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On the Cover:

In his article on page 12, Paul Cuthbert explains that deep learning is comprehensive learning that includes a range of skills and attributes related to human flourishing, including creativity, problem solving and the capacity to establish and pursue personal and collective visions. This issue's cover image highlights this type of learning, which is taking place at Transcona Collegiate in Winnipeg, Man. Student Breanna Early and her teacher, Daniel Martens, uses a document camera, which is stationary on the teacher's desk, and a projector which displays the image on a roll down screen. This technology makes it easy to display textbooks, experiments and 3D objects, as well as promote engaging interactive lessons. Read more in Barb Isaak's article on page 25.



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"There is an intricate relationship between the acquisition of motor milestones and the emergence of play.....when motor milestones are delayed, the development of fine motor skills, language and play are also delayed." (Brigance, A.H., 1991)



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Reg Klassen Superintendent, Rolling River School Division

ASS is proud to present our Spring 2014 issue of *The MASS Journal*, with the theme "Deeper Learning." As you will learn, the concept of deeper learning can be fairly straight forward and yet not without significant complexi-

ties. The simplest understanding of deeper learning is the provision of the competencies that allow an individual to transfer knowledge to new situations. However, this becomes more complicated when we attempt to determine which deeper learning competencies were applied to enable the transfer of knowledge and whether or not the transfer of this knowledge was ultimately successful.

In the 1970s, Fortune 500 companies identified the top seven skills they considered imperative for their employees to possess. At that time, these included: writing skills, computational skills, reading skills, oral communication skills, listening skills, personal career development and creative thinking. Some 20 years later, researchers were surprised that the top three on the list were now identified as team work, problem solving and interpersonal skills, while the rest of the list remained unchanged.

There is a common belief that we are preparing students today for jobs that do not yet exist. If that is the case, then we must teach students in such a manner that guarantees they will have the skills required to transfer their knowledge to these yet unknown situations. This requires educators to reach beyond the teaching of facts and formulas through simple rote memorization.

Deeper learning prepares students to master core academic content; to think critically and solve complex problems; to work collaboratively; to communicate effectively; to learn independently; and to believe in themselves. Effective teachers have always successfully taught students these competencies. Today, there is a growing body of research that would support how imperative deeper learning is for the future success of our students.

In this issue of *The MASS Journal* you will encounter numerous ways that teachers and schools are working towards providing students with deeper learning competencies.

Enjoy our Journal!

a MASS est fière de présenter le numéro du printemps 2014 du *The MASS Journal*, qui a pour thème l'« apprentissage approfondi ». Comme vous pourrez le constater pendant votre lecture, le concept d'apprentissage approfondi peut sembler relativement clair, bien qu'il soit complexe sous certains aspects. La

formule la plus simple pour définir l'apprentissage approfondi est la disposition de compétences permettant à une personne de transférer ses connaissances à de nouvelles situations. Cependant, cela se complique lorsque nous tentons d'établir quelles sont les compétences de l'apprentissage approfondi qui ont été appliquées pour permettre un tel transfert de connaissances et si ce transfert a finalement été fructueux.

Dans les années 1970, les entreprises du palmarès Fortune 500 ont dégagé les sept principales habiletés qu'elles estimaient que leurs employés devaient absolument posséder. À l'époque, il s'agissait des suivantes : 1) compétences en rédaction 2) compétences en calcul, 3) aptitude à la lecture, 4) compétences en communication orale, 5) capacité d'écoute, 6) perfectionnement professionnel personnalisé 7) et créativité. Quelque 20 ans plus tard, les chercheurs ont été étonnés de constater que les trois habiletés figurant en tête de liste étaient désormais : 1) travail d'équipe, 2) résolution de problème, 3) et sociabilité, alors que les autres n'avaient pas changé.

Une croyance répandue veut que nous préparions les élèves d'aujourd'hui pour des emplois qui n'existent pas. Si c'est le cas, nous devons alors enseigner aux élèves de telle manière à nous assurer qu'ils posséderont les aptitudes nécessaires pour transférer leurs connaissances à ces situations encore inconnues. Pour cela, il faut que les éducateurs aillent au-delà de l'enseignement des faits et des formules avec de simples exercices de mémorisation.

L'apprentissage approfondi prépare les élèves à maîtriser le contenu principal d'un programme; à développer une pensée critique et à résoudre des problèmes complexes; à travailler en collaboration; à communiquer efficacement; à apprendre de façon autonome; et à avoir confiance en eux-mêmes. Les enseignants de qualité ont toujours réussi à transmettre ces compétences à leurs élèves. De plus en plus de recherches actuelles reconnaîtraient l'importance de l'apprentissage approfondi pour le succès futur de nos élèves.

Dans le présent numéro de *The MASS Journal* vous découvrirez différents moyens que les enseignants et les établissements d'enseignement utilisent pour s'assurer que les élèves acquièrent des compétences d'apprentissage approfondi.

Bonne lecture!



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James Allum Minister of Education and Advanced Learning / ministre de l'Éducation et de l'Enseignement supérieur

s Minister of Education and Advanced Learning, I commend members of the Manitoba Association of School Superintendents for your leadership and dedication to quality education and healthy school environments across our province.

Working together, we are ensuring that our students receive a quality education so that they can develop the skills they need to get a good job here in Manitoba. With your help, we continue to provide an innovative, progressive and responsive education system that serves the needs of our students.

Your commitment to those needs is admirably reflected in the current journal's *Deeper Learning* theme. By focusing on concepts such as personalization, technology and social activism in learning, you are helping students expand their horizons and giving them valuable tools with which to make positive contributions to their communities for years to come.

We can be proud of the high standards of educational excellence we are setting and the lifelong learning opportunities we are providing that enrich the personal and professional lives of Manitobans.

I look forward to our continued successful collaboration with MASS members in meeting the present and future needs of Manitoba students. n ma qualité de ministre de l'Éducation et de l'Enseignement supérieur, je félicite les membres de la Manitoba Association of School Superintendents pour leur leadership et les efforts qu'ils déploient pour appuyer l'éducation de qualité et un environnement d'écoles en santé à l'échelle de notre province.

En travaillant ensemble, nous faisons en sorte que nos élèves puissent recevoir une éducation de qualité et acquérir les compétences dont ils ont besoin pour obtenir de bons emplois ici au Manitoba. Grâce à votre aide, nous continuons à offrir un système d'éducation innovateur, progressiste et adapté aux besoins de nos élèves.

Votre engagement à répondre à ces besoins transparaît de manière remarquable dans l'actuel thème *Deeper Learning* du journal. En mettant l'accent sur des concepts tels que la personnalisation, la technologie et l'activisme social dans l'apprentissage, vous aidez les élèves à élargir leurs horizons et vous leur donnez d'importants outils pour contribuer positivement à la vie de leurs collectivités au cours des années à venir.

Nous pouvons être fiers des normes élevées d'excellence en éducation que nous sommes en train d'établir et des possibilités d'apprentissage la vie durant que nous offrons et qui enrichissent la vie personnelle et professionnelle des Manitobains.

Je compte sur la collaboration soutenue et fructueuse des membres de la MASS pour répondre aux besoins actuels et futurs des élèves du Manitoba.





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Our commitment to equity includes combating poverty and disadvantage, promoting inclusion and embracing diversity:

- Host an intensive summer institute and broader one day session for superintendents and educational leaders with Pasi Sahlberg to explore the relationship between quality of education and equity in both the broader society and the public school system.
- Partner with the Social Planning Council of Winnipeg and MSBA to survey Manitoba superintendents on current divisional policies, procedures and practices which promote equity.
- Develop a position paper on educational finance and funding with a call to action on equity.
- Support members in the implementation of antibullying legislation, including gay-straight alliances.

Our commitment to quality includes building efficacy and capacity for teaching, learning and leading:

٠ Publish a MASS position paper on Essential Learnings with a call to action.



- Facilitate a discussion by our membership of current trends in math education, with the help of discussion papers and other resources.
- Publish a spring MASS Journal with the theme of deeper learning, with articles from the field in the strands of personalized learning, learning with technology and teaching for social activism.
- Plan the next summer institute on the theme of deeper learning, with strands of personalized learning, learning with technology and teaching for social activism.

EQUITY AND QUALITY: AREAS OF FOCUS **Aboriginal Education**

- Co-sponsor a Culturally Proficient Leadership • Institute in November for MASS members and all of our educational partners.
- Incorporate a cross-cultural learning experience in the MASS AGM by holding it in the north in May 2014.

- Collaborate with MSBA on three sessions over two years which address a comprehensive set of learnings in Aboriginal culture and education.
- Support the work of the MASS Aboriginal Education Advisory Committee as it pursues its renewed mandate to address the call to action in the MASS position paper, Transforming Manitoba Public Education: A View to the Future.

Mental Health and Wellness

- Partner with Manitoba Education and work with a Program Planning Group from a wide variety of partner organizations to plan Education for ACTion 4: Mental Health and Wellness for our Children and Youth.
- Take leadership on the Oversight Committee for Children and Youth Mental Health (OO-CYMH) and work with the MASS Mental Health Committee to address the call to action in the MASS position paper, Mental Health Frame-work for Students.

Early Childhood Education

Support the work of the MASS Early Childhood Education committee as they review the MASS position paper, Early Childhood Education and Care, and propose next steps for action and collaboration in this area.

2013-2014 MASS Priorities



2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97.

New Pedagogies for **Deeper Learning**

By Paul Cuthbert

s educators, we understand that public education has the responsibility to engage our youth in learning that is relevant to today's world. We recognize the importance of developing foundational skills in literacy, numeracy and science, as well as ensuring that youth develop social emotional competencies to become contributing citizens.

