

*Highland IB students put on a Halloween "Fun Run" and all proceeds went to this season's Comox Valley care packaging project. The students raised \$500 and collected many toques, socks, etc!

*Cumberland Community Grade 9 Leadership Students put on a school wide assembly to educate & inspire their school to step up and help.

*All four of our Rotary clubs donated \$500 and/or clothing.

*800 books were donated by the Rotary Book Sale Club of Courtenay

*Over 4000 sugar cookies will have been baked and decorated for our Comox Valley project alone, coming from our local schools, Rotary groups and families within our communities.

*We received a \$1000 donation from one of our local doctors

*The Cumberland Little Beavers Club adopted our "kid care packages" and made up 20 hand painted care packages to be delivered to 20 little boys and girls this Christmas.

*The Comox Valley Dental Association donated all our toothbrushes

*Over 800 students in our school district will have helped paint a bag and or make a Christmas card for the care packaging project, led by teachers and leadership students who stepped into classrooms to educate and guide and inspire their own.

*Local musicians Helen Austin and Brodie Dawson and some of our local choir members are once again volunteering their time to play for the students, while the kids build packages.
*Local coffee shops, business and the Comox community centre and the Courtenay art gallery display the students hand painted bags to help bring in support *And on Dec 19th, two of our local principals joined some of our EDAS team to deliver to those living on East Hastings.

Project 3: Residential Schools Inquiry

Doug David, Denise Anderson, Colleen Devlin, Gail Martindale, Sally Sheehan, and Lynn Swift, all attended the St. Michaels Demolition Ceremony in February of 2015. They were moved by the ceremony and process. The community welcomed over 1200 visitors with open arms to witness a symbolic demolition of the school as well as a brushing ceremony of residential school survivors in the Big House in Alert Bay. The whole day was welcoming, honouring, and so touched their hearts and minds that they were compelled to take action.

Faced with the survivor's bravery and courage during the day, this collaborative team knew that they had to honour the experience with teaching this knowledge back in our district. Some had been teaching about Residential School already and others had been teaching about compassion and taking action with classes, but this journey to Alert Bay crystalized their intent and direction. The diversity of the group created depth and breadth to planning and learning activities. Bruce Carlos, in our Aboriginal Education Department provided time for them to meet. During three sessions, they were able to use a framework for inquiry to keep them on track to co-create and provide meaningful and engaging activities for the children.

We wanted children to say things like, *tell me more about residential schools or how could this have happened*, rather than things like, *why do we need to know about this and what does this have to do with us?*

Working closely with the District Curriculum Support Teachers, Doug David, Debbie Nelson, and Carol Walters, this project is also linked with other our work across the district having compassion as lens.

"By all of us working together, this year, in EDAS's season 12, we handed out care packages to 1755 people living on our streets in 7 communities across Vancouver Island, into East Hastings, Vancouver, and Red Deer, Alberta. Within every magical bag of love made by students, kindergarten to grade 12, so many hands and hearts have come together to make this possible. So much hard work of juggling of schedules, lessons on poverty, active citizenship, homelessness, cookie baking, leadership, understandings of working with intention of good will, faith, kindness, love, new understanding of how to strengthen community, see the unseen and build a more compassionate and caring world, for all of it to come alive. How we thank you for your commitment to this work and for such open and giving hearts. It's been life changing for all of us to experience as we get to witness how anything is possible when you lead/educate with your head and also your heart. I would like to personally thank our EDAS team Drew, Steph, Jodi, Jen, Sheri, Jo, Jenny, Christian, Naz, Nic, Jess & Tania who have worked hard throughout our season to help grow our work & move our projects forward by contributing so much of their time & their own unique gifts. So grateful team" (Chantel, December 25, 2015) *

2016: "To all the school communities, local school boards, local Rotary groups, local businesses, services groups local media, church groups, choirs and individuals who helped make this project come alive. Over 7000 sugar cookies baked and decorated, over 2000 bags painted by and over 2000 homemade Christmas Cards made all made by students. A huge thank you to those living on our streets who have shared their story of heartbreak, pain and resilience so we could learn from them and inspire others to respect everyone's voice, no matter what their story. May those homeless on our local streets understand that they are not alone this Christmas, that someone out there is thinking of them and hoping that feelings of intentional love, reach them from a far..." ~ Chantel Stefan

Educating the Hearts and Minds became an important connection. If we can touch our learners' hearts, we can deepen their intellectual engagement in First Nations learning.

Doug David shared his teaching around compassion and we immediately linked this to Reconciliation. Also, it was important to us that children did not just know about this dark history in the past, but were recognizing situations and thinking in the present and future on what would lead people and government to make similar decisions that led to Residential Schools in the past, and that would lead them to compassion rather than complicity. We have talking circles in mostly every lesson and we do have children expressing incredible compassion and reconciliation, asking questions, and linking this knowledge to their own lives.

This visit to Alert Bay was very timely with events in the news around the call for an inquiry into Missing and Murdered Aboriginal Women, the launch of the *First People's Principles of Learning*, and was also a timely connection to the Truth and Reconciliation Commission and their recommendations for the education community. Justice Murray Sinclair's voice and deep conviction that it is the education system will fix these wrongs, helps us to be courageous and brave to teach this tough subject.

We believe our connection to Aboriginal elders and students in the community is the main reason and the initiative or drive to do what we do. This inquiry is also a means to connect our learners with their community across and the history of its people. These aspects align and have overlapped with the Intergenerational project, where elders told stories to children.

This inquiry is a launching point for teaching about Residential Schools. We have many teachers who are not aware of this topic in depth or are afraid or emotionally worried about teaching about this topic. This team's offerings is a great way to take the pressure off the teacher to know everything and gives a nice opening to create dialogue for students to ask questions. The teacher can ask experts to visit and have become aware of the many resources available to them to gain knowledge about Residential Schools.

So far, the original group has taught this inquiry in 7 different classrooms in 6 schools. There are two more classrooms in the winter signed up for the lessons. They have created a website with all the learning activities for teachers to be able to own this information. We have heard and seen more teachers saying they are using the resources that we have introduced about Residential Schools more readily in their classroom.

Aboriginal Education department has just purchased a teacher's guide from FNESC (First Nations Education Steering Committee) and the supporting literature resources for every elementary school and we are looking forward to seeing how our Residential School Inquiry lesson may spark use of this resource in the schools.

Project 4: Intergenerational Project

Cross community projects are known to build connections, engage students, and build upon a great number of individual strengths. Two teachers attended a break-out session at the NOII conference (Network of Inquiry and Innovation) in Vancouver in the spring of 2013. At this conference, Barb Carriere, a teacher from Invermere, BC, shared her intergenerational work. This served as a catalyst for the intergenerational work done between Valley View Elementary students and Berwick, Comox Valley. We launched our program the following fall. This program ran at Valley View Elementary for three or more years and has since evolved to include others schools.

Valley View began with four Berwick residents and 2 kindergarten classes. We generally had 10-12 residents during each of our visits. Overtime we saw a much higher level of comfort and

confidence among the seniors. Because of this, close connections are quickly established between our students and the seniors at the beginning of each school year and endure throughout the year.

The Berwick residents also come to Valley View Elementary. They have told us how much they love connecting with the school community and seeing how our education system looks today. Berwick has asked the students to be involved in some of their projects too: community field trips, and a Food Bank project.

Two teachers from SD 71 received grants from ArtStarts: Artists in the Classroom and the BCRTA (BC Retired Teachers Association) to work with community artists along with Berwick residents and the kindergarten children.

Connection to Residential Schools Project: This past year, we connected with a local First Nations story teller. She integrated our BC social studies curriculum with her storytelling (The Seasons of Life) while working with the kindergarten students and senior residents of Berwick.

Connection to EDAS Project: Plans are underway to connect knitters of all ages across the community with children around the Comox Valley. The scarves and toques created during this project will be placed in EDAS bags (Everyone Deserves a Smile) in which our vulnerable community members receive a gift of love and warmth. Students will journal during this process as a means of reflecting on this experience.

Moving into higher grades: One of our local high schools is also connecting with Berwick. The Citizenship class at Isfeld will be working with the Berwick residents. During the last school year, students of Huband Park Elementary visited the residents of the Comox Valley Senior's Village on a weekly basis. This work was based on the Berwick model.

Debra Fullerton, previously at Valley View Elementary is now the Vice-Principal at Brooklyn Elementary and has established groups of 4/5 and 5/6 students involved in the project. We continue to take her grade 4/5 students to Berwick.

The focus has changed from basic arts or reading programs that formed the Kindergarten groups. During the 2016/17 school year, we had a core competency focus (communication, personal and social responsibility, creative and critical thinking), along with a social studies focus. The residents shared stories about their knowledge of Canada's government, and we had a First Nations elder in to share stories about our local culture. Through a variety of activities, these were our areas of focus.

The Kindergarten program is no longer running as the two lead teachers who operated the program there have since left the school.

Lisa Moorhead, the Recreational Director for Berwick, has worked closely with the teachers, residents and students throughout this project. Berwick Administrator, Jackie Holt has been an advocate and supporter of this intergenerational program. Berwick in Campbell River is well aware of the many benefits of our intergenerational program. They are now initiating one of their own.

Question 2. Does the program provide adequately for a progression of knowledge, skills and competency development?

Yes, all Hearts and Minds Program projects are designed to build upon learners' awareness of social and community issues, encourage compassion and social responsibility, as well as build the core competencies necessary for learning, such as being curious, being engaged in their own

learning, finding deeper meaning and purpose in school; conducting research, solving problems collaboratively, and blurring the boundaries between school and life. (See also Question 3).

The projects require in-depth inquiry as students need to understand the challenge they have accepted and the solutions they design. Each project is routinely critiqued and students work on their revisions due to their pride, interest, and passion for the work they are doing. Finally, every project has a public audience, and most of them are the direct recipients of the work the students have done.

The projects are built from an appreciative stance, rather than on a deficiency model. Each student becomes aware of some of their strengths and uses these to develop their work. While the structures are established by the teacher, as students develop their skills and their ability, they own their learning, and are empowered to take more and more design control for their projects. As students participate more in these various projects, they become more skilled and independent.

Learning is co-created through active, authentic, listening and talking. The teacher moves to the side and assumes the role of a mentor as the students create their own learning through their work, their questioning, and their passions.

Each project has significant and meaningful content. There is a time sensitivity to the work that establishes urgency. Each project provides a need to know for students that, in most cases, is developed and identified by them. Each project begins with a driving question that engages the students and defines the project. Students are the voice as they have open choice about what they do as it needs to be something they are passionate about.

"The Intergenerational project continues to make connections with the Berwick staff and residents for many years now because we see firsthand the many benefits an intergenerational focus provides. There is a very strong connection between this initiative and B.C.'s Core Competencies" ~C. Walters

Intergenerational project, during the 2016/17 school year, had a core competency focus (communication, personal and social responsibility, creative and critical thinking), along with a social studies focus. The residents shared stories about their knowledge of Canada's government, and we had a First Nations elder in to share stories about our local culture. Through a variety of activities, these were our areas of focus.

As well, we will continue our work this year with a STEM/STEAM approach (science, technology, mathematics, art). Many of our activities this year will be launched with a picture book and will be followed by design challenge. We will be using the resource, Making and Tinkering with STEM: Solving Design Challenges by Cate Heroman (NAEYC Publication). Once again, all of this work will have a core competencies focus. As these two generations interact and get to know each other, they develop relationships, learn about people of different ages, and become friends who live in a community together.

Question 3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

This program aligns well within the current Competency based curriculum and several other BC Education initiatives. For example, using the BC Social Responsibility Performance Standards as an assessment tool, we focused particularly on the strand "shows a sense of community and an

interest in making the world a better place; tries to follow through on planned actions". This project began an incredible journey of shifting mindsets, with students identifying their own ideas to make a positive difference, thinking globally, but acting locally.

Curriculum alignment and development

These programs are developed and implemented by teachers and for teachers *in direct response to* teachers' needs to have relevant and accessible programs that support students' learning of core competencies of communication, critical thinking, but most specifically address the personal and social competencies.

There is strong alignment between the inquiry projects and <u>BC's new Core Competencies Curriculum</u>. In fact, one could argue that the Hearts and Minds program is meeting all the stated curricular and learning goals of this curriculum, and is one of the most effective and accessible ways of ensuring our students (and staff) learn these skills, competencies and attributes.

- Communication -The communication competency encompasses the set of abilities that students use to impart and exchange information, experiences and ideas, to explore the world around them, and to understand and effectively engage in the use of digital media.
- Thinking The thinking competency encompasses the knowledge, skills and processes we associate with intellectual development. It is through their competency as thinkers that students take subject-specific concepts and content and transform them into a new understanding. Thinking competence includes specific thinking skills as well as habits of mind, and metacognitive awareness.
 - $\circ\quad \text{Creative Thinking} \quad$
 - Critical Thinking
- Personal and Social Personal and social competency is the set of abilities that relate to students' identity in the world, both as individuals and as members of their community and society. Personal and social competency encompasses the abilities students need to thrive as individuals, to understand and care about themselves and others, and to find and achieve their purposes in the world.
 - Positive Personal & Cultural Identity
 - Personal Awareness and Responsibility
 - Social Responsibility

Pedagogical approaches

The Hearts and Minds programs and projects align with the more recent pedagogical approaches in the literature and educational conference and professional development cirlces. These are approaches and teaching methods that support innovative learning and collaborative inquiry based development, including components of "growth mindset" from the book *Mindset* (Dweck, 2016), *The Innovator's Mindset* (Courous, 2015), Realizing the Power of Professional Learning (Timperley, 2011), and *Leadership Mindsets: Innovation and learning in the transformation of schools* (Kaser & Halbert, 2009), and the integration of *First Peoples Principles of Learning* (FNESC, 2016).

How do we know? Qualitative Assessment that is predominantly anecdotal

Over the years there have been some rubrics created and recreated, but most of our assessment is qualitative and in the form of student voices, observations, shared learning and reflections and various shared celebrations of learning (Change Makers event). The teachers involved have been collecting stories in written and video formats.

Although, we have not focused on formally collecting data on this work and this is an area that requires ongoing development and support, some quantitative data we could collect would be the numbers of participants – that is, student and teachers' participation has increased demonstrably every year in all four projects.

Success is being considered, measured and celebrated using *Assessment for Learning* as a framework. This happens in most of our inquiry programs district wide – not just Hearts and Minds programs – but is particularly relevant and evident in our Hearts and Minds initiatives.

Formative assessment is a fundamental characteristic of each initiative. The majority of the assessment being done is from **observations**, "it's about reading your students." The observations come from multiple sources – personal observations for engagement, depth of thinking, and affect; scanning the work the students are doing; performance standards; and the quality of their individual projects.

The teachers use these observations to guide their work with each student and use the work to effect mindful assessment of the students. One of the things they are working on now is moving assessment to be continuous so they don't miss the magical learning moments. To a large extent, as the students have taken ownership of their projects, they are highly motivated to do more and to go deeper; both engagement in and quality of work has improved. These projects have also had a very positive effect on developing self-regulation and growth mindsets, evidenced in stories, videos and shared feedback from students.

Assessment for Learning as a framework: Sharing and defining clear learning targets with our learners, co-constructing ideas and criteria for success with our learners, asking and inviting deep thinking questions, giving and inviting descriptive feedback, and creating opportunities for peer and self-assessment. Specifically being mindful of student engagement and ownership of their learning. Below are some examples of strategies and activities the group has tried:

Co-constructing our thinking: We have designed an inquiry that invites learners to begin by exploring common language/understanding around sympathy, empathy and compassion. First co-constructing thinking and defining these capacities, and then invite learners to look for evidence of compassion in video, photographs and story. Learners shared learning and these insights were captured in videos and poster projects.

Establishing a need to know through story, photographs and video. One example, sharing YouTube video: "You poked my heart." The purpose for watching is to find evidence of compassion. What does compassion look like? https://www.youtube.com/watch?feature=player_embedded&v=3sKdDyyanGk **Partner Turn-and-Listen:** Guiding questions- What did you notice in the clip? How did the clip make you feel? Who do you connect to in the short clip? What small acts of compassion did you notice in this short clip? Discuss and share the book *The Smallest Girl in the Smallest Grade* by Justin Robert.

Performances of understanding: One example is Photograph Boxing Strategy – Inviting learners to work in groups to communicate, think critically and respond to photograph mats, looking carefully at one particular photograph with a lens of compassion, framing their thinking with "What do you notice? What do you think? What do you wonder?"

Qualitative examples of what we "value" shows up most in student voice. For example, descriptive feedback in response to the driving questions: "What is compassion?"

"Compassion is about taking risks to do something to help change, like something big or making it better. For example, helping others make better choices."

Feedback in response to the Change Makers project:

"Sorry but I don't like school really, in general, so this inquiry project is kind of like a beacon of light in a dark cave." -Grade 7 student.

"It's about making a positive change in our community, kids choosing their own project and going on their own path, using their spark and their flow." -Grade 7 student.

Teacher feedback:

"What I've noticed from the kids- empowerment! They are thinking they can make a difference. I think that this has come from watching other students- our own and those in videos from around the world- use their passions, sparks, flames- to make a difference on a small or large scale. They believe whatever they do will make a difference and are therefore willing to give it a go. It's a challenge but they feel empowered." -Teacher.

Question 4. Are funding allocations adequate? What are the implications of various funding decisions?

*There is inadequate data to answer this question fully.

There are several projects under this program and many of them span across multiple schools, involve endless volunteer hours (from both students and teachers) and involved several community partners, many of which donate goods towards the initiatives, it is very difficult to determine "funding allocations".)

That said, all four projects relied heavily on voluntary time; due to the nature and purpose of the work – socially responsible contributions and innovative practice – and due to extreme budget cuts and difficult staffing conditions in this district in the past decade, there was not a lot of funding available. In some cases, students and others raised funds; in other cases, district leadership or school principals supported initiatives through offers of release time, purchases of kits, transportation costs, etc. In some cases, there were innovation grants to help with costs.

The EDAS project has a very small budget, \$3,000, but distributes more than \$30,000 worth of product. It all comes from donations – financial and in-kind. They do this by inviting people to come on board based on their passions.

The Intergenerational project: working with community artists is cost prohibitive in many cases. This project was in part made possible through grant money. We are committed to this project and work through funding issues. For the first 3 years, we were fortunate to receive funding from ArtStarts and the BC Retired Teachers. We no longer have these funding sources, but we generally receive enough money from the Elementary Director of Instruction or the AB Ed. department to pay for a guest speaker or artist. Berwick provides transportation for students each time we visit. Busing on a regular basis is not within classroom budgets.

DFC: Over these four years, district Senior Leadership has provided funding and release time to support cross district teacher collaboration and district wide celebrations of this work. One example, last year 250+ students and their teachers gathered at North Island College for our first ever Change Makers Event where local and global change makers shared their inspiring stories.

The Residential Schools Inquiry: Aboriginal Education department has purchased a teacher's guide from FNESC (First Nations Education Steering Committee) and the supporting literature resources for every elementary school.

Resources and Kits:

The district has also invested considerable resources supporting teacher passions in a variety of ways, driven by the teacher leaders. The district has sponsored attendance at conferences, bought them resources they desired, provided them with training, provided them with release time to work on the various projects, and has provided miscellaneous supports from transportation to materials. This has developed a well-supported, passionate group of teachers who are truly empowered to lead Hearts and Minds oriented initiatives.

Learning Resources Centre purchases: The district teacher librarian, in collaboration with district curriculum support teachers, have purchased and created kits to support teachers in this work.

a. Seventeen Issues 21 kits have been created to support intermediate teachers. Issues 21 fosters a service mindset by exploring local and global issues. The series encourages inquiry into local and global issues. Each magazine is divided into three parts with articles

that: 1. introduce the issue; 2. offer information about people who have taken action (game changers); 3. provide steps for students to explore and be inspired to take action and make a difference. Each kit comes with 16 student books (partner read for whole class) and one teacher's guide. The teacher's guide offers well-worded questions to prompt thinking forward, along with suggestions for assessment and learning targets. Inquiry topics include biodiversity, children's rights, climate change, digital world, energy, food industry, food, mental health, ocean pollution, overfishing, pandemic, poverty, power of the media, and threats to health.

b. Service-learning: combining inquiry with meaningful community service - an intermediate kit. Contents: 1 teaching guide, 15 books. Titles include: A long walk to water, Chelonia Green: champion of turtles, Kids who are changing the world, Shannen and the dream for a new school, Severn and the day she silenced the world, Twenty-two cents, Planting the trees of Kenya: the story of Wangari Maathai, The soccer fence: a story of friendship, hope and apartheid in South Africa, Jane Goodall: researcher who champions chimps, One hen: how one small loan made a difference, The boy who harnessed the wind, Every last drop: bringing clean water home, Brilliant!: shining a light on sustainable energy, Ryan and Jimmy and the well in Africa that brought them together, Ivan: the remarkable true story of the shopping mall gorilla. 7 posters, 52 "Be the change for kids" cards.

c. Service-learning: combining inquiry with meaningful community service - primary kit. Contents: 1 teaching guide, 14 books. Title include: Framer Will Allen and the growing table, 10 things I can do to help my world, Kids can use less, Kids can reuse, Kids can clean up trash, Kids can recycle, Kids can keep air clean, Kids can keep water clean, and If kids ran the world.

d. *I can make a difference*, inquiry unit - grade 1 kit. Inquiry Question: How can my actions make a difference? Learners identify personal actions they themselves can take to help maintain a healthy environment for living things; they plan and carry out a classroom course of action for minimizing waste; suggest ways to reduce personal energy

Of course, there is never enough money for education, professional development and resources for innovative programs, particularly social justice and innovative project based programs; this has been a factor in all four exemplars. But passion, volunteering and engaging the community in many ways has helped alleviate some of these barriers.

These programs have been supported by the district in many ways, including financially for conferences, travel, the purchase of resources and in release time for the teacher leaders building and running these initiatives. Therefore, funding decisions do have an ongoing impact on these programs; decisions about where to spend and where to cut are difficult and often lean hard on quantitative data to help decide. The value of these programs is measured in human experiences and qualitative data. If the question is about our bottom line expenses or even how we measure input and output, it is difficult to answer at this point, due to the complexity of the programs and the voluntary nature of those leading them. Expenses have not been formally tracked and are complex to track.

Question 5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

This program is specific to a few sites at this point in time and although there are periodic events or intensive project periods, many of these inquiries are typically embedded in regular classes and curriculum in a variety of ways and on a daily basis – from the ongoing individual use of "I Can" language used to develop smaller classroom-embedded projects to the more complex, multi-school presentations or field

trips involving hundreds of volunteer hours; so, again, it is very difficult to determine quantitative details of staffing involved.

That said, if it weren't for this team of leaders taking the initiative, this program would not have progressed or produced the results it has so far. There is always the risk of burn out, attrition or life events preventing these key champions from continuing. It would be beneficial to have more staff invited to participate.

Although many unnamed teachers, parents and other staff were involved, the primary leaders included: Robert Atkinson, Jaki Braidwood, Jay Bridges, Doug David, Patricia Hart, Heidi Jungwirth, Cheryl Ann Kelly, Ann Marie Kraft, Avi Luxemburg, Catherine Manson, Debbie Nelson, Jan Smith, Chantal Stefan, Nick Moore, Kevin Reimer, Allan Douglas, Christine VanderRee, and Carol Walters.

It is worth mentioning that none of these would have happened without intensive and ongoing extra support from the Curriculum Support Teachers. That role and those leaders serve a critical purpose and are essential to ensuring these programs succeed.

Residential School Inquiry team: This team consist of just a few individuals who have taken the initiative to build and teach in classrooms on this critically important topic. The Aboriginal Education team is supportive but more people on board or trained in the teachings would mean faster and more equitable spread of this program.

DFC: Every team member is an integral part of this project. Much of the work we do occurs 'off the sides of our desks'. It takes dedication and moral purpose to create rich learning opportunities such as Design for Change for our learners. Through emails, after school meetings, lunch-time meetings, weekend coffee conversations connections and initiatives continue to grow and evolve.

Intergenerational Projects: We currently have two committed teachers working on this project along with the recreational director and general manager of Berwick. We meet after school many times throughout the year to plan with Berwick's Recreational Director.

EDAS: The very nature of this program is built upon volunteerism. Chantel Stefan leads the way and recruits teacher, administrator and student support each year. She could also use some significant and consistent support.

Question 6. What are the identified gaps to review?

There simply are not enough schools, administrators or teachers involved in – or in some cases, even aware of these projects. Communication and whole district level celebrations of learning and inquiry are not currently well supported or featured in this district (which has so much to celebrate!) and so distributing or expanding these projects is organic, sporadic, voluntary and slow. In what ways could we build awareness in hopes to inspire and involve more participants?

Busing for Intergenerational projects: Although transportation is provided, Berwick has a small bus which means we need to make two trips from the school to Berwick to transport all the students there and back.

There is not enough information at this point to fully answer this question for all projects of Hearts and Minds programming.

Question 7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

On Design for Change/Change makers: The goal is to use inquiry to develop and implement *service learning and compassion based projects will engage students*. To date, these projects have worked to increase students' levels of engagement in learning, to expand their awareness of local and global issues, to develop compassion and empathy for others, and to use inquiry to identify their interests, and explore ways to solve social or community issues. A secondary goal was to help teachers better understand the lives of their students – particularly those living in poverty or other life and learning challenging conditions. There is no doubt that these four projects are achieving on these goals and more.

Where are the goals stated?

As mentioned, celebration and tracking are two areas that are not strong in this district and not purposefully developed in these programs. Most of the energy, time and resources go into running the programs and not measuring or marketing them.

However, one place where one might find our goals stated or evidence of achievements is on **Learn71** website: <u>http://www.learn71.ca/inquiry/</u> although this is not regularly updated.

Another site to find inquiry projects is <u>http://www.learn71.ca/21st-century-learning/</u> but again, this site is not often updated (not since 2015-2016).

In the media and archives of the district: four projects we speak of in this report are ongoing and some have won global recognition and community as well as educational awards! For example, last year our DFC Canada work stemmed from a professional learning community involving 12 teachers from 4 schools across our school district. In our work, 250 + students were reached and more that 70 inquiry projects were initiated. (See Olivia's article - appendix 1--- which was published in the Comox Valley Record last March)

We have seen authentic evidence of engagement and increased sense of purpose from our learners. Students appear proud of their accomplishments and engaged in sharing their stories of change in videos and articles.

In their own words: Being able to articulate one's learning is important. When asked questions framed with the Feel, Imagine, Do design thinking model, our students can confidently express why they were drawn to their identified issue, why it is important; they are able to describe if and what other people are doing about the issue locally and globally, and they are able to share about what they hope to accomplish with their actions taken.

The voices of students and teachers involved (and the recipients of these programs as well) speak to the ways in which program goals were achieved. Most participants have changed their world views, personal perspectives, activities and have become actively engaged in community and school. Or simply observe the resounding pride, engagement and success of the "Change Makers Event" celebration at the Stan Hagen theatre, showcasing several of these and other student inquiry based projects that are making difference in people's lives. These projects make a difference to the participants and recipients in many ways.

In the breadth and depth of the students' inquiries: The variety of issues that students have explored within this Design for Change inquiry is incredible. To name a few: tackling invasive Scotch Broom, teaching Seniors how to use technology, Hot Dogs (concern for dogs left in vehicles, in parking lots, on hot days), Autism awareness, and urging Costco to find ways to reduce the garbage it produces. Students identify these real-world issues for themselves as things they are

concerned about. They go out into the community to explore and do research. They imagine their own solutions and take action.

This work continues to grow in awareness and utility. More and more teachers and schools are seeing the connections to other work and the benefits of working with the Hearts and Minds 'curricula'. Our secondary schools are starting to connect their many humanitarian efforts with the more system approaches of their elementary colleagues and increasingly teachers are linking what has traditionally been an 'extra-curricular' with their curriculum and gaining improved engagement and learning from their students.

Taking it further afield: Last Spring, Doug David connected (via both email and Skype conversations) with 3 people from other parts of Canada (Toronto, Montreal, and New Brunswick) who are taking steps toward bringing Design for Change into their work/communities: Willow Johnson, Camille Testard and Anita Punamiya.

In the school community celebrations and fairs: Last year a core of teachers decided that we needed to take the work a step further and began organizing an Inquiry Fair. This group met in the spring and began laying the foundation for this celebration of inquiry. Our school district's first Inquiry Fair was held in spring and more than half of the schools in our district participated.

After a bumpy few years with job action and teacher layoffs, in January 2015, 12 teachers from 6 schools reconnected and began collaborating to launch a cross-district Design for Change partnership. As a launch to 2015, our DFC Canada team held a Design for Change, Change Makers Event that occurred in February 2015. In an event similar to TEDx talks, several schools invited local change makers and community service representatives to share stories of inspiration, stories of I CAN, to an audience of 200+ children. Our hope was that our students would walk away from this with increased awareness, sense of purpose and urgency to get involved and be change makers.

After the Change Makers Event, teachers worked with their students to explore sympathy, empathy and compassion, using video clips, story, and images to support this work. Teachers then began to work with students using the DFC design thinking model of Feel, Imagine, Do, and Share to support their work:

"What I've noticed from the kids- empowerment! They are thinking they can make a difference. I think that this has come from watching students- our own and those in videos from around the world- use their passions, sparks, flames- to make a difference on a small or large scale. They believe whatever they do will make a difference and are therefore willing to give it a go. It's a challenge but they feel empowered."

"We have completed the compassion lessons in my grade 5/6 class. As extensions, we took our kindergarten buddy class outside and used the iPads to 'Capture Compassion'. Students have selected their images and are now completing a writing assignment on how their photo captures compassion."

One teacher on our team completed an "I AM" project with his students... see description below:

"Yes we did finish that project. It went really well... students studied some psychology about how they learn, what their motivation, and interests are, and how they enjoy learning. Students also watched selected TED talks and other motivating videos in our mini-unit on Change and how people invoke change."

On EDAS, http://edas.ca/projects/

The level of participation and output climbs each year and this is the 14th year. For example, Puntledge Park Elementary put out a call of interest for a student EDAS Project Club, which meant that they would run the whole project in their school. The hope was to get 16 children to volunteer. They had to apply using an extensive application and the result of the work was so outstanding that of the 40 that showed initial interest, 23 had their dreams validated and became the leadership team.

The reactions – whole body, emotional responses from those receiving the care packages – are one of the measures that continue to inform this work. Anecdotal stories from the students and their families about the shifts in attitudes, behaviours, and interests with respect to homelessness and poverty. It has led to many, many powerful discussions in the homes of the children.

Community members not historically involved with this work have been stepping forward to help out in many diverse ways. There is a growth of evidence of empathy in many areas. Schools that have participated always repeat their participation and encourage others to do the same. More schools participate every year. At every school there is a teacher that has volunteered to take the lead and administration supportive of the project.

The new curriculum and presentations by the EDAS team have helped to develop more interest and capacity in teachers. More districts are inquiring and getting involved. New sites and locations are involved every year. 9 communities have been involved and this year, Red Deer has opened a project. There are new partnering sites and soup kitchens every year. New businesses and volunteers come forward every year.

On Residential Schools Inquiry: We see some very dedicated teacher champions of Aboriginal Education deepening their learning and spreading their knowledge to their colleagues. We see people getting involved that have not been traditionally being involved – Educational Assistants, elders, teachers, students. Teachers are able to see the purpose to this teaching and how it is connected to humanity. We see students make a connection to why it is important to learn about this topic and we see them more able to sit with the sensitive nature of what they have learned. We always provide dialogue and an activity for the children to have an outlet for the feelings, so they can feel like they have done "something" to help the survivors or themselves.

Defining moments in this work: At a workshop with adult learners, in response to "Why teach children about the Residential School experience?" everyone in the room was invited to say, "It matters to me because..." and complete the sentence with their own ideas. The responses were both heartfelt and stirring. Hearing the personal stories not only validates the important work we're doing in classrooms but also gives us strength to continue.

In a talking circle, after viewing Chief Robert Joseph share about his Residential School experience, students were invited to reflect on and share what they notice, think or wonder. Student responses were heartfelt and insightful. One student expressed, "I can't believe someone thought this was a good idea." Another wondered how awful it would feel to say goodbye to your mom and dad, not knowing you won't see them again for over 300 sleeps.

In a talking circle, students were invited to reflect on and share about self-care, knowing that the topic of Residential Schools is difficult. A grade 4 girl's response was "When I feel sad I have to talk to people. If I keep it bottled up my heart aches and my belly aches".

When Sally Sheehan shared a photo book she created which captures our shared experience participating in the decommission ceremony of St. Michael's Residential School... At the end of one of our workshops, a woman approached Sally and told her that her father went to St. Michael's School, and asked her if she could somehow get a copy to give to her dad.

On the Intergenerational projects:

When filling it out grant proposals, we have stated program goals. The team of 3 who organized this work are constantly seeking ways to make our time as Berwick as meaningful as possible for the senior residents and grade 4/5 students. We meet with the residents of Berwick at least once per year to get their feedback regarding what they feel is working, what needs tweaking, and where to next. They have been integral in determining our direction.

Our intergenerational work was recognized by the Learning Partnership. In April, 2016 we were informed that we had won Federal recognition for the initiative in which the Berwick residents welcomed new kindergarten children and their families at Valley View Elementary:

Award for Comox Valley Intergenerational Project Valley View Elementary School; Courtenay, BC For fostering mentorship opportunities and relationships between kindergarten students and the adult community during the project's inaugural year at Valley View Elementary School. As described, "during the course of the entire school year, the students participate in a variety of activities with the older adult residents, including art, music, theatre and storytelling. As a direct result of the relationships with these older adults, [the] children have learned respect, care and empathy towards a generation who lived very different lives." <u>http://www.thelearningpartnership.ca/news/the-learningpartnership-honours-educators-and-community-leaders-for-their-commitment-to-early-learning</u>

As well, Dr. Joyce Bainbridge, professor emeritus University of Alberta heard about our intergenerational work and included a section in her newest edition of her book.

Regarding new sites/locations: we began with four Berwick residents and 2 kindergarten classes. Now, we generally have 10-12 residents during each of our visits. Overtime we have seen a much higher level of comfort and confidence among the seniors. This is a win/win project. The senior residents have a sense of being needed and this has built their capacities and belief that they are contributing to a younger generation. Parents are often saying their children are not near their grandparents. Stereotypes regarding young and old have a tendency to grow, but not always in positive ways. With this project students are saying, for example, "Mom, I've made a new friend. She's 90 years old!"

Other feedback from students:

"My highlight of the year is Berwick. I feel like I learned a lot about the K'omoks First Nations history. I also thought it was super fun and I think our class is really lucky to have this opportunity to go to Berwick". Ava

"I have changed as a person by going to Berwick. I used to think that it wouldn't be fun but I learned that it was an opportunity to go and I met a lot of people. We became friends and they taught me a lot about when they were kids and how school was for them". Leila "Before I went to Berwick I always thought old people were old and cranky but since I went to Berwick I realized they are really nice". Anthony

"I made new friends at Berwick and I will miss seeing them every second week on Tuesdays :(" Sophie

The stories we have collected over the years are our evidence of success. The strength of this program is measured with qualitative data.

Pat the Bunny story ~ Declining vision meant that Pat couldn't read the print of story books. Anaia went home and practiced reading a book with her parents so she could take it to Berwick and read to her resident friend. Anaia chose the book, Pat the Bunny, as she knew Pat would connect to its title.

Sophia's connection ~ Sophia doesn't have many opportunities to see her grandparents. Eleanor became an adopted grandparent; after Eleanor's recent hip surgery, the family visited and continues to do so. She has become an extension of their family.

Vimy Ridge ~ During a Remembrance Day activity, Margaret shared her story of Vimy Ridge and shared a rock from Vimy Ridge. After seeing how gentle the children were with her artifact and how well they responded and listened, she felt she was contributing to the education of these students and has been a regular part since the inception of this intergenerational project.

Cumberland Maypole Dance conversation ~ Dylan and his family went to Cumberland for the Maypole Dance celebration. While watching the dance, Dylan sustained a 20 minute conversation with an elderly gentleman standing beside him. His parents told teachers that they were convinced a level of comfort with another generation had been established during his time at Berwick.

At the park ~ during a community visit to the park with kindergarten children, two residents went up the climbing wall and down the slide! Each of these ladies were in the late 80's!

The evidence of achievement comes in the form of stories. How do we communicate these stories beyond the people involved?

Question 8. Should this program be a district or school program? What are the implications of each?

The Hearts and Minds Program should be a district wide program, with each school having the option to define their own project(s), or in some cases, to work with other schools on similar projects. If it is a district wide project only, then who determines the theme or focus of the social projects for the district and how relevant are those choices for the students in our diverse schools? The best results come when the students in each school are determining the projects from their own inquiries as relevant to their own contexts, concerns or cultures; giving the students choices in where and how they want to make a difference is the very heart of this program. It was interesting to note that it was in the schools with more socio-economic challenges that we saw the greatest gains and engagement and achievement. So it should be school or student based.

That said, these initiatives often require district level support in the form of funds, teacher release time, permissions to travel and transportation, etc. If these projects were to be "funded" or supported solely through limited school budgets, fundraisers, or donations, they would not be successful.

Update: The Intergenerational project at Valley View ended when key leaders Debra Fullerton and Karen Reimer left the school. Debra did get the Intergenerational project going at Brooklyn with Grades 5/6 instead of K's, as it had been at Valley View Elementary. This intermediate group operates on the same philosophy of relationships and working on projects together (intergenerational). She is doing this again this year with her 4/5 class. The visits are now less frequent than with the K's, which means decreased resident participation. Instead of story time with Kindergarten children, many intermediate students are bringing awareness to the residents about what school is like today! Intergenerational projects such as this connect community members, demystify the aging process, and offer ways to share what education looks like in the 20th century.

Question 9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

Given the overwhelmingly positive responses from the learners, the teachers involved, the school community and the larger communities, including the recipients of these various projects (not to mention winning awards across the province), it is evident that this program has positive impact on all students and teachers involved. It would, therefore, be ideal if the programs could be expanded so more students and teachers could experience such gains in self knowledge, community connections, as well as a deeper understanding of students' own living conditions and challenges as well as those of the members living in our communities.

