



## WIRED FOR CHANGE

by Sal Ritacca, Co-founder and former Principal of Leonardo Da Vinci Academy

Years before the pandemic lockdowns I participated in a presentation sponsored by the Montessori Society of Canada on the implications of digital technology on childhood development. The discussion titled "*Wired for Change*" was lead by Lynn Woodward, Montessori trainer, lecturer, consultant, examiner and parent educator. In her talk Lynn cited disturbing research implying that

exposure to the digital world is not constructive for developing young minds, bodies and spirits.

While most parents would never give their 10 year old a car, Lynn is disturbed by how readily most parents hand the same child a smartphone without considering the dangerous consequences. "Do we want our children's learning habits and neurological connections to be shaped by unregulated computer use?" she asks. Parents are advised to reflect critically on why their child actually needs the technology before facilitating what could prove to do more harm than good.

That Canada is one of the most wired nations in the world is reflected in the fact that 1 out of 3 children has an electronic device before they can speak. Lynn reminded those present that "lapware" or other apps marketed for children and parents is programmed as gameware and not by educators or experts in child development. In spite of the fact that most software designed for young people is not developmentally appropriate, 54% of 13-17 year olds spend 30 plus hours per week on digital devices leading to "Electronic Screen Syndrome" - an ailment of the digital age.

Digital screens are no substitute for real world manipulatives which develop eye hand coordination, whole brain thinking, and Math skills and have no kinesthetic value. Lynn also warns of some physical limitations and adverse effects of digital screens. The computer mouse for example does not provide cross lateral movement needed to wire both sides of the brain (the mouse is always on the same side). Other physical manifestations of unlimited computer use include poor posture, sleep disturbance, eye strain and short-sightedness. The latter is a result of the constant focal distance and unnatural screen back lighting which are detrimental to developing eyes.

Lynn suggested that the increase in ADHD in the past 2 or 3 decades may be the result of the new wiring of young brains exposed to digital technology on an ongoing basis. She also cited evidence that the bombardment of digital media decreases intellectual capacity. This is due to the way the digital information is transmitted and because the vast majority of moving images on a screen stimulate the right side of the brain - the same area that generates sadness. Since language development occurs on the left side of the brain, a child's language development is delayed by excessive use of digital devices.

Lynn maintains that the best educational software will not be as good as one to one human communication which incorporates body language, real human feedback, physical contact, and pheromones. Lynn also argues that abstract computer images are developmentally inappropriate for children under 6 years old and can lead to behaviour problems. For appropriate development, children must learn from human beings and experience the concrete (analog) before the abstract - the anti-thesis of digital technology.

Lynn warns that the very features of digital technology, like extrinsic motivation, immediate gratification, and dopamine-like reward based reinforcement are the very things that negate the development of patience and perseverance - qualities critical to success, growth, and mindfulness. The antidote to this, as we have been promoting at LDVA, is time spent in nature and analog based activities that engage "Thinking Like Leonardo".

