

**AN OPPORTUNITY TO MAKE ONTARIO
CANADA'S LEADER IN ONLINE
LEARNING IN SECONDARY SCHOOLS**

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Ontario can and will lead Canada in online learning at the secondary education level - after all, it currently leads Canada in online learning **at the post-secondary level** with:

- 981 + online certificate, diploma and degree programs
- 20,000 + online courses
- 7,600 + online literacy and basic skills courses
- 150,000 college and university students took at least one online for credit course in 2018
- 550,000 online course registrations - 41% of all such registrations in Canada

15 years ago, Bob Rae issued his report "**ONTARIO, A LEADER IN LEARNING**" and felt the need to start his section on *Technology, Innovation and Student Focus* with a glowing description envying how Athabasca University was doing in online learning and how it was using articulation with Ontario institutions to make online learning a reality in Ontario. He challenged the institutions in Ontario to respond.

Today, thanks to outstanding efforts by Ontario's college and university faculty, instructors, learning designers, technology professionals and academic administrators with supporting policies and support by the Government of Ontario and enabling learning platforms by leading homegrown private sector technology providers, Ontario is recognized as the Canadian leader in online learning.

The aspirational goal articulated by the Government of Ontario (4 online credit requirements in high school) is daunting. There are many ways to understand the rationale (a potential way to save on expenditures, a bargaining chip with the teacher's unions, a way to ensure every student has access to courses in all areas of Ontario, as a preparation for lifelong learning).

What happens if/when we as educators choose to read it as a challenge to make Ontario Canada's and North America's leader in quality, affordable and accessible online learning at the secondary school level? Is this a challenge we can respond to?

As a result, we are challenged as a sector in five ways:

1. Leverage and expand the current hubs of innovation and success in the provision of e-learning in Ontario's schools to reach as many students as possible. There are many and growing (see Appendix 1).
2. Scale up e-learning in Ontario's schools and harness all appropriate means to make the delivery and operation as efficient and as effective as possible.

3. Shoot for the stars in terms of the level of engagement of that mode of learning. It can be as and even more engaging than regular classroom learning.
4. Without breaking the bank, identify and help implement the three key requirements for success, the three “Ts”: technology, training, time. That is:
 - Appropriate technology
 - Enabled by trained teachers and professionals
 - Provided sufficient time
5. Given the complexity and diversity of our schools and the scale of the work, ensure that the monitoring and evaluative processes are in place to report on outcomes, including successes, failures and recommendations for ongoing improvement – to practice both breakthrough innovation supported by continuous improvement.

The question is not “if” but “how” and by “when” we are going to meet that challenge and provide our students with:

- Greater flexibility in learning options and choice
- Authentic and engaged learning
- Many routes to success through adaptive learning
- Greater choice of learning options no matter where they live
- Outstanding learning experiences
- Extend digital literacy – a foundation for lifelong learning and the work of tomorrow

To make this work, we need to:

1. **Stop conceptualizing learning at high school in terms of transmission and mastery of content, later assessed by simple multiple-choice assessments.** High school learning can and increasingly is a place for students to encounter rich and authentic learning experiences, both through peer project-based learning, experiential learning outside the classroom, work-based learning, community-based learning or learning through personal projects.
2. **Stop thinking online learning as a solitary experience** – the so-called problem “of the [loneliness of the long distance learner](#)”. Online can now easily mean collaborative, group, global, work-based learning. It can mean a project in which 4,000 students from around the world complete work that leads to some of them presenting at the [United Nations Intergovernmental Panel on Climate Change using the findings from the schools in thirteen countries that participated in this work](#). It can mean participating in a science experiment across national and international boundaries. It can be a rich, highly engaged learning experience – one which fully leverages the [communities of inquiry model of design](#).
3. **Stop thinking of basic learning management systems** as “delivery platforms” and think of rich learning through a range of media – audio,

video, augmented and virtual reality enabled by adaptive learning and AI and supported by powerful and meaningful analytics. Powerful, [engaged online learning requires teaching presence, cognitive presence, social presence](#) and engaged activities for it to be an effective basis of learning. We can now engage learners in rich, multi-sensory learning, as some colleagues already are (see [here](#) and [here](#)).

4. **Stop seeing design of online learning in terms of “one size fits all”.** Every learning experience needs to be designed from the ground up – making appropriate use of available resources, technology, teacher and learner experience, community resources and global opportunities. A module on physics might look and feel entirely different from a module exploring the poetry of Robert Service or Elizabeth Smart or a module on Indigenous Healing. While this may take time, the effort of ensuring high touch, highly engaging learning experiences is worth it in terms of learning outcomes and student achievement.
5. **Stop thinking small.** With the scale at which the Province of Ontario wishes to work (630,000+ learners a year) and the range of activities we will need to create, the scale provides opportunities to think big and imagine new ways of doing things. We can leverage all channels of communication, think differently about the use of time, have assessment for learning and of learning on demand, make courses available year-round – we can change the frame we are all working within.