However, the ideas need to come from the students and not from elsewhere – and not everyone will have the time, will or resources to engage their learners in this type of work. Some teachers do not have the capacity to engage in all the extra hours and energies that these programs take. This program requires a lot of commitment and philosophical beliefs from those involved in organization and implementation.

Expansion is a worthy goal for those individuals willing to offer their time and heart, but it is not as effective if participation is mandated or required.

Question 10. How does the program align and cohere with other programs?

The Hearts and Minds Program and its inquiry projects align with each other quite coherently, but also align in every way with the district's Vision, Mission and Values.

SD71 "Vision: A learning community that embraces diversity, honours relationship and prepares all learners for a changing world.

Mission: To work with our educational partners to develop responsible, compassionate citizens and successful, lifelong learners

Values: • Trusting relationships based on respect, integrity and ethical behavior • An environment that motivates and actively engages learners • Innovation and creativity • Strong partnerships, especially between home and school • Accountability and shared responsibility • Individual, professional and organizational growth • Celebration of accomplishment" (*School District 71 Strategic Plan 2015-2018*)

There is also strong alignment between the inquiry projects and <u>BC's new Core Competencies Curriculum</u>. In fact, one could argue that the Hearts and Minds program is meeting all the stated curricular and learning goals of this curriculum, and is one of the most effective and accessible ways of ensuring our students (and staff) learn these skills, competenciese and attributes.

- Communication -The communication competency encompasses the set of abilities that students use to impart and exchange information, experiences and ideas, to explore the world around them, and to understand and effectively engage in the use of digital media.
- Thinking The thinking competency encompasses the knowledge, skills and processes we associate with intellectual development. It is through their competency as thinkers that students take subject-specific concepts and content and transform them into a new understanding. Thinking competence includes specific thinking skills as well as habits of mind, and metacognitive awareness.
 - \circ Creative Thinking
 - Critical Thinking
- Personal and Social Personal and social competency is the set of abilities that relate to students' identity in the world, both as individuals and as members of their community and society. Personal and social competency encompasses the abilities students need to thrive as individuals, to understand and care about themselves and others, and to find and achieve their purposes in the world.
 - Positive Personal & Cultural Identity
 - Personal Awareness and Responsibility
 - Social Responsibility

Furthermore, a quick review of the <u>First Peoples Principles of Learning</u> will demonstrate clear alignment and coherence with the goals and outcomes of the Residential Schools Project, Intergenerational Project, Everyone Deserves a Smile, and the Design for Change initiatives.

- Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.
- Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).
- Learning involves recognizing the consequences of one's actions.
- Learning involves generational roles and responsibilities.
- Learning recognizes the role of indigenous knowledge.
- Learning is embedded in memory, history, and story.
- Learning involves patience and time.
- Learning requires exploration of one's identity.
- Learning involves recognizing that some knowledge is sacred and only shared with permission and/or in certain situations (<u>FNESC</u>, 2017)

11. What are the key questions or topics for the Board to consider?

Leadership that clears the way and supports the people is crucial. All of these projects and their incredible successes are grassroots initiatives that have found administrative champions, who empowered and supported and validated students' and teachers' interests and work, which motivated and excited the teachers in these projects.

Intergenerational Project questions:

- ✓ What are other ways in which SD 71 educators can connect our students with their community members?
- ✓ Who benefits most from intergenerational work: our SD 71 students or the senior residents at Berwick, Comox Valley?
- ✓ In what ways does an intergenerational program align with the new BC curricula and the Core Competencies and can we demonstrate this and publish it in a graphic form?
- ✓ How do we generate student care and compassion for the elders in our community?
- ✓ How do we help our students further develop care and compassion for people in our community?

Design for Change:

- ✓ In what ways can we support further involvement in the annual *Be the Change* celebration and *Global Partners Meet*, representing Canada in these Global educational partnerships with *Design for Change* (DFC), the largest global movement designed to give children an opportunity to express their own ideas for a better world and *put them into action*.
- ✓ How can we better share these programs and their outcomes with the rest of the district and beyond? In past, we have been featured at conferences, in newspapers, and community award ceremonies, but how do we feature these programs, in an ongoing way, *within* the district to encourage spread?

Residential school project:

✓ Is there a way to get a district wide or multiple school wide <u>Blanket Exercise</u> experience in the district? <u>Laura Tait</u> is a key contact for this powerful and motivating learning activity that could really inspire a ramping up of understanding and engagement in First Nations learning.

References

Couros, G. (2015). *The Innovator's Mindset*: Empower learning, unleash talent, and lead a culture of creativity. San Diego, CA: Dave Burgess Consulting, Inc.

Dweck, C. (2016). *Mindset*: The new psychology of success. New York, NY: Ballantine Books.

First Nations Education Steering Committee (FNESC). (2015). *First Peoples Principles of Learning*. Poster. Retrieved from <u>http://www.fnesc.ca/wp/wp-content/uploads/2015/09/PUB-LFP-POSTER-Principles-of-Learning-First-Peoples-poster-11x17.pdf</u>

Inquiring Districts Network Group. (2015). Inquiring Districts: Activating Learning and Changing Lives. Presentation at BCSSA Conference 2016; Retrieved from http://noii.ca/wpcontent/uploads/2016/05/McGregor-and-Taylor-2016-NOII-Sym-for-web.pdf and Unpublished Draft Report: An Implementation guide for district users.

Kaser, L., & Halbert, J.(2009). *Leadership Mindsets: Innovation and learning in the transformation of schools.* Leading school transformation series. Oxon, UK: Routledge.

School District 71 Board of Education. (n.d.). *School District No. 71 Comox Valley Strategic Plan 2015 – 2018*. Retrieved from

https://www.sd71.bc.ca/About/publications/Documents/Strategic%20Plan/Strategic%20Plan%202015-2018.pdf

Timperley, H. (2011). *Realizing the Power of Professional Learning*. Expanding Educational Horizons Series Editors, Louise Stoll and Lorna Earl. Berkshire, UK: Open University Press.

Appendix 1

The Change Makers Event

On the afternoon of Feb. 12, 2015, a wonderful event was held in the Stan Hagen theatre... The Change Makers event. Students from Brooklyn Elementary, Courtenay Elementary, Valley View, and Huband all attended. Along with performers and audience members Ecole Puntlege Park with Chantal Stefan from project E.D.A.S.

We enjoyed learning about "Everyone deserves a smile" (AKA E.D.A.S.). This was created to help the homeless by giving them gifts around the holidays. It is a non-profit organization that started in Edmonton, just before Christmas in 2003. As it says on the website, "Four friends came together and left 88 homemade care packages on garbage bins in the backstreets of downtown. At the time, they hoped to bring a smile to those living on our streets, letting them know that they were not alone and not forgotten that Christmas". The students at Puntledge and the schools in our district have enjoyed keeping this project going for the homeless on Vancouver Island.

That's a good example of what change making is; Change making is when someone is really compassionate and tries to make someone else smile by fixing something that needs to be fixed. Some times, it could be something simple, like buying food for a struggling friend. Other times it could be something huge, like Boomers Legacy. It doesn't matter how big it is or how long it lasts, what matters is how it impacts someone else's life.

Boomers Legacy is about a young man named Andrew, nicknamed 'Boomer', who went to Afghanistan, to be a medic during war. He saw children freezing and it bothered him that no one could help them. He wrote to his mother asking for help and soon his mother and others had knit wool hats for young children to wear in Afghanistan. Sadly, Boomer was killed by a suicide bomber on August 11, 2006. The Boomers caps project began and became Andrew's legacy. Boomers caps are the children's hats. Even today solders are sent children's clothes from Canada to give to children to keep them warm. That's having a huge impact on all of those kids' lives.

We had tons of other performers/ presenters at this event, including Stella & Sophie Swanson-two very young singer-songwriters, Helen Austin-children's album singer songwriter and hostess of this event, the Isfeld improv team, Fernanda Pare, Al Pullin, Bert Heeringa- Boomers legacy, Francis Nye, Dyllan Johannes, and Tristan Sumner. Plus Videos from DFC (design for change) International! Keep in mind each presentation (or video) represents a different change makers project... that's a lot of change makers!

The main idea of the event was to inspire kids and teens to make a difference and change the world for the better. Anyone could be a change maker. You could check online for videos of DFC Canada or DFC International! Plus, did you know there were approximately 205 students watching the event? and the songs Stella and Sophie Swanson sang were Ba Buddha, road trip and 10 hugs a day. So what are you going to do to change the world?

By Olivia DeLuca

Hornby Island Community School Learning Hub Model

1. A description of the program, a brief contextual history, a brief summary of the current application of the program

On a small, rural, and remote island a need was identified for more flexible approaches to meeting learner and family needs, and accessing community resources for learning. As a community school there was a desire to recognize the "whole learner" and the achievements and learning occurring both in and outside of our school environment. Allan Douglas, Director of Elementary Instruction, Tom Demeo, then Director of Secondary Instruction, and Alissa Pratt, then Vice Principal Hornby Is. Community School and Lake Trail Middle attended meetings with parents and began to develop a structure for a blended learning hub model.

Hornby Is. Community School operates Monday-Thursday 9:00-3:00. It is a Blended Learning School, meaning it has non-traditional structure of instructional hours. Instead, learners, staff and families work to design individual student learning plans and approaches to meet learning needs to ensure learner next steps are met. Families are invited to SPARK meetings each term to reflect upon and revise Student Learning Plans for next steps.

The 43 K-8 learners at the school are organized into 2 "Base Camp" classrooms. Depending on numbers of learners at each grade level the grade span of each class can vary each year. Currently, we have a K-2 and a 3-8 base camp grouping. Through the week, all staff teach all students in various age range and grade level groupings. We call them "Base Camps" as learners will often start in their larger grouping and then break off into smaller, more focused working groups.

Regular staff include one full time teacher, one .6 teacher /.4 Administrator, and a .4 blended learning teacher provided through staffing from Navigate (NIDES). We also have a Library Clerk, Administrative Assistant, and two Educational Assistants (EAs) which share the 4 days (one comes Mon/Thurs, the other Tues/Wed – shared with Denman).

A more detailed context can be seen at <u>https://sites.google.com/a/online.sd71.bc.ca/hornby-island/</u> most content at the site came from our first years of implementation (2015/2016). The vision was programming that could meet mandated expectations for academic achievement and personal social growth as well as addressing family needs for flexibility and recognition of community programming. We also needed to address the small staff structure and ways we could utilize staffing allocations to best meet the needs of the learners.

2. Does the program provide adequately for a progression of knowledge, skills and competency development?

The Learning Hub Model is based on looking at individual learners rather than their "grade". Of course, in keeping with Ministry expectations, learners progress through an assessment and evaluation cycle that holds them to "grade level expectations" with performance scales and standardized tests/benchmarks etc.

but focusing on the individual and next steps to meet grade level goals has allowed us to better meet learner needs within our multiage structure.

The two classrooms are across the hall from each other and they open up into the large library space which is utilized extensively by small groups, multiage groups, and whole school groupings. There is a space for older learners to demonstrate personal/social responsibility by having less supervision and being able to manage behaviour in preparation for transition to a large high school, usually in their grade 8 year.

To support learner academic development within the multiage structure, a variety of online and offline resources are utilized. Regular reading/writing and mathematics benchmarks assessments help to guide next steps and resource selection.

We adapted the space of the computer lab so that the machines are around the outer area and then the centre counter top was cleared of computers to allow teachers to meet with learners for facilitation of paper based materials and individual instruction.

Accessing Learning Support Teachers (LSTs) is an area for concern. Because of the small size of the school, there is not a specific allocation to the school. Instead, an LST is shared as part of Navigate's staffing. Navigate's Learning Support Teachers have large case loads and it can be challenging to have the school's needs met in a timely manner.

3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

In Progress, this is year 3 of the program's development and each year further facets are added with learner, family, staff and at times community feedback. The program is very effective at:

- Inquiry based learning based on "Big Ideas" for multiage groupings and cross school collaborations and showcasing learning
- Ongoing assessment and evaluation
- Awareness and planning for home, school, and community learning experiences

4. Are funding allocations adequate? What are the implications of various funding decisions?

We have 43 learners at our school. To the best of our knowledge, we also have a designation as a rural and remote school. A focus group to look at rural and remote funding and future designation of funding is recommended.

5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

The school has 43 learners. There is a 1.0 teacher, a .6 teacher, .4 Blended Teacher (through Navigate-NIDES), and a .4 Administrator. 20 hours per week are allocated to the Library Clerk and Administrative Assistant. We also have an Educational Assistant each of our four days (two EAs – Mon/Thurs and Tues/Wed). Our gap at this point is Learning Support that is allocated through Navigate (however, their needs are such that it is an ongoing process to determine where and when services are offered). The school population declined dramatically in past years and along with it, staffing allocations. It has been over 5 years since teaching staff were reduced from 3 to 2 teachers and multiage groupings increased in span. Accessing specialized district resources and staff remains a challenge.

6. What are the identified gaps to review?

- Once identified, in what ways can learning needs of learners be met regardless of distance?
- Can technology provide more of a bridge to learning for those needing support? (e.g. an EA with a group of learners joining a Skype or Zoom meeting with an LST)

7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

Our Mission Statement is:

At Hornby Island Community School we value community and its natural environment.

We embrace attributes of: 21st Century Learning, Project Based Learning, Place Based Learning

We put children's intellectual, emotional and physical development first. We envision and support:

- 1. An environment safe for risk taking, responsibility, and being receptive to learning through building of strong relationships in a nurturing, open and honest space
- 2. We hold a vision of our school actively supporting community and in turn a community that supports our school. Hornby Island Community School is a reflection of our vibrant community, thriving because it is unique.

Our goals are to:

• integrate arts into our daily curricular offerings to a greater degree and to evaluate our current curricular resources for effectiveness through regular cycles of assessment and evaluation to ensure growth in core areas are occurring at or towards grade level learning outcomes.

Our Mission Statement and Framework for Enhancing Student Learning can be found at our website.

8. Should this program be a district or school program? What are the implications of each?

This should be a school based program though elements of the program could possibly be used at other schools e.g. SPARK meetings, Student Learning Plan development with families, incorporating recognition for activities occurring outside of school hours are some of the successful attributes of the program.

9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

The program would benefit from having some collaborations with other schools. In particular, if there were regular opportunities to connect with Navigate's Blended Program learners, families and staff could connect and share experiences and ideas. At this point, the FAE program articulates to Vanier and so do Hornby Is. Community School learners so it may be something to look more carefully at.

Hornby Island Community School is a district asset. It is a beautiful facility and the community is very proud of it. Having other district schools visit the facility as part of their outdoor education programming or other

ventures may be a good (and financially feasible) option for schools as they plan their field trips and yearly programming.

The cycle of a school wide inquiry, creating ideas/questions/resourcing and presenting is one that could be expanded. This year our topics include the big ideas of "Spirit", "React", and "The Land" last year's focuses were "We Live Here", "Move It", and "Create". Choosing an overarching school theme brings us together regardless of age/grade. Learners develop questions, identify resources, and share their learning journeys with the community at least 3 times a year.

There may also be an opportunity to offer our facility to other Distributed Learning Programs. Families receive funding from other programs as part of their registration (e.g. Self Design). Perhaps some families would like to use their funds to join school based activities and therefore would be contributing to our revenue.

10. How does the program align and cohere with other programs?

This program aligns and coheres with other programs by:

- 1. Focusing on learner needs academically, socially, and emotionally
- 2. Considering family need in program planning
- 3. Resourcing and curricular planning based on Ministry of Education expectations
- Regular assessment/evaluation/reporting based on Ministry of Education expectations (and local expectations)

11. What are the key questions or topics for the Board to consider?

- 1. How can we continue to find creative and collaborative ways to meet the needs of a small rural and remote community school?
- 2. What are creative ways small schools can access opportunities offered to other schools (e.g. using the high school bus to get to town for activities being offered) to remove barriers to equity and equality?
- 3. What can small schools do that big schools cannot that might be an asset to the district?
- 4. How can we better articulate learners from a small rural and remote school to a large high school requiring approximately 4 hours of travel time each day?
- 5. How can we bring consistency and stability to staffing at the school while respecting contractual agreements (when there are only 5 staff, changing even one person each year has a massive impact).

Independent Learning Centres

1. A description of the program, a brief contextual history, a brief summary of the current application of the program

Developed in 2010, the ILC Program was created to provide opportunities for students to have more flexibility and options within their education. Similar to a regular classroom, students are expected to attend class and make progress towards the completion of an area of study, but the difference is that each student is working independently on different courses that are provided in a variety of online and independent study formats. The options are limitless as students can access core and elective courses through NIDES or a number of other online educational providers, or they can explore an Independently Directed Study (IDS) in a specific area of interest to the student. Not only does this program provide students with alternative educational options, it also helps them develop the ability to self-regulate and to work independently. In the modern world of digital distractions, students find it increasingly difficult to be productive and regulate their use of digital devices, but the ILC provides them with an environment to develop those skills under the guidance of an ILC teacher. The development of these skills will aid our students in achieving post-secondary success as they will be more capable of managing digital distractions and working independently in an unsupervised environment. These benefits have led to the growth of ILC programs as students are attracted to the flexibility and independence and the district recognizes the need to provide students with a guided environment for them to explore their learning.

2. Does the program provide adequately for a progression of knowledge, skills and competency development?

In terms of competency development, the focus on the ILC would be the development of self-regulation skills, which is key to the ILC. The students need to be able to manage distractions and set a pace that achieves success (with the help of the ILC teacher of course). There is less of a situation where a teacher hand holds and tells the students what to do and more where the students have to figure it out on their own. Also gaining the ability to function online through an LMS is integral to future success as more and more training and post secondary courses are moving into that format. Communication and thinking competencies are also key, as a multitude of formats for learning are possible with the type of learning available in the ILC.

3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

The ILC, when done well, allows for differentiated learning opportunities for students as it allows for a larger amount of choice and the adaptability to provide independent study options. The idea of the teacher being a guide instead of a stand and deliver figure is significant. It encourages thinking, independence, and personal and social competencies in a guided environment. When it comes to assessment, the ILC teacher is largely not the one assessing the student, so it is not as relevant in this situation. The ILCs can offer significant choice and opportunity for learning outside the box, which is key to the new curriculum facets, especially the core competencies. We know it's an emerging trend in our secondary schools but not wholly successful as yet. Completion rates of NIDES courses are low and we don't have a lot of data on IDS type of courses, beyond limited anecdotal information.

4. Are funding allocations adequate? What are the implications of various funding decisions?

Funding allocations are adequate, as long as the equipment is kept up to date as it is imperative for students to have access to the technology necessary to complete their courses. ILCs also work far better in a non traditional classroom environment, so creating an appropriate space is important. A mix of computer stations and open space concept is critical and will need to be supported financially to create optimal spaces. Implications of this is that of course, with funding models being fairly static, money taken from one program equals money being taken FROM another.

5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

Staffing levels are adequate for the ILCs, but part of this process is providing the courses for students to complete and those courses need to be developed at NIDES. So if any staffing is needed, it would most effectively be used to develop more updated courses at NIDES. At the school level, enrolment in ILC classes can be overly large and reduce the teacher's effectiveness to deliver a viable option for students-class limits should thus be maintained or kept at between 20-26 students.

Might be worth noting that it is dangerous right now to claim ILC teachers as Support teachers and lose the option to claim beyond 8 blocks of funding. The Ministry will catch up to that eventually and could cost us in an audit.

6. What are the identified gaps to review?

Counseling of students considering an ILC to determine whether the ILC will be a good fit for them. ILC's can be a tremendous vehicle for 21st century learning and inquiry, but HAVE been used by schools as a "dumping ground" option to solve class size issues or course availability options at the school level. To be a viable program moving forward, especially as related to inquiry, students either need to be taught how to learn in this manner (have it scaffolded for them at an early age) or have a specific plan for their learning planned in advance of taking a course in the ILC. I would say that the program needs to explore more options when it comes to the use of IDS options for students as they tend to go to the NIDES courses without looking to explore independent studies. There needs to be a framework in place for students to further explore this and a process that is clear and aligned with Ministry policy concerning IDS.

7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

The goals of the ILC need to be reviewed and formalized in order to provide more direction for the ILC teachers and schools in general. It does play a role within each school, but it is not at the point where there is a clearly stated goal for the ILC teachers to follow. In general, the goal is to have each student succeed in completing a course, but it is time to move beyond that.

8. Should this program be a district or school program? What are the implications of each?

This program is currently a school based program that has led to a large difference in the ways that the ILC's are being run based on the personality of the teacher running the program. If it shifted to a district program then there could be more alignment and coherence when it comes to running the program and more integration in with NIDES, which is the main provider of courses. There could also be a higher level of collaboration between ILC teachers as there are strengths to each program that are not being shared as effectively as they could.

9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

This program should be expanded as there is the potential for opportunities for blended learning and an increased online presence in schools. The ministry is looking for more flexibility and choice when it comes to student learning and the ILC programs can provide it.

10. How does the program align and cohere with other programs?

The ILC can be used as a supplement to almost any program in the district as it provides students with the flexibility to manipulate their schedule to meet their needs.

It is closely aligned with NIDES. It is closely aligned with the independence and inquiry aspects of the personal and social core competency, also.

11. What are the key questions or topics for the Board to consider?

- 1. Should ILC's be managed at the school level or the district level?
- 2. Should the district consider a competency based training program for ILC teachers to ensure that teachers within the program are considering the issues above. Like the students within the program, if ILC's become a "dumping ground" for teachers, moving this program forward will be difficult. It is a specialized position that requires the right teacher. It should follow the parameters of sound educational practice as we move towards the new curriculum. Good practice=a good program. Dumping ground=bad practice.
- 3. Should we invest money in training teachers and money into infrastructure to make the ILC's the centre of learning in the schools that they have the potential to be. They represent a fringe element in the three schools now, but with Blended Learning and Inquiry being focal points of the new curriculum, we should consider investing in making this space as good as it can be rather than settling for what it often is and making do.
- 4. Should be move beyond the ILC's being so closely aligned with NIDES programs and offer a greater balance between traditional online offerings in the DL world with the personalized learning opportunities available through directed independent studies?

Maker Spaces

- 12. A description of the program, a brief contextual history, a brief summary of the current application of the program
 - a. "A makerspace is a collaborative workspace inside a school, library or separate public/private facility for making, learning, exploring and sharing that uses high tech to no tech tools. The mindset is the goal more than the space. The maker mindset is about creating something out of nothing and exploring your own interests. These spaces are also helping to prepare those who need the critical 21st century skills in the fields of science, technology, engineering and math. They provide hands on learning, help with critical thinking skills and increase student ownership. Makerspaces are also fostering entrepreneurship and are being utilized as incubators and accelerators for business start-ups." source: <u>https://www.makerspaces.com</u>

There is some concern about our plan to turn Libraries into Learning Commons and pretending that we now have MakerSpaces. It saves money but is not pedagogically sound pertaining to Maker Philosophy, approach, or delivery.

- b. As a general rule, makerspaces support students by developing their comfort and proficiency with the process of design. While there are many similar models, one of the most renown is the one championed by <u>Stanford's d.school</u>. Though there are variations on this model, most begin with defining a problem, collecting information, brainstorming and analyzing ideas, developing solutions/building a model, presenting your ideas to others for feedback, and then refining your design.
- c. Over the past few years there have been various attempts to apply this approach across our district. There is no "right or wrong" when it comes to "Makerspaces" as long as the general philosophy the process and hands-on creation and each of them has been unique.

One commonly held view is that Maker Spaces are just the shops we have always had, but with newer technology. It is the design thinking part that has really changed and this is across curricula.

Having said that, there are people who understand the real philosophy and such and many who don't really have the understanding. This is where training, mission statement, vision, etc. come in and it needs to be drafted by people who actually know what the pedagogy and philosophy are. Many are called MakerSpaces but are done poorly.

- d. ENTER, E2, iMaker, along with Steve Claassen's work at Vanier and now Isfeld are the only clear Maker Space learning environments within the Valley. We now have one up at a Navigate location in Nanaimo that is substantive and might serve as a model for school based versions at elementary/middle years. John Gair has led that initiative.
- 13. Does the program provide adequately for a progression of knowledge, skills and competency development?
 - a. Yes. Where the program exists, students are supported in their work moving between the different phases/steps of the process. This process is transferable to many contexts. In addition, doing this work students develop skills, competencies, critical and creative thinking,

problem finding and solving, risk taking, resilience, etc. that are completely transferable to multiple contexts.

- 14. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?
 - a. This program, as it is practiced in our district, aligns with current provincial policies on curriculum, curriculum development, assessment and pedagogy. "Every student will get hands-on experience in collaboration, critical thinking and communications skills they'll need to succeed in college, university, and the workforce....B.C.'s new curriculum helps students learn by exploring their interests and passions." https://curriculum.gov.bc.ca/curriculum-updates
 - b. Makerspace work has every child begin with where they are at in their learning. They grow and add to it. Each student sets a course, follows that course, creates a product, gets feedback, and then reflects on the process and product.
- 15. Are funding allocations adequate? What are the implications of various funding decisions?
 - a. In the spots that Makerspaces have been a priority, funding has been found to get started and then grow the programs; however, that has come at the cost of other programs, initiatives, and resources. Due to the variety of delivery models for Makerspaces, there is no clear answer to this question; however, in order to provide contemporary tools for significant numbers of students to authentically create in the 21st century we need to significantly increase resources to those programs. Computers, 3D printers, laser cutters, and other such technology all cost significant money that most schools, especially elementary schools, cannot afford.

This is a very challenging area as all areas are competing for resources and this can be a very expensive commitment. It will have to align with district goals and committed to. Maker Spaces should be set up so that all teachers can access and use them, not just a select few who can manage the technology. We need to create an action plan that creates a base structure for such a space and that allows for extension activities.

- 16. Are staffing levels adequate (show historic and current staffing levels or ratios)?
 - a. At this point, staffing for this work has come out of general school staffing and has, most commonly, been done off of the side of interested teacher's desks. The exceptions to this would be at Navigate with their Enter programs and at Vanier with Steve Claassen (now at Isfeld). Randy Grey, as the Career Programs Coordinator, has tried to promote this work as part of his mandate, but does not have staffing to support it.
- 17. What are the identified gaps to review?
 - a. There are no consistent approaches which makes alignment and cohesion difficult
 - b. There is no concentrated capacity building
 - c. There is no dedicated resourcing for the creation of Maker Spaces
 - d. We have not explored what constitutes best practices
 - e. Each school needs to have a champion with a diverse skill-set

- 18. Is the program achieving stated goals? What are our stated goals? Where are they stated?
 - a. The program cannot achieve stated goals as they do not exist. As a general rule, those teachers that have ventured down this path would define their goals as:
 - i. Use a wide range of idea creation techniques;
 - ii. Create new and worthwhile ideas;
 - iii. Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts;
 - iv. Develop, implement, and communicate new ideas to others effectively;
 - v. Be open and responsive to new and diverse perspectives; incorporate groups input and feedback into the work;
 - vi. Demonstrate originality and inventiveness in work and understand the real-world limits to adopting new ideas;
 - vii. View failure as an opportunity to learn; understand that creativity and innovation are a long-term, cyclical process of small successes and frequent mistakes;
 - viii. Implement innovations;
 - ix. Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur.
 - Resilience constant refining, debugging, iterations, etc.
 Source: <u>www.fractuslearning.com/2015/04/24/goals-school-makerspace/</u>
 - b. In addition to these goals, student engagement, flexible learning, and productivity should be included in the goals as should risk taking, strengths based approach to learning and reflective learning.
- 9. Should this program be a district or school program? What are the implications of each?
 - a. This should be a school program but supported by district resourcing and capacity building. Each school serves a unique community with unique needs and should be responsive to these. There are a number of different ways a Maker Space can be created and developed. Each school needs to have a teacher leader/champion. Having said that, Maker Pedagogy and core structure are important and having consistency and resourcing at a district level would increase the effectiveness of the programs for students across the district. The district will also have to remain mindful of the equity gaps that exist between schools in terms of expertise and resources.
- 10. Should this program remain unchanged, expanded, reduced or eliminated? Why?
 - a. This program should be changed considerably. We need to develop capacity at every site and resource Maker Spaces at each site if we are going to continue this work. If we do not do this, I foresee that some schools will become magnets at the expense of others and then the more socially affluent will benefit far more than those from homes that cannot be mobile to chase programs. This should be fundamental learning for every child and we need to make it available to them.

To do this we would need to hire people who could teach this curriculum, or invest in the development of internal candidates.

- 11. How does the program align and cohere with other programs?
 - The obvious alignment of this program is with our more traditional trades; however, most students do not have access to these opportunities until very late in their public schooling careers. Other alignment with traditional silos are with computer programing related courses. However, it should be noted that it also aligns very much with Early Years philosophy and context.
 - b. The other obvious alignment is with every aspect of our redesigned curriculum, especially Applied Design, Skills, and Technologies (ADST).
 - c. Maker Space Pedagogy is a very practical example of our Inquiry Based learning programs.
 - d. Less obvious is the alignment this offers to what have traditionally been our core curriculum. There are many applications of Sciences, Maths, Social Justice, and English Language Arts present in Maker Space driven learning. There are significant literacy and numeracy links in authentic, meaningful, often real world contexts, i.e. measurement, Cartesian plane, procedure writing, reading for meaning, etc.
 - e. Finally, Maker Spaces are also aligned with the Core Competencies: Communication, Creative Thinking, Critical Thinking, Positive Persona and Cultural Identity, Personal Awareness and Responsibility, and Social Responsibility.
- 12. What are the key questions or topics for the Board to consider?
 - a. Cost of resourcing a 21st Century Maker Space yes, we could have low tech Maker Spaces, but students will get less out of it and not be nearly as well prepared for the world they live in and that we want them to contribute to. If we are talking about authentic experiences in ADST/entrepreneurship, creating new capabilities in the world, popsicle sticks and duct tape aren't powerful enough.
 - b. Capacity building how do we develop teacher capacity in Maker Spaces across the district?
 - c. Equity of access and delivery
 - d. Private partnerships we should explore opportunities to partner with private enterprise and our communities to apply our learning and innovation to benefit others
 - e. How can we take the Maker approach and have it present in all classes? Having a making mindset is not about the space but more about the culture. One of the fastest and most effective ways to create this culture is to have an active Maker Space or two or three or....

Montessori

VanderRee/Burdett Responses - Oct. 16th, 2017

1. A description of the Montessori program, a brief contextual history, a brief summary of the current application of the program.

In 2005, a dedicated group of local parents, with a common interest in finding elementary Montessori education for their children, to formed the Comox Valley Montessori Society (CVMS). The CVMS is a registered non-profit society that supports the further development and continuation of Montessori-inspired education in the Comox Valley.

On January 31, 2006, the School District 71 (SD71) school board voted unanimously to start the preparations for a 3 year pilot project. Commencing in September of 2006, the first public Montessori class in SD71 (and on Vancouver Island) – a K/1 blend – found its home at Glacier View Elementary School. Since then, the program has become a regular program in SD71 and has been established as a Kindergarten to grade 7 program. Now at Queneesh Elementary, we have eight multi-aged classrooms.

The Montessori program in its present form is collaboration between the School District, the teachers, administration, and the families involved. In our case, it means SD71, Queneesh Elementary staff, and the CVMS all work together as one team with a common purpose: To provide a Montessori inspired program for the children of SD71. We are fortunate to have qualified BC teachers who are also Montessori-trained and certified.

2. Does the Montessori program provide adequately for a progression of knowledge, skills and competency development?

Yes, the program adequately provides for a progression. Children typically enter the program in kindergarten where they are taught the Casa program as the base to the primary and intermediate programs. Children who enter in grades 1 to 3 are typically placed in the upper ends of the combined classes so that modelling of methods and materials by younger peers can happen. We have fewer intermediate program late entries. We work hard to ensure families are aware of the progression missed so they can determine if it is a good fit for their children.

3. Does the Montessori program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do you know?

Yes, there is full alignment. It is the expectation that the provincial curriculum is taught using Montessori methods. These methods line up well with the new language around Core competencies.

4. Are Montessori funding allocations adequate? What are the implications of various funding decisions?

The Montessori society funds for the materials for new classrooms as our program has expanded. This can be a \$25 000 investment. The school district supports the program each year with \$20 000. This covers the cost of equipment maintenance and replacement. It seems to be an adequate balance.

5. Are Montessori staffing levels adequate (show historic and current staffing levels or ratios)?

Staffing levels are adequate. Though difficult to hire a new fully qualified teacher, we have been successful in doing so with recruitment out of district and province. We struggle finding fully qualified teaching partners for our part time teachers (medical, maternity or personal leaves.) However, we have managed to work with HR to hire best-qualified staff which have definitely met our needs.

We have had a history of wait lists particularly for our early primary students. Due to the expansion of our program over the last few years, we have managed to clear the wait list each September.

6. What are the identified gaps to review?

Identified gaps:

- Student attrition
- Limited number of classroom placement options when families struggle with teacher or peer relations

7. Is the Montessori program achieving stated goals? What are your stated goals? Where are they stated?

Our goals are in our handbook, in our brochure and on our school website:

The Montessori program values peace education, grace and courtesy, community and liberty in a structured environment. The program recognizes that children have a natural curiosity therefore we focus on hands-on learning and teach the children to be independent within a structured, carefully prepared environment.

For the most part, these goals are being met.

8. In your opinion should the Montessori program be a district or school program? What are the implications of each?

This is best left as a district program. By bringing in families from throughout the district, we have built a more balanced parent community. Historically, we were a them and us school – Montessori and 'regular'. This as shifted to a stronger Queneesh community sense with both our Neighbourhood and Montessori program bringing value and support to our entire school. The program would not be viable if typical catchments were used to determine enrollment.

9. In your opinion should the Montessori program remain unchanged, expanded, reduced or eliminated? Why?

This program of choice for families should be continued in its current form. As our wait list grows, and qualified staff can be hired, the program should be grown. At this point, our Montessori children do well in our current high school settings. I don't feel expansion beyond grade 7 is needed.

10. How does Montessori programs align and cohere with other programs?

This aligns well with the school district goals of personalized learning for our children, as this is the basis of the Montessori program. Children learn to follow their passions and our new curriculum is easily met in the Montessori classrooms. We have a strong Montessori community that this program meets the demands of evident with the CVMS continued involvement with our school and the program.

Response to Intervention (Arden)

1. A description of the program, a brief contextual history, a brief summary of the current application of the program

Five years ago, we started an early primary PLC group to address vulnerability of our early learners because the current LST model was not effective and the needs were increasing. Gradually each year we implemented the model further so now we are trying to do this school wide. We have teacher teams addressing student learning needs through screening, common assessments, central outcomes, and formative assessment cycles.

2. Does the program provide adequately for a progression of knowledge, skills and competency development?

No, but, it does provide for supporting individual student needs as well as grade-wide generalities.

3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

Yes, the research is there. The redesigned curriculum is based on a growth mindset model and RTI is grounded in the continuum of learning NOT production-date education.

4. Are funding allocations adequate? What are the implications of various funding decisions?

Part of the issue is that we do not have enough resources to meet the needs we have identified through the RTI work we have done, although this is a better approach than our previous LST model. We have become creative with our supports, but the research we have done points clearly to a desperate need for more human resources such as teachers, EAs, behavioural specialists, and psychologists.

5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

We are making it work and are having success. However, we would greatly benefit from more adults such as Boost Teachers and EAs to support the model.

6. What are the identified gaps to review?

Although we are getting better results than previously, we need to address the results when students are not having success. How do we respond when we have identified the needs and we are unable to meet them.

7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

We are in the process of learning the how of RTI so there is an implementation dip. We are creating an exceptional culture of collaboration and we predict a significant impact on student learning as we

get better at this new model. One benefit we are noticing is an increase in collaboration between teachers. Some RTI teacher teams are also working on inquiry based learning in their classrooms, for example.

8. Should this program be a district or school program? What are the implications of each?

All schools would benefit from collaborative cultures that choose learning programs that specifically address learning needs.

9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

This approach should be a part of any healthy a culture and each context would need to make it their own. However, Arden's developed guiding parameters are solid and can apply for any context. This program should be expanded to better meet student learning needs collaboratively.

- 10. How does the program align and cohere with other programs? It significantly supports a culture of collaboration and inquiry.
- 11. What are the key questions or topics for the Board to consider?

Should there be a defined process for each school to create a defined RTI.

Currently supports for students are haphazard and based on an old model, if any model at all. Our job is to do so much better. How are we changing the trajectory of success from pre-k screening through after graduation? RTI provides a proactive and prescriptive map for student success.
SD71 Inquiry Fair - Annual Event

1. A description of the program, a brief contextual history, a brief summary of the current application of the program

a. In 2015, a district team was assembled to discuss the creation an event that would carry on the tradition of the District Heritage Fair in a format that would include K-12 students and provide a broader Inquiry based focus.

b. The first year saw roughly 250 students from 9 schools attend the fair at the Native Sons Hall. It was a two day event with an "Opening Night" followed by a rotation of student projects the following day.

c. In April of 2017, the one day Fair was held at Lake Trail Middle school and consisted of 450 students from 19 different schools.

d. The purpose of the Fair is to provide an opportunity for every student in the district to have a forum to present their Inquiry based learning in any style that they may choose. It is not competition based. There are no judges, and there are no prizes or 'next level' opportunities.

2. Does the program provide adequately for a progression of knowledge, skills and competency development?

a. This event provides an opportunity for students to share their learning in a friendly environment.

b. It allows teachers to provide a natural consequence type of event. It allows something to look forward to as well as a firm deadline to complete their work.

c. Among other skills, this event supports planning, information gathering, and demonstration of oral skills.

d. For teachers, the links and resources being gathered on the Learn71.bc site are available to teachers to further their own knowledge, skills and competencies in the area of inquiry.

3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

a. The teachers implementing the Inquiry based content will meet the provincial curriculum in a variety of ways throughout this process.

b. One of the many benefits of this event is that it allows teachers to see the various methods of instruction that their peers are implementing around the district.

4. Are funding allocations adequate? What are the implications of various funding decisions?

a. The event has not officially had a specific line in the budget over the last two years. Allan Douglas has provided us with some funding for busing, printing and venue rental.

b. Using a school as a venue and parent drivers (in 2017) instead of buses has allowed the event to run at very little cost to the district.

c. An official dollar amount would allow for greater flexibility such as hiring TOC's and would also allow for some busing options.

d. The committee has operated under the understanding that there was little funding available. A fixed budget would allow for many other ideas and opportunities to be employed.