However, we are seeing a transitioning of our society to a knowledge-based economy that is global, interdependent and infused with new technologies. We are also observing a world that is no longer sustainable if we continue our current trajectory. As such, we must critically evaluate the goals, indicators and practices of our education system in preparing our youth for the challenges that lay ahead.

Although we now live in the postindustrial age, many structures, processes and policies in our education system are still shaped by the needs and presumptions of this era. In the 20th century, public education centered in preparing youth with the basic skills and knowledge needed to succeed in industrialized systems. We expected school systems to sort people: those who would go to university and those who wouldn't, those who would do professional jobs and those who wouldn't, and those who would fill the semi-skilled and unskilled jobs in which minimal learning at school was required. We are aware that this model is no longer adequate as we need every young person to graduate from school with the skills and competencies to be contributing citizens.

Contributing citizens are those who know how to critically assess different perspectives; examine social, political and economic issues and explore strategies for change that address root causes of social and environmental problems and social injustice; are critical and creative thinkers who think about issues of fairness, equality of opportunity and democratic engagement; make independent thinking a priority and look for ways to improve society and effect systemic change.

Three dominant forces have significantly impacted various aspects of today's world. These include the rise of globalization, which has led to an economy that is increasingly knowledge-based; new findings about learning from the learning sciences; and the pervasiveness of networked digital technologies that open up new ways of thinking, ways of working and tools for working and living in the world. The OECD, European Union, UNESCO and numerous other think tanks and authors conclude that these new realities demand people with different competencies than those considered appropriate for success in the agrarian and industrial era.

Multi-literate, creative and innovative people are now seen as the drivers of today's world and the prerequisites to a sustainable future. It stands to reason that to prepare youth for effective participation in this kind of world, our education systems should re-focus on engaging students in this kind of work, where ideal outcomes are not achievement scores on tests but students' capacities to collaborate, connect with others, create innovative solutions and ultimately to implement them in the real world.

Combined with these world trends, studies from many countries show that among high school students, less than 40 per cent of upper secondary students are intellectually engaged in school. Intellectual engagement is defined as a serious emotional and cognitive investment in learning, using higher-order thinking skills (such as analysis and evaluation) to increase understanding, solve complex problems or construct new knowledge.

A national portrait of Canadian middle and secondary schools-published in the What did you do in school today? First National Report by the Canadian Education Association-showed that many students were engaged in school, but few were engaged in their learning. These findings also revealed that the longer students stayed in school, the less likely they were to attend and feel intellectually engaged in their classes. The analysis also revealed that many students do well (i.e., get high marks) in their courses without being intellectually engaged, leaving us to wonder: what do marks and current classroom-level assessments actually measure?

The concept of intellectual engagement resonates strongly with many educators because it represents the kinds of learning that they aspire to for all students. Yet often the most basic of structures in schools—such as marking practices and definitions of academic success—can work against the emergence of practices that would support higher levels of achievement and engagement among larger numbers of students. Existing models of assessment rarely measure these higher types of learning or the competencies they foster.

There is an emerging body of education literature and research referring to the concept of deep learning. Deep learning is comprehensive learning that includes a range of skills and attributes related to human flourishing, e.g. creativity, connectedness and collaboration, problem solving, wellness, and the capacity to establish and pursue personal and collective visions. In classrooms where deep learning is the focus, you find students who are highly motivated and challenged and continue their learning beyond the classroom. They apply what they have learned in one subject area to newly encountered situations in another. They can also see how their work relates to real life.

Some would argue that deep learning is simply what highly effective educators have always provided; the delivery of rich content to students in innovative ways that allow them to learn and then apply what they have learned. Others would argue that deep learning requires new goals for learning and new pedagogies to achieve those goals.

Michael Fullan and other researchers have formed a new global research initiative called New Pedagogies for Deep Learning. They have suggested that in order for deep learning to be achieved systemically, new goals for education must be established and new pedagogies employed. Their project is grounded in the philosophy of Fullan's book Stratosphere: Integrating Technology, Pedagogy, and Change Knowledge, which argued that when changes to knowledge, pedagogy and technology are thought about in an integrated way, technology makes a dramatic difference to outcomes.

The authors argue that unless a new pedagogy emerges, students will become increasingly disengaged and the adults who work with them will become increasingly frustrated. Moreover, the pace of development in technology and its application to learning are creating new possibilities which, unless they are developed in school and for all, will simply be developed outside school and for some. A new divide would emerge—and indeed this has already begun.

Fullan et al have identified eight elements in the Deep Learning Competency Framework:

Character: Honesty, self-regulation and responsibility, perseverance, resiliency, empathy for contributing to the safety and benefit of others, self-confidence, personal health and well-being, career and life skills.

Global Citizenship: Global knowledge, sensitivity to and respect for other cultures, active involvement in addressing issues of social justice as well as human and environmental sustainability. **Communication:** Communicate effectively orally, in writing and with a variety of digital tools; listening skills.

Critical Thinking and Knowledge Construction: Think critically to design and manage projects, solve problems, make effective decisions using a variety of digital tools and resources.

Real World Problem Solving: Provide students authentic experiences in creating and using new knowledge in the world beyond the classroom.

Collaboration: Work in teams, learn from and contribute to the learning of others, social networking skills, empathy in working with diverse others.

Creativity and Imagination: Economic and social entrepreneurialism, considering and pursuing novel ideas, and leadership for action.

Use of ICT for Learning: Choosing and using ICT responsibly and ethically to support critical and creative thinking about information and about communication as citizens of the global community.

The project authors hypothesize that the learning goals set out above go far beyond the essentials of literacy and numeracy and will require, for their fulfillment, new approaches to teaching and learning, a new pedagogy. New learning goals require changes in how relationships between students and teachers are structured, in how teaching and learning is practiced, and in how learning is measured. These new pedagogies can be defined as a new model of learning partnerships between and among students and teachers, aiming towards deep learning goals and enabled by pervasive digital access. This new pedagogy involves:

- Student as Owner and Driver of Learning;
- Teacher as Designer and Activator of Learning; and
- Technology as Accelerator of Learning.

The explicit aim is deep learning that goes beyond the mastery of existing content knowledge. Deep learning creates and uses new knowledge in the world. Technology unleashes learning and the potential for students to apply knowledge in the world outside of school. Teaching shifts from focusing on covering all required content to focusing on the learning process, developing students' ability to lead their own learning and to do things with their learning. Teachers are partners with students in deep learning tasks characterized by exploration, connectedness and broader, real-world purposes. Learning outcomes are measured in terms of students' capacities to build new knowledge and to lead their own learning effectively, proactive dispositions and their abilities to persevere through challenges, and the development of citizens who are life-long learners.

A vision of a contemporary K-12 education system that focuses on intellectual engagement and deep learning should be inclusive of personalized learning. Personalized learning is a broadly-defined term that is moving to the forefront of educational reform efforts across Canada and around the world. It refers to ensuring that every student's needs are met, passions are explored and goals are achieved. This means student-centered learning that is focused on the needs, strengths and aspirations of each individual person. Students play an active role in designing their own education and are increasingly accountable for their own learning success.

Personalizing learning is not really new to the skilled practice of teaching. Teachers who use instructional strategies related to assessment for learning and differentiated instruction already are tailoring instruction to individual students' learning needs, interests and learning styles. But when strategies are paced to learning needs and coupled with technology as a means of providing more flexible learning opportunities, the learning becomes even more personalized.

This flexible, student-centered approach may include teacher advisors and multiple teachers for each student, non-graded levels, online learning, blended learning, project-based learning, community involvement, competency-based assessment and other elements.

The graphic at the bottom of this page is a representation of how we may consider designing our system to meet these challenges.

Current research from the learning sciences regarding the essential features of learning provides a strong basis to begin to understand what this new pedagogy means and entails.

Collaborative knowledge building is essential to the process through which learners engage in innovation and knowledge creation. It includes inquiry processes specific to the disciplines and complex processes of representation to communicate during collaboration. Knowledge-building requires learners to engage collaboratively in idea improvement, problem solving, elaborated forms of communication, consulting authoritative sources and knowledge advancement as they undertake real problems, issues and questions.

Conceptual understanding is required for deep learning and deep understanding that enables learners to make connections, reason, innovate, problem solve, critique and create. That is, conceptual understanding is essential to the work of knowledge creation. This means that students need to be presented with many examples where the same concept is at work.

Scaffolding is the help given to the learner tailored to that learner's needs in achieving his or her goals of the moment. It requires that teachers have deep understanding of their disciplines, the students they teach, how people learn, the



A representation of how we may consider designing our system to meet these challenges.

resources available to them, as well as the curriculum outcomes. Teachers must be able to continually draw out students' preexisting understandings to scaffold them to a place of deeper learning and deeper understanding.

Authentic intellectual engagement is engagement with things that are personally meaningful, worth knowing and that triggers the desire to understand. This engagement requires that the tasks being engaged have an authenticity, that the work being done in classrooms is "real work" that reflects the living realities of the discipline being taught.

Ongoing formative assessment is required throughout the learning activity to make students' thinking visible to both students and teachers. It needs to be embedded in instruction and include clear criteria for performances of understanding along with specific, helpful feedback during learning.

Digital technologies play a powerful role when used to support learning and knowledge-building activity. They are particularly powerful not only in helping students solve problems but also in posing new problems. It is a medium that makes for elaborated forms of communication, collaboration, building local and global communities, revision, requesting and gathering feedback, providing scaffolding, creating new products and participating in and contributing to local and global communities.

Reflection or metacognition, including knowledge about one's own learning, of one's own learning strengths and weaknesses, and the demands of the learning task, is essential for creating the selfdirected learner.

Preparing teachers for the contemporary learning environments requires a close look at what it means to teach and learn in increasingly networked, technology-rich, digital classrooms. Schools and teachers need to thoughtfully and intentionally design learning environments and tasks in which teachers can explore issues that are relevant and develop pedagogies that are effective for a knowledge era. They need to develop new images and acquire new expertise to design and facilitate meaningful learning with new technologies. Given this shift in our world and the new research from the learning sciences, one can see the complexity that teachers face in working with learners in today's world.

