A Vision

FOR LEARNING & TEACHING IN A DIGITAL AGE

Ontario Public School Boards' Association

Leading Education's Advocates

This paper is a call for the Government of Ontario and the Ministry of Education to lead the way in establishing a vision for Learning and Teaching in a Digital Age. Student and teacher use of technology in their everyday lives and the possibilities this creates for expanding the integration of 21st century skills into our learning and our instructional practices is at a tipping point.

Many other jurisdictions have moved vigorously ahead to define a vision to guide education well into the 21st century and we urge Ontario, which is a leader in student achievement and in education in so many spheres, to take up this challenge. This call is not inspired by considerations of funding but by a conviction that it is critical to define how we will move to keep pace with rapidly evolving technology to ensure our students are globally competitive. This is a matter of public confidence in our education system. Students, teachers, parents, school boards – all our education stakeholders – are ready to embrace this vision.

OUR VISION FOR A PROVINCIAL VISION

In a diversity of ways, Ontario School Boards are undertaking innovative work to engage students and support teachers in a world where approaches to learning and teaching increasingly incorporate the richness offered by the digital age. These innovative efforts need to be recognized and articulated in a provincial vision designed to expand the benefits of digital-age learning and teaching to every student and every school in Ontario.

This paper, authored by trustees and educators across the spectrum of Ontario's public school boards, seeks to align and consolidate current dialogue to support the Ministry of Education in building a progressive and sustainable provincial vision for learning and teaching in a digital age.

Our Vision:

- Requires a purposeful cultural shift in our education system that focuses on engaging and inspiring our students, that fosters creative and innovative minds and embraces the enabling role of technology in expanding how, when and where learning takes place.
- Is founded on the principles of equity of access and equity of opportunity
- Acknowledges that schools are more than a collection of buildings – they represent a system of learning and a culture where learning and teaching reciprocally drive the use of technology
- Seeks to lay the foundations for creativity and innovation and, through student learning and engagement, shape the future
- Recognizes that we exist in an international environment requiring a global set of competencies and responsible, ethical social practices
- Is centred within a provincial curriculum that reflects these values, aspirations and practices.

Our Vision Rests On the Pillars of:

- Authentic Student Engagement
- Inspiring and Inspired Teachers
- Skills for a Digital Age
- Responsible Digital Citizenship

ITS FOUNDATION IS EQUITY.

"A Vision for Learning and Teaching in a Digital Age
is a well-considered approach to how and why our education system should embrace technological innovation as an important part of educational strategy for the province of Ontario."
Martyn Beckett, Council of Directors of Education

AUTHENTIC STUDENT ENGAGEMENT

> A more rational approach suggests that our aim for the lives of the young people who come to us as learners is to help them identify their talents, their passions. We should be structuring their school experiences accordingly. ....
> We recognize that they each come with knowledge gained through exploration, observation, and interaction with the world around them. They also come with specific interests and an interest in being interested, a willingness to explore new ideas and areas of potential curiosity.
> A major role of educators should be the identification of both those interests and the paths along which these interests can grow...
> ...The new role of education is to ensure all students have the opportunity to use their interests and passions to connect to all areas of knowledge.[1]

Students live in a world of "anytime, anywhere" access to information and to a global community of learners and educators. Today's technological environment allows them to draw on sources around the globe and integrate what they discover into their learning using a range of media. They can do it all using a device that fits in their jeans pocket.

The world-wide access to information enables teachers to design, with students, learning opportunities for students that stimulate them to be independent, reflective and collaborative learners, challenge their thinking and assumptions and engage them on many levels.

An example might be a Grade 10 Civics lesson where students are encouraged to look at human rights codes that prevail in a range of societies, search human rights cases that have been featured in various media, and discuss the implications in the students' own world. In the process they are incorporating appropriate social practices into their learning process, addressing ethics, values and human relations in an environment that connects students across the world.

As the lesson evolves and is enriched by the resources that the class discovers, teachers are learning alongside their students. In this kind of passion-based learning, tasks are meaningful in the sense that the learning is about real-world issues and problems; the students are exploring solutions to authentic problems, not artificial situations or simulations.

The challenge for schools is to be open to adapting to and adopting the technology used by students. It represents a relevant way to empower students and engage them in taking responsibility for their own learning. It leads to building relationships in the classroom as the teacher engages with the students about the skills they bring, helps students to refine those skills and encourages students to make productive and relevant use of the technology of their everyday lives.