5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

a. The committee is run on volunteer time with monthly meetings at the IRC after school.

b. Support has been offered by both the Tech department as well as the LRC department in terms of allowing staff to be freed up on the day of the event.

6. What are the identified gaps to review?

a. An allotted budget would allow for many opportunities such as marketing, printing, staffing and venue.

b. Promoting the attendance of high school students has been a goal, and continues to be a goal of the steering committee.

7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

a. The committee's goals as stated in their minutes are to:

i. Give SD71 students a venue to showcase their learning

ii. Educate/Mentor teachers on how to deliver the inquiry model

iii. Promote the concept of inquiry to students, teachers and parents

b. The committee feels that they have made excellent progress in each of their targeted goals.

8. Should this program be a district or school program? What are the implications of each?

a. This program is a combination of both. It allows for schools to decide how they would like to prepare their students (ie. having a smaller school fair in advance) before they attend the district showcase.

9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

a. The hope is that this program will continue to expand into whichever form feels most relevant in any given year.

10. How does the program align and cohere with other programs?

a. The hope is that almost all programs and teachers around the district will come to see that their students may play even a small role in this event.

11. What are the key questions or topics for the Board to consider?

- a. Do they like the idea of a District Fair and would they like it to continue to grow?
- b. What are other districts doing to support Inquiry based learning?
- c. Do they have any recommendations or wishes for the steering committee to consider?

STEM/STEAM Activities

The goal of education is not to increase the amount of knowledge but to create the possibilities for a child to invent and discover, to create (people) who are capable of doing new things. – *Jean Piaget*

1. A description of the activities/program, a brief contextual history, a brief summary of the current application of the program?

STEM is an acronym for Science, Technology, Engineering, and Mathematics. More recently an A has been added to STEM to incorporate the Arts, and STEAM was created. For the purposes of this review I will refer to the all activities as STEAM. STEAM is an educational approach to learning that uses Science, Technology, Engineering, the Arts, and Mathematics as access points for guiding student inquiry, dialogue, and critical thinking.

Many educators believe the shift toward STEAM with a focus on inquiry learning will deepen student understanding, improve academic performance, and prepare students with 21st century skills for the demands of the workforce¹. In addition STEAM provides an interdisciplinary hands—on approach that opens the doors for students to collaborate, work in groups, see relationships between what they already know through other disciplines, and relate authentic concepts to the real world.

At the district level, Kara Dawson is currently working with a team of teachers on coding and Makerspace with a focus on Robotics and Electronics. She considers it a STEM based group. The Intergenerational Program will use a STEAM approach and launch inquiry based activities using picture books. Carol Walters will be using the resource Making and Tinkering with STEM: Solving Design Challenges Cate Heroman (NAEYC Publication)

At the school level, it is based on teacher's interest and preferences. In order to adequately understand the use of STEAM in individual classrooms, a survey to all district educators could prove useful to provide relevant information. I am currently gathering a list of names of teachers using STEAM in their classrooms. This year at Brooklyn Elementary opportunities for STEAM are being presented to students K-7 through 40 minute prep blocks.

At the Learning Resource Centre, we are in the process of making MANY STEM/STEAM kits; one kit is already in circulation and there are 10 copies of this kit. Each of these kits features the book, Making and <u>Tinkering with STEM: Solving Design Challenges with Young Children</u> by Cate Heroman. One kit, featuring the same STEM resource is called, "The Box Kit." This kit contains about 15 different picture books all about boxes. From there, teachers read the STEM challenge described in the resource, offer materials to build and design, and watch their students plan, design, collaborate, communicate, create and think creatively and critically!



Destiny	Learning Resource Center
	Catalog
	Media Search > Search Results > "Making & tinkering with STEM : solving design challenges with young children"
earch	
e Lists	MAKING Making & tinkering with STEM : solving design challenges with young children [book]
	Call #: PL 372.21 HER Copies available: 4 of 9 See all
	"Teaching and learning STEM subjects (science, technology, engineering, and mathematics) is more accessible than ever b challenged as they use everyday materials and STEM concepts to design and build solutions to problems faced by characte Selected List: My List (Add to This List)
	Explore! Early childhood education Find It Science – Study and teaching (Early childhood) Activity programs. Technology Study and teaching (Early childhood) Activity programs. Engineering Study and teaching (Early childhood) Activity programs. Mathematics Study and teaching (Early childhood) Activity programs. Mathematics Study and teaching (Early childhood) Activity programs. Titles by: Heroman, Cate. Additional Info Cover title: Making and tinkering with STEM
	Cover title: Making & tinkering with STEM. Includes bibliographical references. Interest grade level: Professional Follett Library Resources.
	Publication Info Published Washington, DC : National Association for the Education of Young Children, c2017. Format 139 p. : col. ill. ; 21 x 26 cm. ISBN 978-1-938113-28-4 ((pbk.)) 1-938113-28-4

25 additional copies of this book have been ordered and kits are being made that will contain a copy of this STEM book along with a featured picture book and explicit instructions how to launch a specific STEM challenge.

2. Does the program provide adequately for a progression of knowledge, skills and competency development?

Yes, when implemented, there are STEAM activities and resources that would adequately provide for a progression of knowledge, skills and competency development for K-12.

3. Does the program reflect or align to current provincial policies on curriculum, curriculum development, assessment and pedagogy? How do we know?

STEAM activities align with current provincial policies on curriculum, curriculum development, assessment and pedagogy on several levels. STEAM activities:

- incorporate Applied Design big ideas, and skills
- embed Core competencies (communication, creative and critical thinking, social responsibility)
- are interdisciplinary allowing students to build on prior knowledge
- allow students to direct their own learning, ask questions and reflect on next steps.
- are designed to encourage student's natural curiosity
- are inquiry based, hands-on, and engaging for students

4. Are funding allocations adequate? What are the implications of various funding decisions?

Funding consideration should be given to:

- professional development for all staff in STEAM practices and principles.
- materials for building and designing (possibly applied for through a grant based system)
- LRC developing STEAM kits to support teachers (Some lessons/kits have already been created)

Also individual schools can ask for donations, collect recycled materials or put forth proposals to PAC to offset costs.

Funding allocations are dependent on whether STEAM is implemented as a district program or remains at the school or classroom level.

5. Are staffing levels adequate (show historic and current staffing levels or ratios)?

Not applicable however, the focus could be on encouraging classroom teachers to embrace STEAM as part of their instructional strategies.

Other areas for consideration are teacher engagement and passion.

How can STEAM benefit teachers and how can we get more teachers involved in STEM/Steam activities? STEM, STEAM and Inquiry- What's in it for me? The Chalk Blog

6. What are the identified gaps to review?

- teacher confidence, comfort with inquiry based learning
- preparation of materials, extensive planning
- access to materials (specialty items that need to be ordered online copper tape)
- cost of materials (Makey Makey \$70.00 per kit x 7 kits)
- access to resources and activities
- ways to assess student learning might look different

Many STEAM opportunities in our district are limited to individual teachers who choose to use an inquiry and interdisciplinary model for teaching science, technology, arts and math. How can these activities be broadened to support more teachers and students?

Possible solutions for further discussion might include:

- adjusting scheduling to accommodate new ways of teaching and learning.
- providing opportunities for collaborative planning
- providing opportunities for professional development
- making intentional connections between curriculum, assessments, and lesson design and implementation
- Seamless lesson implementation processes and strategies through on-line STEM talks (Bringing STEM experts into your classroom) 4edu.ca
- after school STEM/STEAM clubs or programs
- STEM/STEAM days to encourage hands-on exploration within each of these disciplines

7. Is the program achieving stated goals? What are our stated goals? Where are they stated?

This could be a committee decision. Goals might be created district wide or in individual schools/classrooms.

8. Should this program be a district or school program? What are the implications of each?

Currently STEAM activities are happening mostly in classrooms. However, our District Technology Teacher and District CST are working to support teachers with STEAM based learning.

District Implications

- Financial support
- Removal of some of the identified gaps.
- More coherence and a common language around STEAM
- District Specialist support
- More opportunity for collaboration and sharing of ideas

School Implications

- More opportunity for individual teacher autonomy/creativity
- More flexibility
- Faster implementation
- More ownership, less pushback
- Less coherence and alignment with what others are doing
- Accountability may be less

9. Should this program remain unchanged, expanded, reduced or eliminated? Why?

There is no doubt that STEAM activities provide students with valuable skills and proficiencies that should be <u>expanded</u>. Research indicates that future economic prosperity lies in a workforce that is well-versed, and skilled in rising job markets like science, technology, engineering and math².

10. How does the program align and cohere with other programs?

Aligns with Inquiry based initiatives and applied technology, robotics programs, ADST, Coding, and new curriculum. Full review of alignment and coherence can be completed once all program groups report back.

11. What are the key questions or topics for the Board to consider?

To be determined by the committee.

1. Riley, Susan. Education Closet. Online Article

2. unnamed. Education Closet. Online Article

STEM Appendix: 2017-2018 Program for Quality Teaching Grant Application

Submitted by Kara Dawson (kara.dawson@sd71.bc.ca) School District #71 Comox Valley

1. a. Inquiry Question:

How can we encourage and inspire teachers to include a combination of coding, design, and STEM (Science, Technology, Engineering and Math) education in their practice as they attempt to cover the Applied Design Skills and Technology curriculum? Teachers are often intimidated and insecure about new technologies. We would like to find easy, accessible ways for teachers to achieve these goals.

Coding is not just a rewarding and enjoyable activity for students. Coding, as a practice, whether for teaching or for fun, enhances brain activities integral to critical thinking and problem-solving. Increasingly, the business and financial world demands that young people be able to navigate many disciplines while breaking new territory. Abductive reasoning, which is a cross-section of inductive and deductive reasoning (think Sherlock Holmes), is a real-world skill useful in a multitude of contexts. Coding enhances the portions of the brain that are involved in abductive reasoning and computational thinking. Systems approaches to problem solving, whether in mathematics, science, business, or engineering, are the holy grail of skill sets for employers.

It is important for students and teachers to see that coding is part of more than just controlling the workings of a computer game or program. There are many products out there designed for students to enable them to code devices to perform tasks. These include, but are not limited to Microbits, Spheros, wearable technology, Littlebits, Makey-Makey, etc. When students code a robot or device, they see that the code is serving a purpose and are often inspired to go beyond the original tutorial or experiment, and make the robot do wonderful things. What if students were challenged to use their knowledge of Math, Science, technology and engineering to create the robot or device and then create the code to control it?

Coding and robotics help to enhance place-based learning in spite of the fact that many of the learning contexts in schools are fixed and linear. These technologies turn any room, hallway, closet, or sidewalk into a learning context. The only limits on student learning, if these technologies are used resourcefully, are the limits implicit in their own understanding and imagination. Thus, any space, regardless how narrow or traditional, can become a dynamic learning environment.

We would like to have teams of three teachers choose one of these devices and together come up with lessons to accompany them. Subsequently, they will test the lessons with their classes and report back to the team with their findings. The ultimate goal of the groups will be to create kits, complete with lesson plans, unit plans, technological devices, books, and troubleshooting tips, with the devices that other teachers in our district will be able to share. This core group will be experts on these devices able to support other teachers as they try them out. Such an approach will de-mystify the very intimidating world of robotics and coding for teachers as they will have practical tools and collegial support in taking such instructional risks.

One of the most important project goals will be to disseminate our learning materials and discoveries by publishing them on learn71.ca and on TeachBC as we did our district science kits (<u>https://portal.sd71.bc.ca/group/wyhzgr4/Pages/default.aspx</u>).

Some of the questions that we will need to explore will be:

-What devices will we test? (Some suggestions are Microbit, Makey Makey, Little Bits, wearable technology...)

-How many will we purchase (this will also depend on the school district's contribution)?

-What grades will we target?

-It will be important to tie our experiments in with the curriculum of Math and Science and other subjects with which they will fit. What learning standards will we cover?

-Are the devices easy enough to use so that inexperienced teachers will be comfortable using them?

-How can we let the students lead the investigation of using these devices?

Upon completion of this project, we will be happy to share our results with other districts by publishing it on our school district website: Learn71 and we can put them in the BCTF teacher web page place.

1b. Teachers were chosen based on their willingness and interest in new technologies and courageous effort to incorporate these technologies in their practice. Group members:

- Kara Dawson District Information Technology Support Teacher
- Lesley Johnson Teacher Librarian (Cumberland Elementary and Lake Trail Middle School)
- Warren Biegler Grade 7 Teacher (Miracle Beach Elementary)
- Karla Lingren Grade 5 Teacher (Courtenay Elementary)
- Jan Smith Grade 6/7 Teacher (Brooklyn Elementary)
- Carol Walters Curriculum Support Teacher
- Doug David Curriculum Support Teacher
- Debbie Nelson Curriculum Support Teacher
- Robert Russell-Atkinson Grade 6 Teacher
- Jane Rondow District Support Teacher Student Services (Technology)

1c. The contact person is:

Kara Dawson Information Technology Support Teacher School District #71 (Comox Valley) <u>kara.dawson@sd71.bc.ca</u> (250) 338-1425 <u>Learn71.ca</u>

Lead Information Technology Support Teacher – My role as a support teacher is to provide teachers with help as they learn new technology. I perform afterschool workshops for teachers in my district, do demo lessons to help teachers, create help sheets and videos for new technology, find websites, and programs to support the curriculum and work to bring new technology to my school district. I publish my lessons and ideas on our website <u>www.learn71.ca</u> and keep the technology information on Kara's Corner.

d. Draft Timeline:



- The full day meeting in October will be to get together, go over the question and discuss which devices teachers would like to test. I will bring the ones that I have available to share and teachers will prepare for this a little bit by thinking about what they are interested in.
- Teachers will be invited to share their knowledge of any devices or technologies they have already experimented with.

• We will also come up with a useful, practical format for presenting our lesson ideas and our findings. **November:**

• Teachers bring their devices in and share initial thought and experiences with getting started. Together we can trouble shoot any difficulties we experienced in our initial roll out.

January:

• Get together to present what we have done with the devices and brainstorm ideas for each group to guide further experimentation.

March:

• By now teachers should be ready to use the time to share their ideas and continue preparing them to be shared out. Focus will be on systemizing and developing replicable plans for other teachers going forward.

May:

• This meeting should be to finish off the final touches on the kits that we would have been developing throughout the process.

e. Budget:

Item	Total Price
Teacher release time: 4 teachers for 1 day (\$330) Our district teachers do not require TOCs (Curriculum Support Teachers, Teacher Librarians, Student Support Services)	\$1320
Teacher release time: teachers for 4 half days (\$198)	\$792
Devices (we will not know until we know the amount of money available and the interest of the group)	
Total (without devices)	\$2112

With the full grant, this will leave us \$4888 to purchase devices for the teachers to experiment with and use with their classes and to set up the kits.

f. There may be further funding from our district to allow us to release more teachers. I am unable to include that information at this point but should be able to add this soon.

Benchmarking Tools

District Inquiry Framework:

What do strong inquiry oriented districts do?

Enabling Structures	Now	An exemplar	Identify a growth
			vour district forward
A. Spirals of Inquiry embedded in district procedures & processes	2.5	 teacher teams use this such frameworks some pro-d and staff meetings use these frameworks Framework for Enhancing Student Learning – some are framed this way 	 continue making frameworks and collaboration visible support inquiry approach across the district not just in isolated locations
B. Inquiry teams at the district level	2.5	 PLC Learner teams Inquiry Fair Committee CST's Science kits, etc. 	- most are lead by individual teachers or administrators, not lead at the district level
C. Budgetary support for inquiry	3	 4 CST's Support for individual projects, i.e. Heart and Mind, DI, Inter-Generational, etc. LRC strategic purchases and kit building 	 Have a set budget to apply for Create budget certainty to insure continuity
D. Networked structures to support inquiry (scheduled events & communication)	2	 PLC Framework that is now gone Inquiry Fair, DI 	 Look for time, place, and money for ongoing support and development
E. Time at school/ district level for collaborative inquiry	2	Collaboration time no longer built in	Inquiry implementation focus group
F. Formal partnerships with community agencies that support inquiry	2.5	Comox Museum, CST collaboration, Intergenerational Project, Heart/Mind Program	Identify passionate agencies
G. Formally planned multi year, aligned professional development plan with themed goals	1	This only happens based on individual interest	Encourage and support documentation and clear communication – this likely occurs but not in any coordinated sense
H. Multi-tiered professional resources made available for support (eg. Some professional resources are core for all, others are targeted to specific needs	3	 CST work stems from school goals LRC provides resources, Inquiry kits, AND professional resources for teachers across SD71 	 Provide "just in time" supports for individuals Promote and educate field about supports available throughout the district not just at the LRC
I. All planning tools and instruments are based on inquiry.	3	 With curriculum redesign as a lens everything we design from the LRC now has inquiry embedded in it – Inquiry kits, numeracy lessons, reading 	 Development of tools, i.e. Adaptive Schools Find greater ways to raise awareness and proficiency across district

	1		
		comprehension, Science Kits and they are all found on Learn71	
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Enabling Strategies	Now?	An exemplar	Identify a growth area/learning that will move your district forward
A. Sharing & celebrations are routinely scheduled; a goal is making progress visible and valued.	3	 District-wide, annual, Inquiry Fair Elder Project Launch at LTMS Change Maker's Event in 2015 Global success of DI teams support of senior teams to go to Global Finals Sharing assemblies 	- Advertising - Celebrate - Share widely
B. Recruitment of inquiry minded staff & leaders	2	 Case by case, school by school, leader by leader approach not a defined goal Alberta Connect Charter School 	- Should be a part of interview, hiring, and training process
C. Themes and content for decision making are bottom up, driven by practitioners & inquiry teams	3	 Structures are in place Ideas are being seeded 	 How do we achieve cohesion and alignment if purely grass-roots? Doesn't this necessarily lead to diversity and division? Develop mechanisms other than surveys, i.e. face-to-face write-ups/pop ins
D. Staff & district meetings all devote time to inquiry activities	1	 Some staff meetings do PLC structure allowed for this but few have continued Pro-D staff meetings RTI at Arden 	 Needs to be modelled and developed at all meetings Adaptive Schools/PLC training for all leaders would be beneficial Pick one – "difficult questions" to work on as a team
E. Mission & vision statements	1	 Very few at any levels are written or framed as Inquiries 	 Framework/structures need to be developed to support and model this
F. External consultants to support new learning	4	 Shelley Moore Faye Brownlie Leyton Schnellert Adrienne Gear Sandra Herbst Mike Pruner BCAMT Sandra Ball 	

		- Selina Miller	
G. Giving voice to learners' perspectives throughout processes of inquiry & planning	3	 Done in isolation but is not a regular or planned occurrence except in pockets CSL – Scholantis AFL 8 Essentials of Inquiry Framework – Student voice and choice 	 Make more public the ways this is being done Need better mechanisms for timely voices
H. Consistent and persistent use of a common language of inquiry/learning and/or change	3	 AFL framework 8 Essentials of Inquiry Framework Thinking Strategies Traits of Writing DI CST's 	 Where CST's are involved, these things occur; however, these are pockets and there is a lack of continuity between feeder schools, etc. How do we align such in an environment of individual site/teacher need? Keep sharing language and demonstrations
I. Deliberate referencing to new learning at the district level	3	- This occurs	 How can the TF and SBO work together to better support student success?
J. Aboriginal ways of knowing/being are incorporated into processes & structures	2	 Aboriginal Support Workers Residential Schools Inquiry Ab Ed curriculum team Site and people specific 	 Aboriginal views being encouraged and represented during planning
K. Language of learning evident: equity for all learners, growth mindsets, differentiation, vulnerable learners addressed.	3.5	 Many schools with pockets Traits of Writing Jo Boaler – Math Thinking Strategies RTI at Arden 	 Showcase exemplars – grow expectations based on results
L. Student empowerment & voice; genuine engagement with students in planning processes	2.5	 Starting, i.e. student voice at some program evaluations portfolios Inquiry Framework – student voice and choice blended learning programs, i.e. ENTER, iMaker, ILC's, etc. 	 more avenues for learners to share voice in planning explore potential and opportunities of Blended Learning
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	Now? Exemplar		Identify a growth	
Accelerants			area/learning that will move your district forward	
A. Coherence of purpose between: district policies, accountability, mission, vision, professional learning plans	2.5	 common language and collaboration i.e. AFL, CSL's teacher pro-d learning plans 	 the structures and expectations are there but not the accountability, therefore it doesn't tend to happen this is just starting – developing professional learning plans 	
B. High levels of trust between teachers & district staff	2	 Trust exists with some Trust eroded by the cycle of contract negotiations and continuous budget cuts 	 Working together to build trust –takes time after a tumultuous time Leaders on both sides need to work to articulate, model, and support mutual trust and aligned support 	
C. Collaboration between district/ teachers in professional learning planning; reflective processes are routinely used	3	 Still in pockets but becoming more visible CST assessment support to inform instructional decisions After assessment conversations now outside school hours (without PLC time) 	 More reflective processes developed to share what people have found valuable 	
D. Invitations, not mandates to participate	3.5	 dinner series meetings formative assessments Shelley Moore Workshops by invitation 	- the process we are in - IT and AbEd committees	
E. Encouragement of diversity & mixed responses to challenges	3	 Shelley Moore RTI Access for all Still feels like looking for 'right answer' 	 Showcasing varied responses to challenges Encourage 'wild ideas' 	
F. Shoulder tapping, encouragement and mentoring of teacher leaders	3	 Feels like same people get tapped, but based on what? Challenge to fill formal leadership positions – several were re-posted 	 Grow the group of tapped shoulder with support of even the smallest of actions 	
G. District leaders who model an inquiry mindset & visibly engage in inquiry practices	2	 Feels like the same people are the ones doing the work and leadership Allan Douglas 	 Grow the group with support of even the smallest of actions 	
H. District leaders openly acknowledge professionals & professionalism	2	 Feels like those that do get more to do and credit is given to the wrong people Too often those identified are vilified by peers and not supported by immediate supervisors Allan Douglas 	 Grow this group and find effective ways to acknowledge them 	

I. Risk taking is acknowledged; making mistakes is OK, support if things go awry	2	 CSTs collaborating with classroom teachers Admin supporting teachers Feels like the same people are the ones taking all the risks 	 Show process and support for mistakes next steps – avoid 'knee jerk' reactions
J. Passionate champions at the district, school & individual level	3	 Those who join together around a passion/an idea EDAS Change Makers Admin in classrooms modelling and sharing the work of Inquiry Hearts and Minds CST's LRC Developments 	
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L.			
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For more details on each category, please refer to the user's guide.





Committee Members: Alissa Pratt, Andrew Ferneyhough, Debra Fullerton, Doug David, Gerald Fussell, Greg Kochanuk, and Leah Taylor



Definition: Inquiry Based Learning is learner driven & follows a pattern of the learner asking questions and then gathering information to respond to those questions. Throughout the process the responses are assessed, questions are refined and directions adjusted accordingly. Ultimately, the findings are shared. A key element of Inquiry-Based Learning is learner metacognition. (Ontario Ministry of Education, 2013)

INVENTORY OF PROGRAMS AND SUB-PROGRAMS

· COMPASSK-12

- CURRICULUM SUPPORT TEACHERS
- DESTINATION IMAGINATION
- ENTER AND ENTER2
- FINE ARTS ECADEMY
- HEARTS AND MINDS PROGRAM
- HEARTWOOD LEARNING COMMUNITY
- HORNBY ISLAND COMMUNITY SCHOOL LEARNING HUB MODEL
- IMAKER
- INDEPENDENT LEARNING CENTRES AT ALL 3 SECONDARY SCHOOLS
 STEM/STEAM ACTIVITIES

- INQUIRY 8 TAKEN BY ALL GRADE 8 STUDENTS AT HIGHLAND
- INQUIRY AFTERNOONS (WEDNESDAYS) AT ISFELD
- INTERGENERATIONAL PROJECTS
- MAKER SPACES
- MONTESSORI
- PRO-MERITA
- RESPONSE TO INTERVENTION ARDEN ELEMENTARY
- SD71 INQUIRY FAIR
- SEVEN SUMMITS

CURRENT FINANCIAL REVIEW

- A LOT OF CROSS-OVER, ESPECIALLY WITH NAVIGATE
- 46 TEACHERS OF IDENTIFIED PROGRAMS (@\$4,515,774)
 - CURRICULUM SUPPORT TEACHERS 4
 - TEACHER LIBRARIANS 9
 - INDEPENDENT LEARNING CENTRES (SECONDARY) 3
 - NAVIGATE PROGRAMS 30
- PARTIAL ASSIGNMENTS
 - HIGHLAND INQUIRY 8
 - ISFELD CAPSTONE AFTERNOONS
 - HORNBY COMMUNITY SCHOOL LEARNING HUB
- MOST PROGRAMS HAVE EXPENSES ATTACHED
 - LICENSES, TOOLS, MATERIALS, REGISTRATIONS, HONOURARIUMS
- MANY HAVE IN-KIND EXPENSES
- SOME HAVE BLENDED CONTRIBUTIONS

ALIGNMENT AND COHERENCE

NO DEFINED GOALS

ASSUMED GOALS?

- EACH STUDENT IS ABLE TO USE INQUIRY TO GUIDE THEIR LEARNING, HAVING PARTICIPATED IN AN EFFECTIVE PROCESS FOR INQUIRY.
- EACH STUDENT IS PROVIDED THE STRATEGIES AND CONDITIONS TO LEARN INDEPENDENTLY.
- EACH STUDENT HAS MULTIPLE OPPORTUNITIES TO PRACTICE AND TO DEVELOP THEIR SKILLS OF INQUIRY.
- EACH STUDENT IS ENGAGED IN THEIR LEARNING AND HAS OWNERSHIP OF THAT LEARNING.

OBSERVED PATTERN

- WHAT'S GOING ON FOR OUR LEARNERS
- FOCUS AND PURSUING HUNCHES
- CHAMPION LEARNING HOW TO ADDRESS NEEDS
- TAKING ACTION
- REFLECTING



PREFERRED FUTURE STATE

OUR STUDENTS LEAVE OUR SCHOOLS MORE CURIOUS THAN WHEN THEY ARRIVED; OWNING THEIR LEARNING, KNOWING HOW AND WANTING TO LEARN.

- HAVE INQUIRY-BASED LEARNING THROUGHOUT OUR OPERATIONS
- STABLE SUPPORT
 - FINANCIAL
 - PEOPLE
 - RESOURCES
- GROW COLLABORATIVE MINDSET



WHERE THE PROGRAM BELONGS

- DESIGN IS EFFECTIVE THOUGH NOT COHESIVE
- NAVIGATE
- CURRICULUM SUPPORT TEACHERS AND TEACHER LIBRARIANS
- NEEDS TO BE SYSTEMIC
- SUPERINTENDENT



SUMMARY

EVERY STUDENT LEAVING OUR SCHOOLS MORE CURIOUS THAN THEY ARRIVED; KNOWING HOW AND WANTING TO LEARN MORE.

- HONOUR WHAT HAS HAPPENED
- LEARN FROM OUR PAST
- NEED PASSIONATE CHAMPIONS THAT ARE SUPPORTED

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- CLEAR ARTICULATION AND VISION
- FROM DAISIES TO A MATURE GARDEN

GRADUATING WORLD READY, EMPOWERED, EMPATHIC LEARNERS

APPENDIX B Inquiry Districts Background Review

What do strong inquiry oriented districts do? <u>A Benchmarking tool</u>

An implementation guide for district users

Developed by:

Inquiring District Network Group Draft 2

July 2017

Sample report completed by SD71 Inquiry-Based Learning Review Committee

November 2017



Introduction

We have developed this guide as a means of providing support to districts interested in assessing and guiding their own efforts at district level inquiry.

We have titled this guide "What do strong inquiry oriented districts do? A Benchmarking tool". We have used the term benchmark because the guide is composed of a series of practices, infrastructure supports and resources, processes or events that have been identified by our Inquiring Districts group as important components that support effective inquiry work. They provide some sign posts or indicators that we believe will **support and accelerate** school, district and teachers' commitments to and engagement with inquiry to enhance student learning. We hope that by providing a document that gives you the opportunity to examine your own district practices, it will help you to design a plan for accelerating your district's efforts at supporting and enhancing student learning.

Our group of inquiring district leaders has been studying our own practices and approaches to inquiry at the district (sometimes called the meso level¹) since 2015. Many of us have been involved in inquiry work for a number of years, and have enthusiastically supported its use in a variety of settings. We've seen firsthand the deep change it enables in teachers and leaders alike.

We also know that supporting individuals and schools who are already involved in inquiry is important; but as a group of district leaders, we wanted to focus more fully on how district level support is important-- perhaps even vital-- to growing innovation and transformation of teaching practice in a district. So we launched an inquiry into inquiry supporting practices at the district level.

The network of districts who are involved in this project was initially formed in 2014. After designing an instrument for documenting our work (largely based on a similar study of innovative sites conducted by the OECD in 2013²). We began by formally collecting stories about what we were doing related to inquiry and what worked best within the participating districts throughout 2015. In 2016, we began a conversation about the trends and implications we saw in the district case studies, and began a process of identifying key areas of district level support.

As this discussion progressed, we started to see that district levels of support for inquiry fell into three general categories: by providing *enabling structures* that could be replicated and used for a variety of district level inquiry activities; by providing *enabling strategies* that encouraged and replicated inquiry level work district wide; and finally, by creating *conditions that accelerate* action and transformation.

Inquiry is our Foundation

¹ The OECD (2015) report entitled *Schooling Redesigned*, the meso level was identified as a critical to innovation and growth in educational settings. Strategies such as networking, connections into diverse communities and other "third spaces" for engaging in collaboration and practices were deemed significant accelerators of change. In BC, school districts often play this role of connecting/linking such systems.

² Innovative Learning Environments (OECD, 2013) was a publication designed to map and trace the practices of innovative learning environments around the globe. The primary tool for data collection involved a case study approach; the report has an appendix which includes this instrument which we modified for the purposes of our own Inquiring District project.

As many readers of this guide will know, the *Spiral of Inquiry* (2013) developed by Judy Halbert and Linda Kaser have guided our approach to inquiry at the district level. For readers who may be less familiar with this approach, we recommend you look at the Network of Innovation and Inquiry (NOII website, noii.ca) for more details. However, to assist those less familiar with inquiry models, we include the following brief overview.

The Spiral of Inquiry has six key stages: scanning, focusing, developing a hunch, new professional learning, taking action and checking that a big enough difference has been made. At each stage in the spiral, three questions are asked: What is going on for our learners? How do we know? Why does this matter?



The *Spirals of Inquiry* model has been used by a formal network of educators from across BC (and expanding across the world); the purpose of the network is to advance teacher and leader learning about learning, and to ensure every student in the k-12 system experiences success.

What we have learned in the 15+ years that the Network of Innovation and Inquiry have been in place is that when districts take up this model of engagement with inquiry, innovation and transformation of learning environments are accelerated.

We also draw upon other key innovation and system change researchers; the principles of successful innovation and effective implementation have been important catalysts of our thinking. For example, we have drawn substantially on the ideas of Dr. Helen Timperley (2011) to better understand issues of professional learning and how inquiry facilitates such growth. We have also drawn from Dr. Meridth Honig's (2012) work in district level leadership and its centrality in innovative practice at the district level. We have also drawn from Canadian knowledge holders such as Dr. Kenneth Leithwood, author of *Strong Districts* (2013), who mapped emerging and best practices/strategies in district

implementation measures. Finally, we have also drawn upon theories of leadership—learning centered leadership, distributed and teacher leadership (MacBeath, 2013; Spillane, 2012; Couros, 2015) in considering how leadership practices enable and accelerate innovation. For more detail on these themes, Appendix A has two concept papers developed for the Inquiring District Network..

We sought to align our list of practices and approaches with known features of effective implementation as we developed the attached benchmarks, but also left space to specifically identify components or elements that were identified by our participating districts. This is important because our goal is not to develop a one-size-fits-all guide to action, but rather provide a series of questions or elements that could be reviewed and considered within existing practices, or provide an entry point that can be adapted for local contexts.

Benchmarks as Flexible Measures, Not a Formula

This is why the benchmarks don't offer formulaic advice, but rather set out a series of potential entry points from which you can consider your own context and approaches to supporting new learning among teachers, staff and leaders. There is also room in the benchmarking document to add in additional or different practices, events, strategies or resources that have been developed by the district using the guide.

The goal is for this guide to provide a framework that is both predictable and useful (routine) but flexible; we know from existing research flexibility is an important feature if an activity is to become embedded in everyday activity. When processes are embedded they are more likely to be persistently and consistently put into use. But routines can also lock us into established patterns, so we want the tool to reflect the emerging nature of change by leaving spaces for additional or adapted benchmarks to be added.

Please feel free to share this guide with others you think might benefit from using it. Please also consider giving our district inquiry team feedback on what works, what needs modification, or any other information that you think can help us make an even more learning-centered tool. You can contact us via email at: edadgr@uvic.ca

Having provided a general context to the guide, in the next sections we talk more specifically about the components of the guide, and describe how to use it.

District Inquiry Network Members:

Who are We?

As noted above, we are a group of school districts in BC interested in inquiry based practice and how it can accelerate change for learners in our districts. We have an open door policy, so our membership is often in flux, with new districts joining us. Currently the participating districts include:

Comox	Burnaby
Delta	Vancouver Island North
Richmond	Gulf Islands West
Vancouver	Coast Mountain
Boundary	Okanagan-Similkameen
Okanagan-Skaha	Sooke
Fraser Cascade	Nechako Lakes
Central Okanagan	Arrow Lakes

When should this guide be used?

We think this guide will be useful to districts in a variety of ways: it can be used by leaders to map and document the scope of inquiry practices that are being used in the district. This assessment can be used to both monitor and report on existing initiatives and may provide useful information over time, particularly if the tool is used over a period of years.

It can also be used for setting goals and new strategic directions. In other words, it can be an initial context setting tool that helps participants in a planning process consider what already exists, as well as identify categories or fields of action. It can be a first step in developing a higher degree of alignment between diverse activities being held across the district.

While designed for use at the district level, parts of the tool can likely be used by school based leaders and leadership teams looking to identify opportunities for shared learning and/or for mapping existing pathways of learning. It can also serve to identify areas of strength and opportunities for growth at the school level.

Before you Begin: Some Definitions

When you look at the benchmarking tool, you will see that it has been divided into three parts. These parts are called: enabling structures, enabling strategies, and accelerants. All are also grounded in a particular understanding of inquiry. Because of the centrality of inquiry to the approaches used to support innovation in the school districts who have developed this guide, we start with a definition of what we mean by inquiry focused activity..

Inquiry Focused Activity

The premise of our work is that inquiry is essential to innovation and improvement at the district level.

Many actions can be taken to support innovation or improvement at the school level, but unless they are explicitly named and described as *inquiry*, they don't fit our definition of an inquiry based infrastructure or practice. As noted earlier, as inquiry focused districts, we have modeled our inquiry work using the Halbert & Kaser (2013) model of inquiry, although we do know that other forms of inquiry, such as teacher action research, for example, provide strong inquiry focused models.

As a means to determine whether or not inquiry is central to your work as a district, you can poise these questions to yourself or your team:

- To what degree is our structure, resource allocation or policy explicitly engaged with asking questions, defining questions to investigate, and then engaging in action and formal assessment of outcomes?
- Further, to what extent are these questions generated by digging deeply into the actual contexts of learning and learners' success?
- Do learners' voices drive the basis of our inquiry?
- Are teachers and leaders engaged in such questions and examining their own practices? Inquiry approaches must ground their work in these ways of investigating practice.

If this approach of asking learning embedded questions is evident in the approaches your districts or schools take in implementing change, then this tool will be useful for you and your organization.

Part 1: Enabling Structures

When we describe structures, we are talking about formal mechanisms (programs, structures, committees, calendars, etc.) that have been designed to support inquiry activity at the **district level**. This means a deliberate structure or program has been developed through which inquiry is supported. Remember the earlier point: if your district's structural components to support innovation/implementation are not explicitly named and described as inquiry, they don't fit our definition of an inquiry-based infrastructure.

First Step: Identify Components.

The next step is to scan the list of structure related items provided in the benchmarking guide and consider the extent to which this structure exists in your district. In what follows, we provide more detail about what we mean by the item descriptions in the guide. Please note that several blank spots are offered to add new or additional structural supports that may be available in your district but not identified in the existing benchmarks.

Item	Description
A. Spirals of Inquiry or	Possible examples of inquiry-based practices at the district level
inquiry-based practices	include: strategic planning, board planning, leadership team
embedded in district	learning plans, mission development, Aboriginal Enhancement
procedures & processes	Agreement processes, etc.
B. Inquiry teams at the	Teams are formally convened by district leaders; the focus of the team
district level	is to support inquiry work and monitor its success.
C. Budgetary support for inquiry	Some sort of grant program is in place that enables schools or
	teams/groups to engage in inquiry based practices.
D. Networked structures to	Inquiry "check ins" are part of district calendar of activities;
support inquiry (scheduled events	recognition and support is formally conveyed at various district level
& communication)	events; district communication tools focus on inquiry projects and
	outcomes; annual celebratory and/or sharing events are scheduled.
E. Time at school/district level for	Time for teachers and leaders to participate in inquiry work in a
collaborative inquiry	collaborative way is formally built into budget or calendar structures
	It may be release time; it could be funded by the initiation of district
	wide programs to enable teachers/leaders to be freed up to do inquiry
	work.
F. Formal partnerships with	Partnerships include: Aboriginal bands/nations,
community agencies that support	not-for-profit organizations, businesses or industry, and the goal of
inquiry	these agreements is to support inquiry and learning in community.
G. Formally planned, multi-year,	A written professional development plan that is endorsed by leaders
aligned professional development	& teachers. Purposes are set out and inquiry is evident in the language
plan with themed goals	of the strategy. All professional development for teachers, district
	leaders, district teams, etc. are identified and share a common
	commitment to shared learning themes.
H. Multi-tiered professional	Professional development is designed to meet differing needs and
resources made available for	interests, such as elementary versus secondary, technology focused,
support (eg. some professional	literacy team leaders, etc. However, inquiry is the core practice
resources are core for all, others	through which each program is designed and delivered.
All planning tools and	When schools or district teams (committees are asked to plan, they
instruments are based on inquiry	are guided by a template that uses inquiry strategies
	are guided by a template that uses inquiry strategies.
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Step 2: Assessing your Strengths

You will see that the benchmarking document includes a sliding scale beside each of the items. It is designed to help you to think about the degree to which the district has specific infrastructure tools available for the use of teachers and leaders.