Ontario currently has at least six pillars as a strong foundation to build on:

1. Ministry of Education policy and funding (<http://www.edu.gov.on.ca/elearning/strategy.html>)
2. Four active major consortia that share course access, expertise, resources and strategies:
 - I. Ontario eLearning Consortium (<https://www.elearningstudents.ca/>)
 - 23 boards sharing courses and course access
 - II. Ontario Catholic eLearning Consortium (<https://www.ocelc.org/>)
 - Catholic boards sharing professional development and resource
 - III. Consortium apprentissage virtuel de langue française de l’Ontario, (CAVLFO) (<https://www.apprentissageenligne.org/>)
 - All 12 francophone boards sharing one common online program
 - IV. Northern eLearning Consortium (<https://sites.google.com/site/2010nelc/Nelc>)
3. A virtual learning environment to access learning content, resources, communications, assessment and evaluation (<https://www.d2l.com/k-12/ontario/>)
4. Central program for students not served by local boards - TVO ILC (<https://ilc.tv.o.org/en-ca/home>)

5. Provincially developed online courses and resources:
 - Ontario Online Classroom with blended learning and e-learning credit courses (<http://www.edu.gov.on.ca/elearning/courses.html>)
 - Ontario Educational Resource Bank - central bank of additional resources (<http://www.edu.gov.on.ca/elearning/bank.html>)
6. Hubs of current online learning success in school boards (see Appendix 1).

Let's imagine a different future and walk back to the present

What will outstanding Ontario high school learning look like five years from now and then a decade from now – what could it become?

Let's explore ten bold ideas for the near term to 2025:

1. Modular, stackable learning

Current high school credit courses get broken into smaller modules, which are accessible anywhere and at any time – students can either enrol in a cohort-based group pursuing a full credit course at the beginning of any month, or take partial credit modules any time and stack them to accumulate high school credit and obtain micro-credentials (badges) *en route* to the full course credit. If this is an appropriate [strategy for online learning in colleges](#), it is appropriate for high school. This would permit accelerated learning for more students, in line with the work of several school boards across Ontario.

Imagine flexible learning year round – available when you are ready – no need to timetable.

2. AI supported instruction

While this may take some time to embed in all courses, it is already the case that both simple and advanced chatbots are being used to supplement and support the work of teachers. Ontario-based companies are working to create sophisticated AI enabled supports for learning – something that will be essential for the scale of support needed to accommodate the 630,000 learners envisaged. Whether this is voice-based or text-based, multiple [characters for different kinds of issues](#), which students raise, or complex games and simulations, students can have rich supports 24x7.

Imagine teachers + AI ensuring the powerful presence of learner supports at all times.

3. Adaptive Learning

One challenge with a classroom experience is that there are essentially two routes to completion – fast and slow. One advantage of adaptive learning engine built into [D2L's Brightspace's Performance Plus](#) engine is that there can be many routes to success, based on predictive analytics.

Imagine a great many different routes to success for a module, based on learner responses and behaviour – many routes to the same learning outcome / credit.

4. Serious games, simulations, virtual field tours and experiences

As the costs and time taken to build and develop games and simulation falls, richer learning environments (both at school, at home or local community learning centre or library) can become a source for serious exploration and deep learning. Imagine [exploring the oceans](#), [looking at plant life](#), being in an [AI enabled cooperative program](#), using [simulation to explore the human body](#) for biology (with links to 3D printers) – there is so much we can do in partnership with universities, colleges and film, game and video producers.

Imagine a rich learning environment, which seeks to provide an authentic, powerful, memorable learning experience.

5. High quality science labs

No matter where students live, how big their school is or well-equipped in terms of science labs, all students can access high quality remote labs and use real high-end scientific equipment and get real-time, high quality data for analysis. Canada supports and supplements the work of [The North American Network of Science Labs Online \(NANSLO\)](#), which it expands and works with for school-based science (especially biology, physics, chemistry).

Imagine this and related developments being used to enable powerful science learning at a scale most students currently do not have access to.

6. More cooperative and work-based learning

Online learners in work placements can connect with other students in similar workplaces, engage in specific learning projects, be coached by mentors with the experience of that kind of work and receive career guidance all within the workplace. This builds on work currently being undertaken in the Upper Canada District School Board.

Imagine powerful, engaged work-based learning with effective online learning for credit.

