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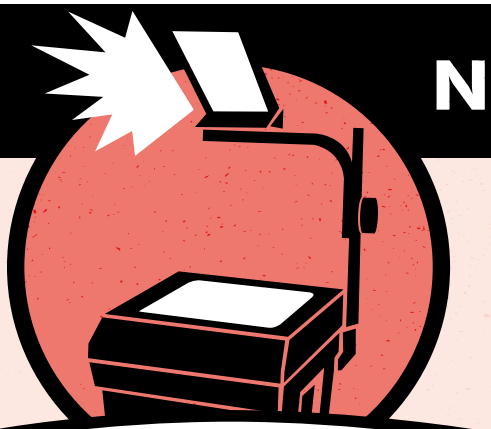

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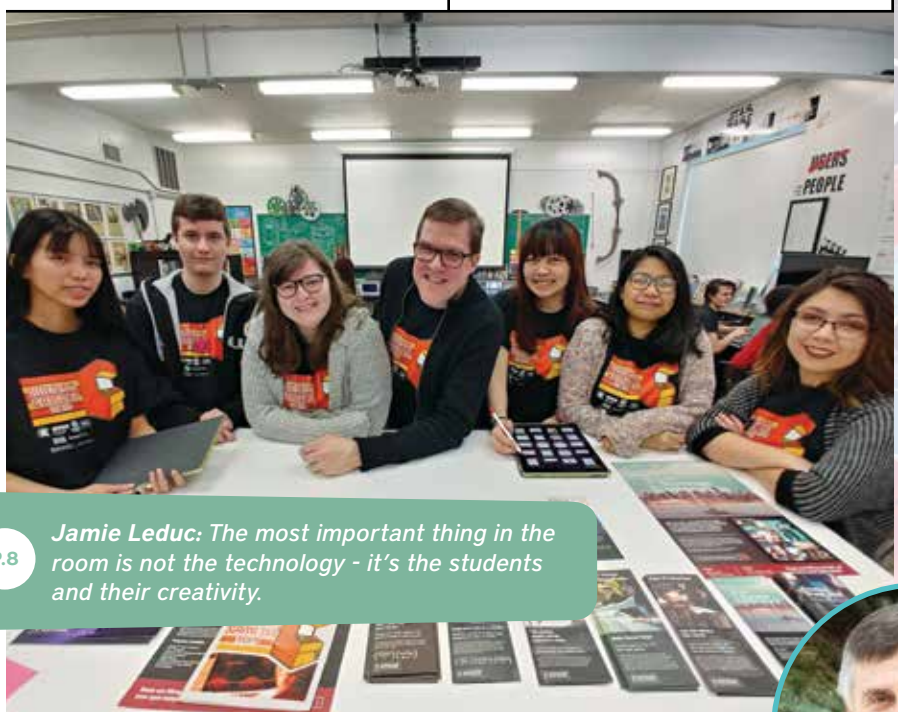
ON THE COVER

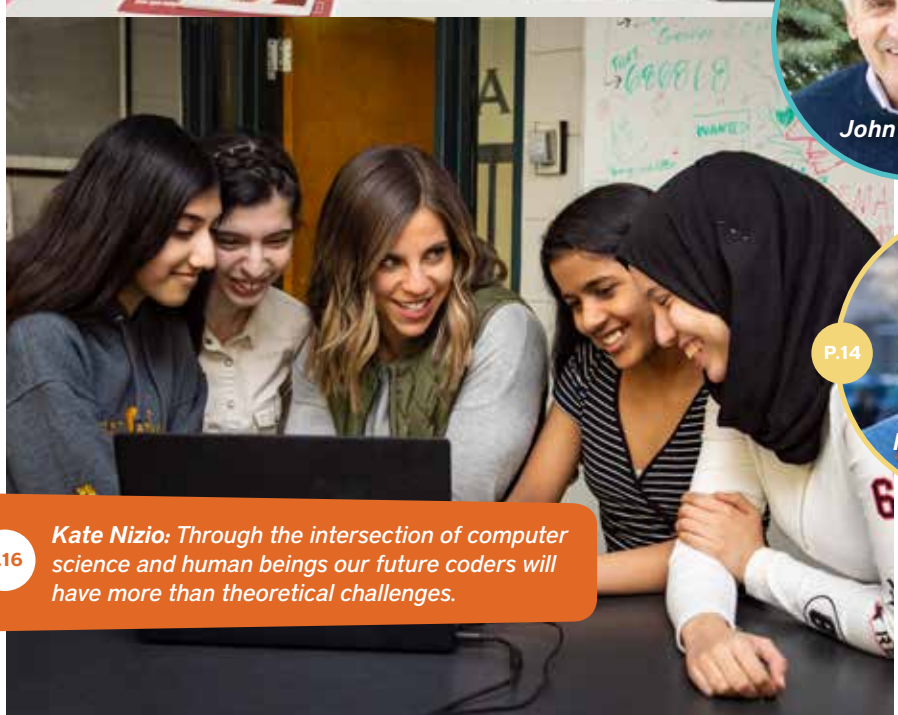
A teacher in an edu-pod in the Alpha Quadrant near Bajor teaches a lesson on the fifth element stones while hovering over the class with the help of an anti-gravity teaching tool.

The nine students, the maximum class size allowed by the United Federation of Planets, teletransport from various points in the galaxy from Andoria to Risa.

Cover illustration by Matt Kehler



Musings on the future of public education.



FROM THE **PRESIDENT**

NORM GOULD

It's hard not to greet the future with optimism.

Poll after poll shows that Manitoba teachers love the work they do. As for public respect, teachers are always at the top of the charts.

Yes, you and I could write lists of challenges we deal with. But by advocating as a professional union of 16,000 members we have always been able to improve students' learning conditions and our teachers' working conditions.

One thing is certain. In the near future, the resilience of the members of The Manitoba Teachers' Society will be pushed to the limits. The demands and complexities of Manitoba's classrooms will continue to pose challenges for students, teachers, parents and the greater community. And we all know that more resources, not fewer, must be invested in our province's children.

Not everyone shares that vision.

Not everyone realizes that healthy public schools are an investment in our future. To use an old truism, teaching is the "profession that creates all other professions". With education comes skills, entrepreneurship, innovation and the ability to problem solve and become good citizens in global community.

However, with continued aggressive austerity measures, attacks on democracy, disinformation, widening inequities, and indifference towards the most vulnerable members of our society, a heavy burden falls to public schools and the MTS members working there.

As challenges in classrooms increase over the years, there will be systemic changes implemented by governments under the umbrella of "improving performance". Unless front-line teachers are consulted and included in the decision-making these initiatives will not be effective.

If government's underlying motivation is to provide the resources for a well-informed and educated workforce, who know how to make a life, as well as a living, decisions cannot be made solely on dollars and cents.

I fear that the 'public' in public education will be put at risk if we stay on this path. Governments will offload their responsibility to provide for and oversee public education to private sector interests. Profit-based education will replace education for all – and with it, more private schools and even charter schools could be on the horizon. Neighbourhood schools will be for those who can't afford to go elsewhere.

But I have faith in our ability to stand up for our students, our members, and the cause of public education – and I can imagine a different scenario.

One where education partners and the government of whatever political stripe work in partnership and collaborate with each other. Where teachers continue to be held in high esteem. Where teaching as a profession is elevated and pursued as a career by a whole new generation.

More importantly, I imagine a future where public schools are universally recognized as a public good and we honestly strive to eliminate inequities in resources and programming for all students in Manitoba.

We owe it to our students and ourselves to build on the success and advances we've made in the last 100 years. That means taking our knowledge, our professional skills, and our fight into the future.

The Manitoba Teachers' Society

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INSIDE MTS

A LONG ROAD BACK, A NEW ROAD AHEAD

ROLAND STANKEVICIUS, GENERAL SECRETARY

As I read through this very special edition of The Manitoba Teacher, that bridges the centennial celebration of our union and professional body, I am captivated by the strength and determination of our founding brothers and sisters and their commitment to improving the teaching profession and Manitoba's public education enterprise. The dark times of 100 years ago in Winnipeg forged certain types of individuals, determined to begin and maintain a movement that would span generations and build a lasting legacy that is today's Manitoba Teachers' Society.