Five core principles provide a foundation for an effective teaching practice framework:

- 1. Effective teaching practice begins with the thoughtful and intentional design of learning that engages students intellectually.
- The work that students are asked to undertake is worthy of their time and attention, is personally relevant and deeply connected to the world in which they live.

- Assessment practices are clearly focused on improving student learning and guiding teaching decisions and actions.
- 4. Teachers foster a variety of interdependent relationships in classrooms that promote learning and create a strong culture around learning.
- 5. Teachers improve their practice in the company of peers.

We have an opportunity to create systems of schools that empower learners and prepare young people for their role as contributing citizens. This will require a reconsideration of learning goals, pedagogical models and the basic structure of our learning institutions. It is no longer a question of academic success or work preparation or citizenship, but rather a combination of all of these. We need to create engaging opportunities for all young people to develop the knowledge, skills and dispositions necessary to thrive in the information economy and ensure the sustainability of the world we live in.

For a complete list of references, go to www.mass.mb.ca.

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Beyond Technology and Towards Deeper Learning

By Jennifer Katz

ike many newer pedagogies, Universal Design for Learning (UDL) and Personalized Learning (PL) have been understood differently by educators in different settings and enacted differently. There are both similarities and differences between these two and it is critical that educators understand the vision behind them, rather than focusing on the outward appearance of their process.

The fundamental goals

The driving force behind both pedagogies is student diversity. In both cases, practitioners are attempting to make learning accessible, engaging and meaningful for all learners (Rose & Meyer, 2002; Courcier, 2007). They recognize the need to create opportunities for the inclusion of diverse learners through providing curricula and instructional activities that suit the individual learning styles, interests, skills and ability levels of the learners.

For instance, in Manitoba the ministry states that UDL "...means that school communities, including teachers, develop plans for the full diversity of their student population. Universally designed schools, classrooms, curricula and materials provide all students with access to the resources they require, regardless of their diverse abilities and needs."

In B.C., PL is promoted as "An opportunity for every child, every student, every learner to do their very best in education."

The goals of both, therefore, rest on social justice and inclusivity. In England, where social inclusion is a major part of the government's agenda, not just in education, PL began with the aim to contribute to the principle of equity and social justice (Department for Education and Skills [DfES], 2004a, in Courcier, 2007). UDL began in architecture, with the aim of providing access to those with disabilities (Mace, Story & Mueller, 1998). UDL and PL, then, are both inclusive pedagogies, aimed at making education accessible to all learners.

Both pedagogies have also rooted themselves deeply in instructional technology. A literature search for either PL or UDL will turn up a majority of research and practitioner articles that refer to the use of technology to "personalize" (PL) or "provide access" (UDL) to learners. However, this is a misunderstanding of the intentions of both pedagogies. Where technology can assist in goals related to inclusivity and social justice, it should of course be utilized.

However, technology itself is not the goal, nor is technological skill development, although it may be part of providing access. At times, technology has, in fact, been used in exactly the opposite way; for instance, when a student must leave the classroom and learning to use a computer in a resource room. If the technology is not facilitating the student's successful inclusion in their classroom learning community, it shouldn't be used. Lower tech options, such as having a peer buddy read or scribe, will better achieve the aims.

As the Department of Education and Skills in England states, PL involves, "High expectation of every child, given practical form by high quality teaching based on a sound knowledge and understanding of each child's needs. It is not individualized learning where pupils sit alone at a computer." (DfES, 2004c, in Courcier, 2007).

This does not mean technology cannot be a powerful part of both PL and UDL; it means it is how it is used that matters. Where technology facilitates a student's ability to meaningfully participate in the life of their classroom and school (such as an AAC device that allows a non-verbal student to communicate with their teachers and peers), it would absolutely need to be an integral part of a student's support. However, we must recognize that PL and UDL do not require technology. Instead, technology is a tool for achieving inclusivity and must be used as such to fit with the aims of PL and UDL.

Implications for instructional practice

There have been two main interpretations of both PL and UDL:

The individualized approach

Many educators have understood and interpreted the term "personalized" to mean individualization, and it has been implemented through the use of online or distance education courses, software programs that individualize skill based learning (i.e. students progress through a series of activities at their own pace), and web based inquiry projects that most often fail to increase achievement or engagement (see, for instance, Huang, Liang, Su, & Chen, 2012). These kinds of practices isolate students and often have been shown to reduce a student's progress (Klem & Connell, 2004).

British Columbia's Interactive Discussion Guide on PL states, "Personalized learning for each student in British Columbia means a shift from a set of broad, uniform learning outcomes and courses, to learning that is increasingly student-initiated and self-directed. It is learning that is co-planned with students, parents and teachers." Although the guide goes on to discuss rigorous curricula and collaborative learning, a quick search of examples of PL and published research indicate educators are implementing PL very differently (i.e. as individual programs) and have growing concerns about the need to create individual programs for every learner-though this was never the intention!

Similarly, the Center for Applied Special Technology (CAST), the originators of UDL, have defined UDL as, "A set of principles for curriculum development that give all individuals equal opportunities to learn. UDL provides a blueprint for creating instructional goals, methods, materials and assessments that work for everyone—not a single, one-size-fits-all solution but rather flexible approaches that can be customized and adjusted for individual needs."

The use of the words "individuals" and "individual needs" has led many practitioners to believe that UDL is about using technology to give individuals access to curricula. For instance, a student with a reading disability could use a read aloud software program. This, of course, is exactly what UDL is not supposed to do-retrofitting a unit or lesson for one individual. It singles out, and often stigmatizes, individuals and leads to avoidance and refusal behaviors. Case studies of students refusing offers to use technology or multi-leveled literature, because it would make them appear different, are commonplace.

The holistic approach

Both PL and UDL should involve learning activities that are offered to all students, not just some, allowing students to recognize their own learning profile and provide opportunities for self-directed and cooperative work.

Barnard (2005) states, "There are five components of personalized learning. First, schools must know the strengths and weaknesses of individual students. Second, teaching and learning strategies must stretch every student; that means creatively deploying staff and ICT, and recognizing different learning styles and multiple intelligences. Third, there must be curriculum choice, particularly post-14 but also through curriculum-enhancing activities in earlier phases. Fourth, heads must take a radical approach to school organization, with a more flexible deployment of support staff; finally, they must develop partnerships in the community, local groups and social services."

Similarly, both Katz (2012) and Burgstahler (2008) promote models of UDL that recognize the importance of belonging and relationship, class climate and cooperative learning structures, collaborative practice among professionals, shifts in the way EA's are assigned and the use of technology to facilitate interaction, not separation.

In the Three-Block Model of UDL (being implemented in classrooms and schools across 18 school divisions in Manitoba, five provinces in Canada and 16 First Nations), UDL is considered to be a framework for inclusive education. Learning is individualized through the valuing of many different ways to learn and demonstrate understanding, but all students are encouraged to learn how to learn in a variety of ways. That is, learning activities are created across multiple intelligences/learning styles, so that all students experience learning through their strengths and can have opportunities for leadership, and at other times must persevere through a challenge, develop resiliency and learn how to work in a team. Pedagogical structures, such as Understanding by Design (UBD), inquiry, differentiation, assessment for learning and curricular integration are woven into a step-wise process for planning and implementing units through Kindergarten to Grade 12. Research (Katz, 2013b) indicates the model significantly improves student self-concept, belonging and engagement, especially at the high school level.

Ruben Puentedura (www.hippasus. com/rrpweblog) promotes the SAMR model of personalized learning, articulating a vision of personalized learning involving technology that is transformative. That is, in which technology is used in new and creative ways for all students,



Theoretical underpinnings of the Three-Block Model of UDL (Katz, 2013a).

rather than simply as a substitute for other tools for an individual student. In the Three-Block Model of UDL (www.threeblockmodel.com), students are challenged through problem based and centre based learning to complete real-life projects that allow students with differing skill sets to be valuable members of the team. Technology is utilized by the students to meet their goals, it is not in itself the goal.

In fact, some theorists state that UDL is "the how" of PL-that is, UDL is a methodology for personalizing learning (www.personalizelearning.com/2013/06/ udl-guides-personalized-learning.html). Inclusive education is the goal, UDL is the method and recognizing students' unique needs, but offering flexible learning activities, provides our best chance of truly creating equity and excellence for all. It is recognition that celebrating diversity, empowering students and offering all students opportunities to be who they are, within the context of a learning community, is the direction our school systems need to head. Individualizing is not the answer-it is neither practical nor desirable to isolate students or expect teachers to design 25 different programs-but honoring individuality through the valuing of



Students in a Grade 6/7 class implementing the Three-Block Model of UDL created a museum of ancient civilizations and water systems, including artifacts made using pottery, maps, visual representations, research and an interactive website.

different world-views, ways of learning and areas of interest is.

In the project shown on this page, a student who is an artist/potter, another who is a tech wiz and a third who is strong in public speaking all make valued contributions to the team and learn about life in an ancient civilization. Students learn about how museums create their displays and make choices about what information to share with the class, and the community can be involved through museum visits, lessons from potters, etc.

Thus, regardless of whether one wishes to engage in Personalized Learning or Universal Design for Learning (or ideally both), to authentically do so requires: a. A vision of meeting the social,

emotional and academic needs of

diverse learners within a learning community.

