EMPOWERING TEACHERS AND SCHOOLS TO PLAY THEIR KEY ROLE IN IMPROVING EDUCATION
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INTRODUCTION

Good afternoon and thank you Kelly for that kind introduction. I was in Toronto recently at a meeting of the Learning to 18 ministry work-group and was given a copy of the latest Capacity Building Series publication entitled Collaborative Teacher Inquiry. It is pretty exciting stuff to see the Government of Ontario throw its weight behind collaborative teacher inquiry as a means of professional learning and school improvement.

Wonderful things are happening currently in Ontario, including this fine conference, that honour teachers as educational authorities and give them their rightful place at the centre of educational change. In addition to large scale, system projects there are also myriad examples across this province of teachers individually and in groups working proactively, tirelessly, and in an empowered manner to improve the learning of their own students, in their own schools and communities. They are doing this through what Lynne Hannay, Wayne Seller, and I (2010) called a process of knowledge creation, where teachers are actively creating educational knowledge for themselves in their own contexts.

It's exciting because it begins to confirm Marks' and Lewis’ (1999) prediction in which they said:

\[ \text{[We] contend that a unified organizational culture built around ongoing inquiry into the quality and effectiveness of teaching and learning depends on the} \]
collective influence of teachers who function as empowered professionals. We view the intersection of teacher empowerment and the capacity for organizational learning as a central thrust for future school reform. (p. 70)

For teachers, collaborative inquiry involving cycles of planning, action, and reflection is exhilarating and rejuvenating. It restores our faith in the values for which we entered the profession. It makes ongoing school improvement viable, compelling, and immediate. It puts teachers and schools at the forefront of educational change. It empowers teachers by combining action to improve student achievement with self-directed, professional learning, so that we see ourselves not as passive recipients but as people empowered to make a difference.

There is ample evidence that when teams of teachers conduct collaborative action research for the purpose of improving student learning they are able to engage in collective action; for an agreed-on purpose; and with enough belief in attainment that they’re able to go forward together toward the goals they set for themselves. These three abilities taken together – agreed-upon purpose, collective action, and belief in attainment – form a powerful basis for educational improvement. They are, as Glickman, Gordon, and Ross-Gordon (2009) pointed out, an “organizational phenomenon” shared by all successful schools.

Teachers really are key players in educational change. Michael Fullan told us that in 1982. He said that a major reason educational reforms at the time failed was because we didn’t know enough about how change was experienced by teachers – the people actually involved in making the changes. Since then, there has been a great deal of work done to develop knowledge from that perspective. And we’ve learned a lot. We have learned for example that from the teacher’s perspective Change is a personal act, regardless of the intended scope of the institutional reform effort.

So here is the structure for my talk during which I am going to speak from the teacher’s perspective (we are all teachers here). I am also going to use the words research and data without apology (for reasons that will become clear as we go along). Since change requires teachers to learn, I want, first of all, to ground the discussion about teachers and learning in the literature on adult and professional learning. Next, I want to talk about the old paradigm that used to govern approaches to educational change, how it has shaped our attitudes toward research, and why it didn’t work very well. Then, I want to tell you about the new paradigm – the one that is grounded in learning theory. That leads to a discussion of the importance of capacity building to support teachers in their role as learners. And finally, I want to leave you with a small number of conclusions and implications.

PART I: LEARNING THROUGH INVESTIGATION IS A NATURAL HUMAN BRAIN STRATEGY

Now the emphasis on collaborative teacher inquiry is particularly welcome to me because teacher professional learning has been a passion of mine for a very long time – extending right back to my first years as a teacher over 43 years ago.
Yes, that’s right 43 years! It’s been a long time. You know, during my career, I’ve always advised people to develop and follow a career plan. “Where do you want to be and what do you want to be doing in five years?” But at this stage in my life, I’ve been having trouble following my own advice. I’ve been a classroom teacher, a school board consultant, a subject co-ordinator, a ministry of education official, a TVOntario curriculum project manager, and, for the last 14 years, an education professor and university administrator. I’ve met Elwey Yost and Bill Nye the Science Guy and the Pokaroo. What’s left?

The other night I was thinking about this problem of no longer having a five-year career plan. I said to my wife, “You know, being a professor is a pretty good job. Maybe I’ll just continue as a professor – maybe that’s my career goal. And then the idea came to me… I’ve decided that my new career goal is to become the George Burns of Education – because he lasted so long.

