





What does a school look like today?

What should it look like in 10 years, 20 years or even 50 years from now?

Those are the questions Hamilton-Wentworth District School Board has been asking. Over the past two years, hundreds of staff, students and community members have been involved in looking at the future of education in Hamilton, to find the answer.

We want to ensure our students are prepared for the world today as well as a future we haven't even thought of yet. With our economy shifting beyond our city, province and country, we need to redefine education for the 21st century.



Why change our schools?

If you've been in a classroom lately, you might notice that in many ways it's not much different than when you, your parents or your grandparents went to school. If asked to provide a definition of school, most of us would probably give the same answer:

"It's a place where we go for six hours a day, 10 months of the year and learn subjects like math, English, science and history. Subjects are taught by different teachers who are experts in the area. Students move from class to class at the sound of a bell, and desks are set up in rows."

Sound familiar? That's because it is. It's been the same system for nearly a century. Our school today is based on an industrial model from the 1900s. Much like a car on an assembly line, the idea was to graduate students who could enter the workforce with the same skills. Even the current, 10-month school calendar dates from a time when youth were needed in the summer to help harvest crops.

The world has changed since the 1900s and so have our students. Students live in a digital age where information, communication and experiences move at lightning speed. In fact, students are profoundly different than those who graduated even 10 to 15 years ago. Mass exposure to rapid visual and textual information has changed how students process information. Challenging and redefining our definition of school is required to meet the needs of our students today and tomorrow.



did you know?

“We cannot carry on preparing students for the farms and factories of yesterday while the world jumps to light speed with biotechnology, nanotechnology, neuro-technology, global highspeed and wireless networks, and incredibly powerful personal portable devices. Schools must prepare kids for the world of tomorrow – the world where they will spend most of their lives.” (Kelley, 2008)

What does the research show?

Students entering secondary school today don't remember a world without the Internet. In fact, they've attained skills playing video games, using cellphones and surfing the Internet. These students are called digital learners and today's learners, facing a changing world, demand something different from their education. Research can guide us in helping make some of these important decisions.

We know, for example, that today's learners prefer to access information quickly from multiple media sources and to network with each other simultaneously. They are more skilled in multi-tasking. They learn "just in time." (21st Century Fluency Series)

The Future of Learning Institutions in a Digital Age outlines the following five key principles when rethinking the future of schools (Goldberg, 2009):

- **Self-learning** – Digital learners are more self-directed and prefer receiving information quickly, as well as engaging in active learning.
- **Horizontal structures of learning** – Given the volumes of information available, the focus has shifted from finding information to finding reliable sources. Critical-thinking skills are required for this task.
- **Moving from presumed authority** – There is a move from a single expert on a subject to a collaborative learning environment. Learners need to know how to take turns speaking, posing questions, and listening to others.
- **Networked learning** – Students are comfortable using collaborative problem solving to accomplish tasks, as they would in online games. There is an acceptance and appreciation of collaborative knowledge-sharing platforms like Wikipedia.
- **Learning is lifelong** – With the world changing at a rapid rate, learners need to be adaptable and flexible to adjust to new situations and challenges.

In *Teaching the Digital Generation: No More Cookie-Cutter High Schools*, Kelly attributes the change in today's learner to new discoveries in brain research. This is the brain's ability to reorganize how it processes information based on new input. Digital generation students are being exposed to new kinds of input on a daily basis and their brains are reorganizing as a result (Kelly, 2008).

The author of *Grown Up Digital*, Don Tapscott, suggests that technology changes how students learn. Students need to actively engage in a topic rather than passively receive information. Educators and school systems need to reflect on the changes in order to connect students with their futures.

“ We are currently preparing students for jobs that don't yet exist, using technologies that haven't been invented, in order to solve problems we don't even know are problems yet. ”



What will a school of the future look like?

If research tells us that our schools should be adapting to a different type of learner, then what should our school environment look like to reflect our students?

We believe our schools should adopt the following principles:

School operating structure is flexible and meets the needs of all learners.

What that means is the learning that takes place in schools reflects that students think, learn and socialize through a natural interface with technology. Students and staff create a flexible learning environment that meets their needs, challenges their intellect and encourages local and global collaboration.

School program recognizes the 21st-century fluencies that our global economy requires.

We will provide our students today with the skills of tomorrow. In order to do that, we need to ensure our students are equipped with the essential critical-thinking skills required for living in this multimedia world. There are five fluencies that will help students master and thrive in the digital landscape.

Student voice is acknowledged and student needs drive the program

We want all learners to have equitable access to programs that meet their abilities, learning styles, interests, aspirations, career paths and that reflect student voice in where, when and how learning occurs.

School is supported appropriately by all members of the community

School communities exist beyond school walls. They are increasingly defined by the population inside and outside of the building - local and global, face to face, and virtual. For students, learning is social in nature and interaction with all communities is essential.

21st-century Fluencies

At HWDSB, we know that 21st-century fluency skills are important to our learners. That's why we've begun incorporating these skills into our classrooms across the system. The 21st-century fluency skills are a compilation of the future skills necessary for our students to meet the needs of society and employment in the 21st century. They help define the ways of thinking and acting that all our graduates will need to support their readiness in an ever-changing world. These skills include the following:

- **Solution Fluency** is the ability to be flexible and willing to alter the chosen path by being open to opposing ideas before working to a solution.
- **Information Fluency** is the ability to unconsciously interpret information in all forms and formats, in order to extract the essential knowledge. This involves both face-to-face and digital communication.
- **Creativity Fluency** is the process of adding meaning through design, art and storytelling.
- **Media Fluency** involves looking analytically at media to interpret the message as well as determining the most appropriate media to deliver a message.
- **Collaboration Fluency** is the ability to work co-operatively with virtual and real partners in an online environment to create original digital products.





e-learning



pathways



engaging programs

How are we going to get there?

