LIVING AND LEARNING IN THE DIGITAL ERA
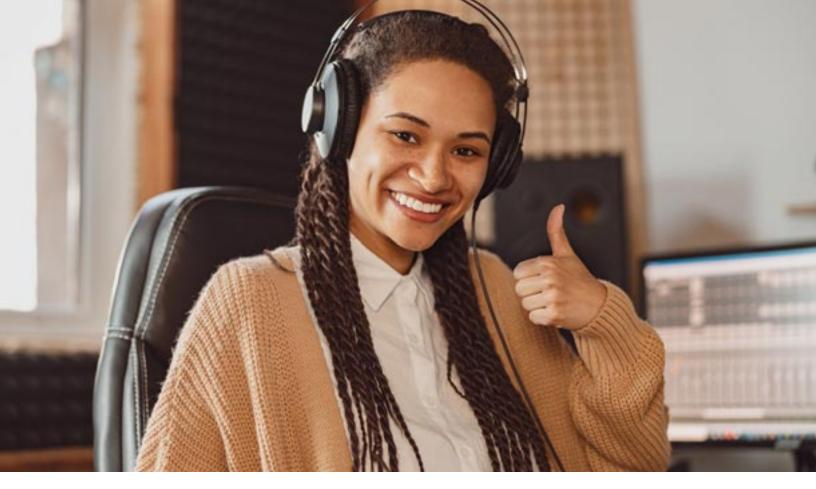
Catholic Virtual Learning Resource

Ontario Catholic School
Trustees' Association

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PRAYER TO ST. ISIDORE OF SEVILLE, THE PATRON SAINT OF TECHNOLOGY

Almighty and eternal God,
who created us in Thy image and bade us to seek after all that is good,
true and beautiful,
especially in the divine person of Thy only-begotten Son,
our Lord Jesus Christ,

Grant we beseech Thee that
through the intercession of Saint Isidore,
bishop and doctor,
during our journeys through the internet we will direct our hands and eyes only to that which is pleasing to Thee, and treat with charity and patience all those souls whom we encounter.

Through Christ our Lord,

Amen.

> "Be who God meant you to be and you will set the world on fire."
> — *St. Catherine of Sienna*

A SHARED WORLDVIEW

As teachers in Catholic schools, we share a unique worldview grounded in service and community. Through our professional practice, guiding students with our hearts and minds, the broader community, both present and future, also benefits. The learners we empower will eventually contribute to society through their own endeavours, continuing a pattern of flourishing and love.

A SHARED COMMITMENT

Regardless of the specific role we have in education at any given time, we are all educational leaders. Educating youth unites responsibility with service, a transformative element of our vocation. In fact, teaching is a profession that fosters all others, motivating students to apply learning meaningfully as life-long, engaged and contributing citizens.

Grounded in Gospel values, Catholic education nurtures an inclusive learning culture of high expectations for all learners across all learning environments. Diversity is championed as a strength, so that students with different backgrounds and experiences are collectively inspired to achieve to their unique potential and promote the common good. Created in God's image, all learners matter.

> "Internet and social networks are a resource of our time...A way to stay in touch with others, to share values and projects, and to express the desire to form a community."
> (Pope Francis)

> "A good school provides a rounded education for the whole person. And a good Catholic school, over and above this, should help all its students to become saints." — *Pope Benedict 16th, Address to Teachers and Religious, 2010*

LIVING AND LEARNING IN THE DIGITAL ERA

Educating by its very nature seeks transformation. Good pedagogy dances between the wisdom of the past and the possibilities of the future while remaining fully grounded in the language and culture of the ever-changing present. For Catholic educators teaching requires an act of imagination that envisages the Kingdom of God on earth — one of peace, equity, and justice — while remaining grounded in the challenges and opportunities of today.

THE DIGITAL ERA

The digital era began innocuously in the 1970s with the arrival of the first personal computers. The jump to personal devices in the 1990s both created a digital divide between those with access and those without, and also fundamentally changed the way we acquire information. Today, questions that previously would have required a trip to an encyclopedia can now be answered within seconds on a hand-held device. Likewise free and widely available Artificial Intelligence programs (AI) provide opportunities and challenges to education and accountability that were unthinkable in the past.