George Burns was a remarkable comedian. For many years, he worked with his wife, Gracie Allen. The act was called Burns and Allen. They started out in Vaudeville, made the leap to radio and then to television. After Gracie died, George went on. He lived to be 100 years old and continued to perform right to the end. What a guy!

George and Gracie were always working on their act. Vaudeville was a tough business. George said that when they started, the act consisted of Gracie dancing and George pointing at her feet. George said that he got so good at it that he could point with either hand.

This is how they worked on the act. George was the straight man. He was in charge of the timing and setting up the gags. Gracie was the comedian. She delivered the punch lines. While they were doing their act, they would watch the audience. Did the audience laugh? Did they laugh in the right places? What was the quality of the laughter – quiet and thin? Loud and long? Or did it bring the house down?

After the show, George and Gracie would talk about the audience reactions. For example, they might notice that the opening was strong but the new bit in the middle wasn’t getting the laughter it should. The gag wasn’t going over. What could they do? – try to strengthen it, or drop that bit and insert something else? Maybe they would get an experienced friend to come to the theatre to watch the next performance and give them some advice. Then they would revise the act, try it again, and watch the audience again to see if the reaction to the new or revised piece was better.

George and Gracie weren’t teachers but they were improving their act through a process of investigation. They were doing what Kurt Lewin, way back in the 1940s, described as action research. They were proceeding, Lewin would say, “in a spiral of steps each of which is composed of planning, action, and the evaluation of the results of action.” (Masters, 1995) Here is what they were doing.

First of all, they were collecting quantitative and qualitative data through observation of audience response. That data sometimes produced what Michael Fullan called a
disturbance - an event that disturbs routine practice (Hannay, Wideman, & Seller, 2007). Cyril Houle (1980) called routine the great enemy of professional learning. As long as one’s routine practices are working there’s not much motivation to change.

By attending to the disturbance, George and Gracie could identify an authentic problem or question about the act. An authentic problem is one that’s personally important: often it makes your stomach hurt. “What do we do about the bit that isn’t getting the laughs?”

Then, they came up with an hypothesis, “Maybe if we try this....! They modified the act accordingly, tried it again in front of an audience, and collected more data to see the impact of their work. That’s what George and Gracie did repeatedly during their careers. They improved their act through a learning process based on investigation. That’s how they made the leap to radio and television. That’s how George kept current to the very end of his career.

Now, why did I tell you that story? Here’s the reason. The phenomenon of action research or collaborative professional inquiry is not unique to teachers. In fact, it turns out that teachers change their professional practices through what is essentially a natural human learning process that is common and pervasive. Almost everybody does it. In 1983, Allan Thomas who was one of the granddaddies of adult education at OISE, defined learning as a cumulative activity that individuals choose to undertake to meet felt needs through self-change. This is what people do when confronting a problem or question that is personally important and has no clear answer.

The phenomenon is also well established in the literature on andragogy (the teaching of adults). Back in the 1970s, Alan Tough (1979) found that adults frequently undertook learning projects to investigate topics of importance to them. His research supported the notion that learning is a normal and ordinary human activity. Tough defined a learning project as a period of time during which a person chooses to be involved in learning about some personally-important topic, problem, or task. He judged that over 70% of adult learning occurs in this way, informally and outside the confines of learning institutions.

But, there’s more. That natural human learning strategy is grounded in research methodology. What we have come to call the scientific method has its roots in this natural human learning process. In 1987, Garth Boomer described the pervasiveness of the scientific method in human thinking when he wrote:

> Human beings are born scientists. We come into the world hypothesizing. The human brain is biologically the same instrument across all but physically brain-impaired humans and it goes about "processing the world" in the same way. When you boil down all the psychologies including all but the most banal behaviourism, you are left with the basic human processing formula: problem - observation - hypothesis - testing - evaluation. The surface manifestations of this basic formula are infinitely varied; the vehicles and media of learning vary
from case to case; "messiness" and nonlinearity may be observable features; but there is always (the) common, underlying "brain strategy." (p. 9)

Now George Burns and Gracie Allen were professional entertainers. Since investigation is a form of learning common to adults, it is not surprising that it is also common to professionals. As far back as 1980, Cyril Houle described inquiry as a form of active learning used by professionals to improve their practice - a process in which they create "some new synthesis, idea, technique, policy, or strategy of action" (p. 31).