Where are you at?	1	2	3	4	5
	Not vet				Got it!

It might also be useful to evaluate intentions; for example, it may be that at the district level an inquiry team has been announced, but isn't yet implemented. The exemplar category then provides a space to give a more in-depth description, statement, or evaluation.

Step 3: Add an Exemplar or Further Description

As you are attempting to show the ways in which your district is responding to this potential resource of inquiry support structure, be sure to include an example or two to help you remember the specific aspects of this component. A short written prompt can help you to recall the basis of your judgment in the "Where are you at?" category.

Drawing from the earlier example, you might say something like: "District inquiry Team has been announced. Training and implementation strategy under development".

Step 4: Identify a Growth Area/Learning that will Move your District Forward

In this column you can initially identify areas you may wish to act upon in the future. A staged approach is recommended; setting an action here isn't the last step in the process. You will want to revisit each category at the end of each section to make sure you are appropriately setting priorities for action, based on your own district's capacity.

Step 5: Reflect and Assess Progress in the Enabling Structures Category

In how many fields or categories is your district actively engaged in providing inquiry based structures? Is there a preponderance of evidence to show there are some gaps that need to be formally addressed first? Are there ways that an existing program might be revised to more clearly focus on inquiry-based practice? If you are at the early stages of thinking about implementing an inquiry based approach to your district's structures and resources, pick one or two priority actions and then move on to the second category.

Part 2: Enabling Strategies

As its title suggests, this category is about identifying strategies (processes, policies, practices) that are being used to support inquiry-based activities at the district level. We are not talking about informal strategies that may be in use by individuals or schools, but rather explicit processes, policies and practices that have been developed to support inquiry and are in use district wide.

Step 1: Identify Components

The next step is to scan the list provided in the benchmarking guide and consider the extent to which the strategy exists in your district. In what follows, we provide more detail about what we mean by the item descriptions in the guide. Please note that several blank spots are offered to add new or additional strategic supports available in your district but not identified in the existing benchmarks.

A. Sharing & celebrations are routinely scheduled; a goal is making progress visible and valued.	Regularly scheduled events are advertised and supported by the district. These events are widely publicized & attended by leaders, teachers, trustees and/or community members. Recognition of inquiry work is included on board agendas, in internal communications, on website, part of an annual report to parents & community.
B. Recruitment of inquiry minded staff & leaders	The district leadership has a hiring strategy designed to identify new educational staff and leaders who are inquiry minded. Advertising reflects this focus. Questions in job interviews emphasize inquiry mindedness and inform hiring decisions. This includes staff, teachers, leaders.
C. Themes and content for decision making are bottom up, driven by practitioners & inquiry teams	The district has a formal process by which it widely involves teachers throughout the district in decision-making and advisory roles. Inquiry teams are relied upon as experts & advisors to senior leadership teams. Reports and recommendations generated by practitioners and inquiry teams are used in district planning processes.

D. Staff & district meetings all devote time to inquiry activities	All district level meetings held focus at least in part on inquiry based activity, or reference goals set during inquiry work. Some meetings are exclusively devoted to enhancing professional learning & inquiry practices, such as elements of formal dialogue like "norms of collaboration" Strategic efforts to support inquiry are regularly reported on during district planning meetings or other public discussions about inquiry work.
E. Mission & vision statements	The mission/vision statement for the district includes references to inquiry & student learning.
F. External consultants to support new learning	The district focuses its external experts on inquiry informed practice, or topics which can inform inquiry based practices. External consultants are given information about the district's focus on inquiry so they can build inquiry based practices and processes into their programs. This builds coherence and alignment.
G. Giving voice to learners' perspectives throughout processes of inquiry & planning	Inquiry processes rely on deeply examining "What's going on for our learners?" Our district level processes related to inquiry emphasize that students' experiences are the foundational means by which to answer that question.
H. Consistent and persistent use of a common language of inquiry/change/learning	District staff, senior leaders & trustees regularly use inquiry- focused language in their public and private communications within the district. They clearly articulate support for inquiry based practice & openly ask about inquiry when they visit schools or talk in community settings. They talk about targets & goals they have set to enhance all students' learning.
I. Deliberate referencing to individual and collective new learning at the district level	District staff and senior leaders publically set learning goals & their own personal inquiry questions. They discuss them in their daily work with teachers, students, school leaders. Senior district leaders & trustees also talk about inquiry based strategies & what they have learned as they implement programs or modify activities and plans.

J. Aboriginal ways of knowing/being are incorporated into processes & structures	First Peoples Principles of Learning are discussed and evidenced in district level inquiry activities. Teachers are encouraged to examine how their expectations may have implicit cultural bias & to consider how their inquiries could be informed using Aboriginal perspectives. There is an expectation that Aboriginal support personnel will be active in inquiry activity and will serve as central knowers and participants in inquiry. Their voices are encouraged & welcomed.
K. Language of learning evident: equity for all learners, growth mindsets, differentiation, vulnerable learners addressed	All district staff & leaders are focused on learning; this is evident in how they talk about district activities, goals, priorities & foci. Providing a quality learning environment for all learners is evident in district policies and programs advocated and implemented. Policy documents, reports, reports to parents, websites, all make reference to learners and learning for all a critical priority.
L. Student empowerment & voice; genuine engagement with students in planning processes	Students are actively consulted and involved in district planning processes, meetings, consultations, and reports about student's progress & learning.
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Step 2: Assessing your Strengths

You will see that the benchmarking document includes a sliding scale beside each of the items. It is designed to help you to think about the degree to which the district uses specific strategies among teachers and leaders.

Where are you at?	1	2	3	4	5
	Not yet				Got it!

It might also be useful to evaluate intentions; for example, it may be that at the district level inquiry is a high communication priority, but only in internal rather than external documents. In this case, you may want to give yourself a 3, and then in the following "exemplar category," provide some details that give a more in-depth description, statement, or evaluation of the particular item.

Step 3: Add an Exemplar or Further Description

As you are attempting to show the ways in which your district is responding to this potential resource of inquiry support strategies, be sure to include an example or two to help you remember the specific aspect of this component. A short written prompt can help you to recall the basis of your judgment in the "Where are you at?" category.

Drawing from the earlier example, you might say something like: "Year end report will include a section on our inquiry work; need to collect specific stories to include in it".

Step 4: Identify a Growth area/Learning that will Move your District Forward

In this column you can initially identify areas you may wish to act upon in the future. A staged approach is recommended; setting an action here isn't the last step in the process. You will want to revisit each category at the end of each section to make sure you are appropriately setting priorities for action, based on your own district capacity.

Step 5: Reflect and Assess Progress in this Category

In how many fields or categories is your district actively engaged in providing inquiry based strategies? Is there a preponderance of evidence to show there are some gaps that need to be formally addressed first? Are there ways that existing strategies might be revised to more clearly focus on inquiry-based practice? If you are at the early stages of thinking about implementing an inquiry based approach to your district's processes and resources, pick one or two priority actions and then move on to the third category, accelerants.

Part 3: Accelerants

When we describe something as an accelerant, we are trying to identify a specific condition or context that helps to enable inquiry to be more quickly taken up by diverse individuals, teams and leaders. In the past, when we have thought about program implementation, we have usually assumed that a methodical systematized approach will allow the reach of an initiative to broaden incrementally. When we think about accelerants, what we are thinking about is how in meeting this condition, barriers are removed or beliefs or assumptions no longer hold us back. We are also consistent-- essentially a broken record, but our purpose is evident in how we talk about or describe the work that we share as educators. Accelerants

address culture, feelings, beliefs, contexts and politics.

Step 1: Identify components

A. Coherence of purpose between: district policies, accountability, mission, vision, professional learning plans	It is visibly evident that there is a strong emphasis on coherence in inquiry & learning in all district documents. There is a common language & reference to district commitments. Learning and inquiry are a shared purpose among all stakeholders in education. Teachers and leaders express ownership with the purposes of the district; they express pride in their professional role as a member of the district team.
B. High levels of trust between teachers & district staff	Teachers, school team leaders, principals, district leaders & senior leaders openly express trust & confidence in the work of teachers. Teachers express confidence in their employers & satisfaction with their professional lives.
C. Collaboration between district/teachers in professional learning planning; reflective processes are routinely used	District processes for developing professional learning plans & processes at the district level actively include teachers from across the district. School administrators are also a part of planning teams. Union representatives are also involved. Collaboration time is built into processes & formally included in policy documents. Reflection is used & valued as a tool for personal and shared learning.
D. Invitations, not mandates to participate	All inquiry activity is based on invitation; no one is required or forced to attend. Teachers openly encourage their colleagues to join them, as do district leaders & Principals.
E. Encouragement of diversity & mixed responses to challenges	In district activities, teachers are encouraged to be creative and adapt approaches to fit local contexts. Challenges are considered appropriate, people with concerns are treated respectfully & acknowledged as valuable members of a learning community.
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F. Shoulder tapping, encouragement and mentoring of teacher leaders	Teachers and district staff with potential as leaders are invited to participate in district activities; there is an open practice of mentoring existing teachers to take on more formal roles. Teachers who are making a contribution to the learning community are openly acknowledged by district leaders.
G. District leaders who model an inquiry mindset & visibly engage in inquiry practices	District leaders talk about their own personal inquiries, and invite others to comment/share their perspectives. District communication tools make this visible as well. If there are district sites (electronic or at events) for sharing, district leaders include their inquiries and learning as part of public & scheduled events.
H. Acknowledge teachers as professionals & support professionalism	District leaders makes evident that professionals are respected and professionalism is a culture that is appreciated and supported.
I. Risk taking is acknowledged; making mistakes is OK, support if things go awry	Teachers know about the value of failure and are not afraid to make mistakes; learning is valued, and this is part of district discussions related to inquiry.
J. Passionate champions at the district, school & individual level	There are individuals in our district who can be identified as champions of inquiry at the district, school & individual level. These individuals have a strong influence because they are valued for their expertise.
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Step 2: Assessing your Strengths

You will see that the benchmarking document includes a sliding scale beside each of the items. It is designed to help you to think about the degree to which the district has specific conditions or accelerants in evidence. Sometimes it can be difficult to find direct evidence to support your assessment; in fact, it may lead to discussions about how the district can ask teachers, students or others about their perceptions of the districts' context, work and priorities related to inquiry, professional relationships and trust. Despite this difficulty, please try and address the scale for each item to the best of your ability.

Where are you at?	1	2	3	4	5
	Not yet				Got it!

It might also be useful to evaluate intentions; for example, it may be that trust is growing between the union and leadership of the district, and you have several projects on which you have begun working cooperatively. In this case, you may want to give yourself a 3, and then in the following "exemplar category" provide some details that give a more in-depth description, statement, or evaluation of the particular item.

Step 3: Add an Exemplar or Further Description

As you are attempting to show the ways in which your district is creating conditions that will accelerate innovation, be sure to include an example or two to help you remember the specific aspect of this item. A short written prompt can help you to recall the basis of your judgment in the "Where are you at?" category.

Drawing from the earlier example, you might say something like: "Union involvement in professional development policy & strategic plan was implemented this year".

Step 4: Identify a Growth area/Learning that will Move your District Forward

In this column you can initially identify areas you may wish to act upon in the future. A staged approach is recommended; setting an action here isn't the last step in the process. You will want to revisit each category at the end of each section to make sure you are appropriately setting priorities for action, based on your own district capacity.

Step 5: Reflect and Assess Progress in this Category

In how many fields or categories is your district actively engaged in providing inquiry based strategies? Is there a preponderance of evidence to show there are some gaps that need to be formally addressed first? Are there ways that existing conditions might be addressed to more clearly focus on inquiry-based practice? If you are at the early stages of thinking about implementing an inquiry based approach to your district's processes and resources, pick one or two and then begin preparing a summary report.

Final Report: Looking for Patterns & Making a Plan

Depending on who has created your assessment, you are going to want to consider the "preponderance of evidence" you've gathered. You'll get a sense of your overall status as an inquiry minded district from this initial assessment.

We suggest that once you've done this initial activity, you:

- Share with others
- > Engage in a dialogue with other leaders in your district or in your zone/network
- Consider different voices and perspectives: what might community members say? Advisory groups? Your teachers Union? Students in your district? How could their input assist you in developing a plan for moving forward over the next year or more?
- > Set some personal and professional goals for yourself
- Develop an action plan with specific goals and seek advice from a wide variety of district stakeholders on how to best achieve these goals
- > Build in review processes and check in points so you can see your progress over time
- > Develop some potential measures for assessing your work
- Find ways of sharing and celebrating your successes
- > Be realistic: set 3-5 goals initially with a plan to check in over time

We also think many of you will be trying to come up with strategies to deal with gaps or concerns. Why not engage in an inquiry process? Ask the question: What's going on for our learners?" and begin to talk with all stakeholders to gather information, and then develop a hunch you can explore.

As you do this work, you'll be contributing to our collective knowledge about how inquiry supports learners at the district level.

We hope you have found this guide useful. We'd love to hear from you, particularly around how this tool worked for you, and ways you think it can be improved.

Conclusion

Finding ways of innovating and supporting innovation are key challenges for educational jurisdictions. We are proud of how we've developed support strategies and infrastructure that enable our districts to be change leaders in BC. We want to acknowledge however, that while this tool is one means of doing this work, there are other tools and strategies that you will want to rely on in your efforts at engaging in continuous improvement.

We consider ourselves to be a learning network: learning networks have capacity for diffusion (shared learning), acceleration (enhancing the research of an initiative) and ignition processes (the growing of commitment across multiple settings and between individuals and/or teams). Learning networks, like our Inquiring District network, are powerful socially-based, flexibly designed systems that can respond quickly to diverse contexts and needs.

In sum, learning networks have the capacity to accelerate learning among teachers, principals and educational leaders as Bryk et al (2015) identified in their exploration of networked improvement communities (NIC). But it is district leaders with a network- oriented, learning-centered mindset who are better able to envision and nurture networked, hybrid partnerships through their unique position as lead change agents or catalytic forces that create new or enhance existing learning pathways. We hope that this tool has provided you with a new learning pathway, and that you will find inquiry to be a valuable tool in your leadership work.

References

Bryk, A., Gomez, L., Grunow, A., & LeMahieu, P. (2015). *Learning to Improve: How American's Schools Can get Better at Getting Better.* Harvard Education Press: USA.

Couros, G. (2015). *The innovators mindset: Empower learning, unleash Talent, and lead a culture of creativity.* Dave Burgess Consulting Ltd: San Diego, CA.

Honig, M. (2012). District Central Office Leadership as Teaching: How Central Office Administrator Support Principals' Development as Instructional Leaders. *Educational Administration Quarterly* 48,(4) 733-774.

Halbert, J. & Kaser, L. (2013). Spirals of Inquiry: For Equity and Quality. BC School Principals and Vice Principals: Vancouver, BC CANADA.

Leithwood, K. (2013). *Strong Districts and their Leadership*. The Council of Ontario Directors of Education, Ontario, BC. <u>https://education-leadership-</u>ontario.ca/media/resource/Strong Districts and their Leadership 2013.pdf

MacBeath, J. (2013). Leading Learning in a World of Change. In OECD *Leadership for 21st Century Learning*, pp.83-104. OECD: Paris, France.

McGregor, C., & Fleming, A. (2012). *The Aboriginal Enhancement School Network: Lifting All Learners.* Network of innovation and Inquiry. Access at: http://inquiry.noii.ca

OECD (2015). *Schooling Redesigned: Towards Innovative Learning Systems*. Educational Research and Innovation. OECD Publishing: Paris, France. Http://dx.doi.org/10.187/9789264245914-en

OECD (2013). Innovative Learning Environments. OECD: France.

Spillane, J., Healey, K., Mesler Parise, L., & Kenney, A. (2012). A Distributed perspective on learning leadership. In J. Robertson & H. Timperley (Eds) *Leadership and learning*, pp. 159-171.

Timperly, H. (2011). *The Power of Professional Learning*. Open University Press: England.

District Inquiry Framework:

What do strong inquiry oriented districts do?

Enabling Structures	Now	An exemplar	Identify a growth
			area/learning that will move your district forward
A. Spirals of Inquiry embedded in district procedures & processes	2.5	 teacher teams use this such frameworks some pro-d and staff meetings use these frameworks Framework for Enhancing Student Learning – some are framed this way 	 continue making frameworks and collaboration visible support inquiry approach across the district not just in isolated locations
B. Inquiry teams at the district level	2.5	 PLC Learner teams Inquiry Fair Committee CST's Science kits, etc. 	 most are lead by individual teachers or administrators, not lead at the district level
C. Budgetary support for inquiry	3	 4 CST's Support for individual projects, i.e. Heart and Mind, DI, Inter-Generational, etc. LRC strategic purchases and kit building 	 Have a set budget to apply for Create budget certainty to insure continuity
D. Networked structures to support inquiry (scheduled events & communication)	2	 PLC Framework that is now gone Inquiry Fair, DI 	 Look for time, place, and money for ongoing support and development
E. Time at school/ district level for collaborative inquiry	2	Collaboration time no longer built in	Inquiry implementation focus group
F. Formal partnerships with community agencies that support inquiry	2.5	Comox Museum, CST collaboration, Intergenerational Project, Heart/Mind Program	Identify passionate agencies
G. Formally planned multi year, aligned professional development plan with themed goals	1	This only happens based on individual interest	Encourage and support documentation and clear communication – this likely occurs but not in any coordinated sense
H. Multi-tiered professional resources made available for support	3	- CST work stems from school goals	 Provide "just in time" supports for individuals

(eg. Some professional resources are core for all, others are targeted to specific needs I. All planning tools and instruments are based on inquiry.	3	 - LRC provides resources, Inquiry kits, AND professional resources for teachers across SD71 - With curriculum redesign as a lens everything we design from the LRC now has inquiry embedded in it – Inquiry kits, numeracy lessons, reading 	 Promote and educate field about supports available throughout the district not just at the LRC Development of tools, i.e. Adaptive Schools Find greater ways to raise awareness and proficiency across district
		comprehension, Science Kits and they are all found on Learn71	
J.			
К.			
L.			
Enabling Strategies	Now?	An exemplar	Identify a growth area/learning that will move your district forward
A. Sharing & celebrations are routinely scheduled; a goal is making progress visible and valued.	3	 District-wide, annual, Inquiry Fair Elder Project Launch at LTMS Change Maker's Event in 2015 Global success of DI teams – support of senior teams to go to Global Finals Sharing assemblies 	- Advertising - Celebrate - Share widely
B. Recruitment of inquiry minded staff & leaders	2	 Case by case, school by school, leader by leader approach not a defined goal Alberta Connect Charter School 	- Should be a part of interview, hiring, and training process
C. Themes and content for decision making are bottom up, driven by practitioners & inquiry teams	3	 Structures are in place Ideas are being seeded 	 How do we achieve cohesion and alignment if purely grass-roots? Doesn't this necessarily lead to diversity and division? Develop mechanisms

D. Staff & district meetings all devote time to inquiry activities	1	 Some staff meetings do PLC structure allowed for this but few have continued Pro-D staff meetings RTI at Arden 	 Needs to be modelled and developed at all meetings Adaptive Schools/PLC training for all leaders would be beneficial Pick one – "difficult questions" to work on as a team
E. Mission & vision statements	1	 Very few at any levels are written or framed as Inquiries 	 Framework/structures need to be developed to support and model this
F. External consultants to support new learning	4	 Shelley Moore Faye Brownlie Leyton Schnellert Adrienne Gear Sandra Herbst Mike Pruner BCAMT Sandra Ball Selina Miller 	
G. Giving voice to learners' perspectives throughout processes of inquiry & planning	3	 Done in isolation but is not a regular or planned occurrence except in pockets CSL – Scholantis AFL 8 Essentials of Inquiry Framework – Student voice and choice 	 Make more public the ways this is being done Need better mechanisms for timely voices
H. Consistent and persistent use of a common language of inquiry/learning and/or change	3	 - AFL framework - 8 Essentials of Inquiry Framework - Thinking Strategies - Traits of Writing - DI - CST's 	 Where CST's are involved, these things occur; however, these are pockets and there is a lack of continuity between feeder schools, etc. How do we align such in an environment of individual site/teacher need? Keep sharing language and demonstrations
I. Deliberate referencing to new learning at the district level	3	- This occurs	 How can the TF and SBO work together to better support student success?
J. Aboriginal ways of knowing/being are incorporated into processes & structures	2	 Aboriginal Support Workers Residential Schools Inquiry Ab Ed curriculum team Site and people specific 	 Aboriginal views being encouraged and represented during planning

K. Language of learning evident: equity for all learners, growth mindsets, differentiation, vulnerable learners addressed.	3.5	 Many schools with pockets Traits of Writing Jo Boaler – Math Thinking Strategies RTI at Arden 	 Showcase exemplars – grow expectations based on results
L. Student empowerment & voice; genuine engagement with students in planning processes	2.5	 Starting, i.e. student voice at some program evaluations portfolios Inquiry Framework – student voice and choice blended learning programs, i.e. ENTER, iMaker, ILC's, etc. 	 more avenues for learners to share voice in planning explore potential and opportunities of Blended Learning
М.			
N.			
0.			
	Now?	Exemplar	Identify a growth
Accelerants			area/learning that will move your district forward
Accelerants A. Coherence of purpose between: district policies, accountability, mission, vision, professional learning plans	2.5	 common language and collaboration i.e. AFL, CSL's teacher pro-d learning plans 	area/learning that will move your district forward - the structures and expectations are there but not the accountability, therefore it doesn't tend to happen - this is just starting – developing professional learning plans
Accelerants A. Coherence of purpose between: district policies, accountability, mission, vision, professional learning plans B. High levels of trust between teachers & district staff	2.5	 common language and collaboration i.e. AFL, CSL's teacher pro-d learning plans Trust exists with some Trust eroded by the cycle of contract negotiations and continuous budget cuts 	 area/learning that will move your district forward the structures and expectations are there but not the accountability, therefore it doesn't tend to happen this is just starting – developing professional learning plans Working together to build trust –takes time after a tumultuous time Leaders on both sides need to work to articulate, model, and support mutual trust and aligned support

		outside school hours (without PLC time)	
D. Invitations, not mandates to participate	3.5	 dinner series meetings formative assessments Shelley Moore Workshops by invitation 	 the process we are in IT and AbEd committees
E. Encouragement of diversity & mixed responses to challenges	3	 Shelley Moore RTI Access for all Still feels like looking for 'right answer' 	 Showcasing varied responses to challenges Encourage 'wild ideas'
F. Shoulder tapping, encouragement and mentoring of teacher leaders	3	 Feels like same people get tapped, but based on what? Challenge to fill formal leadership positions – several were re-posted 	 Grow the group of tapped shoulder with support of even the smallest of actions
G. District leaders who model an inquiry mindset & visibly engage in inquiry practices	2	 Feels like the same people are the ones doing the work and leadership Allan Douglas 	 Grow the group with support of even the smallest of actions
 H. District leaders openly acknowledge professionals & professionalism 	2	 Feels like those that do get more to do and credit is given to the wrong people Too often those identified are vilified by peers and not supported by immediate supervisors Allan Douglas 	 Grow this group and find effective ways to acknowledge them
I. Risk taking is acknowledged; making mistakes is OK, support if things go awry	2	 CSTs collaborating with classroom teachers Admin supporting teachers Feels like the same people are the ones taking all the risks 	 Show process and support for mistakes next steps – avoid 'knee jerk' reactions
J. Passionate champions at the district, school & individual level K.	3	 Those who join together around a passion/an idea EDAS Change Makers Admin in classrooms modelling and sharing the work of Inquiry Hearts and Minds CST's LRC Developments 	

L.		
Μ		

For more details on each category, please refer to the user's guide.

Concept Papers

Concept Paper 1:

Promoting and Supporting Deep Learning Among Districts using Professional Inquiry

Dr. Catherine McGregor (with assistance from Janice Feng & Jenn Seidel)

The focus of this study is to investigate how the systematic use of a disciplined form of professional inquiry among 15 districts is having an impact on student learning. In this concept paper, I explore how the cases collected draw from and exemplify theories of professional learning, and how the inquiry process accelerates and sustains professional learning. The framework for this analysis is drawn from several sources, including the *Beyond PD: Teacher professional learning in high performing systems* (2016) report, the Timperley's seminal *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration* (2007); Honig's recent review of how district leaders support professional learning (2012); and Leithwood's (2013) review of *Strong Districts*. Each will be briefly summarized in turn and then a common set of principles created. Following this, O'Connell's (2010) study *Improving Learning for All* is briefly reviewed, given its significance in the context of our research goals. The last section of the paper will examine the implications of these ideas in the

context of innovative learning environments and the importance of the meso level, as explored by Istance (2016) in *Schooling Re-designed*.

Beyond PD

The first study this paper draws upon is the recently released *Beyond PD* (2015). It focuses particularly on embedding professional learning into the daily life of teachers, because it argues, this model will allow for the systematization or automatization of learning in all aspects of professional life. It also argues that this approach will ensure professional learning is embedded in the culture, beliefs, and identities of teachers and leaders.

The *Beyond PD* report is useful to our context because it draws upon exemplars from four high performing systems, one of which was British Columbia (BC). This ensures us of even greater potential transfer of research outcomes to our context. It summarizes several finding which support deep professional learning in these systems such as:

- 1. The best professional learning is focused on how to enhance student learning.
- 2. There is a need for an overt, formal policy framework that is focused on ongoing professional learning
- 3. Professional learning strategies need to follow principles of adult learning, such as personalization, autonomy, building on existing understandings, and active engagement
- 4. Professional learning happens best in communities of practice, which means learning activities need to be collaborative or shared
- 5. While different models can be used, inquiry /questions must be at the center of the strategy
- 6. Professional learning strategies needs to be based in research, & evaluated for their effectiveness.
- 7. Professional learning requires ongoing resources, including time
- 8. Recognition and the valuing of professional learning builds a strong culture focused on learning
- 9. Leadership is critical; district/regional leaders must model themselves as learners & supporting others to learn
- 10. The impacts of professional learning need to be measured and assessed, although emergent design at the local level will ensure that systemization doesn't stifle innovation or creativity
- 11. Teachers are best placed to address and consider the impacts of their learning & improvements in learning, professional judgment must be built into the systems that measure impacts

Teacher Professional Learning Best Evidence Synthesis

The second paper that informs this analysis is Helen Timperley et al's (2007) seminal work, *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration*. She examined what evidence existed for professional learning strategies that have greatest impact on student learning. She identified seven elements including:

1. Providing sufficient time for extended opportunities to learn and using the time effectively;

- 2. Engaging external expertise;
- 3. Focusing on engaging teachers in the learning process rather than being concerned about whether they volunteered or not;
- 4. Challenging problematic discourses;
- 5. Providing opportunities to interact in a community of professionals;
- 6. Ensuring content was consistent with wider policy trends;
- 7. In school-based initiatives, having leaders actively leading the professional learning opportunities.

Her summary also identified several other key features including:

- 8. Coherence in learning opportunities: consistency over time
- 9. Repetitive offerings of learning with differing methods of engagement, with chances for negotiation of meaning over time
- 10. Reflection through discussion and negotiation during the learning event
- 11. New understandings that 'fit' within an existing set of practices or beliefs are more readily "learned" than those that were dissonant or challenged existing understandings.
- 12. Understanding and Challenging Dissonance: when dissonance is evident, there is a need for catalysts that can dislodge, nudge, and challenge problematic beliefs or understandings.
- 13. Having a rationale for engaging in professional learning is key; and the most powerful such motivation came from teachers who acknowledged their learners were not thriving or their learning wasn't being optimized

District Level Leadership

Honig's (2012) paper discusses the ways in which district leaders can model and support professional learning in their roles; in other words, instructional leadership cannot be practiced only by school level leaders, but must be modeled by district leaders. Her work offers an important set of considerations, given that our study focuses at the district level. The issues she identified included:

- 1. Professional learning opportunities must be situated in authentic settings, so that there is seen to be realistic application to the 'real' work of professionals
- 2. There must be a focus on joint work: that is to say, learning is reciprocal and therefore district leaders need to consistently work with a partner or series of partners at the school level.
- 3. Modeling is key; by this she means how the district leaders 'talk through' their approaches to inquiry/learning, and therefore meta-cognitively processes his/her ways of thinking and analysis/synthesis.
- 4. Tools: while giving personal support was important, tools (rubrics, matrixes, checklists) gives concrete measures to act upon deepens learning because they can be applied to contexts
- 5. Brokers and boundary spanners: engaging others (such as resource people) who can be catalysts for learning and bridging between known and unknown/unfamiliar ideas is important
- 6. Socially or collaboratively working together (such as in teams) enhanced learning

- 7. Learning plans need to be differentiated based on individuals' needs, understandings and contexts.
- 8. Developing a routine or common strategy to guide professional learning was key
- 9. Repeated and consistent engagement over time matters; shows commitment to shared goals and outcomes
- 10. Buffering: district leaders worked hard to try and reduce less important tasks, even take on particular roles/responsibilities to give learners time to focus on professional learning rather than the mundane
- 11. The readiness to partner was key: those who come reluctantly to the process, learn less than those who are optimally engaged in becoming and being professional learners.
- 12. Those that can push back against the demands for help/support with administrative tasks accomplished more, but this is a tension and may require practice for district leaders to learn how to re-direct the conversation towards professional learning, not the tyranny of the day to day.

Canadian Strong Districts

Given Ontario's ongoing research activity and their work to document the scope, nature and conditions that enable deep learning for school their districts, Leithwood's study of *Strong Districts* & *their Leadership* (2013) was important to highlight for our consideration. He argues there are 9 key traits/characteristics of highly successful Ontario school districts.

- 1. The need for a strong mission, vision and goals focused on student learning and success
- 2. A coherent instructional guidance framework; this goes beyond a policy framework for professional learning and emphasizes coherence and alignment across every key instructional policy, including things like assessment measures, data collection, curriculum outcomes etc.
- 3. Decision making that is based on multiple data sources that are systematically collected, things that support and buttress professional judgment
- 4. Formal improvement planning guides are regularly completed and guide decisions taken; decisions are widely communicated
- 5. Job embedded learning is key for all professionals, regardless of their position within the organization
- 6. Budgets, structures, policies and procedures are all aligned with the learning goals of the district
- 7. There is a comprehensive approach to leadership development
- 8. A strongly strategic and learning centered board of trustees who understand how policy and governance must align with district mission, goals, and strategic initiatives.
- 9. There are strong positive and productive relationships among all professionals and stakeholders; the system has a high level of trust that permits genuine and authentic collaboration

A Common Set of Categories

There is clearly overlap between these different authors and perspectives on professional learning: after examining each set of principles, we have selected the following 15 as principles that guided our analysis of how districts are supporting deep professional learning. Our choices were also guided by those aspects of professional learning that were focused on the specific ways in which learning is pedagogically supported, as these strategies or approaches should, over the long term, have a bigger, and more persistent impact on how teachers and leaders think about learning, and more importantly, impacts upon student learning in classrooms.

- 1. All learning is focused on enhancing student success
- 2. Professional learning must be assessed, monitored, and revised.
- 3. Use of **adult education principles** in the design of inquiry based initiatives, including dialogue, reflection and active engagement in authentic, 'job embedded' problems of instruction and learning
- 4. Creating a culture & embedding/modeling of professional learning at every level of the organization, and including characteristics such as buffering, taking on difficult conversations, consistently visiting leaders
- 5. **Engaging brokers and catalysts**: this process of bringing outside thinkers into internal processes can disrupt and/or interrupt systems that may be privileging particular perspectives or ways of doing/knowing/being. It is a good tool for enhancing creativity and innovation
- 6. Overt policy frameworks and strategic plans that support learning over time and with sufficient resources
- 7. A culture of trust: Strongly evident positive relationships among all stakeholders
- 8. Inquiry at the center of all professional learning strategies
- **9.** Respect for professional judgment and leadership at all levels of the organization; learning centered leadership isn't just for those in formal roles, builds a culture of professional learning
- **10. Alignment and coherence:** all policies, practices, strategic planning have a common mission, a strong focus on student learning
- 11. Differentiation: Learning plans match local needs/contexts
- 12. Consistent and persistent planning and resource allocation to professional learning
- **13.** Recognition and an overt strategy for thinking about **how dissonance operates**; how it can be used to advance (or detract) from making progress.
- **14.** Joint, collaborative work: professional learning is reciprocal and enhanced with done in teams, groups, networks or other social/cultural groupings.
- **15.** Assessing readiness for learning matters; those who are reluctant will not take up new learning as quickly
- **16.** A kernel routine or common approach to the professional learning activity but with flexibility built in that allows for local application in different settings

Sustaining Teacher Learning

Before moving onto an analysis of the findings of the district cases, it is important to briefly consider O'Connell's (2010) study because of its potential significance to our work and how to sustain and support teacher inquiry at the district level. First, O'Connell's work traced how teachers took up and applied professional learning strategies over a period of time, in New Zealand, a jurisdiction quite similar to BC. Specifically, O'Connell argued that teachers who "engaged in an iterative inquiry, refocusing on persistent issues of underachievement that still existed" (2010, p. 2) resulted in enhanced levels of student learning. The key, according to O'Connell, is not the routine itself, but its tie to a clear purpose-- making a difference in the lives of *all* learners. In essence, a commitment to equity and excellence for all learners created a deep level of coherence as teachers approached a teaching and learning task, and this deep coherence sustained them in the commitment to

improvement more substantially than applying a routine. These ideas of sustaining coherence through equity based forms of inquiry are important ones for us to examine in our data.

Findings/Analysis of the District Cases

Our team read and coded each of the cases we received; we used the above points to assess how districts were meeting these 16 research based principles, looking for strong coherence as well as variations on the themes. (Please see a summary data table at the end of this report). We also looked to see areas where there might be a new or different practice that wasn't necessarily emphasized in our list of professional learning principles. Finally, we noted where principles/concepts were not overtly described within the cases to see if there were gaps that might inform our analysis. We want to also acknowledge that many of these themes overlap, but as much as possible, we attempt to tease out their various components.

Dominant Common Themes

Differentiation

As the literature suggests, *differentiation* is important because professional learning needs to be strongly matched with locally identified needs of teachers and learners. This principle was strongly evident in most of the districts. In developing their local approaches, districts frequently built upon existing areas of interest, or on initiatives that were already underway. Good examples of this include Arrow Lakes, who described one of their inquiry initiatives as the Changing Results for Young Readers Professional Learning Team. This initiative was initially developed by the Ministry of Education and involved many different districts across BC, (although funding ended in 2015). In the case of Arrow Lakes, the district decided to continue to use the CR4YR model because it matched their concern for enhancing learner literacy, which had been identified as a goal based on an assessment of student performance. The district's approach combined the initial professional learning model developed by the Ministry, but re-designed it to take advantage of existing district and teacher leadership. Other local variations included a stronger emphasis on a particular inquiry model, (Spiral of Inquiry), and integrating it with the initial kernel routine provided by the provincially developed CR4YR. Another change was to enhance deeper teacher learning by having a stronger focus on active reflection (including the enhanced use of student artifacts and journals), as well as an explicit introduction of research evidence that could be used to expand the repertoire of practices teachers used to enhance student literacy learning. So the differentiation both broadened impact on teacher practice while reinforcing existing routines designed to fully engage teachers in learning.

One of the advantages of using an existing initiative is the strong level of professional interest and familiarity with existing processes, which enables learning to continue along an upward trajectory. This offers a potential for greater acceleration of learning as new initiatives always have an orientation period that can slow initial learning. Perhaps more importantly this example also appears to mirror the findings of the O'Connell's (2010) research, in that teacher learning was sustained using a familiar routine and that the enhancements to the routine were embedded in enhancing student

learning by more carefully examining student performance and gaps in performance. Here we see that a moral commitment to all students succeeding as another layer to add coherence.

Other districts emphasized how they built upon earlier learning initiatives in fields such as assessment for learning; four of the 11 districts identified this as a component of their inquiry based approaches. The 'fit' between inquiry and assessment is very strong because the inquiry process emphasizes the need to engage in processes of answering the question "What is going on for our learners?" Additionally, the inquiry process requires participants to examine the outcomes of their inquiry project so as to assess impacts on learning and potentially re-design their interventions based on how well students have learned. *Formative assessment for learning* provides a philosophical foundation that cements into teachers' pedagogical approaches a focus on learning; inquiry based professional learning illustrates how and why formative assessment works. There is a synergy that emerges through their joint use. This observation will be returned to in later discussions because of its implications for thinking about processes and practices that accelerate innovation and/or educational change.

In sum, two key factors related to differentiation at the district level seem particularly important: building on a familiar professional development routines and extending them in new directions accelerates learning as it follows a familiar and accepted pathway. The second point is that foundational principles must also be congruent; synergy builds and therefore learning is accelerated with continued efforts that build on shared understandings/beliefs.

Emergence as a Professional Learning Design Principle

Delta offer a clear example of how emergence was a principle feature of their district level approach to designing and supporting inquiry. The district began with a process of setting in place a strong central vision that could be used to ensure coherence and shared commitments to learning, as well as a means of continually reinforcing goals. They also chose to deliberately engage in a 'bottom up' process of design: by this we mean that the specific inquiry initiatives were not centrally determined, but rather emerged from the interests and passions of the teachers and leaders in their districts. In Delta's case a total of 12 district level initiatives are now operational; Aboriginal education, agricultural education, technological innovation, mentoring, reporting and report card groups, enhancing student to school connectedness are examples of some of the district level initiatives that are now being supported; these themes were identified first at the individual teacher level, and then were brought to the district level by the inquiry coordinators. Once agreement was reached on these related areas, teams were set up to work on each initiative.

Another approach to emergence is evident in districts like West Vancouver who have for 4 years been involved in supporting teacher inquiry through a district level innovation and inquiry grant. Described as an 'organic' process, schools are encouraged to apply for funds based on efforts they are making to better engage students in learning. The success of this organic process is evident: In 2012 they had 12

district teams involving 34 teachers. In 2015, they had 54 teams involving over three hundred teachers. These numbers demonstrate considerable acceleration in both teacher interest and action. Comox offers a similar example: school based Professional learning communities were the structures created to allow for existing groups of inquiry to come together with a common task or project and district resources were then made available to support each PLC. They argue that this approach is a decentralized model that has created spaces for "responsible risk taking" among teachers.