On average adolescents are spending seven and a half hours a day online, sometimes on more than one device at a time (*Rideout et al,* 2010). While encouraging today's youth to find time for exercise and in-person authentic social interactions and activities, older generations must also accept that this is the world in which their young will mature and learn. In recognition of this, schools must direct students away from online social 'bubbles' or 'silos' that may keep them from encountering or accepting those with different personalities, interests, beliefs, and characteristics from themselves. Educators must ask themselves:

> "How can we co-create healthier online experiences where people can engage in conversations and overcome disagreements with a spirit of mutual listening?
>
> How can we empower communities to find ways to overcome divisions and promote dialogue and respect in social media platforms?
>
> How can we restore the online environment to the place that it can and should be: a place of sharing, collaborating, and belonging, based on mutual trust?" (par. 23, *Towards Full Presence*)

> "Great strides have been made in the digital age, but one of the pressing issues yet to be addressed is how we, as individuals and as an ecclesial community, are to live in the digital world as 'loving neighbours' who are genuinely present and attentive to each other on our common journey along the 'digital highways.'" — *Towards Full Presence. A Pastoral Reflection on Engagement with Social Media, 29.05.2023*

In this digital era, schools are no longer preparing students necessarily for the same jobs as in the past. Young people will enter highly competitive, collaborative, and digitalized job markets regardless of their field, and many will work from home. Vocations such as social media specialist, online game developer, and digital video editor simply did not exist in the past. Even factory work and other hands-on jobs have been automated to the point where many now require digital skills. Work is at times outsourced not only to adjacent communities but even to other countries. Creativity and collaboration will be key skills necessary for workers, well beyond simple technological prowess (Jukes, 2018).

As 'digital natives,' most youth have grown up within this reality. But many educators and parents are instead 'digital immigrants' having grown up and trained in a less virtual era (Prensky, 2001). In order to be fully present to our youth, educators must stay abreast of rapid change in our digital world. The Church has provided numerous insights to help educators in their efforts today to assist students to navigate the digital world ethically and compassionately. Among other resources, these include papal messages on each of the annual World Communication Days and most recently the document *Toward Full Presence: A Pastoral Reflection on Engagement with Social Media* produced by the Dicastery for Communication (May, 2023). The latter uses the parable of the Good Samaritan (Luke 10:25-37) as a framework to reflect on the question of "Who is my neighbor" in the digital age. The document considers questions of compassion, hospitality and justice for those who travel the digital highway.

> *"The digital environment is characteristic of the contemporary world. Broad swathes of humanity are immersed in it in an ordinary and continuous manner. It is no longer merely a question of 'using' instruments of communication, but of living in a highly digitalized culture that has had a profound impact on ideas of time and space, on our self-understanding, our understanding of others and the world, and our ability to communicate, learn, be informed and enter into relationship with others."* – Pope Francis, , *Christus Vivit*, 86

ADOLESCENT BRAIN DEVELOPMENT IN THE DIGITAL ERA

Pedagogy must take into account the fact that youth do not learn the same way they used to, not just because of societal change but also because their brains are developing differently (Prensky, 2001). The constant use of devices, and hours spent online, whether gaming or creating video content or communicating, has an impact on the brain (Marciano et al, 2021). "Scientists now have evidence that the brain's structure is far more malleable than we originally believed, and environmental stimuli, experiences, and emotions constantly affect it, causing the brain to reorganize and restructure itself." (Jukes and Schaaf, 2018).

The Adolescent Brain by Dan Siegel, demonstrates that brain specialization is a normal part of adolescence. Young people discover their passions during this stage of human development, and the areas of brain associated with learning these passions develop more fully while other areas begin to shrink (Siegel, 2018). Good education feeds the passions but continues to make links to other areas to maximize full brain development.

While researchers underscore the need for more studies on the developing brain in this digital era, one recent study found that "online activities act as strong rewards to the brain and repeated screen time augments the tendency to seek short-term gratifications" (Marciano et al, 2021). Educators might then seek to provide more short term rewards for meeting learning expectations, while also encouraging students to strive for long term goals.

All this screen-time has not been shown to be necessarily bad for the brain. While some studies show that brain changes may make impulse control more difficult, they also "make children and teens more willing to explore, take risks, and learn from friends." (Magis-Weinberg & Berger, 2020)

In their 2018 book, *A Brief History of the Future of Education: Learning in the Age of Disruption,* Ian Jukes and Ryan Schaaf argue that educators must help students become technologically adept innovators partly because this is where student interest lies and partly because this is what the global job market demands. They list the following nine research-based principles for planning learning activities for today's digital learners, who:

1. Prefer Receiving Information from Multiple, Hyperlinked Digital Sources.

2. Prefer Parallel Processing and Multitasking.

3. Prefer Processing Pictures, Sounds, Color, and Video Before They Process Text.

4. Prefer to Network and Collaborate Simultaneously with Many Others.

5. Unconsciously Read Text on a Page or Screen in a Fast Pattern.

6. Prefer Just-in-Time Learning.

7. Are Looking for Instant Gratification and Immediate Rewards, as well as Simultaneously Deferred Gratification and Delayed Rewards.