Houle found professionals to be quite aggressive in pursuing learning projects. However, it was Donald Schon, writing in his 1983 book, The Reflective Practitioner, who significantly affected our understanding of the process teachers and other professionals use to learn through investigation. The process he described resonates with what we would call action research. Schon described the reflective practitioner as learning through creative interaction with a problematic case. “The art of practice in uncertainty,” he wrote, “is linked to the "scientist's art of research" (p. 69).

So here is the first thing I want you to remember from this talk. Collaborative teacher inquiry is not something new or revolutionary. Instead, it is grounded in a natural human learning strategy that has its roots in what has come to be called the scientific method. Because learning is natural and pervasive, therefore, the problem is not, “How do we get teachers to learn?” Instead, it is, “If teachers are not learning, what’s preventing them?” Adult learning theory says, “If you want people to learn, remove what's blocking them and they will. Add some positive supports and they will learn even more effectively.

PART II: THE OLD PARADIGM – DEVELOPMENT, ADOPTION, IMPLEMENTATION
Well, if learning through investigation is a natural human brain strategy grounded in the scientific method, why do so many teachers get nervous when we use the word research or data? I see such nervousness all the time with some of our Master of Education students at Nipissing University. These are well-qualified, highly professional educators enrolled in graduate studies, but when you suggest they might take the thesis route in their program – actually undertake to complete a research study - they turn pale with fear. Their hands clench. Their stomachs start to role and they get light headed and dizzy with apprehension. “Oh no, I can't do a thesis,” they say, “I'm can't do research.”

The word research conjures up stereotypical images in our heads about scientists in white lab coats with rats or electron generators; ancient professors with wispy white hair hunched over huge and dusty tomes with owls perched on their shoulders; incomprehensible academic articles; IQ scores over 150; Sheldon from Big Bang Theory. I could go on and on with stereotypes of research and researchers but you get the picture.

There are very good reasons that many teachers react with disbelief to the idea that they conduct research. It’s because the old paradigm of how professional knowledge is created and disseminated taught us to think this way. The research mystique was cultivated for a
purpose. It used to be thought that change occurred through a hierarchical process called the development, adoption, and implementation model. This was the old paradigm within which we used to work.

In the old paradigm, the creation of knowledge was separated from the application of knowledge. There were experts at the top of the hierarchy - whose job it was to develop the changes that were to be made in the school system. The changes were then to be communicated to the principals and teachers in the schools who were to adopt and implement them. It was a military model; the senior officers did the thinking and issued the orders; the soldiers carried them out. This model was not just used in education but in other professions as well, including medicine.

The experts at the top of the hierarchy created knowledge through a process of investigation called research. It was thought that teachers were mere practitioners, who were not equipped to do research. They were only able to apply the knowledge developed by the experts. In this way, theory was separated from practice and researchers were insulated from practitioners.

The problem was that this hierarchical model of change didn’t work very well. It seemed to break down in the implementation phase. When we used to develop curriculum guides during my years with the Scarborough Board of Education in the 1970s, we found the people who benefitted most from the development of a school board curriculum guide were the members of the writing team that developed it. They learned a tremendous amount and put a lot of what they had developed into use in their own classrooms and schools. But when we printed the guide and shipped it out for adoption and implementation, a lot of the teachers and principals who received it didn’t share the same enthusiasm. Some put it on the shelf and didn’t use it; others used bits and pieces of it; and still other changed it in ways the developers had not dreamed of. The Rand Studies (McLaughlin & Milbrey, 1976) called this phenomenon, mutual adaptation.

Some people blamed teachers for the failure of the development, adoption, and implementation model. They said, “Teachers are lazy. They don’t want to learn. We have to find better ways to get them to comply.”

But when the process of change was investigated from the perspective of the teacher, as Michael Fullan advised us to do in 1982, something else was found. The experts weren’t the only ones who learned through research – through a process of investigation. So did the teachers! We now know that, from the teacher’s perspective, changing one’s classroom practices involves a process of knowledge creation, a process of investigation based on the development, execution, and evaluation of experiments.

That’s why the old paradigm broke down in the implementation stage – because teachers don’t change their classroom practices by adopting and implementing someone else’s knowledge. Instead, from their perspective, they create their own knowledge through an investigative process just like the experts do. That’s why teachers need to get over any
phobias they may have about doing research. That’s why we have to work hard to de-
 mystify the process of research and the use of data. Because like George Burn and Gracie
 Allen, and billions of other people, teachers already do research and have always done
 research informally to suit their learning needs.