Winnipeg in April 1919 was at a watershed moment in history as World War I ended and a period of "reconstruction" began. As it was reported then, the profession of teaching was in a "chaotic state." Teachers like many other workers and trades in Winnipeg at that time were deeply frustrated by social and economic inequity and injustice. One month after the first general meeting of the Manitoba Teachers' Federation (April 22, 1919) the Winnipeg General Strike erupted. It is not hard to imagine the tension and hostility of those times. The movement to organize and to establish fair wages and working conditions was very popular with the working class but there was also fear of reprisal and of the extremist labels of being 'Bolsheviki.' The chilling effect of harsh labels against teachers and many other workers were broadly felt but they could not deter the movement, as the need for a living wage, collective bargaining rights and an effective public education system had been crystalized with the masses and the union was born!

"Some are inclined to look at this movement with a certain amount of apprehension,… To such I would like to say, that an organized body of workers well educated should occasion no anxiety."

– H.W. Huntly, President Manitoba Teachers' Federation May 1919

The sentiment shared by Huntly that well-educated workers organized together would not be a cause for apprehension or anxiety was an expression of a hopeful future. It was probably a reasonable belief based on the dreams for positive social progress and change in 1919. However, the reality of our 100 year history, as a union, tells us the challenges and struggles are never completely won and as it is often said: "the struggle continues."

Our call now in 2019 and into the future is as vital as it was in the last century. Our profession and the cause of high quality public education in Manitoba needs our collective voice and action as it has in the past. The pressures are manifold. We once again face adversaries in government who seek to undermine the collective bargaining process for teachers (Bill 28). We are seeing a systematic draining of public school funding during a time of increasing enrolments and more complexity in our integrated/inclusive classrooms. Teaching resources and services for French language education have been eliminated and curriculum teaching resources are shuttered due to an ideology of austerity. The status of the teaching profession is further undermined as governments focus too heavily on snapshot testing scores such as from the OECD (PISA test) rather than the more appropriate teacher assessment tools that focus on students' learning and progress. The incidence of violence and disruptive behavior in schools and classrooms has emerged as a serious problem imperiling the safety and personal well-being for all concerned.

Ultimately, these pressures can combine to destabilize public education as a vital social contract. The Manitoba Teachers' Society knows these challenges well and we know, through our 100 year history of leadership and activism, we will continue to serve and support our members as professionals and to advocate for a high quality public education system that is properly resourced throughout Manitoba as our mission and goal.

We are now over 16,000 members strong strengthening our role in leading public education. We are an organization that thrives on learning and we are that well educated membership that was envisioned by our first president 10 decades past. The challenges and pressures of the present will taken on by this generation of teachers on the front lines of this cause and we will continue as the members, leaders and activists towards our vision and belief for a better future beyond 2019. Let us celebrate our proud history in 2019 and prepare to continue our work into the future.

"For let it be remembered that what this Federation is trying to do, is to build out of the conditions of things as they are, what they should be."

– The Manitoba Teachers' Federation, May 1911

LETTER TO THE Teachers OF THE Future

BY DEVON CALDWELL AND LEAH OBACH

Dear Future Teacher,

Congratulations on being part of such an esteemed profession. You are fortunate to have a career that allows you to impact the lives of young people every day. We know your education and training have been rigorous and that you are well-prepared to meet the demands of this special calling. We just wanted to let you know how far we've come as teachers and to encourage you to continue developing the diverse, challenging and rewarding field of education.

A long time ago, students sat in dull classrooms in rows of desks and recalled basic content they had memorized through rote learning. Schools were like factories, meant to churn out employees for the workforce. A shorter time ago, those classrooms grew brighter; there was flexible seating, a pursuit of student interests, and differentiated instruction to meet the needs of different students.

As internet connections became more robust and technology became more prevalent, a shift began. There was less emphasis on rote memorization and more focus on fostering thinking skills. Students began to develop the skills to source and manage information, rather than just recall information. The goals of education began to change and so did the pedagogical practices of teachers.

Now we see you embracing what we once called "alternative pedagogical approaches". You are allowing students to direct their learning through inquiry, project-based learning or problem-based learning. Your students are excited and motivated to learn because they have a real purpose for learning. They collaborate in their efforts to achieve the common goals of their projects. They develop a thorough understanding of various concepts related to their projects or inquiry and you marvel at the skills they build as they progress. These students are thinking deeply as they cooperate, negotiate, solve problems and make a difference in their local and global communities.

"A long time ago, students sat in dull classrooms in rows of desks and recalled basic content they had memorized through rote learning. "

We are so proud of you and your students. It is refreshing to see that students are doing work that matters while also becoming literate and numerate. This is how we envisioned education back in our day.

The other cool thing about how you teach now is the blurring between subject areas. (Do you even know what we mean when we say "subjects"?) It is incredible how your students are developing knowledge and skills in a variety of areas as they pursue projects, tackle problems and undertake inquiry! Did you know? Many of us used to split our school day into blocks of time and teach only certain content and skills during each.

Imagine.

We would teach only math skills for the first 80 minutes of the day until an obnoxious buzzer rang signaling the

change to recess break, followed by another annoying buzz to indicate that it was time to teach literacy skills. These buzzers continued throughout the day and so did the changes of subject.

We started to see that teaching subjects and skills in isolation was perhaps not our best approach, but we are sure glad to see you've got this figured out. Your approach of teaching students what they need to move forward with their projects seems so productive. It is evident that our commitment to developing numeracy and literacy skills has continued in your time, but we like how you are blending those skills with student interests. Please keep facilitating those projects, encouraging students to address authentic problems and fueling their curiosity with inquiry!

We've been working for a long time to extend learning beyond the classroom. We had a strong understanding of why partnerships were necessary and important, but in the early stages, partners were usually brought in to support special projects and initiatives.

I'm sure you can't believe there was a time when families, educators, community members, policymakers, experts, and other classrooms didn't work together seamlessly and interdependently.

These partnerships, supported by technology, have enhanced education in Manitoba's schools. We are delighted to see that even remote and rural classrooms are now interconnected. Your students are learning outside of the classroom.

It's great to see that your students are independent learners who learn and grow using online resources, the people around them and the abilities that you've fostered in them. This is really what we imagined when we used to talk about "turning walls into windows".

And what about play? In our time, play-based learning was an accepted practice in Kindergarten classrooms, but we hadn't quite figured out what playful learning looked like for learners of all ages. Looking back through the years, the disconnect between the play-based practices of Kindergarten and the teaching and learning in later grades is apparent. I'm sure you can't imagine a time when learning wasn't playful and engaging.

We're excited that the playful learning in your school is fueled by teacher and student passions. In your teaching practice, we see that learning is a joyful and holistic process that isn't segmented into times for work and play. What a wonderful way to learn!

In our time, there was much debate over if and how technology should be used with learners. We stressed over implementing a balanced approach and ensuring responsible use of technology.

> "A shorter time ago, those classrooms grew brighter; there was flexible seating, a pursuit of student interests, and differentiated instruction to meet the needs of different students."

Looking back, we are sure you recognize that this was a necessary stage for the education system to navigate, as traditional tools gave way to technology tools. We're sure you see the uncertainty that teachers and families felt when faced with these new ways of teaching and learning.

As you scan your classroom of engaged, respectful learners who understand how and when to use technology, be mindful of the turbulent past. It was a challenge to effectively infuse technology in our time and we are excited to see that students and teachers in your time find technology to be an ordinary and everyday part of life both in and out of school. We are happy to see that what we called "acceptable use" is now the norm and that the education system is truly harnessing the power of technology to improve teaching and learning.

Despite the huge changes that have taken place, some things remain constant for those who seek to guide young minds. It's funny to think that there was a time when we discussed the possibility of robots replacing teachers. It seems a foolish idea when we consider the uniquely human traits that are needed to excel as a teacher.

An abundance of patience, persistence, and caring, a willingness to meet each child and family exactly where they are, and an unflagging dedication to change the world are the timeless tools of the educator. Your skills are irreplaceable.

You and your learners will face challenges that we cannot anticipate in our present times. However, please know that your work as an educator will contribute to raising a generation that is equipped to make the world a better place.