8. Are Transfluent Between Digital and Real Worlds.

9. Prefer Learning that is Simultaneously Relevant, Active, Instantly Useful and Fun.

VALUES AND VISION IN THE DIGITAL ERA

The digital era has emerged at a time when the world struggles with issues of climate change, increased gaps between the poor and the wealthy, and rising disinformation to name but a few of the many current global challenges. Today's graduates must be nourished by wisdom and compassion as they employ their digital skills for a better world.

New ethical questions around the use of technology must also be addressed even as educators embrace new opportunities for innovation. Emphasizing discernment and thinking skills in education will help form engaged citizens who are able to triage the now abundant information available at their fingertips.

Research consistently shows that "learning is influenced by social interactions, interpersonal relations, and communication with others, and learners need opportunities for positive interactive and collaborative tasks" (McKnight, O'Malley et al, 2016). What has not changed in the digital era then is the need for connection, collaboration, creativity and compassion both in the world and in schools (e.g., Fullan et al, 2014). "As a community of faith, the Church is on pilgrimage towards the Kingdom of Heaven. Since social media and, more broadly, digital reality is a crucial aspect of this journey, it is important to reflect on the dynamics of communion and community vis-a-vis the Church's presence in the digital environment." (par. 57, Towards Full Presence)

The Ontario Ministry of Education emphasizes the importance of equipping students with the values elaborated in the *Ontario Transferable Skills which map into the Ontario Catholic School Graduate Expectations.* The OCSGEs envisage a graduate who has become:

1. A DISCERNING BELIEVER formed in the Catholic Faith community who celebrates the signs and sacred mystery of God's presence through work, sacrament, prayer, forgiveness, reflection and moral living.

2. AN EFFECTIVE COMMUNICATOR who speaks, writes and listens honestly and sensitively responding critically in light of gospel values.

3. A REFLECTIVE, CREATIVE AND HOLISTIC THINKER who solves problems and makes responsible decisions with an informed moral conscience for the common good.

4. A SELF-DIRECTED, RESPONSIBLE, LIFELONG LEARNER who develops and demonstrates their God-given potential.

5. A COLLABORATIVE CONTRIBUTOR who finds meaning, dignity and vocation in work which respects the rights of all and contributes to the common good.

6. A CARING FAMILY MEMBER who attends to family, school, parish and wider community.

7. A RESPONSIBLE CITIZEN who gives witness to Catholic social teaching by promoting peace, justice and the sacredness of human life.

The need for caring communities formed by individuals who have acquired these values and skills has never been more important.

> "It is not technology which determines whether or not communication is authentic, but rather the human heart and our capacity to use wisely the means at our disposal." — *Pope Francis*

THE DIGITAL ERA AND TECHNOLOGY IN EDUCATION TODAY

COVID lockdowns in the spring of 2020 pushed schools into taking further robust steps into learning in the digital era. The obligation to provide for distance education meant that, despite the many early challenges (Barbour et al, 2020), more rapid advancements began to happen in Ontario from four important perspectives:

- **Technological Infrastructure:** Educational technology was improved through increased funding to ensure program delivery.
- **Access:** Students who needed access to internet and digital devices at home were identified and efforts were made to meet their needs, thus narrowing the digital divide
- **Professional Development:** Teachers quickly learned how to more effectively use various technologies and various programs (Hargreaves, FACET, 2021).
- **Leadership and Vision:** Educational leadership teams (principals, superintendents, etc) offered whole-hearted support to schools and teachers in their efforts to provide a digital form of education.

Many of the factors identified in a 2013 study as necessary for the success of the use of technology in schools began to fall into place at a more accelerated pace from 2020 onwards, including, "vision, distributed leadership, technology planning and support, school culture, professional development, curriculum and instructional practices, funding, and partnerships" (Levin and Schrum, 2013).

Schools have changed as well in the digital era. In order to meet learners where they are, educators now use technology to meet a variety of learning situations:

- **Online learning** anywhere, anytime
- **Virtual learning** within a school context,
- **Hybrid learning** where some students are at home and others in class,
- **Blended learning** where students are in class but use devices.

Because of the multiple contexts in which education now happens, some experts prefer the term 'ubiquitous' learning to online learning (Sam et al, 2021).