- b. A dedication to designing school and classroom climates, curricula, instruction and assessment processes that allow diverse learners to engage with the learning, their teachers and each other.
- c. Developing students' knowledge of themselves as learners and as unique personalities within diverse communities.
- d. The ability to offer choice, build student autonomy and provide opportunities for metacognitive reflection, balanced with developing communities of care and collaborative skills.
- e. Teacher Professional Learning (TPL) to develop the skill to provide rigorous curricula, develop higher order thinking and hold students to high expectations, while recognizing the many possible paths to achievement.
- f. A professional learning community that supports all staff to understand the vision and develop the competency to work in collaborative teams to enact that vision.
- g. A belief that all means all—every child matters.

Research indicates all of these are possible. Both PL and UDL, when done properly, have been shown to increase self-concept, belonging, autonomy, resiliency, engagement and achievement across the life span (Horton & Oakland, 1997; Katz, 2013b; Samah, Yahaya, & Ali, 2011). The critical component for efficacy remains an understanding of why one is doing what they are doing and the ability to hold to a vision, rather than a practice or method, and then provide the environment in which teachers and students can grow and learn, together.

For a complete list of references, go to www.mass.mb.ca.

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Personalizing Learning in the Interlake School Division

By Warren Nickerson and Christine Penner

nyone who has made a major purchase, received important medical attention, or seen a lawyer or a banker can attest to the desire to get personalized attention. You want your salesperson to cater to your specific needs, you want your doctor to know you by name, and you want to feel respected as a client. You want someone who really listens to you and responds to your needs.

The desire for a personal connection is even stronger in school experiencesstudents want to be listened to, heard and have their teachers respond in a personal way. Calls for personalizing education have recently been heard from a number of important voices in the field. Gleason and Gerzon (2013) advocate personalization that includes "both personal relationships with students, and classroom practices that recognize and attend to individual student gifts, circumstances, and needs" (p. 5). Michael Fullan (2013), in his recent book Breakthrough, suggests that personalization was one of three interdependent dimensions (along with precision and professional learning) that are essential for an effective school.

The Ontario Ministry of Education embodied these three dimensions at the center of its School Effectiveness Framework, and suggested that "Personalization puts the student at the centre, providing assessment and instruction that are tailored to students' particular learning needs" (Ontario Ministry of Education, 2013, p. 4).

By these definitions, personalization sounds nearly the same as differentiated instruction. However, Carol Ann Tomlinson makes a subtle distinction between them. She says, "The combination of theory, research and learner-focused practice has led me to what we now call



differentiated instruction. A subset of differentiation is what I have come to think of as personalized instruction" (2010, p. 13). Tomlinson goes on to give examples of how teachers help students make connections between school and life, how they find the right starting points and how they give students permission to explore what they think is important.

The key to personalized learning is to focus on curriculum, instruction and assessment strategies that help students succeed, while simultaneously remembering that teaching and learning are human endeavours. For example, reading instruction can be *differentiated* when texts are offered at a number of reading levels. Reading instruction can be *personalized* when teachers get to know student interests and offer texts and activities that build on and expand those interests.

Personalization happens when teachers seize on teachable moments, helping students connect course content with their lives. Personalization happens when teachers check in with how individual students are progressing and give them feedback that helps nudge them forward.

As leaders in Manitoba thought about the nature and purpose of personalized learning, and reflected on instances in our own context where teachers have been innovative. We are division leaders in the Interlake School Division, with just under 3,000 students in towns, villages and Hutterite colonies northwest of Winnipeg. We found multiple examples of dynamic educators who achieved personalized experiences for their students through initial assessment and planning, place-based learning, assessment for learning, literacy with ICT and cultural connectedness.

Finding a starting place

Personalized learning starts with teachers getting to know students at the start of the year. Over the last number of years, Stony Mountain School has been developing and refining their initial assessment process. Like Strong Beginnings or other early assessment, the process includes diagnostic assessment of student literacy levels, and incorporates ways to get to know student interests and talents. Generalizations about the class are developed in a class profile of strengths and needs, and then teachers plan instruction that suits the needs of those particular students (Brownlie & King, 2011).

Next year this process will be implemented across the division as part of an emphasis on literacy, school climate and intellectual engagement. While the assessment includes common diagnostic instruments, the process is meant to be one that helps teachers get to know their students as individuals.

Offering voice and choice in learning

When teachers use the class profile to plan learning, they can offer opportunities for students to make personal connections. Roland Gillies, a veteran teacher of more than 30 years, has found innovative ways to engage his students in dialogue in an integrated curriculum. Gillies, who teaches in a multi-age middle years classroom, has worked with his colleagues at Brant-Argyle School on designing instruction based on big ideas. For example, using "Flight" as an overarching theme, Gillies has woven together content from science, social studies and English language arts into broader student inquiry, including assignments designed to help students find personal relevance.

Gillies works at a small school (under 50 students). There is an argument to be made that personalizing learning may be easier in small, rural contexts. However, we would argue that just because a school or a class size is small, it is not necessarily true that the teacher creates a personalized learning experience. It is the same with computer technology—just putting the hardware in a classroom doesn't mean the teacher will infuse new digital media into curriculum.

Brant-Argyle's early years teacher, Sarah Hadfield, is a strong proponent of play-based learning. She coaches her K-3 students to make creative and productive choices during their end of day choice time, encourages them to bring their questions and discoveries to the morning meeting, and connects their ongoing inquiry to expertise from the community.

Our larger, town schools also feature teachers who are personalizing the learning experience. Heather Pollok, a Grade 2 French Immersion teacher at École R.W. Bobby Bend, elicited student questions from shared responses to stories, with support from Siobhan Faulkner, Program Support person for Aboriginal Education. The students explored life in two Canadian communities; one in British Columbia and one in Nunavut. The approach invited students to be curious, ask questions, and explore, affirming that even young students engage when instruction honours their curiosity.

Place-based learning

Strong initial assessment and planning are important, but innovative teachers also recognize the connectedness students feel to their immediate environment. Sarah Hadfield also teaches art at Brant-Argyle School and her art projects often have a strong connection to the natural environment around the school. One of Hadfield's recent art projects for this coldest-of-recent-winters was to paint the sky, trees and berries. By making connections to the local, natural environment that surrounds her students, Hadfield finds visceral ways to make the learning experience personal. These ongoing, meaning-centered projects are chronicled in her ongoing education blog at http://argyleearlyyears. blogspot.ca.

Brant-Argyle's teaching principal, Laura Perrella, strongly supports her teachers' efforts. She is a strong proponent of a learning design that weaves in opportunities for place-based learning or works toward social justice. Her school has built a walking trail on Canada's principal meridian that runs through the grounds (the exact middle of the country), and the school also features a vegetable garden, green houses and an outdoor classroom.

Enacting assessment for and as learning

Formative assessment strongly contributes to personalized learning. In addition to initial or diagnostic assessment, clear goals and strong planning, ongoing feedback is essential to a personalized learning experience. Principal Margaret Ward has led Stonewall Collegiate to improve assessment. High school teachers have been practicing the structure of effective feedback (strengths, needs and next steps), not only for the new provincial report card, but also during progress conversations, which are teacher, parent/ student conferences held one month before report cards come out.

Another set of innovative projects at Stonewall Collegiate involved providing opportunities for student selfassessment. For example, music teachers Don Horbas and Kendra Obach helped their students self-assess by asking them to evaluate an audio recording of their performance using established criteria. Students found this process a powerful way to improve. With strong criteria for success, and feedback on progress from the teacher, peers and self, students can get the personal attention and support they need to grow.

Infusing computer technology

Information-communication technology (ICT) has the potential to help personalize learning. At Stony Mountain School, Michelle Kozyra's Grade 5 students use a wirelessly-connected netbook to inquire and explore, and to choose a format that best helps them demonstrate new understanding. For example, in one project, students fundraised to support a microloan through Kiva (www.kiva. org), which funds projects in developing countries to help people escape poverty.

The students vigorously debated which microloan would make the most difference based on strength of the business idea and the scope of need. Students developed a personal perspective on real issues faced by real people in other countries. They used the web to access information, to engage in dialogue, to reason and to connect. These experiences confirm that ICT can be used to further personalize learning.

Connecting identity and culture

Education and literacy learning have strong links with identity formation. The greater a student can connect to the content, the greater the learning. According to Siobhan Faulkner, Aboriginal students need opportunities to explore positive identities. Faulkner explains that the province's Manitoba Treaty Education Kit (www.trcm.ca/treaty-educationinitiative/kit-resources) starts with an opportunity for students to discuss "In what ways are we all treaty people?"

In schools along Highway 6, these discussions highlighted the special significance of treaties, especially with regard to hunting rights and land issues. One Aboriginal student at Warren Collegiate realized that Aboriginal people who negotiated Treaty 3 had placed special importance on education. A student at Woodlands School brought her mom's experiences as a northern fly-in nurse to class. The class discussed maps, documents and services to northern communities related to her mom's job. In each of these cases, Faulkner explained that personal and local connections to the content have made Treaty relations education more than just a chapter in a social studies textbook.

Most significant for Faulkner has been the pride shown by the Aboriginal Students Group at Teulon Collegiate. When the group initially formed they had two goals: to address water issues in First Nations communities, such as St. Theresa Point, and to change people's views of Aboriginal youth.

One student who had been struggling and not attending much initially, joined the group because he thought it was a good way to get out of class. Recently, he has grown so much he has been selected to represent Manitoba at a conference

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in Ottawa. In their presentation to the Manitoba Association of School Superintendents, the students explained that, through their explorations, they had become motivated to be role models themselves.

All too often, schools are silent about cultural identity. As students explore and develop their own identity in the modern world, they need the opportunity to engage with generation-to-generation family stories and they need to hear positive voices connected to culture. In essence, silence about cultural identity dehumanizes and depersonalizes education.

Conclusion

Personalized learning is the outcome of meaningful curriculum design, productive instruction, positive teacher-student relationships and assessment for learning. It begins with strong initial assessment and a commitment from teachers to plan with the specific needs and interests of their students in mind. Personalized learning requires a localized curricular plan with assignments that allow for student voice and choice, takes advantage of the local environment and events to ground learning, and offers customized feedback to promote growth.