> "This Vision speaks to me about where we need to go, with student learning and engagement at the forefront, as it should be."
> **Brenda Sherry, Technology Coach, Upper Grand District School Board**

It can foster a co-learning environment that helps address fears teachers may have about unfamiliar technology and promote appropriate use.

Engagement is further strengthened by the growth of e-Learning options supported by the Ontario Ministry of Education, particularly the trend towards blended learning. Schools are offering the option of on-line courses which provides more choice to students. They are delivered by qualified teachers, offer teacher coaching, include access to other students online through peer tutoring and discussion groups, and expose the student to a more in-depth experience with integrating technology in their learning.

All of the above supports self-directed and self-paced learning as students take full advantage of "anytime, anywhere" learning. This level of engagement reinforces a shift from learning that happens only in the classroom to lifelong learning or borderless learning where education is no longer constricted within the walls of the school building or by the confines of the school day.

In response to the question of what would engage them more in the classroom and break down barriers to feeling involved, students are clear that what matters most is a motivated teacher and, beyond that, a motivated teacher who has skills to harness the emerging capacity of digital learning technology to help students strengthen their ability to think critically. This allows for teaching to happen in a varied and differentiated way that engages all students.

INSPIRING AND INSPIRED TEACHERS

There is no substitute for good teaching. This is as true with digital learning technologies as it is with the technologies of chalk and board or paper and pen. This is the view of students, parents and educators everywhere.

A qualified teacher defines compelling, challenge-based learning. This has always been true and, in the digital age, it includes, in a very specific way, the role of the teacher in connecting students to knowledge and to knowledgeable people while enabling them to discern what is true, valid and accurate.

In the digital age, the teacher is a navigator or facilitator fostering in students the ability to search competently, safely and efficiently through the wealth of information and human resources available to them. The teacher nurtures effective approaches, the use of appropriate tools, capacity to synthesize the results of research and the skills to create new knowledge.

Emerging digital learning technologies allow teachers not only to encourage students to pursue self-directed learning but to collaborate with them as co-learners as students introduce new technology in the classroom. These technologies also help to create networks of learners on a local or global scale. In a blended learning environment, technology allows for a greater share of class time to be used for one-on-one support, collaboration and consolidation of learning.

Ontario teachers have a well-deserved reputation for how they currently use technology to meet the needs of students who require different ways to access curriculum and learning, students who are non-verbal, students with special needs, students with varying learning styles. We can capitalize on this experience to expand the use of technology to make all learning more accessible for every student.

Supporting Teachers

The Vision for Learning and Teaching in the Digital Age expects that teachers will use all the tools at their disposal to close gaps in student achievement. Many of these tools or strategies are not technology-based – they are the skills great teachers have always brought to their instructional practice.

Current and anticipated technologies for teaching and learning offer additional tools that teachers can incorporate in their instructional practice and in their strategies in ways that engage students in taking charge of their own learning. These technologies have the potential to support deeper levels of collaboration. They rely on the teacher to foster critical thinking skills, values and attitudes that ensure, on the part of the student, responsible use of technology.

Our education system acknowledges the different levels of familiarity teachers have with the tools available in this digital age, tools that are constantly changing. The role of the Ministry and school boards is to support teachers, to offer a range of opportunities for capacity-building, and to ensure that the initiatives they take to integrate technology in their instructional practice are well-supported.

The opportunities to build capacity in the effective use of digital learning technology are already present in the everyday professional lives of teachers. Similar technologies are used for reporting and, increasingly, in assessment practices. There is rich scope for expanding professional learning through technology which allows for increased access where geography and scheduling have traditionally been a challenge.

We need to explore and support the benefits of province-wide professional and personal learning networks as well as a comprehensive provincial repository of digital resources created by Ontario teachers for Ontario teachers. This is an initiative that lends itself to strong collaboration among the Ministry, School Boards and Teacher Federations and can benefit from existing

> "An impressive initiative that promotes the value of co-construction of knowledge -kids taking charge of their own learning."
> **Peter Skillen, Manager, Professional Learning, YMCA of Greater Toronto**

models of collaboration such as the Association for Computer Studies Educators (ASCE), the Educational Computing Organization of Ontario (ECOO) and from the Ontario Software Acquisition Program Advisory Committee (OSAPAC).