When you teach your students how to think rather than what to think, you are preparing them for a future unknown. When you help raise compassionate and caring young people, you are shaping the citizens that will lead the way for many great things.

Teacher of the future, you are doing vitally important work, just as those who came before you. We understand that the pace of change can feel frustratingly slow, but know that the small steps educators take forward have immeasurable impact.

Thank you for everything you do and please know that you and your students are making our dreams for the future of education come true.

Sincerely,

Devon and Leah
Passionate Teachers of the Past

Devon Caldwell is a kindergarten teacher at Oak Lake Community School and PhD candidate at University of Victoria. Devon is passionate about project-based learning, technology infusion, travel, and all things yoga. Connect with her at devoncaldwell.com, Twitter @india0309 and Instagram @devoncaldwellyoga.

Leah Obach is Park West School Division's Literacy with ICT Teacher Leader. She teaches at Hamiota Collegiate. Follow her on Twitter @LeahO77 or visit mrsobachsclass.blogspot.com.

THE FUTURE IS NOW

BY JAMIE LEDUC

SHIFT HAPPENS.

NO, THAT'S NOT A TYPO. IN MY CLASSROOM AT SISLER HIGH SCHOOL, THAT SHIFT HAPPENED FIVE YEARS AGO WHEN I DECIDED TO MOVE THE TECHNOLOGY TO THE BACKDROP AND FOCUS MORE ON THE PROCESS OF THINKING, PLANNING, AND DESIGNING.

This might seem counter-intuitive for a teacher who teaches technology courses, but the reality is that even in a technology class, pedagogically and otherwise, the most important thing in the room is not the technology - it's the students and their creativity.

Since then, more and more of my students are striving for excellence and understanding the creative process of design. In turn, these students are finding their dream careers in the creative industry before the age of 20.

Ultimately, understanding of learning process and being able to work creatively was more vital than just knowing what the tool was and how to work it.

Creativity is essential because we cannot truly predict the future. We might have some good guesses, but anyone who argues that we are preparing students for the future with traditional methods ignores that we don't really know what will happen 20 years from now.

For example, the trend in the workforce is that jobs are becoming automated through Artificial Intelligence (AI). We need to prepare our future leaders to bring skills that cannot be replaced by machines. One day, working behind screens and computer towers just won't cut it. While technical skills will become automated in the very near future, creativity is AI-proof.

Technology can help the creative process but it should not become the centre of the classroom because ultimately it is just a tool. While essential for the greater good of humanity, most of the time technology actually gets in the way of critical thinking, brainstorming, collaboration, and design.

Students are naturally curious and inquisitive; it's a matter of how much we foster their creativity that will determine what they do with it. Questioning allows us to consider the efficacy of our work and the matters of ethics in the sources we use, and creates a framework based on the How and Why of what we do, rather than just the What.

Sisler High School teacher Jamie Leduc and students at the two-day Game On 2019 – a celebration of game design, interactive media and coding.

Relying on the newest shiniest product from a tech vendor is always good for business but not always for education.

A collaborative environment is essential to nurture a culture of creativity in the classroom. It helps develop a sense of community and belonging. This is imperative for the teacher to implement change. Collaboration doesn't just mean teamwork; it also means students will identify goals and rely on each other as experts with different skills needed to complete the creative process. Every student is talented, and every student brings something to the table. Allowing this to happen may be challenging, but it is a fundamental ingredient to develop a culture which fosters open communication as well as inclusiveness.

The shift to a culture of creativity, collaboration and critical thinking has transformed how students envision their role in the world. Many of them have shifted their own pathways to non-traditional education to kickstart their dream careers and are already becoming leaders in the creative industry. They are not just working jobs, they are living their dream careers as software developers, compositors, filmmakers and animators.

One student, an animator, has created his own culture of creatives in the workplace and currently collaborates on story pitches for new projects. Learning the process of working with others was vital for his success.

Another media artist provides portfolio feedback and shares his artistic techniques through social media. His mentorship with my current students has developed from the interactions we had in class. Now, as a graduate, he is emulating my role as a mentor.

The creative and collaborative skills developed in the classroom have clearly positioned them well in their new community. These are not unique skills to my class; these are skills that can be taught and reinforced in any classroom.

This was the shift I needed. This isn't just the future of education – this is the now.

If we want students to anticipate and deal with unknowable problems, we need to start teaching for that today.

But this is also the future of education. Our current students are our future leaders and teachers. We can't imagine the changes that will happen in the education world, but we can imagine the kind of people who we want to be working in that world. They are the creatives, the problem-solvers, the critical thinkers.

The present and future of education are entwined in this shift towards process and creativity. This is our chance to adjust our teaching with the future in mind.

Shift happens, but it still needs our work to start happening.

Jamie Leduc is Animation and Project Management teacher, Department Head of Interactive Digital Media at Sisler High School.

TO UNDERSTAND THE FUTURE...

BY JOHN R. WIENS

"What is a human being? A human being must understand why we are here on earth, why the plants are growing, why we have the four seasons … who thinks he is not better than anyone else … everyone is equal no matter what color they are or what language they speak. That is a human being."

I have chosen the words of a Navajo grandmother, an Elder, as a friendly reminder of our current challenges and our future opportunities in education.

Education is always a present human enterprise and activity, built upon our understandings of the past and the possibilities of the future – my view is that that is something which will never change. To become "educated" is a human achievement, relying heavily on our regard for life, the relationship between the new, the young and the older, and respect for the worlds into which we were born.

To "educate" others is a singular privilege, honour and responsibility – as a teacher, an activity to be cherished, offered with conscientiousness and conscience and an imagination filled with wonder and awe about human lives.

In education, and especially for teachers, the primary focus of our awe is a child – a unique and complex individual like no other, a newcomer to our world, representing our joys of the present and our hopes for the future. Children, given the opportunity, bring refreshing newness and renewal to our daily lives, interrupting our routines and challenging us to be more thoughtful regarding our relationships and activities.

In my lifetime we have become more aware of the difference and diversity our children add to the world, and the knowledge that each child has and deserves an individualized education which allows her/him to be more profoundly human in the company of those who were here when they arrived, those who continue to join them in their human journeys. Children learn to be human beings in the company of others, which is where adults enter the educational picture.

All adults are teachers in the presence of children – that is a tautology worth repeating.

The Navajo grandmother was a respected teacher, an example of why we hold teachers in such high regard in our culture and society. We "certify" teachers because of the serious and essential nature of our work, trusting them with the responsibility of caring for and nurturing our children, interpreting for them, and showing them how to live in these worlds that they find themselves in, not of their own choosing but by fate and/or of necessity.

However, no adults can really duck the obligation that children place on all adults who, given the innate desire, and somewhat the opportunity, to frame and shape their own lives, must try to offer the same possibilities to and for children. It's a tough act to get right considering some of our current fears and anxieties.

Grandmother goes on to say, "I don't want life to end. I want my children to grow and reproduce. I want my children to get along with the white children, learn to share and live like human beings."

In our context we might say, "in our global world we would look forward to reduced hostilities – between nations, between cultures and religions, between genders, all our differences and divides – 'to learn to share and live like human beings.'" The same for humans' relationships with the earth – to plants and to animals; humane

...UNDERSTAND The Past

treatment of the world represented by our environments – our air, our waters and our lands. And we could add our democracy and our laws, mores and conventions – the political and ethical civility that makes co-habitation bearable, possible, and even enjoyable.

How can our understandings and our overt commitments to peace and justice be remembered and renewed? We educate our children at least partially in the hope that they can get more right in the future the things we have been unable to correct – thus helping make the world better while making themselves more human.

Tom Green asks the "educational question: What needs to be done, what skills acquired, what practices employed so that a public may emerge from the plurality in which we begin and so that it might be sustained for all the years of our lives and of our children's lives?"

By "public" he means a world which is inclusive, where people listen to and care for each other's well-being, where everybody's sense of self is tied to granting equal sense of self to all others, where we can all be part and party to the solutions we offer ourselves and others, and where we judge our success by the possibility of all for a good life. In essence, education is always public education.