We're reviewing schools and have developed a high-level plan that begins to reimagine the way HWDSB offers programs and provides facilities to best meet the needs of students.

The Program Strategy strives to reconcile various aspects of education at HWDSB: the core knowledge all students need; the personalized learning that supports this; the pathways students can select; the schools with specializations students can choose; and the Board, cluster and community supports to help students achieve their goals.

Our focus is to ensure all that all students will achieve because they have access to engaging programs and learning environments that honour their interests and needs. Basically, we're rethinking what we offer, where we offer it and how we can help all students achieve their full potential in our schools.

What does this mean for students?

All students will have access to all pathways – university, college, apprenticeship, workplace and community - beyond graduation. To ensure equity, HWDSB may need to expand offerings through new sites, eLearning or through a revised transportation policy so students can get to the programs they select.

For example, each secondary school would provide all of the programs that a student needs for graduation. Each cluster of schools may also offer specialty programs such as French Immersion or Manufacturing. That way, students may choose their closest school or the school that offers a particular program. A few programs in HWDSB will only be at one site, serving students with unique abilities or who want a particular delivery model.

Are we teaching our students differently?

We're using a tiered model to meet the abilities and preferences of students.

This asks the questions: What do all students need? What do some students need? What do a few students need? Then, it involves meeting these abilities with the best fit in programming.

For example, all students need effective classroom instruction. Some students require small-group work in addition to effective classroom instruction. A few students require one-on-one work with a specialist, small-group work as well as effective classroom instruction to reach their full potential.

This is about knowing our students, and meeting their abilities with the right level of support.



“ Our learners don’t just compete with graduates from Burlington and Niagara for jobs, but must face candidates from Mumbai and Beijing. Dramatic changes are necessary, if we can hope to equip our learners with the skill set necessary to compete in a global economy. (People for Education, 2009) ”



"There is a need for schools to remain in sync with the world around them and the learners within them. Students need to be involved in real, relevant experiences that recognize how they learn."

Glossary

21st-century Fluencies: Work to develop exceptional resources to keep learning relevant in the 21st century, to respond to how today's students learn and to prepare them for an uncertain future. The five fluencies include solution (problem solving/adaptability), information (communication/analysis), creativity (innovation/artistic), media (critical thinking/literacy) and collaboration fluency (teamwork/self-awareness/global citizenship).

eLearning: Learning facilitated by the use of digital tools and content, typically involving interactivity, which may include online interaction between the learner and their teacher or peers.

Equity: This is the foundation for improving student achievement and ensures all students have access to programs when and where they need them, and where all students participate to the best of their abilities.

Pathways: A combination of courses that lead to graduation and to a post-secondary destination, which may include options such as apprenticeship, college, university, community or the workplace.

Personalized Learning: Education that places the learner at the centre and provides assessment and instruction that is tailored to a student's particular learning and motivational needs.

Program Strategy: A strategy at HWDSB that reimagines the way that the Board offers programs and provides facilities to best meet the needs of students. It reconciles the core knowledge all students need, personalized learning, pathways, schools with specializations, as well as Board, cluster and community supports.

Speciality Programs: Programming that acknowledges that each student is unique in his or her learning. In addition to the programming offered at neighbourhood schools, alternative programs focus on sports, academics, science, arts and languages. These allow students to explore their interests, consider their pathways, and tailor their education to satisfy their strengths and needs.

Tiered Model: A method used to meet the abilities and preferences of students by asking the questions: What do all students need? What do some students need? What do a few students need? Then, it involves meeting these abilities with the best fit in programming. The level of support or programming adjusts appropriately for each student.

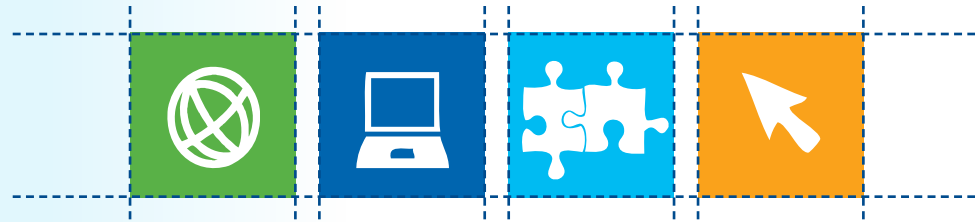
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The future is uncertain, full of challenges but also full of promise. This may be the best way to view the future of our schools – a project that Hamilton-Wentworth District School Board has dedicated itself to exploring.

We know schools need to be flexible to meet the needs of all learners, must offer programs that teach 21st-century fluency skills, must use student voice to drive program, must be supported by the community, and must be well-designed and well-maintained.

By revisiting how we deliver education, we can continue to foster achievement by preparing all students to be ready for success in their chosen pathway. It will also lead to high levels of student engagement because we're listening to our students and their interests and building equity by making sure all our students receive the appropriate programming and support to reach their full potential.

Imagine a school of the future – and what it could do for our students.

Our commitment is to create these schools now.



today's learner is different

“ Schools are centres for social life. Greater efforts must be made to ensure each student has an opportunity to engage in both the curricular and co-curricular life of the school. There needs to be as much resource put into engaging all students as has traditionally been allocated to the elite academic, athlete, musician, artist or drama major. All students need a sense of self-worth and a strong sense of belonging. ”



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ALL STUDENTS ACHIEVING THEIR FULL POTENTIAL