While it could thought that such decentralized approaches might lead to random directions being taken with limited coherence in professional learning, the opposite turns out to be true. By igniting and supporting the passion of teachers in the context of reaching shared goals and outcomes, and with inquiry as the common platform for moving learning forward, the emergent activity strengthened shared purpose while simultaneously building a culture that understood change and innovation as a core activity for all. As noted earlier, differentiation is an identified design feature of settings where professional learning is enabled, but it may be that in the BC context this is even more significant, because it provided a tool through which to re-build and consolidate trust during a time when there was formal job action and when trust between the government and teachers was at an all time low.

Engaging brokers and catalysts

As noted above, leaders at the district and school level are important assessors who know best the readiness of individuals who are reluctant to engage in some or all forms of professional learning. Invitational processes, including the ongoing modeling of a learning or inquiry-centered stance are key tools for district and school leaders. Some activities at the school or district level have an incentivizing effect, such as book clubs, and these provide an entry point into other district level learning activities. Some leaders are themselves charismatic catalysts, inspiring and engaging others in their district with their passion and purpose. However, in many of the cases, there was evidence of how bringing in external field experts—created catalytic impacts on teachers and schools. External experts have been used as key resources who have served as catalysts for helping teachers and leaders think about the ways they can enhance student success through inquiry. Internal experts within a district, leaders who have earned trust and respect due to their continued involvement in professional learning also serve to inspire and support teachers in their learning. *In all cases however, internal or external learning focused leaders are also modeling deeply engaged forms of learning, and consistently refer to how this learning drives their thinking forward.*

In earlier studies of the AESN, McGregor & Fleming (2013) noted that districts who have access to both "inside knowers" at the district level and "outside experts" who could draw them beyond their own boundaries in the application of new ideas, was a catalyzing force that enabled shifts in thinking, inspired action, and effected change. These dynamics were an important component of engaging teachers and leaders in metacognitive processes that shifted from a focus on teaching to a focus on learning and student success. *These dynamics are in evidence in the school districts included in this inquiry study; we can infer from the cases submitted and based on corroborating evidence in earlier studies that these are practices that seem to accelerate learning.*

Joint Collaborative Work

Joint and collaborative work is a central theme that runs through many cases that we studied, including Delta, Fraser Cascade, Nechako Lakes, Arrow Lakes, Richmond and West Vancouver. As the literature suggests, collaboration is crucial for professional learning, because professional learning achieves its best outcome when happens in communities rather than isolated classroom settings, and collaborative work enables teachers and educators to learn from each other's experiences in order to enrich their own understanding and practice of professional learning. Schools also work closer with each other and grow together.

From the reports we find that collaboration is widely used in both small and large school districts for different reasons: in small school districts wherein both the number of teachers and resources are limited, such as Fraser Cascade and Nechako Lake, collaboration enables schools and teachers to integrate their existing resources and knowledge to its maximum. The report from Fraser Cascade states that collaborative work enables helps teachers and school leaders to overcome isolation and become more connected to each other, and improve faster. Similarly, Nechako Lake also reports positive feedback from their practices of collaboration, stating that collaboration and teamwork allows teachers to share their experiences with each other and at the same time also builds closer relationship between district staff and the teachers. Richmond, on the other hand, being a large school district, also puts building and practicing collaboration as one of their top priorities. Collaboration, rather than being a separate principle that has to be carried out on its own, is rather seen as an integral part in achieving other measures of professional learning. For example, time and resources are allocated on a collaborative basis; assessment and monitoring is carried out in groups and community-based conversations; and inquiry is done through professional collaboration. Similarly, in the cases of Delta, collaboration is a principle that runs through other forms of professional practice. Not only is leadership distributed and decentralized but teachers, district leaders, and coordinators of inquiry (COI) work closely with each other, learning and improving rapidly from up-to-date experiences, constantly developing new strategies and finding new insights to be put into practice. In other cases, wherein collaboration is not explicitly emphasized and reported, we can still see collaboration being an implicit approach professional learning.

In general, joint, collaborative work, one of the central principles of professional learning, has been integrated in and become an indispensable part of the common professional learning practices among teachers. In this sense, collaboration benefits individual teachers in their teaching while enabling professional adaption, building from shared experiences. This form of collaboration seems to anchor teachers' commitments more fully and may therefore accelerate changes in personal practice. Just as importantly however, we also know that districts who embed such collaborative approaches into their professional learning offerings, create inviting pathways for others to join in with the work; it creates a shared culture of engagement. We can infer from the cases reviewed, that such a culture creates the conditions that will attract "new" involvement among those not yet involved in professional learning initiatives at the district level, and therefore builds momentum and acceleration of change activities through professional inquiry. *This might be an important point to try and trace more*

carefully at a district level; if we could map growth in the numbers of teachers working in one and then in other related collaboration groups, we could model this acceleration over time.

Consistent Commitment & Structural Support

It is striking that all four of the major research papers reviewed for this summary emphasized consistent structural support for professional learning. Common to all of the summaries we've examined is *that consistent structural support from school districts is absolutely necessary for teachers to actually carry out regular professional learning*. This needs to involve sufficient time (repeated and systematized forms of professional learning) and consistent resource allocation. When there is strong evidence of consistent support, and this support is recognized by teachers, they do not hesitate to commit additional time beyond regular work hours to deeply engage in many activities, such as writing reflectively, participating in after hours workshops, group discussions or even travel to attend district meetings to share and engage in professionally focused learning activities.

The approaches between smaller and larger districts did seem to vary. We acknowledge that in smaller, rural school districts, systematic resource allocation for professional inquiry is challenging, given budgetary constraints. But we note that the strategies being employed by smaller districts are actively constructed around inquiry practices, embedding inquiry approaches into everyday planning, ensuring that learning remains at the center of everyone's thinking. As noted earlier, smaller districts also take advantage of resources that come from other provincial initiatives; it is this weaving together of diverse strategies that creates a stronger overall focus on inquiry and learning, and builds a shared practice and purpose. So while there may be fewer formally sponsored professional learning activities, the inquiry stance creates as strong a commitment to professional learning.

In larger school districts such as Burnaby, Delta, West Vancouver and Richmond, where resources are ample and districts seek to systematically improve and innovate teaching through stand alone professional learning initiatives, commitment to professional learning is steadfast and consistent. For example, Richmond and Delta specified budget allocations for professional learning alone, making it clear that professional learning is supported consistently over time. In larger districts multiple meetings are held throughout the school year and teachers participate in various kinds of activities, including book clubs, professional topic learning, parental discussions, online data bases/websites, documenting learning through e-portfolios, or providing direct support with personnel such as Coordinators of Inquiry (COI) for each school. Professional activities are routinely scheduled so that teachers, district leaders, as well as inside/outside experts can come together on a regular basis in order to exchange experiences and reflections that come from their investigations/inquiry activities, offer suggestions and recommendations, and set future goals/directions. Such systematic and consistent commitments have led to many favorable outcomes, evidenced in the impact stories they provided in their data summaries. Delta for example, has spent considerable time using an interview protocol to document how teachers describe the professional learning they have undertaken, and how it has impacted them and their practice, as well as the learning of their students. These stories are powerful evidence of how professional learning activities do effect changes in teacher practice.

Professional Learning must be assessed, monitored, and revised

As the above discussion indicates, assessment of professional learning is key to understanding its impact. The literature identified this as a central principle, and there is evidence that assessment of professional learning is being considered by many districts. In the cases submitted, we saw evidence of three different ways that professional learning was assessed:

Self- directed assessment: Where teachers assess themselves in a process of ongoing self-improvement during their work as teachers.

Group assessment: Teachers come together with other teachers, Principals and district leaders to discuss issues they have had in their classes.

External assessment: Using an external person or performance standard to monitor teacher's success in the classroom.

Arrow Lakes is an example of a school district that uses all of these methods of assessment. In Arrow Lakes, the schools are using the BC Performance Standards for readings, writing and social responsibility. They use these performance measures to help inform their instruction and monitor how much teachers are making a difference. Teachers use this standard to reflect and re-evaluate their own methods on teaching. Additionally, the district has 7 sessions of group meetings spaced every 3-4 weeks for group feedback. These sessions would create a place where teachers can express their concerns and gain feedback from their fellow co-workers. Having consistent meetings is a way for teachers to feel connected to the school and their co-workers. It creates a community and ultimate a culture of trust. The district also assessed this model by going in and asking teachers to comment on the quality and nature of their learning; this external assessment provides evidence of the success of the initiative, while also providing information about how to adjust the professional learning program that is being led by the district.

Burnaby is a district where the self-assessment measures were focused both on attitudinal and conceptual knowledge about Aboriginal peoples among teachers. Data tables were compiled to show the growth in teacher learning over a period of five sessions; they used a scale that ranges from awareness to action/advocacy. Impact stories were also collected from teachers; these stories provide strong evidence of growth in teaching performance and a shift in their teaching identities, a process that indicates transformational learning, something often difficult to trace or show. Video projects are to be completed to more deeply show the impact of this learning. Similarly, Arrow Lake's took time to carefully document teacher understandings based on their engagement in district practices, and how particular strategies were effective (types of collaboration, modeling, repetition and scheduling for example). They too have created a series of videos that help to document student learning, although teacher perspectives are integrated throughout. Delta also engaged in considerable efforts to document individual teacher evidence of growth and change, with large amounts of qualitative descriptions used to generate themes and subsequent analysis led to creating a summary report and some info graphics that are being used to capture big ideas and themes.

An important next step in thinking about how districts support professional learning is to more deeply examine possible strategies, protocols, instruments or benchmarks that could be used to measure the impacts of this learning. Given the importance of this theme, it will be scheduled as a key topic of discussion in our upcoming data sharing event.

District Alignment and Coherence

Each district had a different focus and often had very different goals, some curricular, others more focused on culture building or structuring professional learning. For example, Burnaby focused on multiculturalism and diversity and how they plan to integrate that into their curriculum. Fraser Cascade had a limited focus on professional learning per se, but rather on how to engage teachers and leaders in thinking about inquiry as a tool for setting school goals; collaboration and building a shared commitment to student learning were emphasized. In West Vancouver, there has been a long standing commitment to effecting change by shifting pedagogies, with subsequent resources being aligned to this purpose through their granting program and the hiring of secondary school inquiry coordinators. Like Fraser Cascade, Vancouver Island North's focus, while specifically on improving student literacy through school level goals, also sought to build shared commitment to the initiative, while simultaneously emphasizing learning-centered accountabilities. Nechako Lakes had restrictions due to their lack of resources and dispersed population, yet are focused at a district level with meeting the needs of Aboriginal learners. Okanagan Similkemen were also focused on how the district could support schools in building a climate of trust and respect.

In all cases however, the initiative is *district led*. Design features common to all included using inquiry as a type of kernel routine that could be adapted and modified to the local context. But they did not allow these initiatives to proceed un-monitored; structured components included regular communication, accountability measures that focused on how student learning was being advanced, grants and/or release time to enable inquiry work—in all cases building a strong sense of district level *alignment* with individually different goals, accompanied by *coherence* of purpose. We know these design features will ensure that successful change is initiated by learning centered leaders.

Yet there were differences as well; in those districts where teacher learning was explicitly a goal and openly focused upon, it appears that the initiative was more widely embraced by individual teachers, groups of teachers and leaders. In other words, when one frames a district initiative in a way that describes it as a process of learning, it simultaneously acknowledges a need for change while emphasizing that the process may involve creativity, personal and collective exploration, and allow generative spaces where people can take risks and make mistakes. It also allows for innovators or outliers to have a space in which to work in a sanctioned environment. This approach also recognizes and allows for differences to emerge, and doesn't insist on conformity. Conforming to a single way of doing something, or a goal or outcome that has been set by a heirarchal district initiated process, can lead to a shutting down of any personal by-in to a district level initiative. A focus on professional learning—learning together in particular—shifts the communication from telling to listening, and enables an empowering space for shared action.

Categories that were Less Explicitly Considered

Dissonance and Professional learning

One of the more interesting ideas we found in the literature related to enhancing deep professional learning was a discussion of dissonance. Timperley (2007) argued that dissonance operates to block innovation, and that there is a need for having in place overt strategies or catalysts that can either dislodge, displace or challenge problematic beliefs or understandings. In the BC context, dissonance and resistance have been real blocks for many districts involved in moving forward with innovation strategies; historical relationships between teachers and the BC government (and by implication the BC Ministry of Education) have been difficult for more than 30 years. When innovation and forced or mandated educational change become synonymous, the landscape for professional learning becomes a highly contested terrain.

Districts in BC have taken different approaches to overcoming this negative discursive framing; as noted earlier, an approach that focused on emergence was one such strategy. While building a culture of shared purpose focused on learning, it also served to counter the narrative that educational innovation was a government plan that should be suspect. In this way the emphasis on emergence allowed districts to *covertly* challenge—rather than openly counter dissonance and resistance. Other approaches that build a culture of shared learning focus on reciprocal, collaborative engagement, and teacher leadership, points we've discussed at other points in this paper. In general however, we suggest districts are using *diffuse or subtle strategies* for challenging blocks or blockers to innovation.

It may be time to take on this issue more overtly, and consider ways in which some beliefs or stances can be more openly challenged—the key one being what is described as *professional autonomy*. The discourse of professional autonomy—meaning teachers individually and collectively have the right to select (and reject) their professional learning focus—is frequently used to shut down particular forms of professional learning which are developed or supported by districts or the Ministry of Education. These approaches to professional autonomy also have the effect of reinforcing models of professional development that are focused on knowledge dissemination rather than models that enhance deep and meaningful teacher learning. Offering an alternative definition of professional autonomy and using this language more openly as a part of activities where shared learning is being supported and developed, may offer a strategy worth considering in terms of countering dissonance. Such work is of course, challenging and requires sensitivity to context, but it may be something districts want to consider in the context of knowing how to better support continuous forms of professional learning.

Assessing Readiness for Professional Learning

This category is not unrelated to the previous discussion on conflict and dealing with those who create dissonance. However here the emphasis is on creating tools or methods that help identify those who may not yet be ready to engage, but with appropriate supports, can be encouraged to more deeply engage in professional learning. The invitational nature of most initiatives described in the cases considered for this paper seems to be a common means by which districts have enabled

those who are ready to join in; subsequently, invitations may be extended by those engaged to the unengaged or reluctant. In many cases, leaders (team, school, district) are the catalysts through which this occurs; more will be said about the importance of leaders in the next section, but it is worth mentioning here that leaders are a key means of identifying those 'ready' or 'not yet ready', with an eye to designing individual pathways forward, based on contextual knowledge of the individual involved. This is a form of political or strategic management as much as it is based in purposeful learning centered practice. Modeling is key to this stance, as we discuss next.

An emphasis on adult learning principles

The literature reviewed for this paper emphasized that the design of professional learning activities was important, particularly in the use of adult principles of learning. These principles of learning emphasize the direct engagement of adults in their own learning, making its connections to prior knowledge explicit, and providing mechanisms of choice for learning as key elements. While all of the cases collected for this study explicitly referred to adult learning principles in their case descriptions, few included this focus in their specific review data (although Arrow Lakes was an exception to this). However it was evident from the types of initiatives (self initiated versus centrally mandated) as well as their pedagogical approaches (primarily the inquiry model), the approaches to professional learning were designed to engage teachers in adult learning models. In other parts of this paper we discuss other pedagogical approaches that were deliberately used to support deep professional learning, such as consistent and persistent forms of learning over time, team or collaborative work, alignment and coherence of purpose and learning centered purpose as critical ways to ensure that learning activities promote deep and engaged learning, rather than one shot, single event professional development workshops that were exemplars of an earlier era. We believe that the widespread nature of these approaches exemplifies the naturalization of these principles into professional learning designs and is indicative of BC's leadership among educational communities.

Professional Learning and The Meso Level

The meso level is an idea district leaders heard and talked about as a part of the OECD innovative learning environments presentation when we were at ICSEI in January. During that session it became apparent to us that district level activity is an important component of the meso level (in that it is between the global environment and the micro or classroom environment) but there are other features of the meso level that have significance. In this last section of the paper, I examine the cases closely to see what activities or category of activities provide evidence of what Istance called "meso level" networking and how this demonstrated innovation. The central feature I want to focus on is how the networking nature of the learning activity bring together formal and non-formal learning environments, as well as offering new nodes or places of activity that emerge from or extend into shared spaces/places for learning.

What do we mean by the meso level?

The meso level seems to be an evolving idea or concept; but key to making sense of it is the idea of integration across and between various structures, events, or networks. In the educational context, this means that there are cross connections both inside and outside of the formal educational

systems we usually see as the boundaries of our educational world (Istance, 2016). This connectivity isn't just about creating links between systems, but also links between people—groups, organizations, communities, or individuals who share an interest in a way to explore and deepen learning for all learners.

Why does connectivity in new ways matter? The meso level offers considerable value as a resource that engages and supports innovation because it builds a more hybrid model of educational activity, and therefore a broader platform from which to support learning and building coherence among and between its linked nodes of activity. Bringing together both the formal and informal aspects of educational activities into a shared network of practice, focused on innovation for learning accelerates change because more components increase the potential sites for learning activity. It is this potential for acceleration of rich, interconnected and hybrid learning spaces that is particularly important.

In *Schooling Redesigned*, Istance says we want a "dense, vibrant meso level" (2016). Our cases may provide us with some models for thinking about how districts develop and support developing such a networked system of innovative learning, or what work they still need to do to accelerate and build a more effective learning system. The insight I'm becoming convinced is true is that *learning*—a focus on learning, a learning mindset, a learning centered motivation—is the grease for all of this vibrant activity. Acceleration is enabled when the focus is on learning, and with an interconnected, networked system (one with the potential to also grow and change) the learning can spread more quickly from node to node, place to place, and person to person.



Hybrid Learning Spaces

The image above comes from *The Schooling Re-Designed* report written by Istance in 2016. The idea of 'voluntary hybrids' as indicated in this figure captures this idea of meso level learning networks well, and I therefore examined the cases to see how we might see or describe examples of voluntary hybrids.

One example comes from the data submitted by Arrow Lakes; one of their videos describes the work teachers are doing online learning environments that engages both elementary and secondary school students in writer's workshops with community authors, writers and poets. Here, the learning environment extends into the meso, bridging between the non-formal and school environment, but also in the middle space of beyond the classroom walls and into virtual shared learning spaces where students and writers alike read, edit, and think about the challenges of writing and composition. A second example comes from Arrow Lakes in a video that describes the "Wednesday walk" students engage in by working beyond the school walls and into the community; there is less of a hybrid component but the non-formal environment encourages a different way of characterizing the learning experience, with greater degrees of self-direction in the learning space.

The Burnaby district case study on Aboriginal inquiry cited teacher participation in the Vancouver Foundation "Through a Different Lens" project. This project provides another good example of a hybrid network that brings together teachers, district staff, and students with an organization who is assisting in making new connections that deepen student learning. Teachers from across BC, (although predominantly on the lower mainland) serve as sites for engaging in exploration of new ways of engaging students in learning. The blog which accompanies the project provides compelling evidence of innovation, but also evidence of partnerships between teachers, community members, both within and across districts. In Comox, there is a strong emphasis on shifting toward understanding the mind/heart connection. While much of their activity describes school based work, they also describe their partnerships with organizations like Design For Change (DFC) and how this international organization is both a resource for and a catalyst for their district level activities. Here there is evidence of how threads of knowledge from other parts of the world are informing their learning and work together. We believe it to be an exemplar of how new hybrid partnerships begin and grow as their connections become stronger and more common nodes of activity develop.

As these examples show, hybrid level networked forms of learning are in evidence in multiple districts, and at various levels of intensity; sometimes the hybrid partnership is between teachers and a broader learning community, sometimes these hybrid networks support student learning, and on some occasions, teachers, leaders and students are as engaged in partnerships inside and outside of the classroom in work that deepens learning.

Questions occur as I write this: to what degree are these networked relationships deep and lasting? Are there ways to document the depth, scope or time involved in these relationships? Would mapping these networks in this way help us to understand the process of learning across and through networks? Is it the depth of the collaboration the thing that matters most? By this I mean is the collaboration reciprocal, in that learning/teaching partnerships are valued as highly inside and outside of the school setting? If student successes outside of traditional learning activities in the school are measured/assessed and added into the total representation of student learning, in something like a learning portfolio, then we can say these learning networks are highly reciprocal and equally valued as valid sites of learning. However, it may also be that the numbers of interconnections matter, and how the horizontal nature of this connectedness is structured and supported is important. Could we then describe the structures and methods of maintaining connectedness over time, distance, or between organizational structures? This speaks to an important feature of the meso level in innovative organizations; how learning/innovation/change is accelerated because of its broader reach. The principle evident from *Redesigned Schools* is that processes of acceleration and diffusion are enhanced when interconnections are encouraged, promoted and enabled through formal and informal support mechanisms. Yet an important question remains how such encouragement and connections are enabled.

In some cases, it is apparent that leaders are key: but in cases such as Delta for example, many different points of emerge from multiple directions, and some come from personal commitment, rather than sanctioned direction.

This also illustrates one of the other difficulties in doing this type of hybrid or networked learning; networks are, by their very nature, emergent structures, meaning they appear and thrive based on context and need, but over time may decline or end, or re-designed or new partnerships may emerge. Istance invites us to consider how 'cluster leaders' serve as catalysts of such activity, as do key events or processes that are focused on continual forms of re-development and assessment. The cases we have collected have evidence of both of these phenomena, yet there may be more strategies or approaches that could be detailed as tools for acceleration and diffusion. It is a question that we could devote more time to considering at our regional meeting.

Conclusion

Without question, there is strong evidence that all 13 of the districts reviewed for this paper were deeply engaged in inquiry based practices that were making a difference for learners and were solidly focused on principles of effective, deep and engaging forms of professional learning. As we were aware when we initially set out to document our work, there are many differences in the approaches used by districts, but by tracing the key features of effective professional learning from the literature, we can find many commonalities and strengths.

Some key questions that were raised as a result of reviewing the data collected from the districts includes:

- 1. To what extent might this paper and the cases provide us with benchmarks for exemplary district practices in professional learning using inquiry? If there are benchmarks we can identify as evidence of deep professional learning, are there stages or steps in achieving this level of mastery? Could we create a mapping tool for this to use in the future?
- 2. In what ways do districts operationalize, support or extend meso level engagements? What structures or other elements enable the growth of hybrid networks and partnerships for learning? To what extent should districts be thinking about the ways they can enhance the creation of new hybrid networks of professional learning? What are the components of acceleration or diffusion that seem most important?
- 3. We know that assessing impact was an important task that districts engaged in as a part of recording their cases. How might sharing these strategies and approaches help us to better understand, describe and map our work as leading innovative school districts?
- 4. Are there potentially common measures we might want to develop to assess deep professional learning? Could a common tool help us to see our progress over time?
- 5. What other next steps should we take to share this information, and plan for the next school year?

<u>References</u>

Honig, M. (2012). District Central Office Leadership as Teaching: How Central Office Administrator Support Principals' Development as Instructional Leaders. *Educational Administration Quarterly 48*,(4) 733-774.

Jensen, B., Sonnemann, J. Roberts-Hull, K. & Hunter, A. (2016). *Beyond PD: Teacher Professional Learning in High-Performing Systems.* Washington, DC: National Center on Education and the Economy.

Leithwood, K. (2013). *Strong Districts and their Leadership*. The Council of Ontario Directors of Education, Ontario, BC. <u>https://education-leadership-ontario.ca/media/resource/Strong_Districts_and_their_Leadership_2013.pdf</u>

<u>O'Connell, P. (2010).</u> *Coherence and Inquiry as Key Dimensions for Sustainability of Professional* <u>*Learning.*</u> New Zealand's Literacy Professional Development Project (LPDP).

OECD (2015). Schooling Redesigned: Towards Innovative Learning Systems. Educational Research and Innovation. OECD Publishing: Paris, France. <u>Http://dx.doi.org/10.187/9789264245914-en</u>

Timperley, H. Wilson, A. ,Barrar, H. & and Fung,I. (2007). *Teacher Professional Learning and Development: Best Evidence Synthesis.* New Zealand.

Concept Paper 2: Leadership for Professional Inquiry: Learning from District Practices

Catherine McGregor (with assistance from Janice Feng and Jenn Seibel)

In this paper we consider the relationship between leadership and the inquiry project cases within our 15 district consortium. As the participants in our project know, leadership is strongly connected to innovation and change. A series of OECD reports (2012; 2013; 2015) have focused intently on the contexts and conditions necessary for innovation. One of the key findings of these studies was that there are seven (7) strategies which best support innovation including: culture change; a clarifying focus; creating professional capacity; collaboration and co-operation; communication technologies and platforms; and change agents. While the term 'leadership' is not specifically mentioned in this list, an examination of each strategy points to the critical nature of leadership—because leaders are catalysts for change in many fields of action. These ideas are the ones that have motivated us to consider how leaders and practices of leadership catalyze, diffuse or accelerate processes of learning and change.

As in our previous paper, we begin by summarizing several key thinkers related to leadership and draw from these scholars' theories that inform how leaders support innovation and learning. While many authors could be canvased for a discussion of educationally focused leadership, three key perspectives were identified; their approaches and conceptual frameworks are briefly summarized below.

The first emphasis is on *distributed or shared leadership*. This is particularly salient given its identification in the OECD reports about the importance of collaboration, cooperation, communication and building professional capacity, all components enabled through multiple sites of leadership. Spillane et al's (2011) summary and analysis of the features of distributed leadership provides a solid representation of this thinking. This is followed by consideration of Couros's (2015) perspective on *innovation mindsets*; Couros's work was chosen given its Canadian focus and the strong emphasis it places on how leaders communicate and create cultures that develop and sustain

educational innovation. Finally, I include the OECD report on 21st Century learning written by Macbeath (2013) as it provides a clear summary of the international scholarship that has emerged in the context of 'new times' and *the global imperative for changing schools and educational communities*. Once each of these articles is briefly summarized; when completed we combine the themes into a shared list, and use these ideas to explore facets of leadership evident in the district cases.

A distributed Perspective on Leadership (Spillane, Healey, Mesler-Parise & Kenney, 2011)

As Spillane et al's (2011) chapter noted, the theory of action that emerges from a distributed leadership perspective is that more leaders, with more focus on learning and improvement, will lead to improved systems, and most importantly, enhanced success for learners. In general, this theory of action makes good sense, however, more leadership will not necessarily translate into enhanced learning, unless certain principles or conditions are considered. These principles are summarized below.

- Leadership for learning occurs as much in process as it does in role; that is to say, formal and informal leaders develop strategies and approaches that advance learning through collaborative, shared engagement with one another, and are mediated by goals and policy (context), knowledge of professional practice, and the nature of the interactions and relationships among and between actors.
- 2. While we know formal leaders are key in school improvement data collected over decades (indirect impacts have been measured and verified), they are also members of a school and/or district team, and as such operate collectively. This means that our professional learning needs to consider how teams learn, rather than how individuals learn. It also means we should not depend on single individuals as drivers of change.
- 3. Social capital and relationships are key to understanding these dynamics; they can alternatively build (or denigrate) social ties and commitments to shared work. Strong ties enable this type of shared learning to thrive; leaders are key to building strong ties among and between teams.
- 4. All leadership activity, including that focused on professional learning, is filtered through interpretive lenses; meaning is constructed and maintained through professional beliefs about what matters, such as judgment, respect, and/or authority in and/or for learning. These beliefs frame how actions are understood or characterized, and accordingly effect participation.
- 5. Kernel routines that are flexible and designed to be collaboratively or collectively developed provide useful ways of proposing how leaders take on roles of co-leaders and facilitators of professional learning.

Innovative Mindsets

Couros (2016) comes at the notion of educational leadership with a focus on what he calls an "innovative mindset". His emphasis is on how change can be supported or facilitated through a particular way of being/thinking. A key term he defines is "the adjacent possible" (p. 8), using this as a means of inspiring growth and transformation that makes a difference for learners. His argument is focused on how leaders can create the conditions under which change can occur, and this is primarily through a stance that questions what is best for learners so they can both thrive and succeed. His key points include:

- 1. Educational leaders should be empathetic, meaning that they should think about learning from the point of the view of the learner and be "learner-centric".
- 2. Educational leaders should understand students' need at any given time, and guide students to search for questions themselves, instead of positing questions for them.
- 3. Educational leaders should always be willing to take risks and question current accepted ways of teaching.
- 4. It is crucial to build networks so that educators and leaders can share ideas with each other in order to develop new and better ideas.
- 5. Always be willing to try something new and to expand learning possibilities for students. By doing so, your attitude will likely to encourage students (and teachers) to innovate as well.
- 6. Educational leaders should recognize that learning is creation: encouraging students to create new ideas help them to learn.
- 7. Educational leaders should help students become resilient and face adversity, to challenge and encourage students to stretch their thinking and try things.
- 8. Educational leaders and innovators should constantly question their efforts, progress, and processes, so that they can figure out what can be tweaked, modified, reiterated, and reinvented. They need to draw on proven theories of what supports learning, while always being ready to modify or adapt to fit a particular learner or context.
- 9. Educational leaders are more than models, they are living exemplars of an innovative mindset. By this Couros means you cannot stand to one side and encourage or share ideas, but rather you must engage deeply in the work of learning and its concomitant process of error and failure. Only then will people trust that you are an innovator or transformer, not just a promoter of change.

Leadership for Learning in the 21st Century

The final summary for this paper comes from the OECD report *Leadership for 21 Century Learning*. Given Macbeath's (2013) stature and prominence in the field, and how this publication has been used as a guide to educators from around the globe who are attempting to modernize contemporary schooling, this was an important source to consider in developing our scope of analysis. In this report, Macbeath (2013) presented five basic principles to guide successful leadership:

- 1. Leaders should focus on learning, putting learning at the center of everything. There needs to be a culture that nurtures learning
- 2. Leaders must do what is right, just and equitable;
- 3. Leaders should have the confidence and conviction to take risks rather than staying in their comfort zones all the time, as taking risks help them understand the gap between how things are and how things should be.
- 4. Keeping a focus on learners and learning outcomes are key: understanding students' unique needs and trying to balance between curiosity and what needs to be learned is important;
- 5. Leaders should create conditions favorable to learning, conditions that enable everyone to take risks, to cope with failure and respond positively to challenges, and provide tools and strategies to enhance thinking about learning and the practice of teaching.
- 6. Leadership has to be shared so that everyone can be encouraged to take the lead as appropriate to task and context; everyone's experience and expertise can be respected and utilized, and collaborative task management realized
- 7. There should be a shared sense of accountability, internally and reciprocally.
- 8. Leaders should reflect on their practice through dialogue and critical exchange among colleagues; their reflection should be guided by questions summarized as "5Ws plus H: what, why, where, when, how".

- 9. Leaders should cultivate diverse skills, including skills of problem solving, experimentation, critical thinking, collaboration and creative communication, in order to adapt to different circumstances that learning takes place in.
- 10. Learning should not only take place within the classroom, but also in different contexts, so that students can develop diverse skills and situation-specific forms of competence

Bringing it all Together

These authors bring important perspectives to the work of leaders who engage in innovation and change, although there is overlap between them. This overlap is evidence of the growing consensus regarding to what constitutes successful and effective leadership. However, there are also some differences, and so the summary list of criteria we considered in our analysis took both commonalities and differences into account. We reviewed the lists and then created a summary that be believe captures 14 key principles, and examined our cases looking for evidence that leaders are:

- 1. Learner and learning centric
- 2. Empathetic and relationally oriented
- 3. Deeply observant, with an ability to navigate through dilemmas and see saliency
- 4. Risk takers
- 5. Team builders: they use distributed approaches to leadership and empower the team to act

6. Pedagogically knowledgeable: they know about leading learning theory, how these can and should be applied to learning

- 7. Guided by a strong vision and moral purpose
- 8. Inclusive and give opportunities for all to have voice
- 9. Coaches that support deep learning
- 10. Focused on creating safe spaces that build resiliency and grit for learners
- 11. Accountable both to self and others
- 12. Reflective and reflexive
- 13. Actively engaged in Networking and catalysts for expanding/growing these networks
- 14. Inquiry minded.

Findings/Analysis

Our three person research team examined and coded each of the cases we received using the 14 coded entries above. We looked for strong patterns as well as gaps and/or variations that seemed to

have significance, particularly in how leaders acted as catalysts, change agents or accelerants. We also tried to read to see if there were alternative or new practices that were not clearly evident in the literature we reviewed. As in our last paper, while we know that in the real life examples that were included in the cases, ideas or themes often overlapped, however, for the purposes of this paper we sought to tease out the specificity of each component.

Dominant Common Themes

Vision and Moral Purpose

Moral purpose is a central theme that runs through the majority of the reports. There are two major intersecting visions that are easily identified: one is the indigenization of teaching and education, and the other is focused on addressing multiple forms of equity to ensure success for all learners. What is common to both themes is the idea that education should facilitate inclusion and combat social and/or cultural oppression.

Our analysis of the cases noted that districts with large indigenous populations are frequently rural, such as Nechoko Lakes, Coast Mountains and Fraser-Cascade. Among these districts the major moral imperative is to indigenize education and empower indigenous learners. And in urban, metropolitan areas wherein students come from diverse backgrounds, most notably Richmond, Burnaby and Delta, the moral imperative stresses the importance of addressing diversity and paying attention to differences. All of the districts see diversity as a rich resource rather than an impediment to learning, and encourage approaches to learning where learners can bring their lived experiences and cultural identities to their learning contexts. The case of Burnaby provides an interesting example, insofar as it does not have a large Indigenous student body, it recognizes the significance of integrating indigenous points of view, stories, and principles of learning into teaching. We noted how frequently stories of impact and detailed descriptions of innovative practices recognized the importance of indigenous cultures, and more inclusively recognized diverse family histories, customs, and life stories.

The role of leadership in establishing, maintaining and/or exemplifying this moral purpose is also strongly evident in the cases. Leadership for this moral purpose comes from several sources; first and foremost it comes through district leaders themselves who frequently communicate the value placed on equity, inclusion in the ways in which they communicate district goals, plans, strategies and speak from the heart about the need to make differences for all learners. We were very impressed by the ways in which districts cases captured this strong head/heart connection and showed the ways in which district leaders actively sought to make their work visible to all employees and the community, carefully communicating to all levels of the organization their commitment to the goal of success for all learners.

While the language of improvement and change is important, so too are the stories that exemplify impact and serve as catalysts to motivate teams and actors, both inside and outside of school settings. How these are held as exemplars and catalysts are an important means of conveying

meaning that matters to the many participants engaged in the inquiry work and networks operating. For example, in Vancouver Island North the "Reading 5 by 5" initiative begun in 2011 provides a concrete goal to work towards (ensuring all students are literate upon graduation) but as importantly, provides a motivational image to guide leaders, teachers and community members towards equity and success for all learners.

Passion for making a difference is the constant that guides procedures and practices. This is evident in many districts, but good examples come from smaller districts where district leadership teams works directly with teachers in teams to implement their vision for learner success. When passion and purpose resonate strongly, risk taking becomes even more possible because the shared values of deep inquiry and learning have been consistently practiced over time, often despite contextual challenges. What has come to matter is the meaningfully engagement in shared work.

Relationally Informed

Leadership is a relational activity; by saying this, we acknowledge that leadership is more than the taking on of a role, but is about our shared engagement in purposeful activity where leadership emerges. The literature also makes evident that leadership for learning needs to be relationally informed; in the first paper we developed this idea quite substantially by exploring the ways in which modeling and engaging in active forms of learning builds strong mutual trust and therefore builds relationality.

Not surprisingly relationally engaged leadership is core to district level inquiry work; the cases reviewed for this paper made evident that this really matters to teachers. In the next section of this paper we talk specifically about distributed leadership, because this is a core way of thinking about leadership that informs the approach taken by districts in these case studies. Distributed leadership is and of itself a relational model in that it requires many to engage collaboratively in shared work, and so builds relationality and a culture that values the work we do together. However, before moving on to that conversation, it is worth mentioning how frequently reference to specific district leaders ways of doing work, their habits, and ways of engaging with teachers and other staff in inquiry and engaged forms of learning drew comment in the evidence collected as part of the case study reporting process. This level of comment implies that there is a high level of respect and regard for district leaders who exemplify and model what it means to engage deeply in learning, and that their approach to leadership through shared learning and inquiry, is noticed by district employees. This kind of anecdotal evidence might not be as powerful an indicator as some other measures, but in the BC context in particular, with its history of mistrust between teachers and districts, these comments offer an important indicator of a changing culture. Concomitantly, it shows that the learning leader stance is one that is highly valued and builds relationality among and between district personnel.

Learning Centered leadership PLUS

Clearly learning was at the center of the work of every district case we read and reviewed. There was a strong, consistent and clear moral thread, as was described in the previous section of this paper. However, in this next section I want to consider more fully the ideas of Spillane in terms of how building teams, creating shared work product and developing distributed forms of leadership more deeply enables a learning centered, leaderful culture. Spillane et al (2011) talked in his chapter at some length about how leaders aren't only change agents themselves, but either enable or constrain the work of others. He talked about leadership as a practice, meaning it is what we collaboratively do. There is no doubt that historically leaders have been granted the social and political capital by others within the educational system to be change agents, yet our experiences in the BC context tells us this can only be effective when we do such work collaboratively with others. While not all work is distributed in school districts, the commitment to and the contribution to developing a distributed network of leaders is key to the ways in which innovation or transformation thrives. In other words, the distributive factor is the PLUS in learning centered leadership. In the next section I explore distributed leadership more fully.

Distributed leadership

Just as evident is a strong commitment to distributed forms of leadership. Many authors and scholars, including Spillane's (2011) work referenced in this paper, make a strong case for building genuinely distributive team approaches to learning and engagement in practices of learning such as inquiry. There is no doubt that BC districts lead in this approach; in many cases, the teams are modeled after the NOII and AESN networks that have been in place provincially. In other cases, this general model has been re-designed into coaching and/or innovation teams that work with other teams—similar to a 'training the trainer' model. Still others involve creating teams in a school or regional site; driven first by a shared interest in inquiry, the groups operationalize as teams, with leadership being taken up by different individuals at various points in the inquiry process. While the various ways in which these teams are developed and supported is worthy of a paper in and of itself, for the purposes of this discussion, I have highlighted two approaches as exemplary of how distributed leadership is both realized and enabled at the district level.