Assessment

Assessment is an important aspect of a teacher's practice that informs both student learning and teacher instruction. The opportunities afforded by technology are significant and can help to enhance and supplement assessment processes and practices, including teacher moderation.

Allowing students to have input into the development and form of the assessment, and to participate in the assessment, is a key step towards student ownership and engagement. Assessment should be varied and incorporate self, peer and teacher assessment and be intentionally designed to demonstrate and measure the skills that will allow students to be successful in the digital age.

The type and form of the assessment will be influenced by the access and use of technology and its many applications. A shift in classroom practice that uses technology as a vehicle to demonstrate student learning will result in a variety of different media such as writing blogs, creating a class blogosphere, creating podcasts, animation and many other applications. Technology will also allow students to create on-line portfolios accessed by teachers, peers and parents for feedback and to submit assignments and tests on line for grading and feedback.

Authentic assessment needs to value not only the outcomes of student learning but also the process of reaching those outcomes. Technology should be used in a way that allows this to occur.

The Teacher and Anytime, Anywhere Learning

In a world where the four walls of the school no longer confine the teaching-learning relationship, there are challenges to be addressed.

When students are engaged in anytime, anywhere learning, how do we maintain the interpersonal connection between teacher and student, and among students in ways that foster student involvement as well as social and mental well-being? What are the expectations for teachers in terms of response to online comment and questions from students? What can be learned from the practices used by teachers of progressive 21st century online courses? Where is the optimal balance between online learning and personal connection in the classroom? What is the expectation for the teacher-parent relationship where parents have access to a classroom online site? What would be the benefits of a provincial "think-tank" to share effective concepts and practices?

SKILLS FOR A DIGITAL AGE

Our Vision seeks to define the skills we want students to have by the time they finish school beyond the essential foundation of literacy and numeracy and core academic competencies. There is a wealth of study on the subject of essential skills for the Digital Age. They have a lot in common with skills that our society has always valued as essential to a successful career and a successful life. Still, we need to acknowledge how these skills are further defined by the information age, the global environment, and the unprecedented connectedness afforded by technology.

The body of wisdom on skills for the Digital Age, which are well-described in the *Framework for 21st Century Learning* (Partnership for 21st Century Skills), points to:

- Creativity and Innovation
- Critical Thinking
- Communication
- Collaboration

All of these skills call on an overall capacity for self-directedness. They are largely defined as follows[2]:

CREATIVITY AND INNOVATION

Think creatively, generating new and worthwhile ideas, exploring innovative formats and media; elaborate, refine, analyze and evaluate one's own ideas in order to improve and maximize creative efforts; work creatively with others, communicating new ideas effectively and being responsive to diverse perspectives; demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas; view failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes; act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur. Creativity and innovation are particularly important in a world of rapid change.

CRITICAL THINKING

Critical thinking:
Reason effectively using various types of reasoning (inductive, deductive) as appropriate to the situation; use systems thinking, analyzing how parts of a whole interact with each other to produce overall outcomes in complex systems; make judgments and decisions, effectively analyzing and evaluating evidence, arguments, claims and beliefs; analyze and evaluate major alternative points of view; synthesize and make connections between information and arguments; interpret information and draw conclusions based on the best analysis; reflect critically on learning experiences and processes. It involves purposeful, reflective judgment, logical analysis, and assessment of factual accuracy, credibility, significance and fairness. It also entails the ability to empathize with others, see a situation from the point of view of another person, and to understand their motives.

Analyzing and Understanding Complex Systems:
Our economic and social systems have grown increasingly complex. For students to become fully participating citizens they need to hone the ability to understand the complexity of the systems around them. Digital learning technologies offer ideal ways for students to gain insights that will help them understand and evaluate the diverse critical issues in our global environment. These technologies give students access to simulation and modelling scenarios that allow them to experiment with, and gain deep insights into, the phenomena and processes that affect the world around them.

> "A Vision that values equity of access, inquiry-based learning, teachers and students as co-learners – an impressive synthesis."
> **Royan Lee, Grade 7 teacher, York Region District School Board**

COMMUNICATION

Communicate clearly, articulating thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts; listen effectively to decipher meaning, including knowledge, values, attitudes and intentions; use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade); use multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact; communicate effectively in diverse environments.