PART III: THE NEW PARADIGM – TAPPING INTO A NATURAL HUMAN LEARNING STRATEGY
So, since the old paradigm didn’t work very well, we’ve moved to a new paradigm of how
 educational change is developed and disseminated (Hannay, Wideman, & Seller, 2007).

Here is the new paradigm. Firstly, the emphasis has shifted from knowledge dissemination
to knowledge creation. While there is still an important contribution to be made by expert
research, teachers create their own educational knowledge through a process of active
learning. This is how changes in classroom and school practice are accomplished.
Secondly, emphasis has shifted from professional development to professional learning.
While there is still a place for traditional professional development activities (like
workshops, conferences, and courses) where teachers are taught knowledge others have
created, the focus is now on empowering and supporting teachers to engage in their own
professional learning using inquiry-based (research) methods. Finally, the emphasis has
shifted from isolation to community. Isolation is often an impediment to learning and
change. Because learning is usually very much a social process, professional learning
happens collaboratively and collegially by teachers working together rather than in
isolation from one another as so often happened in the past.

Now as I said before, these changes sound radical to some people – revolutionary in fact.
But they’re not. Remember a few minutes ago; I said that teachers have always made
changes in their own practice by using a process of investigation? I want to expand on that
statement by telling you another story. While everyone learns, most can learn to learn
more effectively.

When I was a beginning high-school History teacher in Scarborough back in the dark ages –
1968 to be exact - my idols were colleagues who seemed to know exactly what they were
doing in the classroom. As I saw it at the time, each of the courses they taught was stored
in a file box. Each unit or module was stored in its own file folder. Every year, the teacher
got out the file folder for Unit One and taught Lesson One to the class. Then they taught
Lesson Two – the same way they taught it the year before. If they had two classes of the
same course, they taught Lesson One to the first class and then the same Lesson One to the
second class. It was “tried and true.” I wanted to be able to teach with that kind of
assurance.

The trouble was that I couldn’t seem to teach that way. I’d write up Lesson One and teach it
the first time to see if it went over well. If it didn’t, I rewrote it and tried it a different way.
But if it worked well the first time and I tried to teach it the same way to another class. It
didn’t always seem to work as well. I was constantly re-writing lessons and courses. It
drove me crazy! I couldn’t seem to get it right. I thought I was the world’s worst teacher.
Years later I discovered why I kept revising lessons and courses. My major goal as a teacher was to try to transmit to my students my own love of History. I wanted to teach about Henry VIII and his six wives, or the settlement of Upper Canada, or the Battle of Britain so that my students would share the excitement I felt about people’s lives at that time. I wanted them to love History. I wasn’t satisfied when they didn’t. So I was constantly trying to hone my act so that I got that kick – when the students demonstrated intense interest and engagement.

It was a difficult time for me and there was a moment when I seriously considered leaving the profession because I just didn’t seem to be able to reach the standards I had set for myself. If it had not been for support at a critical moment from my department head and the co-ordinator of History I might have done just that.

You see, I had been engaged in an investigation of my own practice but I didn’t know it. I wasn’t aware that I was involved in a learning process at all.

I was collecting data about my students’ responses to my teaching. I did that by observing them informally. I didn’t know I was doing that. I just did it. The data I was getting disturbed me because it was inconsistent with the values I had brought into the profession – I wanted my students to love History. That’s what I thought my job was – to teach them to love History. The contradiction between intention and result raised an authentic question for me about my practice. The question was, “How can I engage the students in each class so that they are as excited about History as I am?” I didn’t frame that question explicitly but it was my question nonetheless. Then, for example, I would say to myself, “The lesson worked well with the early morning class but not so well this afternoon. Maybe the kids are tired in the afternoon. What if I try this?” So I would try to teach differently and observe again to see the impact of my work. In other words, I would form an hypothesis, conduct an experiment, and collect more data to evaluate it. And that new data often became a new disturbance. I went round and round this diagram in repeated cycles of learning. I was conducting action research just as Kurt Lewin said...

That’s what I did but I didn’t know I was doing action research. There was no reflexive thought. I was working alone - not sharing my experience with my colleagues because I didn’t want them to know about my self-perceived inadequacies. I was changing my teaching practices by engaging in investigative learning, but tacitly and in isolation. That’s what caused me to burn out and want to quit.

