

# 21<sup>st</sup> Century Competencies

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# Why 21<sup>st</sup> Century Competencies?

Current calls for education to keep pace are linked to:

1. Changes to the workforce, from industrial production to technology-driven, interconnected globalised economy of knowledge
2. Increase in evidence from research on how to optimise learning – especially through the use of technologies to deepen and transform learning
3. Changing learner expectations; demanding education that is more connected and relevant to their lives

# Where is Ontario going?

- Ontario, Canada, is arguably one of the best (if not THE best) educational systems in the world.
- “Achieving Excellence” – (Ontario Ministry for Education, 2014) made a commitment to define and measure 21<sup>st</sup> century competencies:

*“By 2025...we will be a world-leader in higher-order skills, such as critical thinking and problem-solving which will allow us to thrive in the increasingly competitive global marketplace” (Sousa, 2014, p.9)*

# Other educational groups?

- Research about 21<sup>st</sup> century competencies is dynamic and constantly evolving and requires regular review and revision
- OECD (Organisation of Economic Co-operation and Development; 34 countries)
- European Commission
- Partnership for 21<sup>st</sup> century Skills
- US National Research Council
- And many others

Australia's National Curriculum Framework reflects similar conceptual understandings.

# What are competencies?

- More than skills and knowledge
- “ a competency involves....the ability to...draw on an individual’s knowledge or language, practical IT skills, and attitudes towards those with whom he or she is communicating” (OECD. 2003, p.4)
- The Australian Curriculum calls these ‘capabilities’

# More than skills and knowledge.....

- Note that the 'knowledge' can be found on the web or learned in the workplace.
- Increasingly, employers are valuing **inter- and intra-personal competencies** such as teamwork and leadership skills.
- Evidence (Pellegrino & Hilton, 2012, p.55) now reveals that people skills are an important determinant of occupation and wages; *young people's social skills affect their job prospects in adulthood.*
- Intra-personal skills such as perseverance, determination, grit, resilience, tenacity and a growth mind-set have a strong relationship with an individual's capacity to *overcome challenges and achieve long-term success.* (Tough, 2012, Dweck, 2010)

# Helping children to manage failure

Tough (2012) researched how children succeed, and found that helping children at a young age to learn how to manage failure (in 'child-sized' adversity) is important in building self-confidence, self-regulation skills, sense of efficacy, and resilience that enable children to persist and overcome challenging circumstances.

# 21<sup>st</sup> Century Competencies con'd

Cognitive (in your brain and mind) skills include:

Innovation, interpretation, critical thinking, problem-solving analysis

Inter-personal (relating to others) skills include:

Co-operation, teamwork, negotiation, trust, empathy, responsibility

Intra-personal (within oneself) skills include:

Tenacity, resilience, grit, perseverance, citizenship, responsibility

# In summary:

1. **Character** (grit, tenacity, perseverance, resilience, reliability, honesty)
2. **Citizenship** (thinking like global citizens, empathy, ethical behaviours, willingness to engage with others to solve complex problems that impact society and environmental sustainability)
3. Communication
4. Critical Thinking
5. Collaboration
6. Creativity

## Next week:

We'll talk about how schools can deliver on giving students opportunities to learn four of these:

- Communication
- Critical Thinking
- Collaboration
- Creativity

.....with particular reference to how our school is doing it

# The following week:

.....We'll discuss in groups how we can work together to provide opportunities for students to develop capabilities in

1. **Character** (grit, tenacity, perseverance, growth mind-set)
2. **Citizenship** (thinking like global citizens, empathy, ethical behaviours, willingness to engage with others to solve complex problems that impact society and environmental sustainability)

# Implication for teachers

- **Motivation and emotion** play a central role in the development of intra-personal competencies (sense of efficacy, self confidence etc)
- Understanding **factors that influence motivation and emotion** are essential in providing a learning environment that promotes students success.
- Dweck (2010) found that “students’ mind-sets have a direct influence on their grades and that teaching students to have a growth mind-set raises their grades and achievement significantly” (p.26)