Our culture with its rich diversity and world-wide reach places a high value on having a wide range of effective communication skills.

COLLABORATION

Collaborate with others, demonstrating ability to work effectively and respectfully with diverse teams; exercise flexibility, adaptability and willingness to be helpful in making necessary compromises to accomplish a common goal; assume shared responsibility for collaborative work, and value the individual contributions made by each team member; engage in the collective construction of knowledge – this entails not just doing things differently but doing different things. In a world with virtually limitless access to knowledge, increased specialization, and increased complexity in societal structures, successful outcomes are highly dependent on collaboration among groups of people with diverse sets of skills.

These skills will be largely practised in a context requiring digital literacy where students are interpreting information and applying new knowledge gained from digital environments.

Any provincial vision should describe a similar broad skill set which can be a guide for individual school boards to develop a set of Digital Age Skills specific to their environment.

RESPONSIBLE DIGITAL CITIZENSHIP

"Students understand human, cultural, and societal issues related to technology and practise legal and ethical behaviour.

Students:
a. Advocate and practise safe, legal, and responsible use of information and technology.

b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.

c. Demonstrate personal responsibility for lifelong learning

d. Exhibit leadership for digital citizenship." [3]

"The focus on the teacher as a constant learner is one of the best ways to foster the love of learning in our students."
Jamie Reaburn Weir, Secondary Teacher (English), Waterloo Region District School Board

Digital citizenship embraces ethics and values and informs human relations in an environment that connects children and youth around the world. Our Vision places a high value on fostering in students a strong sense of personal responsibility for ethical practices and respect for others, as well as acknowledgement of accountability for actions, in their use of technology.

Our Vision recognizes the need for specific learning about ethical use of technology. This would address such issues as:

- Pro-social skills and relationships that promote positive and caring climates for learning; cyber-bullying and social competence.
- The digital footprint, concepts of privacy and management of privacy in the world of digital sharing.
- Plagiarism and intellectual property.

A further important area for learning is awareness of health issues in the physical use of technology. Students should learn about repetitive strain, effect on eyes of prolonged used of digital tools, and other ergonomic factors.

In an age when even the youngest children interact with technology, the instilling of practices of good digital citizenship can begin as early as Full-Day Kindergarten. Good digital citizenship should be integrated with character attributes in action as part of a school's social justice, inclusion and equity approach and foundational principles. As students make the transition from elementary to secondary school, they will already have acquired strong digital citizenship skills and be acclimatized to extending their learning through their online relationship with teachers.

EQUITY OF ACCESS AND EQUITY OF OPPORTUNITY

Teacher-Student Interaction

Increasingly, dialogue between students and teachers occurs through online networks that allow posting of homework, submission of assignments, discussion of student work, student-to-student sharing of ideas and comments.

This growing practice extends conversations beyond the time and place of the traditional classroom and raises digital citizenship issues in terms of appropriate teacher-student communications, teacher responsibility for responding to personal or critical issues raised by students beyond the school day.

While online communications support personalized "anytime, anywhere" learning and an opportunity for students to engage who might otherwise feel less comfortable with direct communication, it will be important to maintain balance with the indispensable role of face-to-face engagement between students and teachers.

Some educators who have concerns about the use of technology by students to cheat on assignments will appreciate the advantages offered through online submission of work to easily identify and prevent plagiarism. The enduring response to this issue is to set aside technology as the culprit and to focus on the importance of digital citizenship.

> ""Technology plays a huge role in our day-to-day lives in the 21st century, and it also needs to have an increased role in the classroom. The use of interactive tools allows students to learn at their own pace, enhances their experience and promotes deeper engagement."
> **Hirad Zafari, President**
> **Ontario Student Trustees' Association**

The ideas explored and discussed by educators at the 2010 Big Ideas Global Summit were captured in the paper "*The Right to Learn*." This choice of theme represents a step beyond what the United Nations Millennium Development Goals identified as the right to receive a universal primary education. The "right to learn" is a child-centred concept and is based on "**empowering our young people to leverage their innate and natural curiosity to learn whatever and whenever they need to.**"[4] The premise underlying this thinking is that we live in an age where there is unprecedented opportunity for equity in learning through harnessing what technology makes possible for all learners.