7. Call for an assessment of learning at any time

Students who are assessment ready can call for an assessment of their learning at any time – no waiting for assessment dates. Using a combination of facial recognition for security and AI for item generation and marking (making use of open source systems like [TAO](#) or video based assessment systems like [Valid-8](#)), students can be assessed on their knowledge, capabilities and competencies whether or not they have taken a course.

Imagine on demand assessment being used to recognize the prior learning of students who have developed their knowledge and skill outside of school.

8. International learning

An Ontario based organization – [Taking it Global](#) – has partnered with organizations around the world to enable learning, social action and social enterprise with young people. Imagine a project on designing the most [efficient solar oven](#) in partnership with students in India, Africa and the Caribbean or an [empathic robot, which could support lonely seniors](#) or other project-based learning activities, which partners students in Ontario with others around the world.

Imagine online learning engaging students in social action for change.

9. Student created learning

A key feature of an online platform is that we can all become designers of learning and experiences. As [peer-to-peer learning grows](#), enabled by [teacher professional collaboration](#) and [student agency](#), students can design, develop and deploy their own learning activities and experiences, supported by teachers.

Imagine a suite of learning modules designed by students for students dealing with topics that students see as important to them.

10. Building a learning portfolio – A passport for lifelong learning

Using blockchain to both capture learning, store credit and track activity in a secure environment, every student in Ontario could have a powerful e-portfolio, which they could use as a learning passport for the rest of their lives. Given how important lifelong learning will become in the age of the smart machine, tracking and capturing learning will be an essential feature of any province-wide learning strategy.

Imagine Ontario being the first jurisdiction in the world to fully leverage blockchain technology as the basis for an e-portfolio.

IT'S BOTH COMPLEX AND COMPLICATED

Optimism does indeed need to be grounded in reality.

- Students and their instructors have different levels of competence and capabilities in both teaching and learning and in leveraging technology – [“digital natives” are rare, not common.](#)
- Professional development for teachers, teacher collaboration, the development of powerful tools to support learners, learner support for the smart use of technology are all needed to make online learning work.
- Not every community has the infrastructure needed to engage in powerful, rich and authentic multimedia learning. Both the devices in the student’s hand and the 4G infrastructure are simply not there. When [Michigan mandated online learning as a requirement for high school students \(one of six US states to do so\)](#), a significant investment was also made in rural broadband infrastructure. Ontario is doing the same, but timing is

everything. We need to ensure equity and affordability of access for all students in all parts of Ontario.

- With current models of online learning deployed in a variety of provinces and jurisdictions for high school students, not every student is successful. Yet it is possible – if we rethink design, fully leverage the expertise of teachers, teaching assistants, communities, peers and parents for support and fully enable AI and adaptive learning, that higher rates of success and completion can occur. This requires us not simply to push out content rich courses which resemble how we tackled distance education in the early 1970's, [but to imagine new designs](#), new supports new ways of working. We must design with the intention that every student has the opportunity to be successful.
- Emerging technologies and tools – [many of them in use now](#) – will help with this work. We can learn from the experiences here and around the world in deploying high touch, highly engaged quality and effective online learning at scale. But, learning is a very human endeavour. Ontario has a chance to make the shift to online learning at scale a shift in imagination to provide the richest possible online learning experience for a great many students.

It is important that we do. The impact of emerging technologies on the future of work is clear. Some 30-40% of all jobs in Canada will require people to develop new skills and competencies and to become lifelong learners.

We can see the online learning in high school as a pathway to lifelong learning – a way of connecting the fastest growing sector of learning in the post-secondary systems in North America (online learning) to the work of high schools.

A LAST THOUGHT

It will cost money to do this well.

It may be that, rather than looking at the classroom as the model for how this can be done, we don't even start there.

We start with the question: for this learning, what does high quality, high touch, highly engaged learning look like at scale.

Let's not let the model be *“how do we do what we do now online?”*, let the model be *“given this unique opportunity to think completely differently, what would a filmmaker, game designer, teacher, instructional designer, technology enabler and student working together as a learning design team do to create a fantastic learning experience?”*.

That is the opportunity we are asked to respond to. Maybe then we could really show the world what Ontario can do.

APPENDIX 1

Examples of Pockets of Innovation in Online Learning in Ontario Schools

District School Board of Niagara

- Created and implemented a blended learning class (IDC4UP) where eLearning students are brought together in a central site for training and part of the class is online while the other part is made up of students being in classrooms supporting students with literacy and numeracy.
- Piloted a CHV and GLC in-board continuous intake course to support at-risk students and students at alternative sites. There is a caring adult attached to each eLearning student to help support them at their sites.
- Continue to offer, via eLearning, a LNMAO Mohawk Language course in collaboration with an elder and the Native Friendship Centre to help encourage preservation of the language and culture.