West Vancouver is a good example of a district that has developed and honed a model that has flourished since its modest beginnings more than 5 years ago. They describe their initiative as an Innovation Grant, but the process develops diverse, distributed leadership teams, and these have grown significantly in scope and size over the years these grants have been supported. Their report describes their approach as one based in "horizontal leadership", and is based on beliefs in the power of distributing leadership across the organization. A parallel component in this approach is that it builds upon an existing strong level of innovation in the district, and enhances this culture as it continues to build upon and expand to include new innovative teams.

There are important similarities between strategies that support the development of diverse leadership teams and the discussion related to differentiation and emergent design featured in the first paper on professional learning. The point I want to emphasize here is that formal, strategically focused district level leadership is a necessary component for differentiation to work well; leaders who can strategically envision how this may develop are critically important to creating a trajectory

that enables change to be more widely taken up. In the case of West Vancouver, we can see how this trajectory has been enabled through the ongoing development and refinement of the strategy itself (the Innovation Grant), and the ways in which it has been supported and recognized (through events such as the Celebration of Learning and online district resource sites).

Delta offers a second example of how distributed forms of leadership are developed strategically; in this case they have created a network of non-formal inquiry leaders throughout the district. Described as the "Coordinator of Inquiry" strategy, Delta created this network based on their strong belief that the District's vision to become a leading district focused on learner success would be realized when coordinated across every school in the district. An important part of their approach is that was focused specifically on using the Spiral of Inquiry as the primary tool through which to both effect change and provide a platform for learning centered leaders to lead and support change. From these Coordinators came multiple examples of emergent innovation, as coordinators created and supported school based teams as they sought to inquiry into how to enhance learner success.

An important point to emphasize in this model is that while the Coordinators of Inquiry is an exemplar of a structure and process designed to enhance innovation in district teams, and develop distributive leadership opportunities across the district, it was also a means of engaging formal leaders at the district level with learning about how networked models of professional inquiry worked, and how this learning could then be applied to assist them in reaching their district goals. In other words, the strategy wasn't only about enhancing outcomes for teacher leaders, or students, but to inform how district leaders were a part of the team that work to develop and support such learning.

A somewhat different approach has been used in North Vancouver in the development of a more formalized network and training program for informal leaders interested in becoming Innovation Coaches. Horizontal leadership is created through processes designed to provide scaffolded opportunities for leading professional learning and through mentorship from district level staff. Like Delta's Coordinator of Inquiry model, learning is understood as reciprocal, and district staff are themselves coached to engage in learning that can better support innovation.

Distributed leadership and Tools and Routines for Inquiry

Spillane (2006) discusses how distributed leadership practices are a product of the specific situation that people find themselves engaged in, the quality of the interactions, and the tools and routines that are used to make sense of the shared leadership activity. While the term tools and routines seems rather innocuous, a closer look at what is meant will help us to understand their significance in district level activity. When Spillane (2006) uses the terms "tools and routines" he does not mean to signal that these are simply approaches or procedures for doing the work, but that these processes or practices have particular meanings that are significance to advancing the shared work, because they emerge from the intentions and ideas which drive the work forward. In this sense,
tools and routines can have a strong moral purpose that is embedded within the completion of the activity and that is reinforced through their continued and deliberate use.

This perspective on tools and routines suggests that districts can and do use particular tools or routines in ways that promote engagement in deep forms of professional learning designed to effect changes for learners. Tracing what tools and routines are being used in districts and how these may enhance leadership for learning as well as accelerate innovation in teaching and learning could be a very fruitful line of inquiry for our work.

An initial look at such the cases reveals several tools and routines that seem to have a strong frame from which to suggest they powerfully shape the behaviour and actions of teachers and leaders alike. These include:

Vancouver Island North: Reading Strategy map Richmond's Spiral of Inquiry Progression Rubric Burnaby rubric's to assess Aboriginal mind set Delta's image of their bold vision Structure of Delta inquiry team meetings Okanagan Similkameen 7 District Learning Networks Reflection processes in Arrow Lakes

Shared Routines Embedded with Meaning

What makes these tools and routines learning accelerants? Initially we think this comes from the consistent and clear description of the routine's purpose, and linking it to the learning activity or work explicitly, and repeatedly. In other words, the routine or tool is made "sticky" with repeated use and re-use. That it is explicitly returned to as a symbol and expression of the idea is important; for example, the Delta bold vision mural has been printed and reproduced and is in active use across the district.

The routine or tool needs to be deeply understood by the participants who use it, and used collaboratively in practice. We think that collaboration is another accelerant in the process of becoming engaged in activities that deepen learning, because, as we have noted before, relationality and shared purpose create the conditions for mutual trust. But there also has to be a shared understanding of the purpose served through the use of the tool. So, for example, in Vancouver Island North teachers and leaders alike know that they are measuring their efforts to advance their learners' success when they trace their activity against the Reading Strategy map they have created. When the map is dog eared with use, when the rubric that documents how we measure our

performance along the Spirals of Inquiry Progression becomes a reference point for teachers, district leaders, trustees and community members, it has become a learning accelerant.

The Delta 'bold vision' map is a variation on how meaning becomes attached to artifacts and symbolizes an approach that is embedded in all district staff's understanding of shared values and meanings. I believe the ways in which reflective thinking has been deeply embedded into professional learning practices in Arrow Lakes is another example of a routine that carries meaning and purpose, while simultaneously building commitment to district and personal learning goals.

Inquiry as a Shared Routine Embedded in Meaning

The most central and critically important distributed leadership tool is the inquiry routine itself. Its impact across BC school districts is evident, not only in the cases reviewed for this paper, but in the historical use of inquiry as a part of the NOII and AESN networks. In many districts inquiry has become ubiquitous because of its common and regular use. However, it is important that in the context of developing and nurturing shared leadership for learning that this process be recognized as a shared routine that is embedded deeply with purpose; this helps us to understand how and why the inquiry based process has worked so well as a means to engage and grow innovation across districts. Its central design feature is a focus on making a difference for all learners, and it has a set of key questions designed to drive professional learners towards the goal of effecting change in practice. As importantly however, through its ongoing collaborative and shared use, professional learning relationships become inextricably linked with the process of completing inquiry, and therefore helps create a culture in which inquiry has become a core value.

In summary, routines and tools that build distributed leadership and a shared commitment to learning can accelerate—perhaps even exponentially accelerate—professional learning. They become sticky over time. They create cultures that are centrally about learning and learner success. Some conditions which accelerate this stickiness include:

- 1. That the tool or routine was co-constructed and created by multiple leaders
- 2. That the routine was learned together
- 3. That it has been repeated over time
- 4. The repetition of the routine, the language, visual or words used to describe it are used to remind participants of core meanings and shared purpose

Other themes: Create Safe Spaces for Learning and Reflection

The literature about learning centered leadership stresses many points related to student learning. These might seem extraneous to district level work, yet their presence (or absence) will signify the ways in which leadership is understood and practiced, and therefore provides an important signal as to intentionality. This is particularly important in building a culture of shared leadership where learning is at the center. As was noted in the first paper, Honig (2012) argued that district level leadership is critical to model if a learning centered culture is to be created and maintained. The articles on learning centered leadership emphasize that educational leaders need to prepare students to develop resilience and grit, which is understood as the ability to face adversity and adapt to difficult situations. Creating safe space is also thought to better meet students' needs and equips them with the capacity to better engage in various environments and situations. Creating safe spaces compliments other measures taken to support deepened learning, particularly when learning difficult or challenging content. Districts such as Nechako Lakes, Arrow Lakes, and Richmond all emphasize how important creating safe spaces are to their processes of inquiry.

Leadership Practices that Accelerate Deep Learning & Innovation

As our review of the literature described, learning needs to be at the center of leaders who want to make a difference in the lives of children. It is even more important if those same leaders have a goal of spreading change across a vast array of classrooms so as to bring success to all children. Intentionality and purpose is important, and good intentions will take us in the right direction. But is it enough to create a culture that supports deep learning and innovation? The key question I continually reflected on in reading the cases and summarizing the ways in which leaders practiced what we know are best practices in effecting change, became, "yes, this is a good way to lead, but how does this particular practice, understanding, or belief accelerate, magnify, amplify or grow the learning across the district level"? I continually looked for evidence that might help persuade or infer that growth or changed practice was accelerated, or that an approach was looked more favourably upon because of the work of a leader or group of leaders in that school or district setting. As Couros (2015) said, we need to look for and identity "the adjacent possible", and support developing potentially new trajectories or directions, threads, ideas, and hunches. Two themes about how to locate and identify the adjacent possible include: reflection and accountability. There are clearly overlaps between these ideas and how they operate in districts, but for the purposes of discussion, we separate them out here.

Reflection

Reflection is an important district level activity because it helps deepen the understanding the processes of professional learning. Reflection helps with personal and individual sense making as well, and consolidates learning that may not be readily apparent when one is embedded directly in the design or delivery of a particular inquiry. Reflection is a key tool within the spiral of inquiry, and is embedded in the cyclical nature of its operation. Not surprisingly then, districts understand the value of supporting teachers and leaders in processes of reflection. We did note three types of reflective processes, referenced below:

1) "Mirror" approaches: School districts uses voices from their staff or students to demonstrate or articulate changes. For example "impact stories" were shared which helped to demonstrate the attainment of key objectives or evidence for the scope and depth of the change or learning that occurred. These reflective processes are ones designed to give collective voice to the scope and outcomes of the work being done, and encouraged district leaders to consider successes, but also to become more aware of patterns of success and where gaps continue to exist. Reflective processes

provide the means to share and learn through planned, often structured and regular forms of communication of what has worked and why. The significance and power of a particular practice or event increases through this type of reflective recognition and can be a powerful way of communicating progress and change.

2) School based reflections: In this category we include group meetings at the school level where individuals are asked to work together in reflecting on progress and learning related to their inquiries. These meetings were often held in school time, and therefore were often dependent on district level resources. Some schools had repetitive and consistent meetings (scheduled times and check in points) while others met whenever they were able to. We also noted that while many reflective processes at the school level emerged from the inquiry process, we also noted that other formal reflective learning focused structures were used by others. For example, Arrow Lakes has a very specific reflective learning model that they call Learning Rounds that are faciliated through the assistance of an external expert (Leyton Schnellert). The purpose of these reflective processes are to provide a space to engage in collective learning and in sharing learning, a process that enables sense making and strengthens connections between knowledge and practice. In general it appeared to us that the outcomes of these reflective processes were considered formative, and therefore part of the process of learning, rather than benchmarks that might mark progress towards particular goals. However, we also note how instructional leaders can ask questions that prompt deeper or stronger foci on particular ways in which learning may be manifested, essentially acting as coaches for reflective learning. In this way it also reflects Couros's notion of looking for the "adjacent possible".

3) District wide reflection: In some cases, districts organize schools from across the district to come together to reflect. For example, in Burnaby 25 teachers met for 5 half day sessions. In West Vancouver, they use ProD days for teachers to work together in family of schools to plan and collaborate for a start. However, while these were organized at the district level, there wasn't enough evidence in our cases to suggest that these reflective spaces provided accelerants for deep personal learning, or that they necessarily built towards recognition of change and growth (as described in the earlier two reflective processes).

Clearly reflective processes are critical to engagement in learning and system wide change, and leaders (at the district and school level) are engaged in reflection activities that do both. Yet it is evident that we could learn more with a deeper look at how reflection is facilitated, by whom, and to what purpose. In thinking about how the 'mirroring' process enabled district leaders to think about progress against strategic objectives, or to see patterns which helped them to better identify deep professional learning, it suggests that reflective practices are central to communicating progress and for narrating the district's story of change. Yet reflection focused on teacher learning also provides great benefit in its impact on teacher performance, and leaders (formal and informal) with skills in teasing out the 'adjacent possible" are central figures in creating cultures that advance learning. Having a balance between these reflective opportunities might be a useful way of thinking about how and when to use these tools.

Accountability

As MacBeath (2011) argued, "leadership for learning rests on a shared sense of accountability" (p. 137). In using the term accountability, we are not talking about external systems of accountability that involve measures of performance (such as testing regimes); these systems emphasize political enforceability and answerability. Instead this discussion is focused on professional accountability; by this we mean that accountability is centered on learning, and it arises from mutual trust, respect, and relational regard for professional judgment. And leaders—formal and informal—are central agents in building and promoting professional accountability. Leaderfull, shared approaches to both assessing and expressing accountability are therefore very closely aligned with the idea of distributed leadership. One could argue that professional accountability is a distributed leadership practice-- leadership grows as one engages in shared professional accountability activities, because trust is the grease that enables individuals and teams to understand their obligations in service to learning. When teachers and informal leaders are trusted to account for their own actions (assuming personal accountability) and are invited to participate in teams where approaches or measures to assess learning are being developed or designed, then all are empowered and enriched as professionals.

Evidence of Shared, Professional Accountability

Shared accountability was evident in the district reports in several key ways. One was through the development and design of network like structures within the districts professional learning plans. For example, Delta has developed a multiple spiral model that emerged from teacher priorities for action; each new group was assumed to be accountable for its own performance, but also accountable to the district level teams that meet periodically. Okanagan Similkameen uses a similar approach in their seven District Learning Networks. Another example includes the creation of the Reading Strategy map (Vancouver Island North), or the Aboriginal Mindset Rubric (Burnaby). In these cases the tools were co-developed by teams of teachers, informal leaders, and formal leaders at the school and district level. The process of design and co-construction is central to a shift towards shared, professional accountability.

Coast Mountain's inquiry is concentrated on developing accountability measures that are strongly focused on learning. The entire strategy is one that engages teachers, informal and formal leaders in a shared inquiry into how assessment tools at the school level can be enhanced so as to improve all students learning. An important aspect of their inquiry is the engagement of partner groups, including Indigenous communities, in thinking about and identifying what measures of student success matter most. In this way their initiative is networked beyond the immediate school community, and provides the potential for the scope of accountability to be broadened.

Another important area that demonstrates a focus on shared, professional accountability is that of student reporting. Formal accountability regimes are necessary within schools; traditionally these regimes have been set by senior policy makers and teachers are required to comply, even if there is disagreement with their intentions or purpose. In the BC context there has been a shift in the culture related to accountability systems and districts have been given 'permission' to explore alternative ways of reporting to parents. This shift has emerged from understanding schools as learning rather than sorting systems. Several of the district cases highlighted student grading as an issue that was

being considered through an inquiry lens. In Richmond, the goal was to improve the communication of student learning. To do this they developed four structures; communicating student inquiry project, an innovation grant, a reconsidering letter grade study group, and the Richmond Charter project. All of these approaches rely on shared, distributed forms of professional accountability.

How might systems of professional accountability accelerate innovation and transformation?

Accountability isn't likely the first measure many would consider as a critical means of accelerating a shared commitment to learning and student success. Yet accountability, when it is practiced at the personal, professional and system level, intersect in ways that have deep and lasting potential for changing results for learners. For example, the shift in how student reporting is being considered in a number of districts emerged directly from the adoption of a learning centered mindset and learning centered leadership; without this context, change in assessment practices would have been difficult to sustain. What this makes evident is that professional accountability and learning centered leadership are as symbiotic and interdependent as learning and leadership are: all of learning centered approaches must be in place if innovation and transformation are to thrive.

There are several promising practices that are worthy of comment. Coast Mountain's approach to designing accountability systems that widely engage partners beyond formal schools provides evidence of how accountability extends beyond the traditional schooled boundaries were learning has been primarily measured in the past. As we noted in the first paper, a thriving and rich meso level is central to accelerating innovation and transformation, and so developing new or hybrid organizational strategies that support learning in multiple spaces and places, not just in formal school sites, is key. Another promising practice is the Reading Strategy Map that Vancouver Island North is using to engage many partners and players in accountability—this strategy recognizes that accountability is the work of all, focused on the goal of student success. As in the Coast Mountain case, the scope of accountability is being significantly broadened, and in doing so, learners benefit.

Professional Boundaries

One idea that emerged in the writing of this paper was how the term leadership itself creates boundaries (and assumptive boundaries) about what leaders do, the differences between formal and informal leaders, and the role leaders play in guiding us forward into stronger, more productive educational futures. Does the term leader assume one apart from or ahead of others, or do we imagine leadership as a function of many working together as a team? Do our models of authority and decision making help or hinder in these characterizations? As teachers, informal and formal leaders, we have many professional boundaries that are spoken and unspoken or assumed, and we use these quite regularly (and with little reflection on the embedded meanings they hold) to define our roles and responsibilities. We privilege the perspectives we know best and often don't question our approaches because we assume they are the way "education is done". While this paper shows shifting tides in how we are thinking about and engaging in practices of learning centered leadership, there remains evidence that boundaries—most frequently assumed and left unquestioned—are shaping how particular practices and measures are understood and implemented. We need to reflect on our own beliefs and understandings, and consider the ways in which we engage institutionally and as districts, may embed meanings we would sooner deconstruct or question.

In the earlier paper, a section was devoted to thinking about the meso level; this term invites us to think about how to accelerate innovation because it relies on a more distributed, networked and diffuse structure that enables broader forms of learning. I believe that when we imagine and consider becoming more 'meso' focused-- in part because it extends beyond formal school sites and approaches to schooled forms of learning—we have new pathways through which to lead and engage in practices of leadership. It may well help us break through the professional boundaries that have captured us and held us to old, industrial models of schooling.

Here are some questions I think might help us to think through these assumed boundaries of practice and leadership:

- 1. Who organizes the professional learning goals, outcomes, and activities for teachers? For district leaders? Is there a divide between who is tasked with one role rather than the other?
- 2. Are there artificial boundaries evident in who does what? Do school teams work with or without principal leaders? Are principals assumed to be the leaders of school or regional initiatives? Do district teams report to heads or chairs that exclude informal leaders from processes of decision making? How might changing the ways we operate better match our intentionality related to shared leadership?
- 3. Do we privilege and rely primarily on the perspectives and ideas of teachers and leaders in schools? In what ways do we support those who seek to find partners in community? In what ways do we make this work more difficult than it needs to be?
- 4. Where are the student voices? Is there a way we can share our leadership for learning approach that better involves youth and children in this work? How might mapping student learning across their lives enable us to see the potential new learning partnerships and networks we could create or join?
- 5. What kind of innovation and change do we celebrate? To what extent do we say we value risk taking, but continually reward (or recognize) those who have successes? Do we encourage questioning and dissent as we develop and design ways forward?

Thinking through these and other questions may provide us with important insights into our own work, and help us to accelerate learning and change in our districts.

Summary

This paper has engaged in a short exploration of several key themes that emerged in thinking about the relationships between leadership and district level support for professional inquiry. In thinking about leadership and supporting professional learning, the idea of distributed leadership has been a key focus, and one that emerged from its foundation in the literature but also as the key leadership philosophy that guides all of the districts within our study. Building from the idea of distribution accelerating learning, Spillane's notion of how tools and routines that are embedded with shared meaning and purpose act as powerful and catalysts for change, was a central idea that helped to demonstrate the significance of particular ways of leading. Next steps could involve making a list of practices that have been shown to work, and consider these as a type of benchmarking guide that might provide support to new and emerging leaders as they co-engage in learning. It may also be that we can create some info graphic maps that capture the scope and practice of distributed, inquiry minded leaders. Finally, I think more thought should be given to the ways in which leaders can support the development of networks of learning at the meso level. At the district level we've begun to develop a repertoire of practices that are making a difference, and we are mapping their impacts. But what are the boundaries we assume about leadership, schooling and learning that keep us from advancing into new educational spaces? That question may be a necessary next step if we are to find another "adjacent possible" pathway to support deeper inquiry and success for all of our learners.

References

Couros, G. (2015). *The innovators mindset: Empower learning, unleash Talent, and lead a culture of creativity.* Dave Burgess Consulting Ltd: San Diego, CA.

MacBeath, J. (2013). Leading Learning in a World of Change. In OECD *Leadership for 21st Century Learning*, pp.83-104. OECD: Paris, France.

OECD (2015). Schooling Re-designed. OECD. France.

OECD (2013). Innovative Learning Environments. OECD: France.

Spillane, J., Healey, K., Mesler Parise, L., & Kenney, A. (2012). A Distributed perspective on learning leadership. In J. Robertson & H. Timperley (Eds) *Leadership and learning*, pp. 159-171.

Swaffield, S. & MacBeath, J. (2009). Leadership for learning. In J. MacBeath and N. Dempster (Eds), *Connecting leadership and learning: Principles for practice*, pp. 32-52. Routledge: London and New York.

APPENDIX C Measuring Impact

Inquiring Districts: Activating Learning and Changing Lives

Volume 1, Issue 1 November 2017

Measuring the impact of inquiry

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This paper explores the findings and questions arising from the work of "Inquiring Districts" (See page. 4) and presents information on measuring the impact of innovative social interventions in district—wide or networked communities of practice.

BC's K-12 educational system is experiencing transformation in curriculum, pedagogy and professional development practices in response to profound impacts of technology, globalization, new research in brain development, learning sciences and students' changing socio-emotional needs (BCED, 2014, 2016; C21.org, 2017; Groff, 2012; Timpeder, Kaser, & Halbert, 2014).

In response to these shifts, several districts in BC have begun to engage not only in classroom based inquiry but also district wide inquiry as a means to collaboratively expand and deepen



educators' and districts' collective capacity to implement innovative learning practices that positively impact student learning.

Exploring inquiry at the "meso" level

In reviewing responses to a questionnaire completed by 14 Inquiring Districts, many highlights emerged, such as which forms of data and methods are being used to track changes, what key challenges continue to surface, and also several supportive "accelerants." These findings will be shared in this paper. Most districts are just beginning their inquiry, and early feedback is positive. However, in trying to answer the question "How do we know?" the deeper

do we know?" the deeper challenge of *how* to measure the impacts of meso level inquiry becomes evident. ~

> "Innovation floats on a sea of inquiry and curiosity is a driver for change." "Timperley, Kaser, and Halbert, 2014

Is district level inquiry too new to review?

Literature reviews help us provide established theories and propose new ones; they help us to make researchinformed decisions, and sound recommendations for changes to programs or effective evaluations of new programs. *Systematic reviews* (Petricrew & Roberts, 2006) are very helpful when it comes to informing policy makers, stakeholders or funders on the merits of investing in or sustaining innovative social practices.

However, in conducting a preliminary literature review, we found little information, other than a few authors noting that when it comes to district wide inquiry and innovation - and its impact on student learning - the research is not yet published.

This dearth of research presents both a challenge and an exciting opportunity!

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Measuring outcomes or measuring impacts?

"Increasingly, the importance of collaboration, capacity creation and professional learning, and the effective use of communication technologies are being recognised. But there is a big step from that to innovative and powerful learning environments being typical of schools at scale...."

- David Istance, OECD

"Motivation and energy build as educators together find compelling reasons to change what they are doing, and as they take joint responsibility for doing so. As they engage in deeper forms of inquiry, the process becomes central to their professional lives" — Timperley, Kaser & Halbert, 2014, p. 6) Epstein and Yuthas (2014) state there is often confusion between the terms "outcomes" and "impacts." Bloch (2012) in her research on measuring social impact argues that impacts are to be distinguished from outcomes in that they are broader; they try to capture long-term effects on individuals and the community (p. 3).

Epstein and Yuthas (2014) describe the process of implementing innovative change as a series of five steps:

Inputs → Activities → Outputs → Outcomes → Impacts (p. 107)

"Inputs include both the resources and constraints that a program faces; Activities are steps taken in implementing an innovative intervention; Outputs are the direct results of the team's or organization's activities; Outcomes are the intermediate effects on the target population that are necessary to achieve the desired impact goals. This is where educational assessments of innovative practices often stop. However Epstein and Yuthas recommend a further important step to implement real change: measure impact. Impact, they say, is "the ultimate goal of a social purpose organization [and]

refers to systematic and fundamental progress on a social issue. Most evaluators leave out impacts, focusing instead on outcomes as the final objective. But impacts should be included in the model, even if the organization does not yet have a good way to measure them" (pp. 107-108).

Earl and Timperley (2015) agree. It is worth reflecting on whether the inquiring districts are seeking to measure outcomes or impacts even at this early point.

This next section will share the "methods" used by the 14 inquiring districts.

Measures & methods used in inquiring districts



Measuring impacts

How do we measure the impact of innovation resulting from district-wide inquiry?

We note in the table of methods used that there are a mix of approaches - some tracking changes in students' behaviors; others tracking changes in teachers' behaviors. There are not yet any metrics for measuring overall impact of inquiry on innovative learning cultures.

In Everyone's Story Counts, Bloch (2012) states "Social impact can be defined as any intervention that changes the human environment" (p. 2); K-12 educational transformation certainly applies here.

In measuring impacts of teacher development on student learning, Desimone (2009) suggests we continue to use surveys, interviews and observations, but to do so critically and with reflective skill and purpose.

Second, the majority of methods are qualitative. While the power of story is a natural "go to" for most social settings, some would argue that stories, being

anecdotal, do not tell us "how much" learning has changed. In social sciences, with the exception of standardized tests, which arguably do not measure social impact (Antadze & Westley, 2012), qualitative evidence is the norm. And yet government (funders) and policy makers still seek quantitative evidence of inquiry's efficacy. Antadze & Westley (2012) state "conventional evaluation models and decision-making frameworks are often based on expand our repertoire of linear, cause and effect relationships. Social innovation, by contrast, is a complex process with its own dynamics and multidimensional impacts" (p. 1). They propose that adaptive "developmental evaluation is more suited to evaluating social innovation" (p. 1)

Third, measuring is difficult. Measuring takes skill, time, and money. Bloch and others list multiple hurdles in measuring social impact, the most relevant being "time and data

management" (p. 13) and "the capacity to do the analysis over time of programs and services" (p. 13), which was echoed in the Inquiring Districts reports.

Antadze and Westley, Desimone, Earl and Timperley and others are all correct in their assertion that we need to not only be critical about what we are using but also use inquiry to develop new adaptive frameworks and methodologies, "to metrics, bring alignment and understanding between innovators and evaluators' (Earl & Timperley, 2015) and also invest in building data management capacity in all administrators, teachers and learners so together we might gain a deeper understanding of what it is that we are measuring and why? Is it the outcomes of interventions or the ongoing growth of cultures where inquiry is modus operandi?

Building new metrics and methods.

"Earl and Timperley argue

that evaluative thinking is a necessary component of successful innovation and involves more than measurement and quantification. Combining evaluation with innovation requires discipline in the innovation and flexibility in the evaluation. The knowledge bases for both innovation and evaluation have advanced dramatically in recent years in ways that have allowed synergies to develop between them; the different stakeholders can bring evaluative thinking into innovation in ways that capitalize on these synergies. Evaluative thinking contributes to new learning by providing evidence to chronicle, map and monitor the progress, successes, failures and roadblocks in the innovation as it unfolds. It involves thinking about what evidence will be useful during the course of the innovation activities. establishing the range of objectives and targets that make sense to determine their progress, and building knowledge and developing practical uses for the new information, throughout the trajectory of the innovation. (Earl & Timperley, 2015, p. 5)

Keep it going! Focus on "accelerants"

Challenges aside, there is no going back. We need to continue to identify and support transformational strategies through our networks of inquiry, to collaboratively build the criteria, exemplars and methodologies that move us forward. Clues as to what accelerates learning and successful inquiry were

noted in the reports and literature. These include:

- * Alignment of purpose between district policies, accountability, mission, vision, and professional learning plans.
- High levels of trust between teachers & district staff.
- Collaboration between district and teachers in professional
- learning planning. Passionate champions at the
- district, school & individual level

* Risk taking is acknowledged; making mistakes is OK, leaders support if things go awry.

District leaders who model an inquiry mindset & visibly engage in inquiry practices; mentorship. * Encouragement of diversity & mixed responses to challenges. * Collaboration & reflection are understood as the foundation of all decision making, at district, school & individual level. *Invitations, not mandates to participate.

About Us: The Inquiry Districts Project

In 2013, a network of approximately 14 school districts from around BC began working together to investigate the impacts of professional inquiry. This came partially in response to International research about innovative school environments, conducted by the OECD (2013), which reported the importance of the meso level engagement in effecting transformational change and innovation in education. We know inquiry is a tool that is being used to make a difference for individual learners in classrooms; we want to know how districts that use inquiry based practices at teacher and administrative levels might be accelerating change, or making more of a difference for their learners.

Dr. Catherine McGregor (University of Victoria) and Drs. Judy Halbert and Linda Kaser are also members of the committee, helping to coordinate network meetings twice a year, forming a smaller steering group that sends out communications to all network members, and sharing the inquiry work and findings at several conferences.

Our link to NOII/AESN: These 14+ districts are all strongly invested in inquiry, and in particular, draw upon Judy Halbert and Linda Kaser's *Spirals of Inquiry*. Many participants have been members of NOII/AESN as individuals, but have now begun to incorporate this approach into district wide strategic initiatives.

Our Inquiry Question: In what ways do district level strategic initiatives in inquiry-based learning act as catalysts for moving learning forward and enhancing student success?

References

Antadze, N., & Westley, F.R. (2012). Impact metrics for social innovation: Barriers or bridges to radical change? *Journal of Social Entrepreneurship*, 3(2)

Bandura, A. (1997). Self-efficacy: The exercise of control. New York, NY: W.H. Freeman.

Bandura, A. (1998) <u>Personal and collective</u> <u>efficacy in human adaptation and change</u>. In J.D. Adair, D. Belanger, & K. L. Dion (Eds) Advances in psychological science, Vol 1. Personal, social and cultural aspects. Hove, UK: Psychology Press.

Bloch, B. (2012). Everyone's story counts: Measuring social impact in the not-for-profit sector - an overview. Cosmopolitan Civil Societies: An Interdisciplinary Journal, 4(3), 1-17

British Columbia Ministry of Education (BCED). (2016). Building student success: BC's new curriculum – assessment and reporting.

British Columbia Ministry of Education (BCED). (January 2014). BC's Education Plan: Focus on Learning.

Canadians for 21st Century Learning and Innovation (C21.org). (2017). Comparison of Selected Existing 21st Century Frameworks. Desimone, L. (2009). Improving Impact Studies of Teachers' Professional Development: Toward Better Conceptualizations and Measures. *Educational Researcher*, 38(3), 181-199.

Earl, L., & H. Timperley (2015), Evaluative thinking for successful educational innovation, OECD Education Working Papers, No. 122, OECD Publishing, Paris

Epstein, M. & Yuthas, K. (2014). Measuring and improving social impacts: A guide for nonprofits, companies and impact investors. San Francisco, CA: Berrett-Koehler Publishers, Inc.

Groff, J. (2012). The Nature of Learning: Using Research to Inspire Practice: Practitioner guide from the innovative learning environment project, Dumont, Istance, & Benavides (Eds).

Halbert, J. and Kaser, L. (2013) Spirals of Inquiry for Equity and Quality, BCPVPA Press, Vancouver

Timperley, H., Kaser, L., & Halbert, J. (2014). A framework for transforming learning in schools: Innovation and the spiral of inquiry. Centre for Strategic Education, Seminar Series Paper No. 234

Inquiry, Agency and Collective Efficacy: Bandura's

(1997) Social Cognitive Theory "... approaches the enhancement of human agency, whether in individual or collective form, in terms of enablement. Equipping people with a firm belief that they can produce valued effects by their collective action and providing them with the means to do so are the key ingredients in an enablement process." (p. 477).

For further information Dr. C. McGregor's Blog https://onlineacademicco mmunity.uvic.ca/radicalh ope/ Email cmcgreg@uvic.ca

APPENDIX D Evaluative Thinking

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EVALUATIVE THINKING FOR SUCCESSFUL EDUCATIONAL INNOVATION

Education Working Paper No.122

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ABSTRACT

In this working paper, Earl and Timperley argue that evaluative thinking is a necessary component of successful innovation and involves more than measurement and quantification. Combining evaluation with innovation requires discipline in the innovation and flexibility in the evaluation. The knowledge bases for both innovation and evaluation have advanced dramatically in recent years in ways that have allowed synergies to develop between them; the different stakeholders can bring evaluative thinking into innovation in ways that capitalise on these synergies. Evaluative thinking contributes to new learning by providing evidence to chronicle, map and monitor the progress, successes, failures and roadblocks in the innovation as it unfolds. It involves thinking about what evidence will be useful during the course of the innovation activities, establishing the range of objectives and targets that make sense to determine their progress, and building knowledge and developing practical uses for the new information, throughout the trajectory of the innovation. Having a continuous cycle of generating hypotheses, collecting evidence, and reflecting on progress, allows the stakeholders (e.g., innovation leaders, policymakers, funders, participants in innovation) an opportunity to try things, experiment, make mistakes and consider where they are, what went right and what went wrong, through a fresh and independent review of the course and the effects of the innovation. This paper describes issues and approaches to each phase of the cycle. It concludes by outlining the synergies to be made, building capacity for evaluative thinking, as well as possible tensions to be addressed.

RESUME

Dans ce document de travail, Earl et Timperley mettent en avant l'argument que la pensée évaluative est un élément indispensable à une innovation réussie, et qu'il ne s'agit pas seulement de méthodes de mesure et de quantification. Combiner évaluation avec innovation exige de la discipline dans l'innovation et de la souplesse dans l'évaluation. Les bases de connaissances pour l'innovation comme pour l'évaluation ont vu une évolution importante ces dernières années, permettant le développement de synergies entre ces deux domaines ; les différentes parties prenantes peuvent apporter la pensée évaluative à l'innovation, en tirant parti de ces synergies. La pensée évaluative contribue aux nouveautés en matière d'apprentissage en fournissant des preuves pour documenter, recenser et mesurer le progrès, les succès, les échecs et les obstacles dans l'innovation en cours. Il s'agit de réfléchir aux preuves qui seraient utiles au cours des activités de l'innovation, et donc d'établir un champ d'objectifs et de cibles propices à déterminer le progrès de ces activités, acquérir des connaissances et développer des usages pratiques des nouvelles informations tout au long de la trajectoire de l'innovation. La génération d'hypothèses en cycle continu, le recueil de preuves, et la réflexion sur le progrès permettent aux parties prenantes (par exemple, les leaders de l'innovation, les responsables politiques, les bailleurs de fonds, et les personnes prenant part à l'innovation) d'essayer, d'expérimenter, de faire des erreurs et de considérer où sont ces erreurs, ce qui s'est bien passé ou ce qui a mal tourné, grâce à un bilan nouveau et indépendant du déroulement et des effets de l'innovation. Ce document décrit les enjeux et les approches de chacune des phases du cycle. Il conclut en indiquant les synergies qu'il reste à accomplir, ouvrant le champ à la pensée évaluative, ainsi que des tensions éventuelles à traiter.

INTRODUCTION

Evaluating innovation is a perplexing topic, with innovation and evaluation often perceived as fundamentally incompatible. Bernholz (2011) captures this tension very well when she says that: "Many people's first response to the challenge of measuring innovation is to declare the intention oxymoronic. Innovation is by definition amorphous, full of unintended consequences, and a creative, unpredictable process...Measurements, assessments, evaluation are — also by most definitions — about quantifying activities and products" (p.1).

Although innovation and evaluation in education do not always live together comfortably, they are not mutually exclusive. As will become clear, we argue that evaluative thinking is a necessary component of successful innovation and involves more than measurement and quantification. Although they have developed separately, the knowledge bases for both innovation and evaluation have advanced dramatically in recent years in ways that have allowed synergies to develop between them.

In this working paper, we describe how innovators, funders and evaluators can bring evaluative thinking into innovation in ways that capitalise on these synergies, while acknowledging the challenges inherent in doing so.

WHY EVALUATION AND INNOVATION?

Innovation has become the watch word of education around the globe. The opening line in the OECD report *Innovative Learning Environments* (2013) says it succinctly: "Innovation is a key element of today's societies and economies, and that includes how we learn" (p.11).

Education is seen as the foundation of prosperous societies and there is considerable concern that traditional education will not suffice to prepare students for the future. Innovation is necessary in education to meet the needs of the students and the societies they serve and to cope with the various challenges of the contemporary world: "Innovation drives economic influence; economic influence underpins global leadership; and global leadership requires innovation to solve the many problems facing humanity in the next half century. If this is correct, and innovation is the key, then even the best education systems in the world need to radically rethink what they offer every student" (Barber, Donnelly, & Rizvi, 2012, p. 1).

The case for innovation is well made by Mulgan (2007): "A contented and stable world might have little need for innovation. Innovation becomes an imperative when problems are getting worse, when systems are not working, or when institutions reflect past rather than present problems" (p. 9). However, as Mulgan and Leadbeater (2013) caution in relation to the innovation process: "You can't plan for a breakthrough! (p.15)...There needs to be humility to learn from experience and the inevitable surprises" (p. 17).

Because innovations matter, there is considerable interest in how things are going, with a wide range of agendas at play. Certainly funders and policy makers are interested in the success of innovation initiatives. Even though they see educational innovation as necessary, they often want a sense of security about their investment, so the call for innovation is often accompanied by a demand for accountability. Bernholz (2011) captures this sentiment in the epigraph to a publication for the MacArthur Foundation: "Give me something new and prove that it works" (p.1).

Although evaluation may provide funders and policy makers with confidence that the innovation is proceeding in productive ways and that their financial support remains warranted, we argue that evaluation has a much more powerful role within innovation when it is positioned as an integral part of the innovation process, contributing to the development and evolution of the innovation, with milestones of success to be tracked along the way emerging and being established and negotiated as part of the process. As Drucker (1985) wrote in his landmark paper: "Innovation is work rather than genius. It requires knowledge. It often requires ingenuity. And it requires focus...It may be difficult, but knowledge-based innovation can be managed. Success requires a commitment to the systematic practice of innovation" (p. 8).

Successful innovation may be rapidly changing in response to uncertainty and complexity, but the changes are not random. Leaders of innovation draw on a blend of creativity and discipline that allows them to react effectively in diverse and changing conditions. Rather than being unstructured, disciplined innovation involves constant problem definition, horizon scanning, situation analysis, monitoring of progress, creation of contingency plans, and feedback for improvement throughout the innovation process.