To sum up, and so as not to disappoint my friends, I invoke Hannah Arendt, "Education is the point at which we decide whether we love the world enough to assume responsibility for it ... which, except for renewal, except for the coming of the new and the young, would be inevitable. And education, too, is where we decide whether we love our children enough not to expel them from our world and leave them to their own devices, nor to strike from their hands their chance of undertaking something new, something unforeseen by us, but prepare them in advance for the task of renewing a common world."

> "Education is always a present human enterprise and activity, built upon our understandings of the past and the possibilities of the future – my view is that that is something which will never change."

I am not given to despair as long as we are able to speak freely and join together, whether in support or opposition – protest, flash mobs, hashtags or elections – education makes dialogue and action for the "public" or "common" good possible, and more probable.

Education begets civility and freedom – the gifts and promises of the human imagination inherent in each child and in each one of us. To understand the future of education we must understand the things from the past that never change – our humanity, our children, adult responsibility – and the fact that education is all about learning to live well, alone and together.

John Wiens is Dean Emeritus of the Faculty of Education at the University of Manitoba and Past President of The Manitoba Teachers' Society. Building a teaching career on education for democracy, he remains in awe of children's sophistication in making their ways in our world.

action LEARNING in the 21st century

BY FRANCINE MORIN

Educational leaders locally and abroad acknowledge that we are facing immense environmental, social, and economical challenges across the globe and a highly unpredictable future. There is no question that students attending Manitoba schools today will inherit a complex world, presenting them with ubiquitous problems to solve. At the same time, our contemporary world provides opportunities that can be used to advance students' learning and flourishing in ways that we can only imagine. If our schools are going to prepare students for the future, the task ahead for educators is to employ pedagogies that will empower students with agency and equip them with competencies for rising to challenges, addressing concerns, and solving problems effectively. In this article I discuss an essential pedagogical model for 21st century learners—action learning, a rich philosophy of learning and practice.

I begin by sharing some characteristics about action learning, its assumptions, objectives, and particular approach to pedagogy. At the heart of action learning is the idea that learning occurs when students ask questions about concerning matters or enticing opportunities and take action to understand them and bring about change. Processes such as developing and implementing action strategies and receiving feedback, asking new questions, creative and critical thinking, innovating, and working in collaborative groups are all central to action learning. The ultimate goal of action learning is pragmatic—to resolve a real problem, realize an important initiative, progress towards confronting an authentic challenge, or take up a new opportunity in a meaningful way. Students learn for themselves as well as with and from one another, alongside of their teacher-mentors.

A set of principles can be offered to guide teachers wanting to use action learning pedagogies in their classroom. First, action learning needs to be provoked by a task, which is a problem, concern, or opportunity that requires action and is shared by a group of learners. In thinking about tasks for students, teachers need to distinguish between puzzles and problems. Puzzles are not appropriate for engaging students in action learning because there is already a single, correct solution for them. In contrast, problems are more perplexing and appropriate for action learning because there is no single answer that is applicable to all contexts or situations, but rather multiple, viable responses are possible. Problem-oriented tasks are most suitable for action learning because in order to be solved they require exploration, collaboration, and an integration of the diverse contributions of students.

A second important notion is that learning takes place when action is taken. Tasks that promote learning then are ones in which students move into doing; they are not simply raising awareness about issues or making recommendations for others to act upon. In K-12 school settings, it follows then, that the tasks selected must be developmentally appropriate and feasible for students to

tackle. A third principle of action learning is rooted in the power of social learning, which occurs when students work in peer groups or action learning sets. There are two ways in which the action learning sets can work. In the first approach, the set takes on a shared task, while in the second approach each peer member works on a different task, but in both options students learn from one another. All tasks used in action learning must be within students' sphere of power to address through planned actions. An optimal set size depends upon the students' grade level as well as their skills and capabilities in undertaking group work. It is also recommended that teachers organize action learning sets strategically with special attention being paid to building diversity within the peer group which elevates the potential for rich learning. With the support and guidance of their teachers, sets of peers take responsibility for developing their own knowledge, competencies, and capacities for resolving action learning tasks.

Most educators agree that learning is driven by curiosity which rationalizes a fourth principle for guiding action learning, the development of questioning insight among learners. This idea means that students need to learn how to ask questions that launch, advance, deepen, and broaden the exploration of a task. This process is complex and in action learning contexts, students require scaffolding to become effective question generators. Some questioning skills can be developed as action-oriented inquiries are undertaken, while others require more intentional instruction, prompts, and guided practice. The aim of question generation is to clarify and frame the task, help students identify what they know and do not know about the issue, and continue to ask fresh questions.

It is easy to imagine how profound learning becomes possible for students through undertaking action-oriented inquiries within peer sets. The pedagogical process I suggest next is informed and inspired by many years of work in the area of inquiry-based learning and action research with students, teachers, and school leaders.

The six stages of an action-oriented inquiry cycle involve:

1. Identifying a task—a situation that needs to be improved, challenge to be confronted, opportunity to be embraced, or problem that needs to be resolved;
2. Generating insightful questions to clarify the task and what is known or unknown;
3. Formulating action strategies (innovations or interventions) to improve the situation, confront the challenge, realize the opportunity, or resolve the problem;
4. Implementing the action strategies and monitoring them to assess what happens;
5. Revising the actions taken in light of the assessment; and
6. Continuing until the outcome of the task has reached a satisfactory conclusion.

Educational leaders locally and abroad acknowledge that we are facing immense environmental, social, and economical challenges across the globe and a highly unpredictable future.

Within action-oriented inquiries students are supported by their teacher and peers as they monitor the experimental actions they implement to address targeted tasks through observation, direct experience, and other forms of information gathering. Careful analysis, interpretation, and reflection on action result in recognizing and reframing the work and learning moving forward. More wholly, the process results in students co-constructing new knowledge and developing competencies and capacities, not only to solve the immediate task, but others like it they will encounter in life and learning in the future. In short, students are learning how to learn. In this pedagogical model, learning is not about gaining new understandings from didactic forms of instruction or traditional textbooks, but rather learning emerges from reflection in and on action and embodied, authentic experiences. Although facilitators are not always used in action learning with adults, it is clear that in the K-12 context, the teacher's role as facilitator is critical. They must function as mentors by using various forms of instructional scaffolding and prisms of effective practice to increase students' learning and achievement.

"Future ready" learners need curriculum invitations that afford them opportunities to experience their significance and power as agents of change. The 21st century life worlds of Manitoba students across the grade levels offer endless sources of inspiration for flights of creativity and the action learning necessary for flourishing today and tomorrow. I suggest that these inspirational sources become the curriculum invitations explored in classrooms through action-oriented inquiries conducted by students and guided by teachers who define education as the process of making a difference within our local communities, nation, and the world. The future of public education indeed can be ours for the making.