Educators recognize that information communication technology can be a powerful way to facilitate access to information and private dialogue. Finally, educators committed to personalizing learning help students develop an identity connected with their culture.

We want our students to feel relevance and connection at school, and based on the thoughtful and innovative examples from teachers in the Interlake School Division, we are confident personalized learning can become a common description of the learning experiences in our schools.

For a complete list of references, go to www.mass.mb.ca.

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Integration of Technology for Deeper Learning



ne of the outcomes of the St. James-Assiniboia School Division Strategic Plan is that students are active learners able to demonstrate a high level of academic, intellectual and social engagement in order to be successful in an everchanging world. To that end, the St. James-

Assiniboia School Division has embarked on a journey to enhance the digital learning environment for students in grades K-12.

The division recognizes that today's technologies can enhance learning environments by providing students with new and innovative ways to create, collaborate, communicate, think critically and develop as responsible global citizens in an ever-changing world. This provides students with opportunities to deepen their learning and requires that we, as educators, challenge assumptions we may have about the way students learn and the type of environment in which this occurs.

By providing students with access to digital tools we are giving them the opportunity to stretch their imaginations and challenge themselves as creative and critical thinkers. Teachers across the division are giving students a more active and lead role in their learning, thereby creating more personalized and engaging learning experiences.

Our vision for integrating technology in the classroom tasks us with empowering students to be engaged in their own learning-empowered to pursue areas of interest that touch their hearts and minds as they endeavour to become lifelong learners. The world is at students' fingertips and it is our privilege to be able to guide them safely and securely as they navigate existing and new pathways for learning.

There is no doubt this is a framework that is much more complex, diverse and uncertain than what we have been accustomed to in the past. However, it is also exciting and exhilarating to see students invested in their learning and eager to release their capacity for creative expression.

Technology in St. James-Assiniboia classrooms has been a lesson in evolution. Almost 10 years ago, the division removed fixed

By Tanis Pshebniski, Rob Carnegie, Jackie Gagné, Darren Kuropatwa, and Andy McKiel

computer labs in all early and middle years schools, opting instead for mobile laptop carts. At the time, this proved to be a significant change for our teachers in that we also standardized our suite of software to ensure every computer across the division had the same set of tools.

This allowed us to move away from a variety of "edutainment" software applications to focus our professional development efforts on a common set of software tools that would promote critical thinking and creativity. Initially hesitant with the change, teachers soon took to the laptops and the flexibility they provided and set to work integrating technology into their curriculum in meaningful ways.

Over the years, what we have increasingly heard from our teachers was that greater access to technology for students was the new challenge to be addressed. In the fall of 2013, based on input from our Divisional Technology Committee and feedback from various pilot projects, the division decided to make the bold move of replacing shared laptop carts with a far greater number of mobile devices to address the demand for more access to technology with the same budget.

The current technology landscape

Early Years:

- All Kindergarten classes are equipped with 3 iPad Minis.
- All Grade 1 to 5 classrooms are equipped with 7 iPad Minis.
- · All staff are equipped with a desktop computer and an iPad Mini.

Middle Years:

- Every student is assigned an iPad Mini.
- All staff are equipped with a desktop computer and an iPad Mini.

Senior Years:

- · Bring Your Own Device Pilots for students are currently underway.
- · All staff are equipped with a desktop computer and an iPad Mini.

Setting the stage

We would be remiss if we did not mention the importance of having the necessary building blocks in place before embarking on our mobile learning initiative. Over the past few years, the division has invested heavily in its technology infrastructure to prepare for the years ahead.

This investment included the construction of a fibre optic network connecting all schools to the St. James-Assiniboia School Division Board Office, rewiring aging networks in all schools, replacing network hardware and finally, deploying division-wide managed wireless connectivity; all essential cornerstones that must be in place in order to provide a stable and reliable infrastructure to ensure the success of our education technology goals.

LwICT and the 5 C's

Manitoba Education's document (2006) A Continuum Model for Literacy with ICT Across the Curriculum started a conversation within our school division and around our province. It got teachers talking about how we could, and should, use technology ethically and responsibly to develop critical thinking and creative thinking skills.

In our school division, the conversations very quickly turned from the tools to the tasks as LwICT forced us to consider the impact technology was having on teaching and learning in our classrooms and schools. At the time, this conversation was taking place in a world where cell phones could still only make phone calls and a tablet was a flat slab of stone.

The evolution of the tools and the emergence of the social web have led us much further along our journey. For many of our students, social networking platforms are their new street corners and, as educators, we strive to support our students in their development of critical 21st century skills.

In doing so, we feel that it is essential to focus on the 5 C's: communication, collaboration, creativity, critical thinking and citizenship. Our students often look to us as guides through these uncharted waters. Therefore, as our divisional journey continues, the focus on the 5 C's helps ensure that we are preparing our students and staff to become model citizens.

The evolution of the digital landscape is making a huge impact on the teaching and learning in our classrooms and in our communities, both online and offline. The ability of our staff and students to develop broader learning networks where they can share ideas and information has opened up a whole new realm of opportunities.

Tara McLauchlan, a senior years ELA teacher, says, "When you teach with technology the doors open, the windows open; there are no walls." Listen to her testimonial at www.sjsd.net/testimonials.

Connecting to our greatest resources: each other

It is difficult not to overemphasize the importance of the ongoing professional development needed to make any digital learning initiative successful. We have found the best sort of professional development connects teachers to each other. In St. James-Assiniboia, divisional curriculum coordinators work with individual teachers as needed. Teachers can connect with any curriculum coordinator at any time. In addition, large division-wide initiatives are facilitated by the curriculum coordinator team.

At the grassroots level, curriculum coordinators work with teachers one on one; they co-teach, co-plan and work with teachers and students in their classrooms. They also bring together groups of teachers to focus on particular instructional issues within particular disciplines.

Each early years school has identified one teacher leader who represents the school at centralized in-services, in a "train the trainer" model. Each middle years school has identified one digital learning teacher leader. These teachers already have some comfort using technology and have time in their schedule earmarked specifically for supporting other teachers in their schools.

Senior years is different from early and middle years with our Bring Your Own Device (BYOD) plan beginning in the fall of 2014. Each senior years school has identified one BYOD teacher leader in each department. Each of these groups of leaders work with the curriculum coordinator team to develop pedagogical approaches that best take advantage of digital learning in their particular environment.

Since the fall of 2011 we have brought together various stakeholders—students, teachers, administrators and parents—to explore the opportunities technology offers vis-a-vis learning in something we call the Digital Learning Project (DLP). Each cohort meets anywhere from three to five times each year for focused learning experiences where we share meaningful ways technology can be used to support learning.

School level staff meetings include a professional development component where teachers share new approaches to teaching. In addition, the division has identified professional development (PD) days each year that focus specifically on digital learning. These division-wide PD days are structured very much like a professional conference. Each session is more of a conversation led by other teachers sharing the emerging practices they are exploring in their classrooms. Taken together, these are some of the ways in which the St. James-Assiniboia School Division is trying to connect our greatest resources, each other, to improve student learning across the school division.

SAMR model: transforming teaching and learning

At a recent PD session, teachers were introduced to the Substitution, Augmentation, Modification, Redefinition (SAMR) model, developed by Dr. Ruben Puentedura. It is perhaps most accurately described as a ladder that sharpens student's cognitive skills and increases engagement when infusing technology into the learning environment. Using the SAMR model in planning and preparation allows teachers to refine and reflect on their pedagogical skills. It guides teacher planning for student learning in ways that were previously thought impossible and thereby transforms teaching and learning.

Divisional digital leaders, from a variety of subject areas, are currently exploring ways of transforming learning through technology infusion. At the **S**ubstitution level, technology acts as a direct substitute for traditional pencil and paper tasks. Students complete assignments on their iPads instead of on paper.

Augmentation builds on this by adding another step to the assignment. Students at this level might interact with Google Docs and use Keynote to present and record information.

A transformation of student learning can be measured at the Modification level where there is evidence of increased engagement as students become producers of work that could not otherwise have been created and responded to without technology. Students are sharing their learning and redesigning tasks. They are creating content by engaging in wiki discussions, posting blog comments and receiving immediate feedback. The classroom environment is transformed into an arena for collaboration, reflection and response, thus further engaging the learner as a critical thinker.

At the **R**edefinition level students are creating and collaborating, using technology as a vehicle to explore new knowledge that allows for the creation of unique products, projects and tasks. A transformation has occurred at this deepest level of student engagement and learning. The process of applying learned skills and redefining new tasks requires a mind shift in teaching and learning as students are sharing online and receiving feedback from a variety of sources worldwide. They have moved from redesigning tasks to creating tasks that were previously thought inconceivable. Through the infusion of technology, students are collaborating and communicating with audiences beyond the classroom.

Final thoughts

The St. James-Assiniboia School Division recognizes that the world in which we live is in a perpetual state of change, especially in the area of technological advancement. The shift from using technology as a tool for furthering student learning to technology as a vehicle to



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transform thinking and learning is evident throughout the division. As students are prepared for the future, we can actively support the infusion of technology into everyday learning experiences in order to promote active, life-long learners equipped with new and innovative ways to create, collaborate, communicate, think critically and develop as responsible global citizens in this ever-changing world.

For a complete list of references, go to www.mass.mb.ca.

In the St. James-Assiniboia School Division, Tanis Pshebnisk is Assistant Superintendent, Program and Curriculum; Rob Carnegie is Administrator of Technology; Jackie Gagné is Coordinator, Arts; and Darren Kuropatwa and Andy McKiel are Curriculum Coordinators.