Personal computing is increasingly available to all students and allows them to take greater responsibility for their own learning, to draw on the rich sources of knowledge available online, and to learn at their own pace.

The use of technology for learning and teaching is incredibly valuable for students in remote locations. In small rural and northern schools and in First Nation community schools where distance and low enrolment numbers would normally limit the resources and course options available, access to webcasts, on-line learning and rich mines of information help to reduce, if not eliminate, the inequities students might face in these situations. This applies equally to equity of access in teacher professional development where professional growth opportunities are available on-line and teachers can learn from each other without having to be physically in the same place.

Our vision includes a foundation of equity of access so that all students regardless of their location or economic circumstances can exercise their right to learn.

CONCLUSIONS AND RECOMMENDATIONS

> **"Multi-literate, creative and innovative people are now seen as the drivers of the 21st Century and the prerequisites to economic success, social progress and personal empowerment. Organizations and authors have identified these competencies and called for transformation of public education systems globally to meet current learning needs along with a shift in the way that we engage students in their own learning"** [5]

The vision and the specific pillars that support teaching and learning in a digital age that are offered in this paper have been written by Ontario educators and students but they represent the wisdom of many respected thinkers and researchers around the world. Countries with top-performing education systems on any international scale are engaged in wide-scale transformation to ensure that students are prepared for the "21st century world."

The authors of this paper examined international and Canadian studies; they considered the work of the pan-Canadian organization C21 which has drafted a paper called "*Shifting Minds*", a document which, in turn, draws on an international range of expertise in business, research and education sectors. The trends and advice documented in this wide body of literature bear out the need for the kind of vision and urgent action for which our paper advocates.

Recommendations:

Vision

1

That the Ontario Ministry of Education adopt or adapt Our Vision with education partners to drive a purposeful cultural shift in our education system that

- focuses on engaging and inspiring our students
- fosters creative and innovative minds and
- embraces the enabling role of technology in expanding
- how, when and where learning takes place.

Authentic Student Engagement

2

That the Ontario Ministry of Education support boards in their efforts to adapt to and adopt the technology used by students, recognizing the need to:

- empower students and engage them in taking responsibility for self-directed and self-paced learning as they take full advantage of "anytime, anywhere" learning that is no longer constricted within the walls of the school building or by the confines of the school day.
- engage and stimulate students to be independent, reflective and creative learners.

Inspiring and Inspired Teachers

3

That the Ontario Ministry of Education support teachers in their role in teaching in the digital age through :

- offering a range of opportunities for capacity-building and ensuring that the initiatives teachers take to integrate technology in their instructional practice are well-supported

- expanding professional learning through technology and increasing access across school boards, with a specific focus on province-wide professional and personal learning networks and a comprehensive provincial repository of digital resources created by Ontario teachers for Ontario teachers
- provide support to boards to replicate and scale up evidence informed pilot projects.

Skills for a Digital Age

4

That the Ontario Ministry of Education in its vision for Teaching and Learning in a Digital age amend the set of core skills that are assessed as part of "Growing Success" including:

- Creativity and Innovation
- Communication
- Critical Thinking
- Collaboration.

Responsible Digital Citizenship

5

That the Ontario Ministry of Education in its vision for Teaching and Learning in a Digital Age provide guidance on digital citizenship including:

- Pro-social skills and relationships that promote positive and caring climates for learning; cyber-bullying and social competence
- The digital footprint, concepts of privacy and management of privacy in the world of digital sharing
- Plagiarism and intellectual property.

Equity of Access and Equity of Opportunity

6

That the Ontario Ministry of Education include in its vision for Teaching and Learning in a Digital age the strong value of equity of access and opportunity so that all students regardless of their location or economic circumstances can exercise their right to learn.

- The Ontario Ministry of Education re-establish the technology budget line to ensure that school boards can continue to adequately implement a staged plan to provide reasonable and equitable access to current technologies and applications.

Summary

Ontario currently celebrates a well-deserved position in the world for high student achievement and for the quality of its public education system. It is critical to keep the momentum going.

The challenge to be overcome is ensuring the readiness of our students to take their place in world of rapid technological change and increased globalization. We need to start with an articulate Vision that will engage all our educators, all our learners, all our parents and all our communities.

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