Evaluative Thinking

Evaluation methods and evaluative thinking provide the tools for systematically gathering and interpreting evidence that can be used to provide information about progress and provide feedback loops for refinement, adjustment, abandonment, extension and new learning.

The essence of evaluative thinking is expressed in a recent publication from the International Development Research Centre (Bennett & Jessani, 2011):

Evaluative thinking is a means of thinking, of viewing the world, an ongoing process of questioning, reflecting, learning and modifying. Evaluative thinking is an inherently reflective process, a means of resolving the "creative tension" between our current and desired levels of performance. It allows us to define the lessons we want to learn, to determine the means for capturing those lessons, and to design systems to apply them in improving our performance. By going beyond the more time- and activity-bound processes of monitoring and evaluation, evaluative thinking is learning for change (p. 24).

Evaluative thinking contributes to new learning by providing evidence to chronicle, map and monitor the progress, successes, failures and roadblocks in the innovation as it unfolds. It involves thinking about what evidence will be useful during the course of the innovation activities, establishing the range of objectives and targets that make sense to determine their progress, and building knowledge and developing practical uses for the new information, throughout the trajectory of the innovation. Having a continuous cycle of generating hypotheses, collecting evidence, and reflecting on progress, allows the stakeholders (e.g., innovation leaders, policymakers, funders, participants in innovation) an opportunity to try things, experiment, make mistakes and consider where they are, what went right and what went wrong, through a fresh and independent review of the course and the effects of the innovation

SETTING THE STAGE

Although there is increasing consensus about the importance and value of evaluating educational innovation, there are many issues involved in turning this idea into a productive reality. It helps to understand something about innovation and evaluation, as a backdrop to understanding their relationship. Both fields are themselves complex and evolving, with a wide range of definitions and representations, often contested. Before considering the nexus between them, it is important to consider the complexity of each of them individually.

What is Educational Innovation?

The word innovation is somewhat hackneyed and has come to have many meanings. This is true more broadly and within education. It is not possible in this paper to detail all of the ways that educational innovation is characterised and understood. Just as a taster, it can be evolutionary or revolutionary. It can address a single project or programme or be large-scale encompassing a complete system. It can be initiated from within or from outside. It can be simple, complicated or complex. It can involve products, content, resources, processes, people and organisational arrangements. It can include technical, economic, social and educational aspects.

The European Commission's Green Paper on Innovation (1995) defines it as: "...the successful production, assimilation and exploitation of novelty in the economic and social spheres" (p. 1).

Some authors suggest that to be called an innovation it must be radical and disruptive: "Innovation must not simply be another name for change, or for improvement, or even for doing something new, lest almost anything qualifies as innovation. Innovation is properly defined as an original, disruptive, and fundamental transformation of an organization's core tasks. Innovation changes deep structures and changes them permanently" (Lyn, 1997).

Although there are many ways to describe innovation, it is important to remember that innovation is an idea, but in the enactment each innovation is unique, with its own development, trajectory, and personalities. Each one is also anchored in the particular context from which it has emerged. In reality, educational innovation ranges from relatively straightforward (but not simple) school improvement activities, often in difficult contexts, to transformational approaches that disrupt the way that "schooling" and "learning" happen. In some contexts, the idea of school improvement in itself can be considered innovative because of the starting points and nature of the problems. In others, the innovation is intended to totally transform education systems and the nature of schooling. Between these two extremes lie a wide range of innovation models and paradigms that bring theories and initiatives together in a multitude of ways. Box 1 provides some examples of diverse innovations within the OECD Innovative Learning Environment programme.

Most educational innovations are made up of multiple players, working across a number of locations and guided by a wide range of theories, some of which have been tested in other contexts. The innovations themselves typically roll out in unpredictable ways and change along the way with everyone learning as they go.

Innovation in education is not a new phenomenon. Education has been involved in a cyclical process of reform for many decades, with attention to school effectiveness and school improvement. It has largely focused on evolutionary incremental change in schools in which effort is concentrated on trying to make changes within the existing context of schools.

Box 1. Examples from the OECD Innovative Learning Environments

A learning community in Andalucía, Spain is introducing diversified resources, teaching methodologies and moreover, the school builds its own *classroom curriculum*, counting on the democratic participation of students, and taking their cultural reality (Gypsy culture) into account.

In Victoria, Australia, a community college is focused on creating seamless cohesion between the vision, architecture, social environment and pedagogical approaches throughout the school that is the result of the depth of attention given to every aspect of planning and operations. Listening to the entire school community has led to the development and enactment of a shared vision around the wellbeing and education of the children.

A school community of educators in British Columbia, Canada is focused on creating learning environments for themselves and their students that are steeped in inquiry mindsets and a value system that honours the self, while recognizing the innate need to belong in a community. Through a focus on belonging, support, interdependence and respect for diversity. Students are immersed in an environment that offers a balance of structure and autonomy so that they experience a combination of safety and accountability as they take risks in their own learning.

Proponents of radical innovation in the context of schooling suggest that it is necessary to go beyond improvement and to challenge long-standing and deeply held beliefs about what schooling is for, with fundamental shifts in the way people think about the nature of learning and the rhythm of interactions in learning environments. It cannot simply be the linear application of innovative ideas to defined educational problems and existing processes but is concerned with the social, personal, institutional and cultural process of change, as well as changes to education processes. This sentiment is reinforced by Hannon (2009) who argues that: "current 'school reform' and 'improvement' efforts are wholly inadequate to the scale of the challenge to prepare young people to live well and sustainably on this planet in the new century and that any new paradigm must entail 'a holistic transformational shift towards connected institutions and processes, at a whole set of levels'" (p.1).

This perspective means that, to be innovative, change must go beyond a single project or programme. Rather it encompasses interconnected parts of a system for the purpose of creating radical change that recognises the complexity of modern systems: "Most modern systems are both hideously complicated and bewilderingly complex and innovations within them are likely to be an interconnected set of innovations, where each influences the other, with innovation both in the parts of the system and in the ways in which they interconnect. Education is no exception" (Mulgan & Leadbeater, 2013, p.43).

In this paper, we are not advocating for a particular definition of innovation. Instead, we point out that the definition is contentious and provide some sense of the range of possibilities that have emerged in education that are called innovation, with a related influence on the kind of evaluation that is required.

What is Educational Evaluation?

The idea of educational evaluation is deceptively simple. It involves the systematic collection and analysis of data needed to make decisions and identify effects of educational initiatives or, as the American Evaluation Association describes it: "Evaluation involves assessing the strengths and weaknesses of

programmes, policies, personnel, products, and organizations to improve their effectiveness" (AEA, ND).

In practice, evaluation in education is not a singular thing and it has always been a contentious and challenging domain. There may be agreement about the need to assess and improve educational change initiatives but there have been continuous debates in the field about the purpose of evaluation, the methods that are used, what counts as worthy outcomes, how to measure important concepts, whether the evaluation should be defined by programme or by theory, and the list goes on. These debates arise, in part, because of the many different reasons for evaluation. The diversity is exemplified in a recently published comprehensive analysis of how different approaches to evaluation and assessment are being used around the world to support effective teaching and learning in schools. The results of the OECD Reviews of Evaluation and Assessment in Education, a major cross-country project involving the participation of 29 education systems are summarised in the comparative international report Synergies for Better Learning (OECD, 2013).

Although we address the issue of evaluation purpose in detail later in this paper, it is important to raise the issue here because the purposes have a major influence on the way any evaluation is planned. Why? Because evaluations are driven by what people want and need to know about and different people have different interests and perspectives. Evaluation in education was initially formulated around summative and formative purposes, with formative evaluations being conducted during programme development and implementation to provide direction on how to best achieve the goals or improve the programme. Summative evaluations were completed once the programmes were well established to determine the extent to which the programme achieved its goals. Both of these models were premised on a belief that the programme was relatively static and could then be "scaled up" by replicating it elsewhere. Box 2 gives a wide range of different types of evaluation, any of which might apply within a particular innovation.

Box 2. Types of Evaluation

There are many different types of evaluations depending on the object being evaluated and the purpose of the evaluation. Perhaps the most important basic distinction in evaluation types is that between *formative* and *summative* evaluation. Formative evaluations strengthen or improve the object being evaluated -- they help form it by examining the delivery of the program or technology, the quality of its implementation, and the assessment of the organizational context, personnel, procedures, inputs, and so on. Summative evaluations, in contrast, examine the effects or outcomes of some object -- they summarize it by describing what happens subsequent to delivery of the program or technology; assessing whether the object can be said to have caused the outcome; determining the overall impact of the causal factor beyond only the immediate target outcomes; and, estimating the relative costs associated with the object.

Formative evaluation includes several evaluation types:

- needs assessment determines who needs the program, how great the need is, and what might work to meet the need
- **evaluability assessment** determines whether an evaluation is feasible and how stakeholders can help shape its usefulness
- **structured conceptualization** helps stakeholders define the program or technology, the target population, and the possible outcomes
- *implementation evaluation* monitors the fidelity of the program or technology delivery
- **process evaluation** investigates the process of delivering the program or technology, including alternative delivery procedures

Summative evaluation can also be subdivided:

• **outcome evaluations** investigate whether the program or technology caused demonstrable effects on specifically defined target outcomes

- *impact evaluation* is broader and assesses the overall or net effects -- intended or unintended -- of the program or technology as a whole
- **cost-effectiveness and cost-benefit analysis** address questions of efficiency by standardizing outcomes in terms of their dollar costs and values
- secondary analysis re-examines existing data to address new questions or use methods not previously employed
- *meta-analysis* integrates the outcome estimates from multiple studies to arrive at an overall or summary judgement on an evaluation question

Source: Trochim, 2006

Programme leaders have tended to be interested in formative evaluation for internal accountability, with policy makers and funders wanting summative evaluation for external accountability. As the call for evaluation grew and "high stakes" decisions have been based on the results of summative evaluations, there has been concern about the pervasiveness of naïve and often shoddy evaluation practices that were being used.

These concerns about the quality of evaluations resulted in a set of Standards for Program Evaluation, published by The Joint Committee on Standards for Educational Evaluation in the US to provide guidance to programme evaluators (summarised in Box 3). This was produced first in 1981, revised in 2004 and again in 2013¹, and provides a broad base of expectations for high quality and ethical evaluation procedures.

Box 3. Program Evaluation Standards

<u>Utility Standards:</u> The utility standards are intended to increase the extent to which program stakeholders find evaluation processes and products valuable in meeting their needs.

Feasibility Standards: The feasibility standards are intended to increase evaluation effectiveness and efficiency.

<u>Propriety Standards:</u> The propriety standards support what is proper, fair, legal, right and just in evaluations.

<u>Accuracy Standards:</u> The accuracy standards are intended to increase the dependability and truthfulness of evaluation representations, propositions, and findings, especially those that support interpretations and judgments about quality.

Evaluation Accountability Standards: The evaluation accountability standards encourage adequate documentation of evaluations and a meta-evaluative perspective focused on improvement and accountability for evaluation processes and products.

External Meta-evaluation: Program evaluation sponsors, clients, evaluators, and other stakeholders should encourage the conduct of external meta-evaluations using these and other applicable standards.

Source: The Joint Committee on Standards for Educational Evaluation, 2013

¹ For details about the standards, see Program Evaluation Standards at <u>http://www.jcsee.org/program-</u> evaluation- standards-statements

Educational evaluation has typically taken a linear approach of describing the programme and using the programme definition to determine the evaluation design and methodology. Evaluators establish the range of stakeholders with an interest in the programme and in the evaluation and what they expect the evaluation to provide for them. They engage the programme team to get clarity about the nature of the programme, its structure, the underlying assumptions and the theory of action that underpin the expectation for success of the programme. They get information about the goals and outcomes for the programme and develop indicators and measures to provide evidence related to these outcomes. And, they determine an evaluation design that is consistent with the programme goals and purposes. Once they have this information, they choose and devise data collection procedures keyed to the theory of action, collect the pertinent data, analyse the data, draw conclusions and prepare a report for the programme team. The final step in the process is presenting the findings and recommendations for use by the stakeholders.

Many guides have been prepared to help programme leaders engage with evaluation and evaluators². The example in Box 4 from the University of Washington gives a good overview of the nature of the process.

Box 4. Six Steps of Program Evaluation

- Step 1: Define your stakeholders: Your stakeholders are supporters, implementers, recipients, and decision-makers related to your program. Getting them involved early on will help you get different perspectives on the program and establish common expectations. This helps to clarify goals and objectives of the program you'll evaluate, so everyone understands its purpose.
- Step 2: Describe the program: Taking the time to articulate what your program does and what you want to accomplish is essential to establishing your evaluation plan. Your descriptions should answer questions like: What is the goal of our program? Which activities will we pursue to reach our goal? How will we do it? What are our resources? How many people do we expect to serve? Articulating the answers to those questions will not only help with accountability and quality improvement, but it will also help you promote the program to its beneficiaries.
- Step 3: Focus the design of your evaluation: Evaluations can focus on process, means, resources, activities, and outputs. They can focus on outcomes or how well you achieved your goal. You may also choose to evaluate both process and outcomes.
- Step 4: Gather evidence: Qualitative and quantitative data are the two main forms of data you may collect. Qualitative data offers descriptive information that may capture experience, behavior, opinion, value, feeling, knowledge, sensory response, or observable phenomena. Three commonly used methods used for gathering qualitative evaluation data are: key informant interviews, focus groups, and participant observation. Quantitative methods refer to information that may be measured by numbers or tallies. Methods for collecting quantitative data include counting systems, surveys, and questionnaires.
- **Step 5: Draw conclusions**: This is the step where you answer the bottom-line question: Are we getting better, getting worse, or staying the same? Data comparisons show trends, gaps, strengths, weaknesses. You can compare evaluation data with targets set for the program, against standards established by your stakeholders or funders, or make comparisons with other programs.

• Step 6: Present findings and ensure use: It is important that all the work you put into program evaluation gets used for quality improvement. When you present your findings and recommendations, it is important to know the values, beliefs, and perceptions of your group; build on the group's background and build on common ground; and state the underlying purpose for your recommendations before you get to the details

Source: Northwest Public Health Center, University of Washington

² See <u>http://www.cdc.gov/EVAL/resources/index.htm</u> for a compilation of evaluation guides and resources.

This process is generally necessary but not sufficient for evaluating innovation. Innovation is rarely intended to produce replicable programmes and the rapidly changing context requires approaches that are fluid and responsive, as they explain in the example in Box 5 from the philanthropic sector.

The field of evaluation is vast and growing, with a robust literature and "on-the-ground" practices being developed to move beyond simple models and to provide processes that can be integrated into the development of innovation. Evaluators and researchers studying evaluation have continued to both extend and refine the nature and form of evaluation processes to adapt to the changing demands for having defensible evidence available for important decisions about policy and practice. New methods for data collection and analysis have emerged to extend the scope and breadth of evidence that can be considered.

Within the field of innovation, technological advances have expanded the capacity for addressing social problems, and have created more data and more sophisticated data that requires evaluative expertise in order to understand the evidence and use it within the innovation. Box 5 describes trends that are emerging in next generation evaluation.

Box 5. Next Generation Evaluation: Embracing Complexity, Connectivity, and Change

New ideas have expanded the ways in which organizations think about improving society and have opened up additional opportunities for collaboration. Simultaneously, technological innovation has expanded the sector's capacity for understanding and addressing social problems, and it has created more data that the social sector can leverage in its work.

We found three primary trends that are driving the need for evaluation to evolve:

- 1. New Philanthropic Innovations: There is an increasing realization that traditional philanthropic models have had limited success in curing chronic social ills. Even tested solutions are forced to experiment when faced with the challenge of scaling to new populations and geographies. In addition, several new and often untested approaches are coming to the fore, including social entrepreneurship, impact investing, social impact bonds, and others that do not lend themselves to traditional methods of evaluation. This growth of experimentation in the social sector demands that evaluation better capture learning in complex environments.
- 2. Different Rules of Interaction: Over the past few years, the pace of change in the sector has accelerated, increasing the number of solutions and approaches involving multiple interdependent actors. The environment has become more fluid and the solutions less predictable. Ideas such as collective impact have reinforced the need for organizations to work together across boundaries, share information, and build on the lessons each has learned. As rules of interaction between social sector organizations evolve, evaluation approaches and methods must adapt to provide relevant, credible, and useful feedback to social sector stakeholders.
- 3. Proliferation of Digital Infrastructure: Technology adoption is widespread and a "digital

infrastructure" (Bernholz, 2013) is now emerging for philanthropy and the social sector. The explosion of social media and the use of handheld devices have rapidly reduced the length and duration of the feedback cycle between funders, non-profits, and end beneficiaries. As more data are created and analyzed, evaluation must expand to allow social sector stakeholders to better understand the nature of social issues and maximize the use and effectiveness of data to solve social problems.

Source: Gopalakrishnan, Preskill & Lu, 2013

Recent theorists have been concerned with creating frameworks that are malleable and designed to consider evidence in the context of innovation. For example, Patton (2011) describes developmental evaluation, intentionally directed at innovation projects as "an extension of the summative/formative repertoire focused on using evaluation within the process of innovation in which both the path and the destination are evolving, as a mechanism for bringing rigorous inquiry to development by being intentional about using data in a meaningful way to inform innovation in progress."

Viewed this way, evaluation is itself a dynamic, flexible, process that is specific to context, actively involving the various communities represented in the project in an iterative and cyclical process to determine the nature of the evaluation, in the context of this particular innovation.

THE NEXUS BETWEEN INNOVATION AND EVALUATION IN EDUCATION

Both innovation in education and evaluation of educational innovation are striving to address the demands and complexity of the changing societal and global landscape. When innovation and evaluation come together, they can provide a powerful iterative process for addressing new ideas and engaging in inquiry and learning, as complementary and intertwined processes. Innovations and innovators bring new ideas and rationales for intervention, as well as new approaches to capabilities, behaviour, and institutions. Evaluation and evaluators provide mechanisms for disciplined collection and use of evidence to investigate, support, challenge and guide innovation. The conjoint power of innovation and evaluation comes from the depth of thinking that emerges from the interface of generative ideas and appeal to evidence, in a deliberate process of learning for change. They do not work as separate processes but are connected and reciprocal, with close working relationships among the key players (innovators, funders, participants, facilitators and evaluators) to understand and influence the innovation as it unfolds.

Bringing innovation and evaluation together, like any relationship, involves all groups becoming familiar with the strengths and belief systems of the others and then determining how they will create synergy as they inhabit the same space and work towards the mutual goal of successful innovation. Because of their different backgrounds, innovators, funders and evaluators have a lot to learn about one another. They may have different views of the world. They may come to their relationship with a range of misconceptions about the values, beliefs, personalities and working style of the others. Making the relationship work is an ongoing process of listening, questioning, and trying to understand the different perspectives, in order to profit from each other's expertise and insights.

In the remainder of this working paper, we unpack how this interface works by identifying important issues at key decision points where evaluative thinking can enhance the innovation

process. Although we have organised the paper sequentially around these decision points, in reality the process is more iterative and evaluative thinking can come into play at any time. The tidiness of the order belies the usual complexity.

Who are the Innovators?

It is not always easy to identify the "innovators" in an innovation initiative. There are those who conceive of or invent the ideas, those who lead and shepherd it into the public realm, those who support it directly or indirectly and those whose lives are changed as a result of it. Because innovation in education is a public undertaking, the work happens in real time on a public stage, with a wide range of participants. First off are the initiators of the innovation, with plans and ideas. They are accompanied by the funders (often policy makers) who provide the wherewithal for the innovation to proceed. There is also an active group of "innovation facilitators", who provide innovation leaders with support in the "process" of being innovative. Not to be overlooked are the participants in the innovation – the people who are expected to change what they think and do (often school based educators, students, parents and the community). These groups and individuals can bring very different perspectives and expectations to the innovation but they all have a role to play in innovation and will be interested in learning about and from the innovation as it evolves.

Box 6. Cognitive Biases

Katz & Dack describe a series of cognitive biases that can cloud how people respond to new information when they are monitoring change initiatives:

- don't think through all possibilities
- focus on confirming existing hypotheses, not challenging them
- pay too much attention to things that are vivid
- consider the information to be an exception or an anomaly
- hesitate to take action in a new direction
- don't want to expose vulnerabilities

Source: Katz & Dack, 2013

All of the individuals with a stake in the innovation will bring their own biases, seek confirmatory evidence about success and overlook disconfirming evidence. Box 6 gives some examples of human cognitive biases that can influence understanding. The strength of combining perspectives is that it creates the space for new insights and breakthroughs in learning, as the collective interprets and brings evaluative thinking to the evidence at hand.

It is not unusual for different members of the innovator group to imagine that they are able to conduct their own internal evaluation, given that the innovation will often move quickly and they possess intimate knowledge of the theory and the enactment of innovation on the ground. These conditions make them essential to the evaluation but their inherent biases can often stop them from seeing outside their existing perspectives.

Who are the Evaluators?

Evaluation is a large field that has been claimed by many institutions and groups as its own. Defining and regulating the field has been a major undertaking since evaluation became a significant part of public policy that goes beyond the scope of this paper. However, it is important to recognise that evaluation is often seen as the "country cousin" of research and people who have done research in academic settings may see themselves as qualified to become evaluators, without the extensive expertise and skill required. There are also many entrepreneurs who see a "ripe" market and establish themselves as evaluators. However, evaluation of innovation is not a simple process that can be done by anyone. It is technical, ethical and creative. Box 7 describes a set of evaluator competencies.

Box 7. Evaluator Competencies

The Canadian Evaluation Society (CES, ND) has prepared a set of competencies in five domains for accrediting evaluators, as a mechanism for specifying "...the background, knowledge, skills, and dispositions program evaluators need to achieve standards that constitute sound evaluations".

- Reflective Practice competencies focus on the fundamental norms and values underlying evaluation practice and awareness of one's evaluation expertise and needs forgrowth.
- Technical Practice competencies focus on the specialized aspects of evaluation, such as design, data collection, analysis, interpretation and reporting.
- Situational Practice competencies focus on the application of evaluative thinking in analyzing and attending to the unique interests, issues, and contextual circumstances in which evaluation skills are being applied.
- Management Practice competencies focus on the process of managing a project/evaluation, such as budgeting, coordinating resources and supervising. Interpersonal Practice competencies focus on people skills, such as communication, negotiation, conflict resolution, collaboration, and diversity.

Source: CES, ND

As we mentioned earlier, evaluation is itself a complex science with its own expertise associated with understanding context, collecting and analysing data and connecting evidence to theory and to intentions. Operating within the innovation space requires comfort working with a range of theoretical stances and world views, maintaining high integrity and ethical standards and being adaptable in order to focus and refocus the evaluative activities within the evolving innovation.

Defining the Innovation

One of the first tasks in bringing evaluative thinking to an innovation is getting a detailed and comprehensive description of what the developers intend and are doing – defining the particular innovation

– its roots, goals, theoretical underpinnings and philosophy, in order to formulate an efficient and workable evaluation approach that will contribute to ongoing decisions about the innovation and satisfy accountability requirements along the way. This process is particularly important in innovation because of the wide range of possible definitions of what constitutes an innovation and the likelihood that innovations will change and morph over time. This description typically forms the foundation for tracking development, determining progress, and deciding what evidence is important to support and assess the success of the innovation. Innovation, by its nature, is not (and cannot be) a defined programme. As Gamble (2008) says:

Initiatives that are innovative are often in a state of continuous development and adaptation, and they frequently unfold in a changing and unpredictable environment. This intentional effort to innovate is a kind of organizational exploration. The destination is often a notion rather than a crisp image, and the path forward may be unclear. Much is in flux: the framing of the issue can change, how the problem is conceptualized evolves and various approaches are likely to be tested. Adaptations are largely driven by new learning and by changes in participants, partners and context (p. 13).

Although innovation does not follow anyone's blueprint, it can be misleading to see everything as "emergent", without any conscious shaping (Mulgan & Leadbeater, 2013). Complex innovations do not appear from nothing or by chance. They are shaped and designed by individuals and groups as goals and a set of ideas to achieve them that form the basis for action. As the constellations of innovation emerge they require equally complex and bespoke evaluation approaches that bring evidence to bear throughout the innovation to complement and inform decisions.

Defining an innovation is not a one-time exercise. Although innovation is emergent, it begins with a clear formulation of a vision. What are the problems (sometimes intractable) to be addressed and the desired or preferable state for the future? From there, the innovation team can move from these "big picture" goals to defining more specific goals and actions. The process continues with a "best shot" theory of action, making the underlying assumptions, frameworks and activities designed to progress the goals clear to the innovators themselves, and to stakeholders.

Developing an initial theory of action points the direction and defines the thinking underpinning the innovation. This theory of action is not static or immutable. It is expected to change and transform as part of the innovation process. The activities that occur within an innovation are likely to have modest and measureable goals that are intended to contribute to the larger goals and can provide some obvious checkpoints in describing places to pause, consider feedback from evidence, examine emerging patterns, reflect and rethink the plan. As the innovation progresses, the outcomes and processes that emerge are more fully understood.

Evaluators, at this stage, can help clarify the description of the innovation, assist in identifying the goals for building the theory of action, capture evidence about a range of questions "just in time" to contribute to the decisions as they are being made, and make the twists and turns within an innovation more deliberate and visible. Box 9 is an example of a process for monitoring a theory of action within an innovation.

Box 8. The Theory of Action Defined	
A Theory of Action is an organisation's "theory", or story of how it will make change in the world. A theory is an xplanation of why certain things happen. The fundamental component of a theory of action is a diagram that maps, at he most basic level:	
• The intended impact on the world and how communities will be different because of the work – called long- term outcomes.	
What changes or actions are necessary now, in order for these impacts to come about and what is the logic of how these actions will contribute to short term or intermediate outcomes along the way. A Theory of Action is best suited to:	
• Understanding the rationale/logic behind why the organisation does what it does (how and why certain changes are expected to come about)	
• Tracking contributions to complex change processes and outcomes shared among multiple actors.	
• Testing assumptions and thereby gaining a realistic understanding of the work and resources needed.	
• Learning and building evaluative thinking within an organisation.	
Achieving clarity and transparency of means and purposes among stakeholders.	
Providing a means to communicate the compelling story of the initiative to funders, board members and outside constituents.	
ource: Adapted from Borgman-Arboleda, C. (ND)	

Box 9. Monitoring a Theory of Action

At the centre of a state innovation was the idea that bringing families into the centre of schools would create better connections between home and school for learners. It was hoped that the professionals would become more responsive to families' aspirations and ways of learning, particularly in ethnically-diverse communities. The end game was to improve student outcomes. Schools and community representatives were encouraged to join one of many networks established for the purpose. Network development was facilitated by an expert to help them to undertake an analysis of the current situation and stay focused.

Evaluators worked alongside the practitioners in the networks so they could monitor their own progress. The evaluators developed a series of evaluative probes to be used by practitioner evaluators within each network. By using the same measures, the findings were able to be collated across the state.

The first probe was simple. It involved identifying the position of those who attended network meetings. If this was to be a joint effort between schools and their communities, the expectation was that community representatives would be at network meetings. It was very easy in the early stage to identify that school professionals were essentially planning things for absent parent and community members. They were consulted but they weren't involved in the decision-making processes.

The second probe was designed to be used when networks were formulating their action plans. The practitioner evaluators were asked to identify the position of those attending their meetings and survey the participants to identify how the community was involved in developing the network plan. It was still evident that parents were consulted but remained on the periphery when it came to decision-making. The consistency of these findings allowed those involved in the design of the networks to work with the networks to find out why the professionals preferred to consult rather than to involve parents and communities directly and reconsider ways to redesign the interaction.

Evaluators can help make the theory of action explicit by asking questions about goals and about anticipated outcomes (questions like: "What do you expect from this? For whom? When? What might it look like? How does it work?") as prompts to support strategic thinking along the way about how to adapt and adjust the process and as opportunities to provide insights about successes and challenges.

There are no ground rules about how the innovation should evolve but it is important to routinely and rigorously revisit the goals and the theory of action, and to chronicle, document and monitor the progress and decisions over time, as a backdrop for understanding what works, how and under what circumstances.

Multiple Stakeholders; Multiple Interests

As we mentioned earlier, there are many players in any social innovation and the various stakeholders are more than passive observers of innovation. A traditional "hands-off" evaluation approach limits the utility of the evaluative thinking in moving the innovation forward. All of the groups who are involved in the innovation should also be part of the evaluative thinking process. These groups extend far beyond the core leaders of an innovation, often including communities, parents and particularly students themselves as key participants and decision-makers. When all of the groups who have a commitment to and interest in the innovation bring their diverse perspectives and intentions to the evaluation, the evaluation is likely to be more authentic and all stakeholders are more likely to understand, share, and support decisions (Cousins

& Earl, 1992). Conversely, without stakeholder involvement and support, the learning from evaluation (and from the innovation itself) does not necessarily address important questions and the findings may be ignored, criticised, resisted, or even sabotaged. Evaluators need to be very aware of the wide range of stakeholders and focus attention on increasing understanding and credibility by engaging key stakeholders in evaluative thinking as the innovation progresses. Box 10 is an example of the different expectations of multiple stakeholders.

Box 10. Who Cares to Know?

A foundation funded innovation was designed to address the intractable problem of secondary school students who were not engaged in schooling. The foundation was particularly keen to have immediate confirmation that students were off the street and in school. The network leaders were particularly focused on learning why the students were disengaged. Both are laudable outcomes but reflect different perspectives and beliefs.

Recognising Contexts

The situations or systems that form the context for innovation are rarely stable. Innovations are more likely to be embedded in local, political, social, historical and economic realities (advantages and constraints) that often change and influence every decision about the innovation. Evaluation work in cross-cultural context has raised awareness of the need to understand the cultures and norms that surround any innovation and to situate an innovation in its context (Rog, Fitzpatrick & Connor 2012). How is the innovation situated in relation to prevailing cultural norms and practices? Will there be ramifications for the wider economic, political, social and/or educational systems?

Given the unpredictable nature of context, innovators and evaluators must be culturally responsive and aware of the prevailing context and to changes that are occurring, through careful attention to the progress of the innovation "in situ". Evaluators and evaluation designs, in this case, need to be flexible and adapt to emergent and dynamic realities in complex environments, through decisions about methods and approaches that are respectful of prevailing norms and coherent with specific evaluation situations and questions. Many evaluation models and approaches call for working closely with the innovators and stakeholders to learn more about their preferences and interests, their values and their culture. This is a dramatic shift from an evaluation framework that is "hands off" to one in which evaluators become partners in the interpretation of complex systems rather than measurers of specific outcomes. Rather than tell a simple black and white story, they need to engage with the innovators and other stakeholders in all phases, beginning with determining what evidence is required and collecting the data. Stakeholder involvement cannot stop here, however, because what is usually most contested and context-dependent is interpretation of the evidence. Interpretation becomes an iterative process of capturing the viewpoints of all the key participants, deciding together what the data really mean in terms of the progress of the innovation and deciding how to monitor the process of what is actually occurring.

Identifying the Purpose(s) of Evaluation within the Innovation

In an earlier section, we described the wide array of purposes for evaluation. When there are many stakeholders and the context is complex, there are often many different purposes for evaluation and audiences for the insights that evaluation can provide. This is most obvious in the competing space between
evaluation for accountability (external accountability) and evaluation for feedback and improvement (internal accountability and improvement). Both of these purposes are legitimate and require attention. The challenge is to get clarity about what questions will be addressed within the innovation/evaluation process and, with particular attention to when they are appropriate.

Defining and negotiating the purposes of evaluation is a critical and ongoing issue for attention by the key players that needs to be addressed directly, transparently and often. Even though policy makers and Funders' support innovation, they may also be "risk-averse" and want a sense of security about their investment in innovation. This can lead them to overlook the fact that innovation, by definition, is risky and many innovations should "fail" otherwise they are likely to be safe, rather than truly innovative (Perrin, 2002). They may look for confirmation and success early, and in simple ways.

Innovators, on the other hand, may agree with Bill Gates, who said in his 2013 letter (Rosen, 2010, cited in Gates, 2013): "Without feedback from precise measurement, invention is doomed to be rare and erratic" (p.1).

They often accept that evaluative thinking has inherent value for development of the innovation, with the main purpose being to bring an ongoing evidentiary basis to the feedback, reflection and decision- making processes as successive iterations of innovations are planned, implemented and reviewed. However, they are wary of being expected to produce outcomes or looking for indicators of success too soon.

Negotiating this territory is not simple or straightforward and often requires the key players to spend considerable time clarifying their assumptions and establishing shared evaluation purposes, not once, but at the points in the innovation process where the expectations diverge.

GETTING ON WITH IT: APPROACHES AND METHODS

Evaluating innovation can usefully draw on the rich knowledge base already available from the evaluation domain. The evaluation literature has highlighted the importance of developing theories of action, identifying specific evaluation questions, developing methods to answer particular evaluation questions, bringing independence and rigour to the process and focusing on interpretation. Many of the principles underpinning this knowledge base are directly applicable to evaluating innovations, although they can require adaptation and new methodologies.

One of the main ways in which evaluating innovation is different from many traditional approaches is the need to be flexible and open to the emergent and dynamic reality of innovations. Decisions about methods and approaches will seldom be guided by and directly built on established evaluation models and the approaches will change throughout the innovation as explorations of data lead to particular interpretations with new issues to be explored.

Having flexibility and openness does not suggest an unplanned process. Rather it means a systematic and iterative process of both looking forward and looking back with intentionality. Looking forward involves formulating evaluative questions and collaboratively planning what evidence to collect to answer them. Looking back means considering evidence and deciding what analyses and consideration of the evidence are most useful to examine what is happening in the innovation, and the extent to which the innovation is progressing towards its goals or resulting in unintended consequences.

Framing Evaluation Questions

Evaluation questions are formulated by asking "What do we need to know?" These questions shape how the evaluation and the innovation will evolve, with new questions emerging as the innovation evolves. Thinking about what questions should take precedence means pausing and reflecting on the current status of the innovation to establish the kind of evidence that would be useful now and in the future. It is essential that the key players spend time identifying the right questions and return to this conversation regularly. In fact, these may be among the most important conversations because the questions that arise internally may be quite different from the ones that are posed for external accountability and the evaluation process must address both along the way.

Identifying the questions that warrant and require an appeal to evidence is part of the intellectual challenge of flexible and ongoing evaluation. Certainly, innovators, funders, policy makers and evaluators will have lots of ideas, but not all of them can be addressed in the evaluation. Lengrand et al., (2006) caution that there can be over elaborate efforts to understand everything that is going on at the expense of providing timely or even relevant information. The skill is to identify questions that provide the most relevant information, at the particular time, in the particular context, and balance stakeholder needs and the intended short, medium and long-term outcomes. Innovators, funders, policy makers and evaluators all play a part in shaping these pivotal decisions.

Typically there are two orders of questions related to what is happening in the short term and the bigger picture.

- What do we need to know now about what is happening for immediate feedback and decisionmaking? These questions are quite specific. They focus on the kinds of details that stakeholders agree are important to find out to give an indication that the innovation is moving in the right direction
- What do we need to know about what is happening in terms of the bigger picture of intended outcomes for the innovation locally and systemically? These questions are more general and ensure that evidence is collected "along the way" that will contribute to understanding of the innovation and its impact more broadly.

Given the unpredictability of innovation, both orders of questions need to include the possibility of unintended consequences because it is sometimes these unintended consequences that prove to be the breakthrough, or the stumbling block.

Deciding the right questions is a science in itself. It requires careful consideration and negotiation of the needs and timelines of all the stakeholders. Otherwise, there's a risk that the evidence will not contribute to building new knowledge and moving the innovation forward.

Collecting Evidence, Timelines and Timing

The systematic collection of evidence provides the platform for answering the evaluation questions. There are innumerable texts on the important qualities of evidence, with the technical aspects beyond the scope of this paper.

Box 11. Just In Time Evidence

An innovative arts programme focused on increasing student engagement in their learning partnered artists with teachers in classrooms to deliver elements of the curriculum through arts-related activities. To gather data related to the students' engagement with their learning during these activities, the evaluators designed surveys to be completed by the students. These were delivered to the students through an "experience sampling" process (Hektner, Schmidt & Csikszentmihalyi, 2007) in which students received the survey via their cellphones at selected times during their classroom activities, coinciding with their participation in the arts-related activities and in their other classroom experiences, several times during the school year. This produced "just in time" data rather than asking students to give global statements related to their engagement, after the fact.

In essence, the evidence must be fit-for-purpose, of sufficient quality to form an accurate representation of the situation being evaluated and be available when decisions are being made. These criteria come together in different ways when deciding what evidence counts as fit-for-purpose, when to collect it and what level of attention needs to be given to quality. Sometimes there will be a need to engage in fast cycles of evolving strategies to react to opportunity windows and respond to external factors, and provide rapid feedback to inform immediate decisions or concerns. Some evidence will become a routine part of checking progress along the way. At points in time, there will be interest in stepping back and determining progress towards the ultimate goals. In situations where rapid feedback is needed to inform an imminent but low-stakes decision, demands for quality will be less than in situations where evidence is needed to inform a high-stakes decision or for accountability purposes. Similarly, requirements for representativeness will be more stringent.

Over the years, the evaluation community has developed innumerable mechanisms for collecting information that are potentially applicable to evaluating innovation. These methods can range from document analysis; narrative, stories and vignettes; surveys, focus groups and interviews; to students' just-in-time responses using digital technologies and social media; and more recently the advent of analysis of "big data". Boxes 11 and 12 are examples of alternative ways to collect data. All have the potential to transform how organizations will engage in evaluative thinking in order to design, organize, and manage change. "Big data" makes it possible to capture huge amounts of information about employees, students, and operations through the:

...millions of networked sensors that are being embedded in the physical world in devices such as mobile phones and automobiles, sensing, creating, and communicating data. Multimedia and individuals with smartphones and on social network sites will continue to fuel exponential growth. Big data—large pools of data that can be captured, communicated, aggregated, stored, and analyzed—is now part of every sector and function of the global economy. (Manyika, Chui, Brown, Bughin, Dobbs, Roxburgh & Byers, 2011, p.1)

All of these methods (and more) may have applicability to inform decisions within an innovation. Being "fit for purpose" means selecting methods that take into account the evaluation purposes and practicalities in a particular context. Methods for collecting evidence, in an imminent but low-stakes decision context, might best capitalise on the speed of digital technologies to sample relevant activities and participants' responses to them in real time. In the higher-stakes accountability context, multiple sources of evidence collected over a longer period of time are more appropriate.