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Technology in the Classroom

By Barb Isaak, with contributions from Brenda Augusta, Rod Epp and Drew Forrest

iver East Transcona School Division (RETSD) is continuing to find ways to integrate technology into the curriculum. Long-term planning and a vision for the future provide the framework for teachers to plan lessons that incorporate technology. The result is increased student engagement and success in meeting curricular goals.

As stated by educational researcher Phil Schlechty, "Learning is about purposeful engagement. The engaged student is attentive, committed, persistent and finds meaning and value in the tasks."¹ The importance of shifting the lens over time from the performance of teachers to the performance of students is critical.

In RETSD, the Board of Trustees has had a strong commitment to technology integration since 2005. Ongoing conversations, learning and reflection about how to structure the working classroom are critically important to its success.

The interplay between a strong backbone that supports technology integration and the actual reshaping of classroom practice is mutually developed over time.

To create the backbone each teacher has a desktop computer and projectors are being installed in their classrooms via a scheduled rollout. These two elements are coupled with a fibre optic network, owned by RETSD, which provides fast wireless Internet service. At the same time, a group of divisional curriculum consultants play an integral role in reshaping classroom practice by supporting the learning and work of the teachers in a variety of ways. These consultants, who call themselves Team 21, work with K to 12 teachers. They strongly believe technology integration supports student learning. They also believe the importance of professional learning opportunities to meet teachers' needs cannot be understated.

Michael Fullan, a leader in educational change research and author of *Stratosphere: Integrating Technology, Pedagogy, and Change Knowledge*, said innovative teaching happens more frequently as a result of "professional development activities that involve the active and direct engagement of teachers, such as teachers conducting research or directly practicing new methods."²

RETSD teachers have the opportunity to engage in a variety of professional development formats and opportunities including:

- **Competency development:** Teachers are provided with opportunities to learn about a particular software application, the curriculum connections and supports it provides. These professional learning sessions tend to be delivered when teachers contact consultants or network with colleagues as they navigate curricular connections.
- Series format: A series of three halfday professional learning opportunities

give teachers the opportunity to learn, teach, reflect/critique and teach again. This circular process provides a supportive environment for teachers to ask questions, learn from others and have others learn from them. The group is created around a general area of interest. While teachers may not be working towards identical outcomes, their reflective practice and learning is supported through working together with other educators, teaching lessons and then debriefing with the group.

• **Residency:** A residency involves a group of teachers from the same school who work with the support of the administrator(s) to meet school priorities and curricular outcomes. This process is long-term in nature and may span more than one school year.

An example of the evolution of a residency is the work being done by English teachers in several senior years schools. They are in collaboration with the divisional Grades 9 to 12 English Language Arts/Social Studies consultant and Penny Kittle, educational consultant and author of the book *Write Beside Them: Risk, Voice, and Clarity in High School Writing.*

The residency teaches how to demonstrate the writing process to students. Kittle explains that she brings in a draft of a piece she is working on to read to students. She talks through what she wants to do with the piece while making revisions in front of them.

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Kittle said, "Students love to participate [in the revising]; they comment on what I'm doing and suggest phrases. ... The key here is the model of re-reading a text under construction. I use an authentic 'under construction' draft of mine as I verbalize the questions and thinking I bring to my own listening to my text."³

RETSD's long-term relationship with Kittle has led to the use of document cameras to enhance learning in senior years classrooms. Document cameras can project onto a screen what is happening in a lab demonstration, an art lesson or other teaching activities. They particularly lend themselves to teaching writing because students can see the writing process as it happens.

When students are able to observe a teacher writing in front of the class, making changes on the page by striking things out, adding between the lines, pushing things to the margins—all the kinds of things that good writers must do to work towards a final piece—they begin to see that writing is more than throwing words down on the page in one draft.

The document camera allows for this to happen immediately and directly in front of the class, allowing teachers, or in some instances students, to model good writing practices and discuss in the moment what good writing looks and sounds like.

When students see that even for an English teacher the first draft is never perfect and good writing happens over many return visits, often with collaboration and deliberation, the likelihood is greater that students will follow the same process with their own work.

An ELA teacher can use the document camera in other ways. It is effective in projecting a page from a novel, magazine or anthology. This can be done in a spontaneous way that does not involve running to the photocopier and coming back with an often poorly reproduced black and white image that loses much of the impact a colour reproduction can provide.

Another illustration of authentic technology integration is the work being done at Polson School, a K to 6 school which has been focusing on

student writing for the past three years. Polson School is a participant in the Regie Routman Project, which was initiated because student writing is a priority in RETSD.

At Polson School, staff have been immersed in their learning through watching and discussing videos from the *Regie Routman in Residence* virtual residency resource. They discuss their beliefs about the teaching of writing and observe the ongoing work at John de Graff School, the divisional "hub" school for the project.

This ongoing work, spanning five years, has been supported through a co-teaching structure that sees an early years consultant and classroom teachers working together four times a year. In 2012-13, a technology integration consultant was invited to join the team. The goal was to use technology as a vehicle for making student writing more public, as one of the guiding principles of *Regie Routman in Residency* is that students need to write for authentic purposes and audiences.

In order to provide appropriate support, the technology consultant needed to be part of the planning and learning cycle to better understand the writing process and the technology skills of the teachers.

With writing always as the central focus, teachers began including specific devices, such as digital recorders. This allowed reluctant writers to tell their stories first and have the opportunity to listen to them if they got stuck while writing. Video cameras were used to record groups working together. The videos were then viewed and discussed by the group, with special emphasis on what was noticed in the development of the writing.

Students also had numerous opportunities to incorporate technology as they shared their writing with fellow students, their parents and the community.

Kindergarten students created a Google Maps tour with captions showing important places in their community. Grade 1 and 2 students uploaded their writing samples and illustrations to teacher websites, which allowed parents to be included as an audience. Grade 3 and 4 students wrote movie scripts, which were then filmed as a way to introduce newcomers to the school. The Grade 5 students wrote articles for the school newsletter, which is distributed electronically to parents and community.

Every opportunity that students have to write for a larger audience supports their understanding of writing with a purpose. Regie Routman said, "When students write for an authentic audience, writing is no longer schoolwork but a means of communicating something to someone they care about. When students know a reader they value will be receiving their writing, they are willing to do the hard work of revision and editing."⁴

Technology has also changed how students create portfolios of their work. An Electronic Portfolio Encouraging Active Reflective Learning (ePEARL) is a digital rather than traditional paperbased portfolio. It was developed by the Centre for the Study of Learning and Performance at Concordia University in Montreal. The web-based portfolio allows teachers to assess students' learning in all subject areas.

A number of RETSD schools have classrooms that use the digital portfolio, but in Sherwood School and Westview School all students in Grades 1 through 5 are creating their portfolios using ePEARL.

This practice provides a cumulative portfolio for each student, which is then used as part of the parent-student-teacher interview. Sherwood School is focusing on the collection of writing samples, while Westview students have used ePEARL's guide function to record reading samples several times a year.

Students who use ePEARL can easily share with others and get feedback on their work. They can collaborate with their peers online, thereby increasing the magnitude of input and feedback. Parents can sign into their child's ePEARL account to view work and give feedback. Teachers are able to log in at any time to assess a student's progress.

What's next for technology integration in RETSD?

In 2014-15, the division plans to launch its technology-enabled learning plan (TELP). Working with IBM

Canada K-12 Education consultants, two RETSD teams are currently investigating and choosing appropriate software and hardware for teachers and students. They are developing a professional development plan that will equip teachers to use technology to enhance teaching and learning in math. The plan will be phased in and will focus on numeracy in Grades 4 through 9. A plan for assessing TELP's effectiveness is also being developed.

Refocusing to support the teaching of math will create new learning opportunities for these teachers, with sound pedagogical practice being the first criteria. The inclusion of an electronic device with supporting software or apps will grow out of sound classroom practice. This initiative will provide the opportunity to reflect on additional data regarding learning and student performance.

Work in other curricular areas will continue as the goal to develop strong students and positive digital citizenship is inclusive of all subjects and grades.■

Barb Isaak is Assistant Superintendent with River East Transcona School Division; Brenda Augusta is an Early Years Consultant; Rod Epp is a Technology Integration Consultant: and Drew Forrest is a Senior Year ELA/SS Consultant.

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Seeking Social Justice in UNESCO Associated Schools

By Gareth Neufeld, with contributions by UNESCO Associated Schools provincial coordinators: Linda Mlodzinski (Manitoba), Robert Mazzotta (Alberta), Marie-Josee Rousse (Quebec) and Diane Hawrysh (Saskatchewan)

Cultural Diversity Project -Winnipeg, MB.

Restorative Justice

Circle - Millet, AB.

n nurturing a culture of peace by following Four Pillars of Learning, students learn that justice runs deeper than charity, and that embracing diversity requires more than scheduling occasional bannock-pizza lunches.

Winnipeg's Vincent Massey Collegiate (VMC) was among the first members of the Canadian UNESCO Associated Schools Network. The staff and students have consistently challenged themselves to deepen their understanding of what it means to fulfill the network's mandate of working toward a culture of peace, both within their school and beyond. Advocating for human rights is one aspect of that mandate. To that end, VMC had a Gay Straight Alliance (GSA) well before Manitoba passed legislation in 2013 requiring Manitoba schools to establish them where requested.

Perhaps not surprisingly, having a GSA soon tested the depth of the school's commitment to human rights. Heather Syme, UNESCO schools lead-teacher at VMC, explains, "One example of advocacy stemming from our having a GSA is our open access washrooms. Some transgender students revealed to me their daily struggles with accessing traditional washroom and change facilities, and together with the GSA we set a plan in motion."

She continues, "Over four years we [staff and students] advocated with local and senior administration for shared facilities suitable for use by our transgender youth, or other youth who felt unsafe or uncomfortable using traditional washrooms. We



received access to two washrooms, but it wasn't until last year that we were granted our own keys, which we could distribute to students who used the open access washroom."