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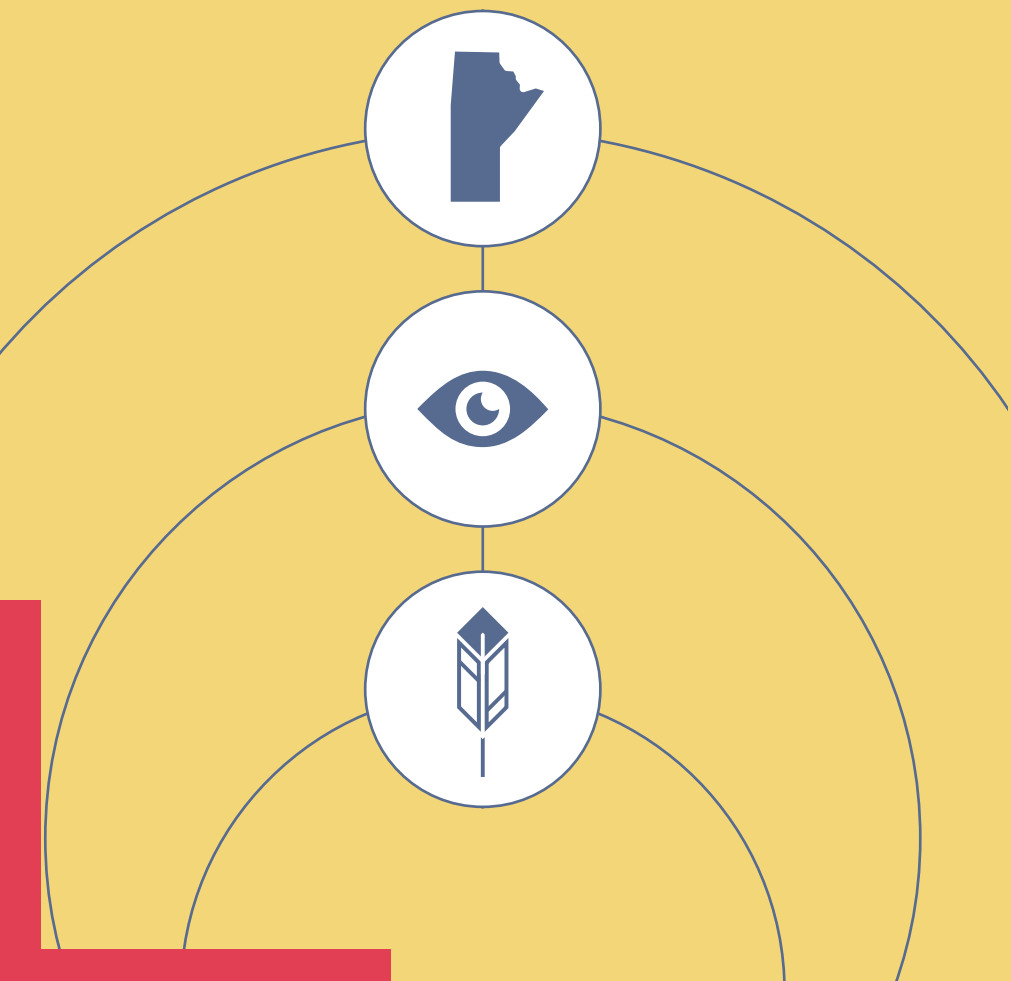
FACING THE NEW REALITY

BY NIIGAAN SINCLAIR



In the early 1970s there were about a dozen Indigenous students at the University of Manitoba. One of them, my father, told me he could go months without seeing another Indigenous person.

In the 2018 fall semester, the U of M reported 2374 self-declared Indigenous enrollees. At the same time, the University of Saskatchewan announced 2672 self-declared Indigenous students – the largest on-campus community in Canada. The University of Regina has almost 1800, the University of Winnipeg comes in around 1200, and Brandon University has just about 500. Universities aren't the only places Indigenous students are attending either. Red River College has around 1500 self-declared Indigenous students.

Conservatively, that's ten thousand self-declared Indigenous post-secondary students in Saskatchewan and Manitoba.

That's ten thousand lawyers, nurses, teachers, artists, doctors, plumbers and business owners. Just in Manitoba and Saskatchewan.

This is a good thing. It's a sign that Indigenous students – historically the most marginalized and oppressed group in Canada's education system – are overcoming obstacles in education. It's also a sign teachers, schools, and support services for Indigenous students are helping them enter and, eventually, get through their degrees. Universities and colleges are not places for everyone, but for Indigenous peoples it's usually a gateway out of poverty and a ticket to opportunity.

Now, imagine for a moment if there weren't the tremendous obstacles facing Indigenous students. We'd be filling the schools.

And this just scratches the surface of the potential of Indigenous students.

Indigenous peoples are the fastest growing and youngest community in Manitoba.

According to the 2016 census, approximately 17% of the population here self-identify as Indigenous with 58.4% (130,505) being First Nations, 40.0% (89,360) Métis, and 0.3% (610) Inuit. The largest community lives in Winnipeg, with 92,810 people self-identifying as Indigenous – a 37% increase from the 2011 census.

There are likely more coming. If I shook the family trees of all Manitobans it's likely an Indigenous ancestor would fall out of most of them. A distant grandparent, of course, doesn't make one Indigenous. Being Indigenous is not about who you represent but who represents you. In other words, it's in how you act and what relationships you have, not the percentage of Indigenous blood in your veins.

That being said, half of the Indigenous peoples in Manitoba are under the age of 25 with the average age being 29. By comparison, the average age of non-Indigenous peoples in Manitoba is 40. The baby boomer generation – so long the dominant group in Manitoba's population and economy – are all now in retirement age.

Addressing the needs of Indigenous learners is arguably Manitoba's most pressing need and the most important investment everyone can make in the future. In an ironic return to the 18th and 19th centuries – when Indigenous communities fed, clothed, and cared for virtually everyone – who do you think is going to run the businesses, work in the old age homes, and pay the taxes?

At the same time, Manitobans must be prepared for the reality that every single person in our community will be living beside, working with, and perhaps even marry and/or make children with an Indigenous person.

In fact, there is no bigger influence in the life of every Manitoban than the gifts Indigenous peoples have given every person who lives in this place. This is not just land – although signing treaties and giving them space on their territories could be said to be the biggest gift of all – but drives to the heart of the fundamental tenets of Manitoban identity.

Every Manitoban has been created by Indigenous peoples.

For proof of this, look on Manitoba driver's licenses and count the Indigenous names. Kanata. Manitowapow. Winnipec.

Now, look at where Manitobans travel: Pembina Highway, Portage Avenue, and Main Street – all Indigenous trading routes. Manitobans live in places like downtown Winnipeg, Selkirk, and The Pas– all former and current Indigenous sites.

Now, look at the laws we follow: health care, welfare, and democracy – all invented by Indigenous peoples. It's not that English, French, and other cultures didn't shape these things but, if we began only with ideas and traditions emerging from Europe, Canada and Manitoba would look very different.

"Addressing the needs of Indigenous learners is arguably Manitoba's most pressing need and the most important investment everyone can make in the future."

Every single person in Manitoba has been shaped by Indigenous peoples. It's not that non-Indigenous peoples didn't have a hand in this place – it's just they weren't the only hands.

This means if we do not prepare non-Indigenous Manitobans for the fact they are created by – and will live and work with – Indigenous peoples during every moment of their lives here we are ultimately doing them and ourselves a disservice.

If we do not teach every single Manitoban that they have foundational and current ties with Indigenous peoples and Indigenous contributions make up Manitoba's past, present and future we are failing. When we deny this we not only continue a long legacy of divisive policies and practices in the education system that sought to demean and disenfranchise Indigenous peoples – forcing them into poverty – but continue a long standing practice of miseducating Canadians on who they fundamentally are and how they can live peacefully in this place.

If our education system does not equip students with the knowledge that working and living with Indigenous peoples is a reality while at the same time empower them on how to make this reality a positive and meaningful one, we are producing ignorant, ill-equipped, and ultimately unemployable citizens.

When Manitobans wake up to reality and realize that their education system did not prepare them they will feel traumatized, lost, and confused. The symptoms of these feelings are denial, anger, and fear. This eventually turns into violence, racism, and hate.

For over a century and a half Manitobans and Canadians have endured an education system that denied, erased, and perpetuated falsehoods about Indigenous peoples, resulting in a lot of division, conflict and violence. The legacies emerging from this "education" is the most expensive obstacle Canada faces today. It costs all of us billions of dollars every year in court battles, violence, and "awareness training."

All due to a denial of reality. The reality: we are all in this thing together. This thing called Manitoba.

A place built by Indigenous communities who welcomed, cared for, and contributed to the lives of others – just as others contributed to them.

A place still here. A place finally reaching its potential.

We just have to see it for what it really is.

Niigaan Sinclair is Anishinaabe (St. Peter's/Little Peguis) and an Associate Professor at the University of Manitoba.

The future in CODE

BY KATE NIZIO

I did it!" she exclaimed. What did you do?" I ask. I finally got it to work!"

There it is, the same way I haphazardly wandered my way into an interest in computer science. The satisfaction you get from forcing a computer to do something at your will through what seems like a secret language is what got me into it as a kid.

Back then, it was just about making words show up on a screen. With all the new coding tools out there for students, we now can make full-fledged games with relatively new coders simply with colourful blocks.

Given the flashy nature of Microbits, Scratch, and Raspberry Pi, I'm always pleased by the fact that students that stay in computer science find the theoretical and mathematical questions just as rewarding.