Organising and Analysing the Evidence

Whenever innovators and evaluators are involved in the collection of evidence, the next step is one

of deciding how to analyse and organise it so that it sheds light on the questions at hand. There are no standard analyses in evaluation contexts, and when it is associated with innovation, this is a collaborative task that is determined by the questions that have focused the investigation. And, not surprisingly, these questions are rarely simple. Innovation is multi-faceted and the hunches and quandaries that prompt an appeal to data are almost always complex and nuanced. Complex questions require complex analyses, geared to providing insights and clarifications.

The advent of computer programmes for analysis of quantitative data (everything from Survey Monkey to SPSS to big data analytics) gives many people ready access to statistical analysis. All too often the analysis becomes a "fishing expedition" where routine analyses and typical reports create overconfidence and drive simplistic understanding, based on stand-alone statistics, without the aid of context, a range of perspectives and other data to help assess the meaning. Statistics provide a numerical language in which ideas are quantified and organized using mathematical algorithms. Analysing quantitative data is fundamentally a thinking process, using statistics, to understand some phenomenon better. Statistics provide tools for developing and challenging hypotheses in a process of deepening understanding and raising questions.

As Abelson (1995), in his book "Statistics as Principled Argument" maintains: 'It is essential to argue flexibly and in detail for a particular case when you use statistics. Data analysis should not be pointlessly formal. It should make an interesting claim; it should tell a story that an informed audience will care about, and it should do so by intelligent interpretation of appropriate evidence from empirical measurements or observation" (p.2).

This approach requires a deep understanding of the way that statistics work, along with expertise and experience in using evidence and statistics as tools for thinking. Understanding statistics, data analysis and determining reasonable boundaries on interpretation are even more critical when considering "big data". The McKinsey Report on Big Data (Manyika, et al., 2011) highlights the problem: "Companies and other organizations and policy makers need to address considerable challenges if they are to capture the full potential of big data. A shortage of the analytical and managerial talent necessary to make the most of big data is a significant and pressing challenge and one that companies and policy makers can begin to address in the near term" (p. 3).

Analysing qualitative evidence requires its own expertise and experience. Studying education often means investigating the "everyday activities". When the reality of classroom or school life is captured through interviews, observations, blogs, videos, audiotapes, etc., the resulting evidence can be almost overwhelming. At first glance, it can often lead to the response "so what" or "what really matters here". It can be tempting to look for ideas or stories that confirm existing beliefs or to form categories of responses based on intuitive responses to the evidence. However, analysing qualitative data is not a clear-cut procedure. It is a very time consuming process that requires meticulous attention to detail through an active interrogation of the data in order to elucidate the significance of seemingly every day talk or behaviour and moves the conversation from specific incidents to larger themes and ideas. Box 13 gives a good example of the complexity of qualitative analysis. The evaluators' role is to bring organisers and analysis procedures to bear on the data to help the team approach the data with sensitivity to the culture in which it was produced, while at the same time, standing outside to see the larger themes, issues, ideas, actions.

Box 13. Using Vignettes To Understand Innovation

The OECD Innovation Learning Environments project in Austria is using vignette research as a data collection and analysis approach to gain access to learning experiences in the midst of the pedagogic situation, *in medias res.* As Westfall-Greiter& Schratz (2014) describe them, vignettes are a dense narrative of a poignant moment, capturing a lived experience as it occurs – a form of literary non-fiction that stems from researchers co-experiencing the lived experience of students by staying open and particularly attentive to elements such as atmosphere, facial and bodily expressions and tone of voice while co-experiencing. Vignettes are intended to initiate an experience in the reader which is as close as possible to that of the researcher's experience of the experience of students experiencing school. Vignettes captured in an innovative learning environment become an evaluation tool when the innovators in engaging with the vignette, peeling off and adding layers to come to enable exploration of "what I think I understand" and revealing layers of meaning and new insights about the impact of the innovation. These insights form the basis for such things as giving student teachers feedback after the lesson identifying pedagogical issues for planning.

MAKING SENSE OF IT ALL

Insights and observations that arise from looking at evidence can be interesting and compelling, but they really are not worth much unless they can be converted into useful knowledge that can inform the stakeholders and influence and guide the innovation. All too often, much attention and expense is attached to collecting evidence, and interpretation is hurried and superficial, when what matters are the insights that accrue from the evidence. Digging jewels out of the evidence is at the core of evaluative thinking – a process of considering the evidence, in relation to the questions that prompted its collection and engaging in careful inquiry and interpretation. This is a process of building and capturing knowledge, within the context of multiple stakeholders and multiple interests.

Having the evidence is the beginning. Analysing and organising it provides the next stage and structure for interpretation, but the real "work" of using evidence comes in the thinking process that occurs when all of the people who care about the innovation engage in making sense of what it means. Evidence does not have a particular "value valence" associated with it and data, by themselves, are benign, or at least neutral. It is the interaction between evidence and people that results in decisions that creates harm or beneficial effects. Whether we view this process as organised and strategic, or a consequence of an unpredictable confluence of people, problems, data and decision opportunities (March & Olsen, 1986) makes a difference. However, both strategic and non-rational models assume that using data is a thinking activity that draws on personal views but also on capturing and organising ideas in some systematic way, turning the information into meaningful actions and making the interpretation public and transparent (Senge, 1990).

Interpretation as Building Knowledge

When evaluation operates as a separate process from innovation, data analysis and interpretation are typically situated in the domain of the evaluator. When it is situated as part of innovation, interpretation becomes a shared and ongoing process of inquiry, using the discipline of appealing to evidence to deepen understanding within and about the innovation. It occurs through a cycle of collaborative knowledge building to improve ideas:

"Knowledge building is the creation or modification of public knowledge that lives "in the world" and is available to be worked on and used by other people. That goal is to advance the frontiers of knowledge as they perceive them.

[...]

In knowledge building, ideas are treated as real things, as objects of inquiry and improvement in their own right. Knowledge building environments enable ideas to get out into the world and onto a path of continual improvement. This means not only preserving them but making them available to the whole community in a form that allows them to be discussed, interconnected, revised, and superseded" (Scardamalia & Bereiter, 2003).

This notion of knowledge building is a sophisticated one that advances many notions about how learning happens for individuals and how it is transformed in social contexts to become part of what a culture holds as knowledge.

As Nonaka, Toyama & Konno (2000) indicate: "Knowledge is dynamic, since it is created in social interactions amongst individuals and organisations. Knowledge is context specific, as it depends on a particular time and space. Without being put into context, it is just information, not knowledge.

Information becomes knowledge when it is interpreted by individuals and given a context and anchored in the beliefs and commitments of individuals" (p.7).

Knowledge building can happen within individual projects and across projects. The process is the same; only the data to be considered and the players differ. Within projects, it occurs whenever the team are trying to achieve greater understanding and clarity about how things are developing and changing, as they evolve. At points in time, it may be worthwhile to look across a number of projects to synthesize the learning into a coherent and defensible set of interpretations, investigate trends and look for synergies in order to address large and important questions that can be useful to all and to inform the larger field of innovation.

In any complex situation what is seen to be important depends on what is valued, which in turn, is influenced by the various roles in the innovation/evaluation. Multiple stakeholders will attend to the evidence most relevant to them and they will interpret it through different lenses. Different players will bring different theories to the table and understand the evidence in different ways. This is a major advantage of the merger between innovation and evaluation because including the multiple perspectives pushes thinking and challenges "taken for granted" ideas. Funders and policy makers will inevitably want to know the extent to which the innovation is progressing towards the intended outcomes, what is working as intended and what is not. Innovators often want to know similar things but from their perspective are more likely to be focused on the shorter term goals and how evidence can inform the next decision. Practitioners involved in implementing the innovation usually want to know more directly about how the innovation is impacting on the day-to-day aspects of their work and likely immediate goals. Making meaning of evidence together is a delicate balance of listening to different perspectives, negotiating the issues for consideration and addressing questions of interest in order to deepen and extend the understanding and engagement for everyone. The example in Box 14 shows the invaluable contribution of students to the evaluative thinking and interpretation process.

Box 14. Multiple Perspectives in Interpretation

In a large secondary school in a very multi-cultural area, a group of students were concerned that the programmes being offered in the school for the community were not serving the community needs. They approached a steering committee of school and community agencies and were asked to join the committee. The expanded committee decided to hire a group of students representing the diverse nature of the school to interview parents and community members within their own language and culture group about the best use of the school facilities. The committee formulated questions; the students conducted the interviews in their home languages and came together as a group to translate, transcribe and create initial themes for discussion by the steering committee. The steering committee morphed into an interpretation and planning committee to prepare a facilities use plan. The plan was deeply influenced by the insights that emerged from the data and from the students' intimate understanding of the needs of the many different cultural groups.

Intentional knowledge building experiences can interrupt the status quo and create the space for multiple alternative views to emerge, through discussing what the evidence means, generating hypotheses, and establishing a range of possible interpretations. This process sets the stage for new knowledge to surface as the participants encounter new ideas or discover that ideas they have held as "truth" do not hold up under scrutiny and they use the recognition as an opportunity to rethink what they know and what they do (Earl & Katz, 2010).

The example in Box 15 describes a useful inquiry approach for systematic analysis of the situation evaluative thinking and knowledge building. In the inquiry process, the players use the evaluation evidence, along with the tacit knowledge and experiences of the participants as the fodder for inquiry and knowledge building, as innovators and stakeholders consider complex educational issues from a range of vantage points.

Box 15. Dynamic Spiral Critical For Knowledge Creation And Sharing

- **Creating Context:** Through explicitly creating a context, the issues being investigated are connected with deep principles of the knowledge domain in question, and anchored in authentic, practical, and complex problems of the external world, or issues that the participants generally care about.
- **Engaging in Question-Driven Inquiry:** An essential aspect of progressive inquiry is generating one's own problems and questions to guide the inquiry; without questions generated by the participants themselves there cannot be a genuine process of inquiry. Questions that arise from one's own need to understand have a special value in the process of inquiry.
- **Generating Working Theories:** Construction of their own working theories guides inquirers to systematically use their background knowledge and become aware of their presuppositions. Progressive inquiry is aimed at the explication of these intuitive ideas.
- **Critical Evaluation:** Critical evaluation underscores the need to assess the strengths and weaknesses of the tentative theories (explanations) produced so as to direct and regulate the evolution of inquiry. It is essential to focus on constructively evaluating the advancement of the inquiry process itself, rather than simply an end result.
- **Searching for New Information:** Searching for and working with "research" is necessary for deepening one's understanding. New information can come from literature, consulting experts, or conducting one's own explorations. Explicit comparison of the intuitive working theories with the well-established ones makes the limitations of individual and collective knowledge apparent.
- **Engagement in Deepening Inquiry:** A critical condition for progress is that inquirers focus on improving their ideas by generating more specific questions and searching for new information. The dynamic nature of inquiry is supported by the fact that generating working theories and obtaining new research knowledge makes new guiding questions accessible.
- **Shared Expertise:** The agent of knowledge creation is not an isolated individual but an individual embedded in a community, or even the community itself. All of the preceding aspects of inquiry can be shared with other inquirers. Inquiry can advance substantially through relying on socially distributed cognitive resources and collaborative efforts to enhance shared understanding.

Source: Hakkarainen et al., 2004

The tension between those who see evaluation as a mechanism for external accountability and those who see it as an embedded part of the innovative process is often one of timing, not of kind. Engaging in routine evaluative thinking allows everyone with a stake in the innovation to gain a better understanding of the progress of the innovation as it develops and the extent to which it is meeting its intended or evolving goals. When the key players work together to clarify goals, recognise progress in smaller steps, and negotiate the nature of acceptable evidence, they are more likely to understand the process and become advocates for both the innovation and the evaluative thinking that is taking place. The timetable for gathering evidence will continue to be flexible, with all parties engaged in deciding what they want (and need) to know, what they will accept as evidence, and when it is appropriate and possible to try to address their purposes.

When the knowledge building spans a number of innovations, the process is somewhat like a metainterpretation, where the interpreters work with information from a number of innovations to identify, describe and codify the collective learning so that it becomes explicit and can be shared. The TLRP project described in Box 16 is an example of a model for aggregating ideas across projects.

Box 16. Knowledge Building Across Projects

Although it is not evaluation, per se, the Teacher Learning and Research Project (TLRP) in England used a knowledge building process to learn from individual projects that were focused on different research questions and utilised a range of methods and theoretical resources. They used a cross-programme thematic seminar series and task. This process generated considerable discussion and the identification of a set of principles that transcended each of the individual studies to be communicated to wider audiences.

Source: James & Pollard, 2010

The nature of knowledge building is rarely predictable and the evidence from evaluation will be processed and interpreted in unexpected ways. It is as often the gems, surprises, outliers and snippets of evidence

that give insight into what is happening for whom and why. Sometimes differences in interpretation will persist because of various players' competing theories. These differences need to be framed as theories in competition, not whether one is right or wrong. Adjudication of these theories comes from further testing, and possibly collecting more evidence (Timperley & Parr, 2005). Learning and change arises from this deep inquiry process. Through this iterative process, the team engages in interpretation, with inquiry and evaluative thinking as a way of doing business, rather than a discrete event.

Capturing and Mobilising the New Knowledge

Having worked through the interpretive and knowledge-building process with particular stakeholder groups, the learning needs to be visible and accessible to others both within and beyond the innovation, through processes of capturing it in some accessible and retrievable form (print, audio recording, video, translations, etc.) and intentional mechanisms for sharing the learning with people (internally and externally) who are not part of these regular episodes of making meaning.

Sharing and mobilising knowledge means creating new learning environments locally and beyond for others to engage with the ideas. This does not mean "going out and telling others" what has worked or not

worked. Rather it means engaging in a wider process of evidence-informed inquiry with those not involved in the original interpretive knowledge building activities to activate existing knowledge, infuse the new knowledge from the innovation and socially construct new understanding.

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There is an expanding literature on sharing knowledge and connecting it to practice and to policy that has grown from a range of disciplines and has evolved into a distinct scholarly field. Depending on the context, it is variably referred to as knowledge transfer, knowledge management, knowledge translation, knowledge mobilisation, knowledge animation or knowledge diffusion. Box 17 is a graphic presentation of knowledge animation as described by Stoll (2009):

...a social process by which practitioners and policy makers make learning connections when engaging with research findings. Knowledge animation is about helping people to learn and use ideas generated elsewhere, and through this process create their own knowledge. It's concerned with finding ways of making knowledge accessible and mobile so that it stimulates dialogue that challenges people's thinking, promotes new understanding and helps them generate new knowledge that will enhance their practice and policy. (p. 1)

As is obvious in this paper, knowledge mobilisation in innovation is not a "one-off" activity. Knowledge mobilisation includes aggregation and packaging of explicit knowledge but it also requires knowledge work – direct and active engagement with the knowledge in ways that make tacit knowledge visible and allow the participants to draw on both tacit and explicit knowledge as they share the learning from their collective work. It is a deliberate process of stopping at various points in the innovation and evaluation process and asking, "What do we think we know that should be shared and checked?" "Who should we involve?" and "What process is best suited to sharing this stage of the learning?"

In essence, an effective knowledge mobilisation or animation process embodies the principles associated with any effective learning environment, as they have been described by the OECD Innovative Learning Environments initiative (OECD, 2013), things like active engagement, self-regulation, social nature of learning, attention to tacit knowledge, challenge, clarity of expectations, feedback, and horizontal connectedness.

Sustainability

As innovation progresses, there is always concern about whether it will be sustained. Sustainability, however, is another of those concepts that has multiple meanings in different contexts. According to the Oxford Dictionary, the definition is: "able to be maintained at a certain rate or level". The Merriam Webster Dictionary says: "able to last or continue for a long time".

So, what does it mean in the context of educational innovation? In our view, considering sustainability means addressing the questions: Sustain what? For what?

Even within the field of innovation, there are different expectations for sustainability. Christensen (1997) described innovations as sustaining or disruptive. "Sustaining innovations" are innovations that create improvements and can be incorporated into the existing practices of organizations. "Disruptive innovations" require different models to succeed, models that require new mindsets, and skillsets and cannot be integrated into existing structures and cultures. Because innovation in practice is local, each innovation needs to determine what sustainability means in the particular context.

In evaluation of educational innovation there is a wide range of conceptualisations of what sustainability might mean and are described below.

• Sustainability as Fidelity to Programmes: This notion of sustainability, which is closely connected to a search for methods and approaches that can be "scaled-up". Once something has been

shown to work, the sustainability issue is fidelity to and spread or breadth of a defined programme, with serious attention to ensuring that resources are available, teachers are trained and that implementation follows the original plan – the closer, the better.

- Sustainability as Maintenance of the integrity of Key Processes or Routines: Sustainability can be considered as maintenance of things like routines, approaches, materials, etc. that are focused on a specific area. This often is associated with situations where a short-term influx of resources, professional development opportunities and other forms of assistance have been available and then withdrawn. The sustainability question becomes one of ascertaining if the injection of these resources leaves a footprint behind them. Are elements of the innovation visible after the passage of time and have they been transferred or passed on to others?
- Sustainability of Theories, Principles or Ideas: When innovation is not a single "thing" or project and is more focused on changing cultures or ways of thinking towards continuous improvement, the sustainability issues are likely to be related to ongoing improvement that is influencing success for students. This conception of sustainability relates closely to the ideas about capturing and mobilising new knowledge in the previous section. It takes what was learned within a particular context and connects it to underlying principles through unpacking the big ideas and using them to move to the next iteration of the innovation. Scardamalia & Berieter (2003) refer to this process as developing deeper learning in ways that advances the frontiers of knowledge. It may go beyond a single innovation as those involved tease out the big ideas and improve theories about approaches to innovation. Principled knowledge is the kind of knowledge that can be transferred and further developed across contexts (Pellegrino, 2006) whether it is an innovation planned for the future or for others that are developing alongside.
- Sustainability as a Habit of Mind: Although each innovation is local, there is a larger interest in the nature of innovation and sustainability of innovation as a "habit of mind" as described in Box 18 a way of thinking and action that permeates the culture of the people involved and continues as a cyclical process of innovation that extends across projects and acrosstime.

So where does evaluation fit in this picture? In the understanding of sustainability as programme fidelity, evaluation was focused on identifying whether the programme worked or not for the purpose of deciding whether it should be continued. This traditional summative evaluation was typically outcomes focused. Formative evaluation provided evidence along the way, as the programme was being developed in order to identify important processes and approaches essential to sustainability and anticipated programme spread.

Box 18. Habits of Mind

Habits of Mind is knowing how to behave intelligently when you DON'T know the answer. It means having a disposition toward behaving intelligently when confronted with problems, the answers to which are not immediately known: dichotomies, dilemmas, enigmas and uncertainties.

Source: Costa & Kallick (2000)

As the more principled view of sustainability has emerged, along with more developmental views of evaluation, evaluative thinking has become an integral part of identifying the big ideas within an innovation and linking them to evidence of how they have played out and what might or might not contribute to sustainability of process and outcomes that can contribute to system capacity as described by Fullan in Box 19.

Box 19. Sustainability

Sustainability is the capacity of a system to engage in the complexities of continuous improvement consistent with deep values of human purpose.

Source: Fullan (2004)

INNOVATION AND EVALUATION: SYNERGIES AND TENSIONS

Throughout this paper, we have tried to convey an image of a nexus at which innovative thinking, disciplined by evaluative thinking, work together as an intellectual disposition for guiding innovation in social contexts. Together they operate as a composite of imaginative innovation and reasoned evaluative critique to create new knowledge. This knowledge is developed through bringing together perspectives from innovation leaders, innovation participants, funders and evaluators as they struggle to move from ideas to actions and to bring relevant evidence to the table to address emerging questions. To make this combination work requires discipline in the innovation and flexibility in the evaluation. Cautions apply to each and there are inevitable tensions. One of the risks on the innovation side is the potential to slide from complexity to chaos. Evaluation designs can cope with complexity but not chaos, other than possibly to document its dysfunction. Quinn-Patton writes about how social innovations, like education, can become so complex at the extreme that they do not serve their purposes: "At the extreme of this continuum of uncertainty is chaos, intense conflict among the key stakeholders and extreme uncertainly about what to do to achieve desired outcomes" (Patton, 2011, p 93).

On the evaluation side, there is a potential for the evaluation to detract from, rather than to enhance an innovation, in ways best expressed by Lengrand et al., (2006): "Evaluation is not a panacea...It is a vital element of this [the innovation] process, but one element among others. It is not an end in itself... Especially if carried out in a rigid fashion, with strict adherence to a narrow set of targets and indicators, the evaluation process can come to limit the conduct of programmes" (p. 40).

There are processes that can help to reduce, and sometimes avoid these tensions. We now highlight some that we believe are useful and important – openness to improving ideas, being pragmatic, negotiating and re-negotiating meaning and relationships.

Being Open to Improving Ideas

Evaluative thinking within innovation assumes that continuous learning is intentionally embedded into the innovation process. As we described earlier, knowledge building is a collaborative process designed to

improve ideas through additions, refinements, and adaptations. It requires space, time, and resources for dialogue, collecting evidence, reflection, posing questions, identifying and challenging values, beliefs and assumptions, and instituting feedback loops. As Preskill & Beer (2012) describe it:

Those who are interested and willing to experiment with social innovations must be willing to take risks and accept missteps or failure. They must be willing to live with uncertainty and acknowledge that their plans, regardless of how well laid out, will likely shift as the circumstances around them change. With uncertainty and unpredictability comes an even greater need for strategic learning as an innovation is conceptualized, designed, and implemented. (p. 3)

Although most funders and innovators see themselves as open and flexible, many innovation initiatives are bounded by contracts and expectations that keep change and adaptation to a minimum. Innovations may also be the "brainchild" of individuals or groups who are strong advocates for particular directions, follow their instincts and are disdainful of appealing to evidence as a strategy for change and have little interest in alternative perspectives. Evaluative thinking is not consistent with only considering positive evidence or with approaches and direction that are already decided or entrenched to produce "good news".

At the same time, traditional evaluation models often do not lend themselves to the changeable and adaptive nature of working within innovations because they are not sufficiently flexible to capture the ongoing development in innovation, nor are they responsive to the immediate information needs of innovators and policy makers.

In many cases, traditional evaluation approaches fail to meet the fast-paced information needs of ...decision makers and innovators in the midst of complex social change efforts. At worst, the application of traditional evaluation approaches to innovative change initiatives may even decrease the likelihood of success because they restrict implementers to pre-set plans that lose their relevance as the initiative unfolds. (Preskill & Beer, 2012, p. 1)

Although it seems simple, one of the conditions that we have identified is having an open, inquirybased view of the innovation and the role of evaluation within it. The process of strategic learning that integrates evidence and evaluative thinking into innovation is a melding of innovators who engage in evaluative thinking and evaluators who engage in innovative thinking. This can even mean that funders and innovators need to negotiate among themselves to select evaluators carefully to ensure a match of purposes and perspectives. Evaluators may choose to leave the team if they feel they are being used to promote rather than improve the innovation.

Being Pragmatic

Clearly, introducing evaluative thinking into innovation is not a trivial undertaking. The role for evaluators can shift from periodic involvement, often on the margins of the innovation, to being central players in the innovation planning and developing evaluative thinking. Evaluator cost and availability are likely to be issues. It is rarely practical or cost-effective to have the evaluator join as a full member of the innovation team. On the other hand, it is important to allocate sufficient resources to engage the evaluator for key episodes of evaluative thinking, to share in leading particular processes related to evaluative activities, to provide evaluative expertise and to build evaluative capacity.

These occasions will vary within and across innovations and require that the evaluator be available during the different phases of the innovation. In the early stages, evaluators have a role in sketching the

theory of action, identifying the important questions, determining methods to gather evidence and collecting it in partnership with the innovators and organising the data to be accessible for interpretation. A major role is leading the discussion around what the evidence means.

The need for just-in-time evidence, together with considered interpretation to inform ongoing decisions, places high demands on the evaluators' flexibility and availability. These roles have resourcing implications that cannot be fully anticipated or planned for because of the unpredictable nature of innovation and the integral nature of the approaches to evaluation within it.

Being pragmatic may also mean leaving some aspects of the innovation outside of the realm of evaluation. Focusing on key elements of the theory of action that are agreed by all stakeholders to be pivotal in achieving the purpose of the innovation may provide the greatest return on the evaluators' involvement. Not everything can or should be evaluated.

An alternative is to use the work of the evaluators in a few key areas to help innovators bring evaluative thinking into other areas, thus permeating evaluative thinking throughout the innovation, as is exemplified in Box 20. Becoming evaluative thinkers does not happen automatically. It must be an explicit purpose and be systematically addressed, with periodic involvement of evaluators, throughout the evaluation to ensure that innovators understand and internalise evaluative thinking and see how it can be applied across contexts.

Box 20. Embedding Evaluative Thinking

In a New Zealand initial teacher education programme, the goal was for graduates to develop adaptive expertise so they had the meta-cognitive and self-regulated learning skills to continue to learn as they entered the teaching profession. All teaching approaches and routines were to be introduced within this framing. The limited availability of funding for an evaluation led to the decision that the evaluators would focus on collecting evidence about the effectiveness of the teacher educators' feedback practices in developing the student teachers' adaptive expertise because major resources were going into this area and it was considered the optimal learning opportunity. The teacher educators were closely involved in designing the data collection of audio recordings of feedback practice and interviewing the student teachers. They also spent considerable time discussing the meaning of the data and the implications for future practice.

The teacher educators reported that the exercise had been so valuable in developing both their understanding of how to develop adaptive expertise and what it means to engage in evaluative thinking around their practice that they decided to investigate the effectiveness of the way they presented new ideas to the student teachers and follow-up group discussions. This time round, the evaluator acted more as a guide to answer their questions and providing prompts for engaging a range of views in the interpretation process.

Negotiating, Renegotiating and Renegotiating

As we have identified, the blend of disciplined innovation and evaluative thinking is essential for

moving innovation forward and capitalising on the opportunities for knowledge building. The power of innovation often lies in crossing these boundaries:

Interdisciplinary innovation arises from the positive effects that result when stepping across the social boundaries that we structure knowledge by. Those boundaries include academic disciplines, government departments, companies' internal functions, companies and sectors, and the boundaries between these domains. In the knowledge economy, it is often the case that the right knowledge to solve a problem is in a different place to the problem itself, so interdisciplinary innovation is an essential tool for the future. (Blackwell, Wilson, Street, Boulton, & Knell, 2009, p.1)

The challenge in the co-habitation of innovation and evaluation will be finding the time and space where those involved can come to a shared valuing of both the processes and the knowledge that emerges from their mutual efforts. Creating new knowledge involves negotiating, renegotiating and then again renegotiating meaning as problems become redefined and new evidence is brought to the table for consideration and interpretation. Negotiating meaning and creating new knowledge requires the mix of expertise of innovation leaders, innovation participants, funders and evaluators. Funders bring their unique view of where the innovation fits in the larger picture. Innovators bring a vision of innovation possibilities, expertise in education, and change management. Innovation participants know their own context with its strengths and limitations. Evaluators bring the technical expertise involved in defining questions and developing appropriate methodologies to answer them, together with analytical and interpretive expertise involved in the systematic reasoning from evidence.

The power of negotiating meaning in the nexus often lies in blurring the space between them, with innovators taking on evaluation roles and evaluators becoming involved in the innovation. This creates a space for productive dissonance as their backgrounds and beliefs bump into one another. As Blackwell, et al., (2009) have found, "it is often believed that people with different training have difficulty communicating because they have learned different specialist languages. But we have found a bigger problem – that they are actually trying to achieve different things. Different disciplines often have different core values...In order for a new interdisciplinary team to become effective, that team must develop shared values and culture" (p.4).

The values and culture different players bring to any situation are sometimes referred to as personal theories. They consist of beliefs and values, together with the practices that follow from them and the outcomes considered desirable. In any situation, differing personal theories between innovation facilitators and participants, stakeholders and evaluators should be expected and accepted with the differences framed as different theories in competition with one another and in need of negotiation, rather than one being right and another wrong. In a theory competition approach all parties need to take responsibility for engaging with others' theories with mutual understanding at the nexus fundamental to successful negotiation of meaning and the development of new theories that become shared new knowledge (Senge, 1995; Timperley & Parr, 2005).

CAPACITY FOR EVALUATIVE THINKING: PULLING IT ALL TOGETHER IN THE NEXUS

Box 21. Capacity

Capacity is a quality of people or organisations that allows them routinely to learn from the world around them and apply their learning to new and sometimes novel situations so that they continue on a path toward their goals, even though the context is ever-changing. It also helps them continuously to improve learning and progress at all levels.

Source: Stoll & Earl (2003).

Successful innovation evolves through building knowledge at the nexus between innovation and evaluation. The interaction of diverse perspectives and complementary expertise in this space creates the opportunities for evaluative thinking in innovation. The nexus is meant to be a place of creative dissonance and intentional interruption of "taken for granted" ideas using evidence; capitalising on a mix of expertise, theories about how the world works and the pragmatics of what is possible in a particular context. It can be messy and ordered, risky and disciplined. Negotiating this complexity is new territory for innovators and evaluators that requires having the capacity, as described in Box 21, for evaluative thinking to engage with the messiness of trying out new things, while bringing sufficient discipline and flexibility to the process. Embedding evaluation in innovation blends disciplined innovation and evaluative thinking at the nexus. In this space creativity combines with evidence and reasoned argument as innovators and evaluators work together to interpret evidence, challenge ideas and clarify their assumptions, beliefs and directions and the stage is set for new theories and improving ideas to move innovation forward, as a sustained process.



REFERENCES

.

Abelson, R. (1995), *Statistics as Principled Argument*, Lawrence Erlbaum Associates Inc., Hillside, New Jersey.

American Evaluation Association (ND), www.eval.org/p/cm/ld/fid=1 (accessed 11 November 2013).

- Barber, M., Donnelly, K., and Rizvi, S. (2012), *Innovation: The Atlantic, The Pacific, Global Leadership* And The Future Of Education, Institute for Public Policy Research, London.
- Bennett, G. and N. Jessani (2011), *The Knowledge Translation Toolkit, Bridging the Know–Do Gap: A Resource for Researchers*, International Development Research Centre, <u>http://ajpp-online.org/resources/downloads/04-TheKnowledgeTranslationToolkit.pdf</u>.
- Bernholz, L. (2011), "Evaluating Innovation", MacArthur Series on Field Building, <u>www.scribd.com/doc/57548064/Evaluating-Innovation (Accessed 06 October</u> 2013).
- Blackwell, A., et al. (2009), "Radical innovation: crossing knowledge boundaries with interdisciplinary teams", Technical Report No. 760, University of Cambridge Computer Laboratory, <u>www.cl.cam.ac.uk/techreports/UCAM-CL-TR-760.pdf</u>.
- Borgman-Arboleda, C. (ND), Developing Your Theory of Action: A Facilitation Guide, Evaluation Collaborative <u>www.seachangecop.org/node/1257</u>.
- Canadian Evaluation Society (ND), Evaluator Competencies, <u>evaluationcanada.ca/txt/2_competencies_cdn_evaluation_practice.p</u> <u>df</u>.
- Christensen, C. (1997), *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*, Harvard Business School Press, Boston, MA.
- Cousins, B. and L. Earl (1992), "The case for participatory evaluation", *Educational Evaluation and Policy Analysis*, vol. 14, (4), Winter.
- Costa, A. and B. Kallick (Eds.) (2000), *Habits of Mind: A Developmental Series*, Association for Supervision and Curriculum Development, Alexandria, VA.

- Drucker, P. (1985), "The Discipline of Innovation", Reprinted 1998 Harvard Business Review, <u>http://ogsp.typepad.com/focus_or_die_ogsp/files/drucker_1985_the_discipline_of_innovation.p</u> <u>df_</u>.
- Earl, L. and S. Katz (2010), "Creating a Culture of Inquiry: Harnessing Data for Professional Learning", in Blankstein, A., Houston, P. and Cole, R. (eds.) *Data Enhanced Leadership Series: The Soul Of Educational Leadership*, Corwin Press, Thousand Oaks.
- European Commission (1995), Green Paper on Innovation, <u>http://europa.eu/documents/comm/green_papers/pdf/com95_688_en.pdf_</u>.
- Fullan, M. (2004), *Leadership and Sustainability: System Thinkers in Action*, Corwin Press, Thousand Oaks.

Gamble, J. (2008), *A Developmental Evaluation Primer*, The J.W. McConnell Family Foundation, <u>www.mcconnellfoundation.ca/en/resources/publication/a-developmental-evaluation-primer</u> (accessed November 2013).

- Gates (2013), Why Does Measurement Matter?, Annual Letter, <u>www.gatesfoundation.org/Who-</u> <u>We- Are/Resources-and-Media/Annual-Letters-List/Annual-Letter-2013</u>.
- Gopalakrishnan, S, Preskill, H. Lu, S. (2013), Next Generation Evaluation: Embracing Complexity, Connectivity, and Change, <u>www.ssireview.org/nextgenevaluation</u>.
- Hakkarainen, K., Palonen, T., Paavola, S., and E. Lehtinen (2004), *Communities of networked expertise: Professional and educational perspectives,* Elsevier, Amsterdam.
- Hannon, V. (2009), "'Only Connect!': A new paradigm for learning innovation in the 21st century", Occasional Paper No. 112, Centre for Strategic Education.
- Hektner, J., J. Schmidt and M. Csikszentmihalyi (2007), *Experience Sampling Method: Measuring the Quality of Everyday Life*, Sage Publications Inc., Thousand Oaks.
- James, M. and A. Pollard (2011), "TLRP's ten principles for effective pedagogy: rationale, development, evidence, argument and impact", in *Special Issue: Principles for Effective Pedagogy: International* responses to evidence from the UK's Teaching and Learning Research Programme Research Papers in Education, Vol. 26/3.
- Joint Committee on Standards for Educational Evaluation (2013), Program Evaluation Standards, Sage Publishing.
- Katz, S. and L. Dack (2013), *Intentional Interruption: Breaking Down Learning Barriers to Transform Professional Practice*, Corwin Press, Thousand Oaks, CA.

Lengrand, L., and Associés (2006), *Smart innovation: A practical guide to evaluating innovation programmes*, DG Enterprise and Industry, ECSC-EC-EAEC, Brussels-Luxembourg, <u>http://admin.interact-</u> <u>eu.net/downloads/2395/Smart%2520innovation:%2520A%2520practical%2520Guide%2520to%25</u> 2 0Evaluating%2520Innovation%2520Programmes.pdf .

- Lyn, L. (1997), "Innovation And The Public Interest", in Altshuler & Behn, D. (eds) *Innovation Challenges, Opportunities, and Dilemmas in American Government,* Brookings Institute.
- Manyika, J., et al. (2011), Big data: The next frontier for innovation, competition, and productivity, McKinsey Global Institute.
- Mulgan, G. (2007), "Social Innovation: What it is, why it matters and how it can be accelerated", Working Paper, Skoll Centre for Social Entrepreneurship, Oxford Business School. <u>www.politicadeinnovacionsocial.co/documents/250640/254377/Social-Innovation-what-it-is-why-it-matters-how-it-can-be-accelerated-March-2007.pdf/4aa7263e-571c-48c5-a14b-493b66c064a0</u>.
- Mulgan, G. and C. Leadbeater (2013), "Systems Innovation", Discussion Paper, NESTA, London.
- Nonaka, I., Toyama, R. and N. Konno (2000), "SECI, Ba, and leadership: a unified model of dynamic knowledge creation", *Long Range Planning*, Vol. 33, No. 1, pp. 5-34.
- Northwest Public Health Center (ND), Six Steps of Program Evaluation, Northwest Public Health Center, University of Washington, <u>www.nwcphp.org/evaluation/tools-resources/program-evaluation-tips</u>.
- OECD (2013), Innovative Learning Environments, Educational Research and Innovation, OECD Publishing, Paris, <u>www.oecd-ilibrary.org/education/innovative-learning-</u> <u>environments</u> 9789264203488-en.
- OECD (2013), Synergies for Better Learning: An International Perspective on Evaluation and Assessment, OECD Reviews of Evaluation and Assessment in Education, OECD Publishing, Paris, <u>www.oecd-</u> <u>ilibrary.org/content/book/9789264190658-en</u>.
- Patton, M. Q. (2011), *Developmental Evaluation: Applying Complexity Concepts to Enhance Innovation and Use*, The Guilford Press, New York, NY.
- Perrin, B. (2002), "How to and how not to evaluate innovation", *Evaluation*, Vol. 8(1), SAGE Publications, pp.13-28.
- Preskill, H. and T. Beer (2012), *Evaluating Social Innovation*, Centre for Evaluation Innovation, <u>www.fsg.org/publications/evaluating-social-innovation</u>.

- Rog, D., J. Fitzpatrick and R. Connor (Eds) (2012), "Context: A framework for its influence on evaluation practice", *New Directions for Evaluation*, No. 135, John Wiley & Sons, Hoboken, NJ.
- Scardamalia, M. and C. Bereiter (2003), "Knowledge building", in *Encyclopaedia of Education*, Gale, Farmington Hills, MI, pp. 1371-3.
- Schratz, M. and T. Westfall-Greiter (2014), "Beyond the Reach of Teaching: Learning as Experience", Paper presented at ICSEI, Indonesia.
- Senge, P. M. (1990), The Fifth Discipline: The Art and Practice of the Learning Organization,

Doubleday/Currency, New York.

- Stoll, L. and L. Earl (2003), "Making it Last: Building Capacity for Sustainability", in B. Davies and J. West-Burnham (eds), *The Handbook of Educational Leadership and Management*, Pearson Education, London.
- Stoll, L. (2009), "Knowledge Animation in Policy and Practice: Making Connections", Paper presented at the Annual Meeting of the American Educational Research Association as part of the symposium Using Knowledge to Change Policy and Practice.
- Timperley, H.S. and J.M. Parr (2005), "Theory competition and the process of change", *Journal of Educational Change*, Vol. 6(3), pp. 227-252.

Trochim, W., Introduction to Evaluation, <u>www.socialresearchmethods.net/kb/intreval.php</u>.