



6840 Seaview Road, Sechelt, BC V0N 3A4

www.zonein.ca

Bend-La Pine Schools
520 NW Wall Street
Bend, OR 97703

06 October 2015

Dear Superintendent Shay Mikalson, Wendy Winchel, School Board Members - Peggy Kincade, Nori Juba, Andy High, Cheri Helt, Julie Craig, Stuart Young, Ron Gallinat and All Bend La Pine School Principals;

In my capacity as a pediatric occupational therapist, biologist, international speaker, and author on the subject of the impact of technology on child development and learning, I'm writing to you on behalf of students, teachers, and parents requesting you reconsider the use of devices which operate using wireless radiation.

Please find below guiding principles regarding managed balance between technology and healthy activity, as well as information on wireless radiation. More judicious use of educational based technologies in a safe manner, will serve to ensure sustainable futures for all children. Reversion to Ethernet or fiber optic cable devices, until such time as the World Health Organization deems wireless to not be harmful to young children, is recommended.

Guiding principles for the use of educational based technology in school environments.

Minimize Risk and Maximize Safety.

- Wireless radiation has not been proven safe (WHO 2011).
- Recent research indicates wireless radiation causes harmful effects to adult humans (Avendano 2012, Hardell 2013).
- Long term effects of wireless radiation on children are unknown at this time (AAP 2013).
- Children have thinner skulls, more aqueous bodies, and have rapidly developing cells, indicating they are exceedingly more vulnerable to harmful effects from wireless radiation than adults (AAP 2013, C4ST 2015).
- The American Academy of Pediatrics and the Canadian Pediatric Society recommends no more than 1-2 hours total technology use per day, including

educational technology. Many schools exceed these expert guidelines (AAP 2014).

Weigh Risk vs. Benefit.

- Education technology is not evidence based and is laden with conflict of interest e.g. manufacturers claims are financially motivated, and are not substantiated by university level research.
- Traditional and standardized teaching methods have substantive research support and evidence, yet are being rapidly replaced with education technology.

Ensure adequate foundational skills prior to use of technology.

Children need to balance the following 4 critical factors with technology, to optimize development and learning. Time spent with technology adversely affects these factors.

- *Movement*: stimulates vestibular, proprioceptive and cardiovascular systems.
- *Touch*: stimulates parasympathetic system for lowered cortisol and adrenalin.
- *Human Connection*: activates parasympathetic system; a life sustaining force.
- *Nature*: attention restorative, improves learning, erases effects of technology.
- *See video*: [Message to Schools on EdTech](#)

Risks associated with the use of technology by children are as follows:

- *Sedentary nature* of technology use is causally related to the recent rise in obesity/diabetes, developmental delay and learning difficulties (Tremblay 2011, HELP EDI Mapping 2009/13, Ratey 2008, PISA 2012).
- *Isolating factor* of technology use is associated with escalation in social impairments, mental illnesses (including adhd and autism), and self-regulation difficulties (Houtrow 2014).
- *Overstimulation* from technology use is a causal factor in rise in attention deficit, aggression, sleep disturbance, and chronic stress from hyper-arousal of the sympathetic nervous system (Christakis 2004, Gentile 2009, Markman 2010, Bristol University 2010).
- *Neglect* of students by teachers and support staff who are engaged in their own personal technology, is unfortunately common.
- Consequently, the risks associated with using education technology far outweigh the dubious benefits.

When In Doubt, Act With Caution.

- Existing research on harmful effects of wireless radiation on *adults*, indicates taking a cautionary approach when considering same radiation exposure to *children* (AAP 2014).



6840 Seaview Road, Sechelt, BC V0N 3A4

www.zonein.ca

- Rapid cell turnover in children creates particular concern regarding potential DNA damage from wireless radiation, and consequent susceptibility to cancer. While rise in cancer incidence is becoming more apparent, rise in rates of cancer in children will not be observable until adulthood.
- Removal of wireless radiation and reversion to Ethernet cabled devices, will ensure immediate and long term safety to all students, teachers, and support staff.
- Defaulting to a remote authority regarding removing wireless radiation from schools, is not acting in the best interests of students and staff, and may not be defensible in a court of law.