Human rights are, of course, examined in schools in all parts of Canada, and often embedded in curricular documents. And students from around the world will soon be able to explore complex human rights related questions while visiting Winnipeg's Canadian Museum for Human Rights. But at VMC and other UNESCO Associated Schools around the world, staff and stu-

dents have come to understand that it isn't enough to learn about human rights. They must be lived out locally on a daily basis: down the hall, in lunchrooms, in locker rooms and in school yards.

Eleanor Roosevelt reflected this reality when she wrote, "Where, after all, do universal human rights begin? In small places, close to home—so close and so small that they cannot be seen on any maps of the world... Unless these rights have meaning there, they have little meaning anywhere."

With the intention of supporting cultures of peace, UNES-CO founded a network of schools in 1953 that has grown to over 9,000 schools worldwide. There are over 60 schools in Canada and 21 of those are here in Manitoba. The Canadian UNESCO Associated Schools Network was launched in Winnipeg in January 2002 by the Canadian Commission for UNESCO (Ottawa).

The network's public and private schools (K to post-secondary)

focus on peace and human rights, intercultural learning and education for sustainable development. Four Pillars of Learning underpin pedagogical practice, "Learning to Know, Learning to Do, Learning to Be, Learning to Live Together." It is these Pillars of Learning that most explicitly draw students into deeper learning, particularly with respect to addressing issues of global citizenship and social justice.

What is global citizenship?

Global citizenship is currently a hot topic in many educational circles. Manitoba's Grade 12 Global Issues course, with its use of UNESCO Schools' Four Pillars of Learning and its Take Action requirement, is one important instance of connecting learning with active, global citizenship. It should come as no surprise that teachers in UNESCO Associated Schools also engage in much reflection about what it means for citizens to work for social justice.

An important resource in the exploration of this question has been the writing of Joel Westheimer at the University of Ottawa. In *Educating the "Good" Citizen: Political Choices and Pedagogical Goals*, Westheimer raises the question of how to best support an effective democracy and concludes that there are three kinds of citizens: Personally Responsible Citizens; Participatory Citizens and Justice-Oriented Citizens (241-47).

A personally responsible citizen, according to Westheimer, is one who experiences citizenship as essentially individualistic, acting "responsibly in their community by, for example, picking up litter, giving blood, recycling, volunteering and staying out of debt." Participatory citizens learn "about how government and other institutions work and about the importance of planning and participating in organized efforts to care for those in need." Justice-oriented citizens critically assess "social, political and economic structures, and consider collective strategies for change that challenge injustice and, when possible, address root causes of problems."

Westheimer states that this third kind of justice-oriented citizen is a perspective least commonly pursued in schools. An emphasis on a justice-oriented kind of citizenship will inevitably be the most controversial, in that it demands a deeper level of learning which examines and potentially unsettles the established status quo.

School-based engagement

Staff and students in UNESCO Associated Schools are under no illusion that they are somehow unique in encouraging students to become socially responsible citizens. Many schools across Manitoba and Canada engage in teaching social responsibility and emphasizing global citizenship, where social justice or sustainability are part of their program of activity (e.g. Green Club, Students without Borders, Fewer but Equal).

UNESCO schools patiently but persistently encourage students to deepen their learning to embrace a justice-orientation, but they also engage in and celebrate all three kinds of citizenship, recognizing that each has a role to play. Seven short reports from across the Canadian network reflect involvement in all three kinds of citizenship:

 Larry Paetkau's Grade 12 students at College Pierre Elliot Trudeau in Winnipeg opened La Friperie, a used clothing store in the school, after learning about the Accord on Fire and Building Safety in Bangladesh. Paetkau explains that they had fun but also created conversations about how their decisions have global consequences.

- Grade 10 student Bailey from Olds, Alberta reflected on a case study designed to explore global issues related to resource extraction, production of finished goods and international trade. Becoming conscious of the origin of his purchases raised his and others' commitment to making more ethical purchasing decisions.
- In Quebec, secondary 4 and 5 students interact with schools in Haiti, Burkina Faso and India as part of the Techno-South Project. Académie Lafontaine students are introduced to the field of international development through a project based on experiential learning (use of tools or devices, technical planning, material production).
- Student engagement isn't reserved for the upper grades. At Onanole School, located in the Riding Mountain UNESCO Biosphere Reserve, Manitoba, Grade 2 and 3 students initiated a fundraiser to support research and the protection of the biosphere's animals. "They sold toques with animal designs," said Pam Ryznar, teaching-principal. "Even our youngest students find ways of seeing themselves as global citizens, when they are inspired and allowed to make a difference."
- After students at Bethlehem Catholic High School, Saskatoon researched UN Millennium Development Goals, they assessed what they were already doing in working toward the goal and what else could be done personally and within their school. They raised awareness among their peers and wrote letters to Canada's Prime Minister, which included suggestions for specific action.
- At Munroe Jr. High in Winnipeg, UNESCO Schools leadteacher Chris Coppinger has led an initiative called One with the Biosphere. Using UNESCO Biosphere Reserves as a model, Coppinger's students have adopted a nearby stretch of land running alongside a decommissioned rail-line and are replanting original tall-grass prairie plant varieties (see photo on page 28).
- At Griffith-Scott Middle School in Millet, Alberta a move away from consequence-driven discipline towards a restorative justice model (pictured on page 28) has resulted in a culture of respect, responsibility and safety. Principal Frank Heinrichs explains that most of the staff has been trained and a recent survey shows that 93 per cent of students feel safe and cared for at school.

Networking deepens learning and promotes solidarity

As mentioned earlier, the fourth Pillar of Learning in UNESCO Schools is Learning to Live Together. We know that learning invariably deepens when it happens together with others, when wrestling with important issues is done collectively, in community, rather than individually. This is particularly true when students have opportunities to collaborate with students from other schools, either from across town or from across Canada and the world.

The UNESCO Schools network has recognized for a number of years that the most powerful asset of the network is, in fact, the network. Its capacity for promoting and facilitating partnerships beyond the walls of one's own school empowers students as they share their passion for social justice with others. Through these partnerships, students' ideas are tested by a diversity of perspectives, understanding is deepened and solidarity is found with other justice-seeking students near and far.

Student conferences are one way this has happened. Both the Manitoba and Alberta networks have hosted national student conferences, focusing on human rights, education for a sustainable future and social justice. In May 2014, the Quebec network hosted a French-language conference for students from across Canada. A recent highlight for the Canadian network was a major international human rights conference in Winnipeg in December 2012, which attracted students from across the Canadian network and as far away as Germany.

A long-standing wish to promote networking has led Manitoba's UNESCO Schools to organize themselves into clusters of schools, known as Project Network Groups (PNGs). Each PNG plans and implements a project related to one of UNES-CO Schools' areas of study. One of the PNGs (six elementary schools), for example, met in February 2014 during a common professional development day, in order to explore issues related to indigenous/settler relations.

Another PNG planned and implemented a large student conference in February 2014 at Vincent Massey Collegiate. It was attended by over 1,000 students, who focused on the theme Citizenship: Making Ethical Decisions in a Global Society.

In the belief that reaching across cultural boundaries should happen for students as early as possible, five elementary UNESCO



Schools in Winnipeg have networked to promote intercultural contact between students who would typically bump up against cultural or historical barriers. Participating schools in the six-year-old Cultural Diversity Program (see photo on page 28) are Niji Mahkwa Aboriginal School, Al Hijra Islamic School, St Emile Catholic School, John Pritchard School and Brock Corydon School's Dual Track English and Hebrew Bilingual program.

"This ground-breaking program is designed to recognize and give significance to the students' personal and cultural identities while encouraging knowledge, understanding, appreciation and respect of other people's religions and cultures," explains Ira Udow, one of the programs founding administrators.

The students learn to work and play cooperatively with children of other cultural and religious groups and to realize that their global citizenship may start with something as simple as sharing the soccer-pitch with their new friends.

An inspiring example of networking from the international UNESCO Associated Schools network can be found in Lebanon. Lebanon has been struggling with conflict for many years and is the most religiously diverse country in the Middle East, with 18 state-recognized religious groups. It is in this complex environment that Lebanon's roughly 50 UNESCO schools have taken on the challenge of promoting a culture of peace.

For example, in an attempt to promote mutual understanding, cooperation and intercultural exchanges, a three-day workshop created a profound opportunity for peaceful dialogue. This workshop involved UNESCO Schools teachers and students from Denmark, France, Germany, Jordan, Lebanon and Oman.

Conclusion

Becoming citizens in the global community is never simple. But by participating in dialogue with curiosity rather than judgment, collaborating in research, creating shared experiences and courageously partnering in advocacy, students in the UNESCO Associated Schools network deepen their identity as justice-seeking citizens every time they cross cultural, historical or ideological boundaries and reach out to embrace a common humanity.

One of the enduring understandings taught in Manitoba high schools through the new Global Issues course says it well, "There is no them or over there: we all belong to the human species, our concerns are interdependent, and we are part of the natural world."

Gareth Neufeld is a Consultant with the Manitoba School Improvement Program. Contributions to this article were provided by UNESCO Associated Schools provincial coordinators: Linda Mlodzinski (Manitoba), Robert Mazzotta (Alberta), Marie-Josee Rousse (Quebec) and Diane Hawrysh (Saskatchewan).