"So, is learning about data types and completing these questions about casting doubles to integers just as fun as making a video game?" I ask. "Weirdly enough… yes," they say..

It's those who love a challenge and have perseverance that stick around to code for years to come. And yet, the others who decide coding is not for them still build the ability to see patterns and think logically through their everyday life.

I often have coders tell me about how they start to see the algorithmic process of folding clothes or sorting items. This is what makes teaching computer science beneficial: the multitudes of ways that our lives intertwine with code and, conversely, how code can impact our lives.

On the other hand, it is also through the intersection of computer science and human beings that our future coders will have more than just theoretical challenges, as the product of coding impacts all of us.

Even if you're not a slave to your smartphone or social media, there's code in your car, your TV, the checkout at your grocery store - the list is endless. Computer science makes many of our daily tasks take much less energy. In many of our students' cases, they're keeping up streaks on Snapchat (not sure what it is? Ask your closest teenager), Facetime-ing friends, and binge-watching YouTube. It gives our students a place to express themselves and constantly connect with friends.

Yet, as we know, there are some not-so-positive side effects to what seems like our new tech overlords. As psychologist Jean Twenge pointed out in a recent study, "since 2010, iGen adolescents [people born after 1995] have spent more time on new media screen activities and less time on nonscreen activities, which may account for increases in depression and suicide."

Some of my colleagues have jokingly pointed out precisely what the problem with this is: "It's your fault," they lament. "You're teaching these kids to make this Snapchat stuff." It's true. I am. But let's admit it - these new tools are not going anywhere, whether I personally teach it or not.

This is why variables, loops, or computational thinking are only part of what is my responsibility to teach. What my students will do with these concepts in the future is equally as important. In the past few years, I have had my students listen to podcasts, read articles, and watch videos that discuss the impact technology is having on people.

Students then analyze an app and come up with design boards that work to fix "flaws" or negative features of current apps, in hopes that I plant a seed of consideration for the apps, websites, and programs they may one day develop as adults.

Luckily, tech companies are seeing the strain of their devices and their responsibilities to society. Apple's Screen Time for iOS and Google's Digital Wellbeing have both been released in the past year, sharing information with the user about daily and weekly usage. Instagram recently came out with a feature called Your Activity that allows you to set alerts when you reach a certain amount of time within the app.

Yet, as even my students point out - it's not always up to the tech company to make sure their app never causes any trouble. It's up to the users of the apps and programs. What I'm not sure they have fully internalized yet is the fact that they themselves are also consumers, and are partially responsible for their own use and how it affects their lives.

So really, my thoughts are two-fold - our coders need to consider the power of the tools they create on others, but we also need to teach students to harness that power in order to make sure they're helping, not hurting, themselves or others.

As part of our mental wellness month at Fort Richmond Collegiate, we're holding a JOMO week - which stands for the "Joy Of Missing Out." This plays off the popular idea of FOMO (Fear Of Missing Out), which students are reportedly known to feel when scrolling through Instagram or Snapchat.

Seeing others live their best lives, whether a realistic image or crafted image, can often leave teenagers feeling left out or inadequate, as if their lives are not good enough. Add in a lack of sleep from late night scrolling, and inefficient studying because of constant text notifications, and you have the recipe to potentially leave a teen feeling less than an optimal version of themselves.

Despite this negativity, it is important to note that this idea of our JOMO week isn't all about leaving devices in a locker. As stated by Common Sense Media in a recent report, "social media helps alleviate teens' depression by connecting them to support and inspiration, and also contributes to depression for those who get stuck in a loop of isolation and self-abnegation".

In other words, the effects of social media are not so cut and dry. We are hoping our JOMO week - including a sleep meditation session, screen time charting challenges, informative quiz games, and more - will get our student body thinking about the tech tools they use so frequently in hopes that they learn to self-regulate screen time, and make choices to use these tools to bring more joy than pain.

No matter the future workforce we are educating our students for, our students need to be able to think critically about the programs they build. The ability for students to self-regulate and manage these new, highly impactful tools needs to be at the core of what we teach for years to come.

Kate Nizio is a computer science teacher at Fort Richmond Collegiate.

THE SCHOOL OF THE FUTURE

BY T.S. THORSTEINSON, 1953

In the last issue I discussed one instrument of instruction, if that be the name to apply. That was the school "Journal."

In education of the future – more specifically in our schools of the future – there will be new techniques, new instruments of instruction, invented hereafter and thereby completely new or else borrowed from other fields of human endeavour where their success has been proven.

I am wondering about the potentialities of the film, radio and, soon, television for practical and universal use in the field of education, in our schools. The old instruments and techniques are not doing a good enough job. I feel we could exploit new instruments and techniques of instruction with much profit. Sometimes I think we are losing time, much time and much precious benefit.

We need research in this matter. We need much research and we need it badly. Without doubt, in my opinion, such research will uncover much more practical and universally applicable methods or employment of these instruments in our schools on a broad and thorough scale not yet thought of, this in a future that is not far away.

Man is maladjusted in a world of change

I feel education of our time – I mean the elementary – does not serve to fit the modern child happily into the fabric of modern life. The youth of our time is bewildered, the adult maladjusted.

Today man knows much about material things but little about the mind. Here there has been relatively little research. It is all so much in the area of the intangible and abstract. In the material world medical science is rapidly conquering disease, discovering its origin, nature, prevention and cure.

Science has given us a succession of things, one following the other with ever enlarging implications – steam, electricity, telephone, motor car, plane, radio, television, atomic energy ... what's next and what of its effect on civilization, on our way of life, it is difficult to estimate.

While these things come fast, adjustment to them by the human being is slow and measured. They bewilder him – frighten him. He finds life complex, this complexity ever-growing. He is conscious of personal maladjustment in a world that is changing faster than he can understand. Could it be that the root of this maladjustment lies in education? I think so. I feel that the root lies almost entirely in elementary education, in the concept of life infused in the impressionable years.

Man's feelings about things have changed

We have the skyliner, television, atomic energy. We have the motor vehicle, radio, telephone and electricity on the remotest farm. The ox has gone, the horse is going, the wagon a museum piece. The brooding hen is replaced by the incubator.

The farmer's domain is no longer an island kingdom in a rural sea. He has become part of the urban. He knows the city street traffic regulations, he knows the world score. There's new life here. There's a new way of life, completely new, but we don't realize it.

John A. Macdonald, Benjamin Disraeli and Teddy Roosevelt were persons our fathers read about but never saw or heard. These greats, in a sense, were none of their business.

Today Ike and Winston Churchill, Bevan, Adenauer, Schuman, Neguib, Nehru, Malenkov and Mao are our personal business. Our fathers did not worry about

what the greats of their time might do next. We do. Such is the impact of a half dozen inventions. This impact is universal.

In our fathers' day the white man was master. He was accepted as such, his ways copied. The yellow and black no longer accept such a concept. The so-called backward races are surging forward. One hesitates to teach geography today, for the map may be changed tomorrow. Speed is the rule of the day.

We need to change the school – its inner being

And so passes history on wings and air waves in the heavens above. Below, all things have changed, except one – the little red schoolhouse and what goes on therein. Here, in the main, life's concept of yesterday is being taught and inculcated, scant armor against today's complexities. Here, substantially, are the same desks, same bell, same books, same teacher, same school board, same methods, same R's, same gripes, same griefs. Outside there's a new world. We need to search and examine and change.

The ox, the democrat, the buggy and the horse fitted into yesterday's pattern and fabric of life. So did yesterday's school, its concept and pattern of operation. The car and tractor, telephone, radio, plane and television fit into today's pattern of life, but not yesterday's schoolhouse, it's obsolete.

Yesterday's graduate found recompense for long years of labour and learning in knowledge put to fruitful use in a world of relative calm and tolerant goodwill. Today's graduate emerges ill-equipped to find his place in a world of speeding machines and human ideologies in deadly conflict. He does not know how to adjust himself to and live with these new contraptions invented and put into operation by his contemporaries.

Some say we need a new pattern of education. We don't need a new pattern. We need a new concept. Having a fresh concept we can design the pattern to suit.