That’s my story. But you all have your own stories if you think about it. In fact, when asked to remember, many teachers I’ve interviewed can describe their careers as a series of connected learning projects, each following the same pattern – repeated cycles of disturbance, question, hypothesis, experimentation, and the evaluation of experiments - an ongoing personal saga of professional learning and change.
PART IV: THE NEED FOR CAPACITY BUILDING – LEARNING HOW TO LEARN

So let's recap. The new paradigm of educational change honours teachers as educational authorities in their own right and focuses on collaborative professional learning. The paradigm is grounded in a human brain strategy (learning through inquiry) that adults in general, teachers, and other professionals have been shown to use naturally and pervasively in their lives and work. It goes by many names depending on what literature you read – self-directed learning, active learning, inquiry, investigation, action research. But there's a problem – and this is the second thing I’d like you to remember from this talk. While teachers tend naturally to change their classroom practices through a process of investigation, many do so without sufficient awareness, knowledge, and skill. That was the case in my own story as I told you earlier. Under such circumstances the teacher's investigation may be less effective, more time-consuming, and more emotionally taxing than it needs to be to achieve meaningful results.

The benefit of enhancing one's own learning skills is an ongoing theme in the literature on adult education. As Dorothy Mackaracher (2004) wrote: “Learning how to learn challenges individual learners to develop skills and knowledge for learning more effectively in various contexts and settings.” There is, therefore, a real need, right now for capacity building in the Education Profession. This is the third thing I want you to remember. Teachers can benefit from demystifying the research process and learning more about how to undertake collaborative professional inquiry efficiently and effectively.

How can we help teachers to enhance their ability to learn through investigation? Dan Jarvis, Doug Franks, and I did quite a bit of thinking about this question two years ago when we were involved with the ETFO, Teachers Learning Together project. We provided support for seven teams of teachers who were working to improve student learning in Mathematics. Our observations confirmed R. M. Smith's (1990) conclusion that learning how to learn involves two related skill sets - intrapersonal and interpersonal – both of which can be enhanced through capacity building activity.

The intrapersonal set includes the thinking skills involved in conducting an inquiry-based learning project. They are essentially research skills. There are all sorts of print and electronic resources available to help teachers hone such skills. Colleagues, administrators, and university education faculty members may also provide assistance on how to do such things as:

- frame, review, and update a research question
- develop an hypothesis about where to begin
- design and modify a study
- collect and analyze data
- use “triangulation” to check results
- keep a reflective journal to record the study, and
- develop and present a research report (Delong, Black, & Wideman, 2005).

These are fairly straightforward skills to begin to learn. Key ways to help professionals enhance these skills are to model, coach, and provide resources. Teachers need to see
action research conducted by their colleagues, partner with colleagues to undertake a study of their own, and have coaching and resources readily available as they conduct that study. In these ways they develop the skills, confidence, and experience to undertake future studies more independently.

The interpersonal set, on the other hand, includes knowledge, skills, and values that teachers use to work on a learning project collaboratively with others. Fundamentally, such skills establish a culture wherein collaborative inquiry may occur productively. Collaboration is central to professional inquiry because of the positive impact “talk” has on “thought.” As teachers, work with a partner or team, they de-privatize practice by engaging in evidence-based dialogue about teaching and learning. Professional dialogue makes one’s tacit knowledge explicit, enabling it to be reflected upon. It also provides access to the experience and knowledge of others. You don’t have to do everything alone.

Developing the interpersonal skill set has not been explored sufficiently in the literature on education. We need to learn more about it! Moreover, such skills include an affective dimension that makes many educators nervous. Traditionally, the Education profession has been hesitant to address the impact of the affective domain in learning. More attention needs to be given to the affective domain and particularly on how it impacts on team-based professional learning.

During our work with the TLT project we found that there are at least three interpersonal skill clusters that are critical to team learning. The first set includes skills that promote democratic collaboration. This describes a culture where decisions are made collectively within the team, rather than being imposed.

The second interpersonal set includes skills that promote professional dialogue. Dialogue involves the conversational sharing of ideas so that understanding emerges synergistically through everyone’s contribution. For dialogue to occur, teams need to know how to provide constructive feedback and manage conflict constructively so that members’ feelings are protected.

The third interpersonal set includes skills that promote trust-based relationships. Trust appears to be pivotal in creating collaborative teams that can engage in deep and meaningful professional dialogue. The degree to which teachers trust each other in the team governs the extent to which they will share their thoughts, feelings, and experiences.