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downtown

Les jeunes du Manitoba prennent soin des leurs Manitoba Youth Combat Homelessness

Par Monique Guénette et Derrek Bentley

ERAWÉ a été fondée par une équipe de bénévoles en septembre 2010 dans le but de sensibiliser nos jeunes citoyens à l'itinérance et à développer chez eux un sentiment d'empathie envers les sans-abri. En collaboration avec ses organismes partenaires, notamment Mission Winnings Harver, L'hurter, Edmontor, et

Siloam Mission, Winnipeg Harvest, Ubuntu Edmonton et le Downtown Winnipeg Biz, TERAWÉ s'efforce de venir en aide à des communautés locales et internationales – les sansabris du Manitoba et ceux qui vivent dans la pauvreté ainsi que la communauté de Kimironko (au Rwanda) constituée principalement de veuves du génocide de 1994 et de leurs familles. Ensemble, nous pouvons mettre fin à ce cycle et changer le visage de la pauvreté au Manitoba et dans le monde.

TERAWÉ a eu l'honneur de tenir pour la 4^e année l'événement « Une nuit sans-abris/A Homeless Night » en octobre 2013. Ce projet vise à créer une expérience authentique où les participants font une collecte le soir de l'Halloween, passent une nuit à l'extérieur dans des abris, livrent les dons recueillis et font du bénévolat chez nos partenaires, tout cela en l'espace de 24 heures. Nous espérons que cette expérience, qui leur permet de redonner à la communauté, développera chez chacun d'eux de l'empathie et modifiera leur perception envers la pauvreté et les sans-abris. Cette soirée vient en aide à nos deux organisations caritatives privilégiées, Siloam Mission et Moisson Winnipeg Harvest, qui aident plus de 60 000 Manitobains chaque mois.

Cette année, TERAWÉ a eu le grand plaisir d'annoncer la participation de cinq écoles (quatre de la DSFM et une de la Division scolaire Louis Riel). Notre grand espoir est de pouvoir nourrir et abriter tous les Manitobains, et que chacun de nos participants soit plus sensible et empathique à la pauvreté et aux sans-abris après avoir vécu l'expérience d'*Une nuit sans-abris*.

Nous sommes prêts à aider les conseils scolaires, les comités du bal des finissants ou les groupes humanitaires de vos écoles à mettre en place ce projet dès 2014! Tout notre matériel est à votre disposition (lettres, affiches, etc.).

Imaginez que le Manitoba soit la première province reconnue pour les efforts de ses jeunes citoyens contre la pauvreté et le cycle de l'itinérance!

Monique Guénette est enseignante de musique et d'harmonie au Collège régional Gabrielle-Roy. Derrek Bentley est finissant (2011) du Collège régional Gabrielle-Roy. Pour de plus amples renseignements, visitez le www.terawe.info.



By Monique Guénette and Derrek Bentley

ERAWÉ was founded by a team of volunteers in September 2010 with the goal of creating awareness of homelessness and empathy towards the homeless. Together with its partner organizations, which include Siloam Mission, Winnipeg Harvest, Ubuntu Edmonton and the Downtown Winnipeg Biz, TERAWÉ, strives to

serve both local and international communities: the homeless and those living in poverty in Manitoba, and the community of Kimironko in Rwanda, comprised mostly of widows of the 1994 genocide and their families.

In 2013, TERAWÉ was pleased to host its fourth, "Une nuit sansabris/A Homeless Night." In less than five years, TERAWÉ has been able to raise over \$13,000 in cash, 20,000 pounds of food and just under 80 vans full of clothing. Working together with the students of our Manitoba schools, we can bring a change to homelessness in Manitoba and around the world.

Our project tries to create an authentic experience for participants who sleep in outside shelters overnight, after having collected donations on the evening of Halloween. The following morning the participants visit our partner organizations and give back to the community by dropping off the collected donations and by volunteering; all in the span of 24 hours.

TERAWÉ is proud to announce that there were five schools participating in this past year's event (four from the Division scolaire francomanitobaine and one from the Louis Riel School Division). Our hope is that we can help to feed and clothe every Manitoban and that through this life changing experience, our participants become more conscious of their surroundings and develop empathy towards the homeless.

Let us come out and help your school council, grad committee or humanitarian group set up this project in your school. All posters and letters to your parents and community are set to go; you adapt them to your school's needs.

Imagine if Manitoba was the first province known for really "caring" for all of its citizens...through the efforts of its youth!

Monique Guénette is a music and band teacher at Collège régional Gabrielle-Roy. Derrek Bentley is a graduate (2011) from Collège régional Gabrielle-Roy. For more information, visit www.terawe.info.

Professional Capital: Transforming Teaching in Every School, written by Andy Hargreaves, Michael Fullan

By Ray Derksen

Each year the MASS Public Relations Committee puts together a set of five books for the MASS Book Club. Members can purchase a set of these books. Reviews of selected books by committee members will appear on the MASS website and in the MASS Journal.

n Professional Capital: Transforming Teaching in Every School, Michael Fullan and Andy Hargreaves articulate a clear and concise path that they believe will lead to the continual improvement of our public education system. It is hard to disagree with the simplicity and sheer logic of their central premise-hire the best people, get them to work together and keep them around. The fundamental premise behind any initiatives to improve educational outcomes for students must recognize, and indeed celebrate, that it is the staff in the school system that will make a difference.

Fullan and Hargreaves do not support the notion held in some school systems, particularly south of the border, that you can fire your way to better outcomes. The belief that you can fire your way to improvement has led to a situation in the United States where the largest cohort of teachers is now in their first year of teaching. This is a startling statistic that does not bode well for the American public school system, particularly if we accept the premise of *Professional Capital* that it is well-trained, highly experienced professionals working together that will make the difference.

Hargreaves and Fullan believe public education is at a critical juncture where it is being torn between powerful social forces that hold very different views on public education. These forces are coalescing around two views of capital, business capital and social capital.

The proponents of business capital see public education as a market for short term profit. Schools are largely seen as

ANDY HARGREAVES MICHAEL FULLAN

PROFESSIONAL CAPITAL

Transforming Teaching in Every School



untapped markets that are worth billions of dollars, ready for corporate investment. The authors warn that from a business capital perspective the main purpose of public education is to yield profit for private enterprise. Proponents of business capital promote a number of assumptions about teaching:

- Teaching is not hard and is technically easy;
- Teaching can be learned quickly;
- Teaching can be done by almost anyone with a bit of training; and
- Technology can replace teachers in many situations.

The authors cite many examples of the business capital perspective making significant inroads into public education, particularly in the United States. From a business capital point of view, the quickest way to maximize profits is to minimize the cost of the system. The biggest cost in the system is staffing. If the need for highly trained professional staff can be minimized there will be a subsequent reduction in pay scales because, after all, "anybody can do it." Fullan and Hargreaves argue that following the lead of the business capital model will lead to the gutting and ultimate destruction of the public school system.

The second form of capital is professional capital. The assumptions of professional capital are:

- Teaching is technically difficult and requires deep knowledge;
- It takes long periods of time to learn the art of teaching;
- It takes collaboration with peers to perfect practice; and
- Technology can only be used to enhance learning and cannot be a replacement for teachers.

The premise of the authors is that learning and achievement in the school system can only improve through the development of professional capital.

Fullan and Hargreaves have created a formula for professional capital that is based on three components: finding a way to select the best members of society for the profession (human capital: HC); getting them to work together in a spirit of professional collaboration (social capital: SC); and making sure they stay in the profession (decisional capital: DC).

Human capital is defined as the individual qualities the teacher brings to the profession, such as aptitude, emotional intelligences, training and experience. The key to getting the best people or improving human capital is to ensure that salary levels are adequate and are not a disincentive for people entering into the teaching profession.

Interestingly enough, Fullan and Hargreaves show that once salary levels are not a disincentive, the biggest factor in attracting the best people into the profession is the status which society affords the profession. What is particularly concerning in this perspective is that there will be a steady erosion of human capital in the system as society becomes ever more critical of teachers and the professional skills of teachers are devalued. Fullan and Hargreaves argue that we must attract the best people for the profession but also accept the reality that immediate improvement in the school system lies in working with the people already there. The key to improving the current workforce is to work on the next component of the formula social capital. Social capital refers to the levels of trust and collaboration that exist within a school and is measured by the degree that teachers help each other, share ideas and feel a collective responsibility for all the children in the school.

Both human capital and social capital are important factors in improving student learning. Fulllan and Hargreaves make the case that the presence of high social capital in a school or system increases human capital. Good social capital will add value to everyone working in the school. Everybody improves when staff are working in a climate of trust, collaboration, teamwork and shared responsibility.

However, human capital on its own does not raise social capital. You cannot improve a school by firing the low performing teachers and hiring a few all-stars. Mediocre teachers will out-perform teachers possessing high human capital if they are working in an environment with high social capital. High performing teachers will quickly lose their luster if they are working in environments that are low in social capital.

The third component of the formula is decisional capital. Decisional capital refers to the intuition that comes to teachers through years of experience. Data in itself means nothing without the judgment an experienced professional can bring to bear on the information. Fullan and Hargreaves draw on the work of Malcolm Gladwell to point out that it takes approximately 10,000 hours of practice for people to develop a high level of expertise in their field of endeavor. Teachers typically reach 10,000 hours of experience after eight to 10 years.

Fullan and Hargreaves stress that if you want to avoid encountering teacher burnout at the end of their careers a great deal of attention has to be paid to the teachers who are in their 10th to 20th year of teaching. Too often our focus in the system is supporting the beginning teachers while trying to figure out what to do with people in their last few years before retirement.

Fullan and Hargreave make the point that if we want teachers to finish their careers with their professional expertise peaking at retirement, we must focus on continuing to develop their human capital. Neglecting a teacher's professional growth midcareer will usually result in a steady decline in a teacher's human capital, resulting in many late career problems for the teacher, the learning environment and the school system as a whole.

Professional Capital is a book worth reading. It is an insightful analysis of many of the trends that are occurring in public education today. The formula for improvement according to Fullan and Hargreave is simple but not necessarily easy.

Ray Derksen is Chief Superintendent, Frontier School Division.

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