We have the instruments and the know-how

We faced a global war in '39. It was a terrible challenge. We had to find a way to win. We did. We won physically. We face a different challenge now – a challenge to fit education to modern life and its complexities. We must win here also, physically and, more important, morally.

It can be done. I am sure of it. I am certain we have the intellect and ingenuity to do it. We have the instruments. We have the know-how. We have the goodness of heart to guide and temper.

We need to employ wisdom to assess, perception to diagnose, skill to design and will to begin.

Let's look into the school of the future

Let us look into the school of the future. Let us form a mental picture here for the purpose of observation and appraisal. The building will be the same. There will be no apparent physical changes. The new will be the equipment, the instruments of instruction. There will be a typewriter, a duplicator or mimeograph or some such machine, a film projector and library, a radio and a television set. These will be permanent fixtures.

There will be much more instruction by the visual and audible. Understanding comes more quickly and profoundly by seeing and hearing the real things than by reading about them through the printed word.

An ancient Chinese sage is credited with having said that "a picture is worth a thousand words." Here this will hold true.

The three R's will always be there, but...

The three R's are a "must" and will always remain so. I need and will always need the reader, arithmetic text and scribbler.

But think of the thoroughness and clarity with which I could teach geography, history, science, health and even arithmetic if I had a film library like I have a library of printed books.

Think of the thoroughness and clarity with which I could teach human geography, history current and past, vocational guidance and that whole field of just learning how to live if I had radio with desired programmes and wave lengths and then television when it comes.

My students would then understand what a bushel or pound of anything looks like, what foreign lands and climates feel like. They would understand the relationship between Churchill, Gladstone and the Pitts, between Eisenhower, Lincoln and Washington.

After a few years of such teaching they would not emerge without understanding or purpose, bewildered beings entering a strange and whirling world. They would know the score, where to go and what to do with a great deal more confidence and peace of mind than they do now.

The printed word is losing its hold

I cannot help but feel that the printed book – text book or library volume – is losing its hold. Its appeal of old is becoming weaker. It has begun to slide into some second place. Its practical usefulness is diminishing. Use of it exclusively is getting onerous. Its being pushed aside by other things – speedier things.

I cannot help but feel that the printed word is being supplanted by the picture, whether printed or audiovisual.

It is much quicker and easier to look through Life Magazine and Time to get a composite picture of the world scene and trends than to pore through reams of Tribunes, Free Presses, New York Times or Montreal Stars. The radio tends to and television will force us into such habit and the child with us.

So in the school, it seems to me, we need more of the visual, much more the picture, the film - and the audible with them, radio and television.

The printed word is getting too cumbersome for instruction

Practically everything we teach in school is by way of the printed word. What a tedious thing when everything is flying around with ease and speed below, on and above the earth. In our books the picture is secondary, very, very secondary, and much of the photography depressing at that.

In a world of speeding machines and speeding information, this speed accelerated by the telephone, radio and soon television, I feel continued use of the printed word alone as the only universal instructional tool is becoming too cumbersome and tedious to both child and teacher. Its exclusive and endless use depresses the child student and he wants to get out. It depresses the teacher, too, I think, and he wants to get out, too. I sometimes feel this very cumbersomeness and tediousness is driving people away from the teaching profession.

The fact alone, I believe, is one of the greatest impediments in recruiting people for the profession. They feel this, but cannot and do not express what they feel. They just stay away. It is not pleasant to go out into a field to plow with oxen when you know there are tractors, big, powerful tractors that could do in a day what will take you a week. You simply would not enter the employ of a farmer who plows with oxen. That's all.

BACKWARD GLANCE
*THE FUTURE AS SEEN FROM **1967***

LOOKING INTO THE FUTURE

BY W. C. LORIMER, 1967, *W.D. LORIMER WAS MANITOBA'S DEPUTY MINISTER OF EDUCATION (1967)*

In our society these days, it is customary to look into the future and try to predict where we are going and what new developments we can expect to see. Education undoubtedly can be expected to show as many and as revolutionary changes as any other aspect of our society. As a consequence, teachers, parents and all those associated with education will find themselves in a period of flux. The only people who will find change normal and will not be worried in the least about it are the students. The only thing that may worry them at all is that the change is not fast enough.

It cannot be over-emphasized that the teacher is the heart of the educational process. This is not to say that other aspects or other parts of the process are not important and may not even be essential to the development of a proper educational system. In the final analysis, however, the teacher will be the heart of the system tomorrow, as she is today. What, then, are some of the trends which we may anticipate with respect to teachers as they carry on their instructional and leadership responsibilities?

The qualifications of teachers are first to come to mind. Some suggest that all teachers should have at least a university degree before they begin to teach. I associate myself with this group not because of the special qualities of the subject matter which is studied in universities or similar institutions, but because teachers must be at least as well educated as other groups in our society who have responsibility for providing direction and leadership.

…

It is more difficult to forecast whether we will see revolutionary changes in the type of program provided for the qualification of teachers. This area ls under constant study and The Manitoba Teacher in many places experimental work is being done with respect to teacher education programs. In this connection, the Canadian Teachers' Federation is sponsoring a study designed to develop new guidelines for programs of teacher education. It is my view that elementary school teachers need to be better prepared in the professional subjects than they are now and that secondary school teachers need to be better prepared in their academic content subjects. It is likely that in the not too distant future teachers with honors or masters degrees will be required for high schools.

We must also expect new approaches in the preparation of those who are now called vocational teachers. The expansion of this facet of education requires substantially larger numbers of teachers with different backgrounds than we have been accustomed to consider.

Finally, there is need for the preparation and inclusion in the teaching body of para-professionals to meet the increasing demands for technicians and teacher aides who will be closely associated with the teaching process. There are many avenues for employment here that must be explored, particularly as the overall quality of the teaching profession is raised. It is certainly not impossible that schools of the future will have as large a staff of para-professionals as of professionals.

The teachers of tomorrow at all levels and in all areas will be well qualified experts in their fields who will devote a substantial amount of time to in-service study to keep up with change. Because they will be fully qualified when they begin to teach, their continuing study will be directed to the expanding field of knowledge in both professional and content areas.

Curriculum is another area in which changes are imperative.

…

An important advantage of the involvement of teachers in the development of curricula is that teachers feel the programs are not instructions delivered to them but are something which they have helped to develop. Therefore, they have some identification with both the content and the method of presentation. While this is a sound philosophical base, the association of the average teacher with curriculum planning is more theoretical than real.

When new courses of study are required, there might be merit in gathering experts in the field from wherever they can be found to be included in the committee of Manitoba teachers. There may be a good case for moving beyond the do-it-yourself techniques of curriculum building in order that we may benefit from the contributions of the most knowledgeable people in the field. As well as having advantages, the present methods have a tendency to develop curricula based on the experience of the past rather than the needs of the future. Admittedly, this may not be a popular step and may lead some teachers to feel that impractical experts will plan curricula rather than those who know what they are doing.

After a program is developed, teachers should use it as a guide and should not follow it slavishly without adaptation to the particular situation in their own schools. As a result of such development in curriculum, central examinations would have to be abolished except where they are needed to get some recognizable qualification at the completion of some important period of study.

We must also expect new approaches in the preparation of those who are now called vocational teachers. The expansion of this facet of education requires substantially larger numbers of teachers with different backgrounds than we have been accustomed to consider.

Closely associated with methods and curriculum is the organization of schools. Graded schools are common in Canada as they are in most countries. Both the school and society will change their views in this regard and what is now called 'continuous progress' will become more common. This will be partly because of changed thinking and partly because of the possibilities of new technology. What implications does it have and why is it so slow in developing?

First of all, continuous progress is really 'progressive education' – that nasty term formerly used - and education, once having had its fingers burned, is not eager to experience that situation again. To establish a system of continuous progress is to rely on the judgment of teachers, to eliminate formal examinations and to do away with percentage marks and home reporting of the old-fashioned kind. Worst of all, it involves streaming pupils because it is clear that fast runners will forge ahead and may even get out of sight of the slow runners. It requires a high level of professional competence and integrity among teachers because in spite of good intentions it is easy to fall back in slow progress for slow children and to set lower goals than they can achieve.