LEARNER-CENTERED EDUCATION IN THE DIGITAL ERA

Today, the development of curriculum that is technology-savvy and meets the needs of today's digital learners aims to be:

- **High Interest:** Meeting the learning styles and goals of today's youth (Jukes, Schaaf, 2018)
- **Learner-Centered:** Students have choice and control over their learning (McKnight, O'Malley et al, 2016)
- **Accessible:** Anytime-anywhere learning for all regardless of learning style
- **Useful and Reliable:** Discernment must be used to triage web information
- **Safe:** Online safety must be emphasized

Research demonstrates repeatedly that motivation remains the key factor in helping students engage in learning. Multiple research efforts affirm that motivation is most effectively sparked through learner-centered strategies (McKnight, O'Malley et al, 2016; McCombs, 2005):

"Learner centered" is the perspective that couples a focus on individual learners — their heredity, experiences, perspectives, backgrounds, talents, interests, capacities, and needs — with a focus on learning — the best available knowledge about learning and how it occurs and about teaching practices that are most effective in promoting the highest levels of motivation, learning, and achievement for all learners." (McCombs & Whisler, 1997, p. 9) (Quoted in McCombs, 2005)

The concept of learner-centered education is not new, but the technologies such as those noted in Neuroscience, AI and the Future of Education by Scott Bolland (TEDxSouthBank) make it easier than ever for teachers to implement.

However, a certain mind-set of how education should happen must be transcended first in order to embrace new possibilities (Jukes and Schaaf, 2018). A 2016 study (McKnight, O'Malley et al) demonstrated that where technology is effectively used in schools that use learner-centered strategies it has the potential to:

- **Improve access:** Both students and teachers have access to more up-to-date material, and this is true anytime and anywhere. Technology also allows for accommodations and modifications as needed for students, as well as choice and control of material.

- **Enhance communication and feedback:** Teachers can give more continuous and immediate feedback and responses, and students are able to collaborate and communicate more widely.

- **Restructure teacher time:** Teachers spend less time grading and more time coaching and guiding students in their learning journey, while giving more immediate feedback.

- **Extend purpose and audience for student work:** Student work can be shared and find purpose not only with peers but with the world beyond the classroom, including globally.

- **Shift teacher and student roles:** Rather than providing continuous content, teachers were helping students manage their own learning and giving them more choice and control.

Educators are actively engaged with students at all points — in class and virtually - focusing on short instruction, high interest activities (searches, games, multimedia, research, discussion, etc), direction, coaching, and finally just-in-time feedback and assessment. Research shows that, "learning is enhanced in contexts where learners have supportive relationships, have a sense of ownership and control over the learning process, and can learn with and from each other in safe and trusting learning environments" (McCombs, 2005).

"For we are what he has made us, created in Christ Jesus for good works, which God prepared beforehand to be our way of life." (Ephesians 2:10)

CATHOLIC CONTEXT AND CONTENT IN THE DIGITAL ERA

The principles of the Ontario Catholic Graduate Expectations arise easily for examination and exploration in learner-centered education which "recognizes learning as both a social and a cognitive process, not merely a matter of information transmission" (Barbour et al, 2020).

Digital tools provide important ways for students to learn about Catholicism and Christ's call for Beatitude living. Our students and staff have the opportunity to explore related aspects of Catholicism through our curricula. This might include:

- prayers at appropriate moments
- reflections on the social impact of historical events or scientific advances in relation to the principles of Catholic Social Teaching.
- pop-up boxes or links to learn more about Catholic leaders in their fields,
- online searches for related Catholic teachings.

At all times, writers must bear in mind the diverse identities of students in Catholic schools. These elements are then simply gifted to students without impacting grades.

It is important for educators to always consider the broader mission Christ calls us towards. At all times the school is not simply teaching curriculum but also teaching students how to live together, how to love God, and how to love each other as neighbours in all our differences and imperfections.

"Working together as a team, making space for diverse talents, backgrounds, capacities, and rhythms, co-creating beauty in a "symphonic creativity," is actually the most beautiful witness that we are really children of God, redeemed from being concerned only with ourselves and open to an encounter with others." (Par. 68, Towards Full Presence)

CONCLUSION

The advent of the digital era has had a profound global impact. "Digital generations live a hybrid existence — one part constructed from real-world experiences and the other part a virtual environment." (Jukes and Schaaf, 58). It is not simply that students want to learn differently than previous generations, it is that through continuous use of digital devices the way they learn has fundamentally changed (Prensky, 2001).

Despite these changes, human interaction and relationship remain a fundamental part of all education, and the heart of Catholic schools. Digital generations may approach learning differently from previous generations, but the goals and hopes of peace and justice remain the same. According to the Congregation for Catholic Education (2022):

> The school must be the first social setting, after the family, in which the individual has a positive experience of social and fraternal relationships as a precondition for becoming a person capable of building a society based on justice and solidarity, which are prerequisites for a peaceful life among individuals and peoples. This is possible through a search for truth that is accessible to all human beings endowed with rationality and freedom of conscience as tools useful both to study and in interpersonal relationships. (par 19, 2022)

"Let the wise also hear and gain in learning, and the discerning acquire skill." (Proverbs 1:5)

"I above all invite you, young people, to download the Click to Pray app."
– Pope Francis (www.clicktopray.org)

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Our Mission

Catholic Virtual Ontario provides equity of access for Catholic secondary students
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