One other area deserves particular attention. Teachers need support when they are involved in transformational learning – that is, learning that involves revision or restructuring of their theories of practice. A teacher’s theory of practice comprises basic and fundamental beliefs about what it means to be a good teacher. It enables one to explain, predict, and control events within one’s professional life. When a teacher’s theory of practice is in flux during a period of change, the teacher is no longer able to explain, predict, and control with certainty, and this can cause anxiety and other kinds of emotional discomfort. You feel like Linus does when his security blanket is in the drier!
One of the teachers I interviewed some time ago was a terrific “stand-up” secondary-school English teacher. She told me that she had become troubled by what she called the “dead faces” in front of her as she lectured. Her initial hypothesis was that it was a student problem, so she had herself transferred to a better school – where presumably she would find better students. She said that after six months at the new school she found herself seeing the same “dead faces.” At that point, she said, she had to admit that it must be something. “I was doing or not doing.” So you see where she had initially blamed the students for the problem, she now owned the problem for herself.

She cast about for a new hypothesis – what could she do to solve the problem of the dead faces? To make a long story short, she attended a workshop on co-operative small group learning and decided that changing the pace of her teaching by incorporating group work might be the answer. But when she first began to use group work in her classes she ran afoul of her own theory of practice. You see, as a good “stand up” teacher she had certain basic and fundamental beliefs. Two of them were, “A quiet classroom is a good classroom,” and “The teacher’s responsibility is to present the new learning to the students and make sure they understand it.”

When students were doing group work, the classroom was noisy. Worse, she was not presenting the material so she wasn’t sure of her role. She didn’t know for certain what was happening in each group. She could not control everything as she had tried to do in the past. The result for her was enormous anxiety that she was not doing her job as a teacher – and it almost caused her to abandon the change she was trying to make.

Luckily, this teacher knew the dangers of working in isolation. Through a school board consultant, she contacted other secondary teachers who used group work. By talking with these people, she was able to clarify the concerns she was experiencing, adjust her use of group work, and reconcile her theory of practice to her new teaching methods. A few years later when she was asked what group work had done for her teaching, she beamed and said, “It’s wonderful. Now, when I say to the class, ‘Listen to me,’ they know it’s something they can’t get from each other, and I can lecture to them for 15 or 20 minutes with their full attention and interest.”

The moral of this story is that changing one’s teaching methods is a complex matter involving the ways we think, the ways we feel, and the ways we act. Collaboration with others is critical in getting us through the rough spots as we change. Consequently, we have to build helping skills into our capacity building efforts.

**PART V: A FEW CONCLUSIONS AND IMPLICATIONS**

So, in summary, let’s go back and look at the statement by Marks and Lewis (1999) that I showed you earlier. They said,
We contend that a unified organizational culture built around ongoing inquiry into the quality and effectiveness of teaching and learning depends on the collective influence of teachers who function as empowered professionals. We view the intersection of teacher empowerment and the capacity for organizational learning as a central thrust for future school reform.

I believe fervently that professional teachers have the capacity to work creatively and in a self-directed manner to meet the learning needs of their students. This capacity represents a potentially powerful and largely untapped school improvement resource – one that is now beginning to be widely recognized and supported. This is really exciting stuff. But we can’t achieve this through the use of the old adoption and implementation paradigm of education change. Instead, we have to proceed as a school system in ways consistent with the new paradigm – which is based on the primacy of collaborative professional learning.

The human learning process that I have described to you today is so potentially powerful that when teachers identify an authentic problem with practice, they will literally crawl over obstacles to solve it. They will repeatedly develop and test hypotheses; they will go out of their way to find resources, until they have created something that works with their students. Teachers need system support and encouragement to learning to do this efficiently and effectively – in other words to learn more about how to learn. Time is a critical factor and a rare resource. Data that comes from outside the school – system data – can be the disturbance that results in framing authentic questions. But for the investigative process to be triggered, the questions must be authentic to the teachers involved. They cannot be imposed.

It is not a matter of teaching teachers something new but of removing blocks that impede their learning, creating cultures that support an investigative approach to school improvement, and building capacity in the use of collaborative inquiry skills. As we go down this path further, I believe that teachers and schools will need to have increased programming flexibility – flexibility to create and evaluate methods that improve learning for their particular students - and increased opportunity to share the results of their improvement efforts with teachers in other schools. May I dare to say that there will need to be less concern for replication of programs and more for learning from one another?

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