# Knowing the process of learning

- Hattie (2012), Fullan & Langworthy (2014) make the case for students 'learning the process of learning' to become the core purpose of education in the 21st century.
- 'Learning to learn' or a **growth mindset**, enhances students' ability to acquire skills, knowledge, and attitudes that are relevant to new areas of learning.
- It includes self-regulation skills, and ethical and emotional awareness needed to communicate, work, and learn with diverse groups of individuals and teams worldwide (valuing difference and diversity)

## Learning to Learn – definition:

“the ability to pursue and persist in learning, and to organise one’s own learning including through effective management of time and information, both individually and in groups”.

It includes :

- seeking and making use of guidance,
- identifying available opportunities, and
- overcoming obstacles in order to learn successfully.

# Implications for Teachers

- The competencies should not be taught as subjects but **embedded and integrated in learning areas**, through pedagogies used
- ‘**Deep Learning**’ is required for students to develop the competencies.
- This requires a shift by teachers from ‘covering all content’ to **a focus on the learning process**; developing students’ ability to lead their own learning, and to **do things with their learning**.
- Teachers must **partner with students in tasks** that include exploration, connectedness and real-world purposes.
- **HOW MUCH OF THIS ARE WE DOING NOW?**

# Teaching Strategies

- Project-based/Inquiry-based/problem-solving
- Students being taught a range of strategies and then choosing which is best for the purpose/context.
- Students make decisions about the nature and structure of their own learning

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**HOW MUCH OF THIS ARE WE DOING NOW?**

# The Role of Technology

- Use of real-time data
- Simulations to situate learning in their own world
- Opportunities for students to link to their own personal interests
- Visual representations to see how things connect
- Manipulating representations to force thinking about new ideas and implications
- Communications technologies can help students build their knowledge through the contributions of their peers

# Consider the possible role of service-learning

- Engaging students in community service that is integrated with learning descriptors
- Engagement with real-time situations in their communities
- **Examples:** visiting old people in retirement homes, community gardening, litter control

# Implications for learning spaces

- Design for flexibility: movable furniture and walls that are easily reconfigured for different class sizes and activities and subjects
- Maker-spaces provide spaces and tools for students creation (e.g. 3D printers, robotics, software)
- Mobile technologies require: learning pods, studios, collaboration zones, project-planning rooms
- Design for greater information sharing, collaboration and interaction, reducing disengagement and bullying...and global sharing and collaboration
- (Seek input from the local community to facilitate service projects)

# Workshop

In groups discuss:

1. The 6 (or 4) 'Cs'; whether we are addressing them now and well enough
2. What areas we need to do more of
3. Greater collaboration between classes (physical and/or virtually)
4. Better use of spaces to facilitate collaboration and communications
5. Implication for our individual and collective planning

# Problem-based learning for 21<sup>st</sup> Century

Examples; work in small groups

**English:** Create a digital-image story, using only digital images and sounds

**English:** Create a social networking profile page for a figure from history, a literary character or author

**English:** Create a digital marketing campaign to raise awareness of an issue concerning digital citizenship e.g. cyber-bullying. Create both a public announcement and a print medium brochure/poster.

# Further examples:

- **HASS** – create marco-polo's (or some other historical figure) online Auction site (each item should have a picture and a price)
- **HASS** – create a multi-media presentation titled “Why do civilisations fall?”
- **HASS** – put together a digital presentation about pop culture and trends since 1920 (should include music, clothes, sport, food, entertainment)
- **Science** – create a class virtual ‘zoo’; each group creates a fictional animal including characteristics, adaptations, food, water, shelter and presents it in a digital format the rest of the class

# And more examples:

- **Maths**: (pair up with a class in another country (use TeachersConnecting.com or ePals). Correspond through class email accounts. Each group pairs with a group OS to research different shapes in their school (one group does circles, another cylinders etc). Upload and compare differences in writing.
- **Maths**: create a viral video about a function; consider what makes a video go viral (humour, animations, music lyrics?) Video should include all information about the function (family)