Hamilton Wentworth District School Board

- Offers a Shared Model to assist smaller schools whose courses don't have sufficient enrolment to run by matching with similar courses online.
- Expanded course offerings in grades 9 & 10 in response to student selections, to provide programming to students who are in need of flexible course delivery and to address student programming needs for those students who are unable to attend school for a variety of physical and/or mental health concerns.

Kawartha Pine Ridge District School Board

- KPRDSB created three new eLearning hub schools in their rural and smaller schools. Each of the schools are staffed with one full-time eLearning teacher in a specific subject area. These courses are shared amongst the schools to expand course offerings. The three teachers support all eLearning students through a hub eLearning classroom equipped with technology and videoconferencing capabilities.

Keewaytinook Internet High School (KiHS)

- The First Nation communities in Ontario's remote north had a unique need that was not being met by traditional education programs. KiHS was established to provide parents and students a way to continue education in the local community, yet still provide the youth a quality high school program using a delivery model focusing on the role of two teachers: an online teacher (using computer and videoconferencing) and a local teacher.
- Students are engaged in the formal educational process with retention rates in the online program reaching 90%, with plans to add programming for the ever-growing number of students in these remote communities.

Lambton Kent District School Board

- Conducts small school scheduling in conjunction with central eLearning lines to problem solve and accommodate scheduling for smaller schools.
- Successful pilot of non-proctored exams with some courses. There was no

discernable difference in outcomes from proctored and non-proctored exams.

- Replaced traditional exams with student teacher interviews and demonstration of learning in a number of courses. Teachers conduct “face-to-face” interviews with students via virtual classroom, phone or other video options to assess students’ responses to questions and reflections on their learning.
- Implemented a triangulation of data approach to assessment and evaluation in eLearning classes. Teachers use Video Note, Virtual Classroom and Video Assignment tools to collect observation and conversation assessment data.
- Expanded their eHub program to two more schools, bringing the total of eLearning Support Rooms with teachers to five.

Ottawa Catholic School Board

- eLearning has allowed the small schools in the Ottawa Catholic School Board, in conjunction with the Ontario eLearning Consortium, to offer a plethora of courses for a variety of pathways. Students are able to access SHSM requirements via eLearning so they can pursue career paths as desired. Many senior level social science courses are unavailable in small schools. These courses are essential to the learning and interests to many students and thus, via eLearning, students can access history, politics, human development and many more.
- Use eLearning to provide an accelerated math program for grade 8 students to take a grade 9 math. Students from across the board, who have a Gifted Profile, complete their grade 8 course between September and January. They complete their MPM1D credit using D2L.
- Offer a continuous intake option for OCSB students.

Renfrew County District School Board

- Uses the provincial VLE for their vLearning program, where classes are connected by a teacher in one building, with students in another building within the Board.
- Team-teaching with elementary and secondary school French class.
- Offer Continuous Intake eLearning sections for students who cannot attend regular face-to-face classes or students in situations of risk.
- Collaboration of teachers and eLearning staff to design and develop the NBE3U course that is visually appealing, easy to navigate, meets the needs of students, and honours Indigenous ways of knowing.

Upper Canada District School Board

- Offers many options for smaller schools, including 56 sections of Day School online per year.
- Has a growing Continuous Ed Online program to supplement the Day School (about 20 sections).
- Has a centralized model where ALL Day School, Con Ed and Summer Semester eLearning courses are run through the same ePrincipal and small eTeam.

- Five eHub schools where the Day School sections are offered. Each site has multiple eTeachers who are each assigned multiple sections. This model allows much more efficient eTeacher PD and encourages PD to take place more organically among teachers of the same eHub school.
- Piloting a synchronous model of Day School online to benefit schools who are slowly being migrated over to a common district-wide timetable. Once all of the high schools are on the same timetable, they can begin to work on a completely synchronous model of online course that could potentially be used between high schools where a teacher is in one building with some students and other students are Skyping or Zooming in for the period.
- Expansion of CoOp and After School/Reach Ahead online credit opportunities. New course creation projects are underway, including Coding courses, GLS10/Math focus and new grade 9 and 10 options for online opportunities in the next school year.

Virtual High School (VHS)

- Located in Bayfield, Ontario, VHS currently offers over 70 online courses, with engagement at the core of each stage of design and development. In the course CHC2D: Canadian History since WWI, VHS uses every opportunity to use games, immersive worlds and role-playing to engage and motivate their students. In CHC2D, students are asked to determine the causes of WWI by role-playing in a history simulation. Course writers make every attempt to infuse the courses with creative instruction, variety, choice and flexibility.