Team teaching and flexible grouping, in large schools, will make it possible to establish continuous progress and enriched educational opportunities. This will result in a significant upgrading of educational effort through the teamwork of teachers in the schools of the future. Well-structured team situations give children the opportunity to learn to do more individual study and independent thinking. We can reasonably expect better qualified teachers in better situations to capitalize on individual strengths of pupils.

…

The most exciting things in our world today seem to revolve around science and technology. We are talking about putting men on the moon, about unknown flying objects coming to earth, about ships to the planets, about scientific breakthroughs of all kinds. Everyone is tremendously interested in and impressed by the wonderful things science and technology have achieved and are likely to achieve in the future.

…

The extension of the human brain through the use of computers is only in the early stages but it is already clear that it will lead to a revolution in man's activities. Although the computer seems to be dramatic in science, industry, technology and space research, it will be no less so in education. If the use of the computer as a teaching device is coupled with the information which is likely to develop from research in education, medicine and psychology, it is not beyond the realm of possibility that the whole educational pattern will be entirely changed.

The curriculum can be expected also to change as a result of the impact of science and technology. It is not impossible that mankind may change from a reading-oriented to a hearing-oriented system of education. This is not to say that reading will disappear entirely but it will not be the important and basic skill that it is now when it is possible to present material more effectively through pictures and voice.

We are all aware of the importance and value of libraries in our society. Libraries are being expanded and in schools they are becoming instructional materials centers. One basic problem is that the accumulation of human knowledge is reaching the point, both in quality and speed, where we cannot keep up with it. The computer will revolutionize libraries and many other aspects of society revolving around the storing and retrieval of information. The possibilities here almost sound like fairy tales. An important function of the parents has been to teach the children and by extension, as society has become more complex, to transfer this function to the school. Nevertheless the parents have continued to play a very important role in the education of the young and, as everybody agrees in our society, this should continue to be so. But what happens when the computer is a source of all information?

What happens when it is easier to ask the computer to get the information required and to get it correct rather than to ask the parents? Why would children want to consult with their parents when they can dial into a computer and get their answers, not only to factual questions but also to questions that involve matters of choice and decision; for example, the choice of a career, whether it is better to take this course or that course, indeed, whether it is better to go out with this girl or that boy. As our society is now constituted, it is extremely unlikely that it would hold together with any degree of success, if the family were to disintegrate. If we appear to be moving in that direction, it is not too soon for sociologists and psychologists to begin to do some thinking about what is going to replace the family.

In the past, except for rare instances, education was considered to be a process which went on for a fixed period of time and then was completed. It is now clear that this is no longer the situation. With very few exceptions, most people will continue with some educational program throughout their lives.

The question is when should education begin. Educational research as well as observation suggest that it is desirable to begin education early with children from so-called culturally disadvantaged homes; that is, homes in communities where children are not sufficiently stimulated in language development and speech and where they do not have a sufficiently rich environment to develop their mental capacities as they need to be developed early in childhood. One question is whether we will limit these opportunities to the children of the culturally disadvantaged or whether we will include all children. Where a mother is able to provide a proper home and is not required to work, the child and the mother are possibly better off if they are together. This is all the more true where there is more than one child. If, however, mothers are going to work and children are going to be cared for by babysitters, or if the family is going to disintegrate to the extent that children will be put into day-care centers, it may well be that the school needs to begin its activities earlier than at present.

In the past, except for rare instances, education was considered to be a process which went on for a fixed period of time and then was completed. It is now clear that this is no longer the situation. With very few exceptions, most people will continue with some educational program throughout their lives.

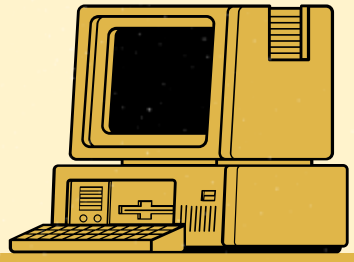
Assuming that most boys and girls will begin to go to schools at age five and will continue until age 18 in the normal course of events, what will happen beyond age 18? Our present school-leaving age is 16 and this is true in many other provinces. It will soon be impossible for 16 and 17 year-olds to get work and one day most people will begin work at age 20 or 21. This means that some kind of post secondary education for all young people will be necessary. Many will go to technical training institutions and universities, others will want to take more general education and many will look for training in areas not offered at present. In some parts of Canada and the United States, community colleges are filling the need by providing a broad general education and in some cases the same kinds of programs as are being offered in Manitoba and other parts of Canada in technical institutes. Having completed this education, all segments of the population can be expected to require training and re-training programs to be offered as a regular part of the structure of our society. Technological advance is so rapid that no one can stop learning without falling behind.

Many other aspects of education are in the process of change or are likely to change. Unquestionably, both open and closed circuit television with video-tape machines will be an essential part of the educational process. We can expect to see schools occupied more hours of the day with several groups of teachers carrying on programs. We can expect the school to provide courses in child care and child development for young mothers as well as hobby and other courses for senior citizens. We might even anticipate all physical education being removed from the curriculum and being associated with a fully fledged recreational program operated by recreational experts after the regular school day. We should expect to see courses in all kinds of activities made available to people of all ages and all interests - some will be intellectually stimulating, some will be pure fun, some will be therapeutic, some will be hobby activities, some will develop new skills -- whether in welding or in speaking Chinese. There will be no limit, provided 15 people and an instructor can be found. And if some want to engage in activities requiring expensive equipment, be it in an orchestra or in a machine shop, it will be available on loan or on a reasonable rental basis. People, even today, should not have to sit stupefied by television, alcohol or boredom.

…

Society and the schools must really be ready to accept and encourage change or it will engulf us. The issue is not whether we agree with and accept that we must change, but that there is no future in security and normalcy, and the good old days. They are deader than the dodo, more out of date than the dinosaurs and of less substance than space. We must be for tomorrow, because today is over and yesterday is beyond recall.

COMPUTERS WON'T HURT YOU



BY CHRISTOPHER USIH, 1989

The computer is the most talked about instructional tool in education today. Its impact can be felt everywhere, from kindergarten through graduate school. Its full impact, however, has yet to be fully realized.

Given this scenario, it seems wise for teachers and student teachers everywhere to embrace this technology and learn to incorporate it in their teaching. Unfortunately, this has not happened. Many teachers still do not know what a computer is and what it does. Many have yet to employ one in their classroom. Some teachers are afraid they do not have the prerequisite skills or technical know-how to operate a computer system. They assume they do not understand the basics, let alone the intricacies of new and different computer systems and application software.

Most people who are familiar with computer systems will say the best way to learn to use a computer is to set yourself in front of one and explore. Many application programs are so 'user-friendly' they only require a minimum of effort to learn how to use them. Some students already know more than their teachers and would only be too happy to show others. My grade 7 students, for example, use the computer for drill and practise in mathematics with little assistance from me.

Given the relative ease of implementation, I wonder why so many teachers avoid the computer. One obvious reason seems ignorance which leads to fear and apprehension. The problem could be eliminated with effective teacher education programs. Unfortunately, developers of teacher education programs have been slow in recognizing the validity of computers and have underestimated the impact of the technology in everyday life.

If teachers are to become effective change agents, every effort must be made to rectify this problem. Otherwise, we will continue to turn out teachers who. Through no fault of their own. are more ignorant In this domain than their students. At the same time, it is incumbent on all teachers who have access 10 computers in their schools to use them.

Like overhead projectors, computers are much more than machines. They are instructional aids waiting

to be explored. I long for the day when computers – like overhead projectors will be scattered across the school as opposed to being locked up in one room. On that day, teachers will be able to use computers as they now use overhead projectors.

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Following is part of the Society's policy on computers and computer education. The Society advocates -

- *computers be considered basic, accepted and vital tools;*
- *both male and female students be given equal opportunity to become computer literate and computer-competent;*
- *computers be used to enhance learning;*
- *knowledge about and use of computers be integrated into existing curricula;*
- *computer courses focus on developing student ability to make decisions, solve problems, predict consequences and develop processes rather than acquiring information;*
- *the Society assess continually the impact of computers on education;*
- *a province-wide network be established for the dissemination of computer services;*
- *the minister provide full program funding for computer education as well as establishment grants to set up computer systems in divisions / districts.*