Montgomery County's statement that the radiofrequency levels in schools "is compliant" with federal regulations *does not* assure safety to the students in your care. The current proposed technology plan to further increase the use of screens in classrooms on a daily basis, clearly does not support children's healthy development.

The implications of failure of schools to act with caution now regarding wireless radiation and technology, could potentially be horrific in both scope and magnitude, and may constitute neglect of children. Please act now to safeguard your children's future.

Respectfully,

CRowan

A handwritten signature in black ink, appearing to read "Cris Rowan", written over a white background.

Cris Rowan, BScBi, BScOT, SIPT, AOTA Approved Provider
CEO Zone'in Programs Inc. and Sunshine Coast Occupational Therapy Inc.
crowan@zonein.ca email

Websites: www.zonein.ca, www.suncoastot.com, www.virtualchild.ca;

Blog: www.movingtolearn.ca

Research References

American Academy of Pediatrics, Letter to Federal Communications Commission on August 29, 2013; retrieved on February 26, 2014 at <http://apps.fcc.gov/ecfs/document/view?id=7520941318>.

American Academy of Pediatrics, Policy Statement – *Children, Adolescents, and the Media*, Council on Communications and Media; retrieved on February 26, 2014 from <http://pediatrics.aappublications.org/content/132/5/958.full>

Avendano, C., Mata, A., Sanchez Sarmiento C. A., Doncel, C. F. Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation. *Fertility and Sterility*. January 2012; 97(1): 39-45. Retrieved on March 18, 2014 from [http://www.fertstert.org/article/S0015-0282\(11\)02678-1/abstract](http://www.fertstert.org/article/S0015-0282(11)02678-1/abstract)

Bristol University: School for Policy Studies News (2010). Available at: <http://www.bristol.ac.uk/sps/news/2010/107.html>

C4ST: Dr. Oz Alert – Why Cell Phones Could Cause Cancer in Kids (2015). Available at: <http://www.c4st.org/news/educate-yourself/dr-oz-alert-why-cell-phones-could-cause-cancer-in-kids.html>

Christakis DA, Zimmerman FJ, DiGiuseppe DL, McCarty CA. Early television exposure and subsequent attentional problems in children. *Pediatrics*. 2004; 113 (4): 708-713.

Gentile, D. Pathological Video-Game Use Among Youth Ages 8 to 18: A National Study. *Psychological Science*. 2009 May;20(5):594-602. doi: 10.1111/j.1467-9280.2009.02340.x.

Hardell, L., Carlberg, M., Soderqvist, F., Hansson, K. Pooled analysis of case-control studies on acoustic neuroma diagnosed 1997-2003 and 2007-2009 and use of mobile and cordless phones *International Journal of Oncology*. 2013; 43(4); 1036-1044. DOI: 10.3892/ijo.2013.2025.

Healthy Early Learning Partnership – Early Development Inventory Maps for British Columbia, University of British Columbia; retrieved on February 26, 2014 from <http://earlylearning.ubc.ca/maps/edi/bc/>.

Houtrow, A. J., Larson K., Olson, L. M., Newacheck, P. W., Halfon, N. Changing Trends of Childhood Disability, 2001-2011. *Pediatrics*. Available at <http://pediatrics.aappublications.org/content/early/2014/08/12/peds.2014-0594.abstract>

Markman, A. (2010) Ulterior Motives- How goals seen and unseen drive behaviours. *Psychology Today*. Retrieved from <http://www.psychologytoday.com/blog/ulterior-motives/201003/the-broad-view-research-video-games-and-aggression> on March 11, 2014.



0840 Seaview Road, Sechelt, BC V0N 3A4

www.zonein.ca

Ratey JJ, Hagerman E (2008). *Spark: The Revolutionary New Science of Exercise and the Brain*. Little, Brown and Company, New York.

Tremblay, M.S., LeBlanc, A.G., Kho, M.E., Saunders, T.J., Larouche, R., Colley, R.C., Goldfield,

G., Gorber, S.C. (2011) Systematic review of sedentary behaviour and health indicators in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity* 2011, 8:98 doi:10.1186/1479-5868-8-98

World Health Organization – International Agency for Research on Cancer, Press Release No. 208, May 31, 2011. Retrieved on June 1, 2015 at http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf

© Cris Rowan, Zone'in Programs Inc. 2015