

Computers vs. Playgrounds – It’s a No Brainer!

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Teachers report with increasing frequency that playgrounds are in a state of disrepair, while school expenditures on technology routinely exceed budget allocations. Year after year research shows that exercise makes kids smarter (1) and technology doesn’t (2), yet schools continue to invest in technology at the detriment of child health and literacy. Why is this? Schools have blindly jumped on the *faster than life* “technology train”, not knowing where it’s going, and apparently not aware that many children have already fallen off. Recent research is showing that when children read screens, as opposed to books, their comprehension and retention of information is significantly less (3). Yet, many schools are moving toward the “virtual” classroom, where in the future, a teacher’s presence may be quite limited.

The rapidity with which technology has entered the home and school system is staggering, and allows little time for parents or teachers to critically analyze what is really happening to their children. At an average eight hours per day of non-school related technology use (4,5), children are not meeting critical milestones for development, impacting on their ability to perform academically at school. Exhibiting low muscle tone and learning difficulties, today’s child can’t print, read or pay attention. Hard wired for high speed, aggressive, anxious and depressed, classroom management of 21st century child is every teacher’s nightmare. Canadian statistics show 14.3% of children have a diagnosed mental illness (6), 15% are developmentally delayed (7), 15% obese (8), 30% have learning disabilities, and 40% of high school graduates lack the literacy skills employers seek (9).

It gets worse. Early exposure by children to violent media content has resulted in an epidemic in child aggression, creating havoc in schools and homes (10). As the health and education sectors begin to uncover the devastating consequences of technology overuse, the struggle begins for a cure to this new societal ill. What has been known for decades is that children need to move to learn (1), and when movement is restricted by allowing technology to replace recess and lunch in outdoor playgrounds, children can’t learn. It is really that simple. Schools need to manage a balance between achieving critical elements for child growth and success, with use of technology. Access to playgrounds during recess and lunch, offers children a variety of types of movement, as well as ample opportunity to socialize and participate in creative and imaginary play. Yet, many schools allow children to stay inside and “work” on computers during recess and lunch, often unsupervised, detrimentally affecting their health, development and academic performance. Unstructured play in a nature based environment provides attention restoration necessary for optimal brain productivity. Sitting for extended periods gazing at a 2-dimensional screen fine tuning the art of killing, actually “short

circuits” the frontal cortex, eliminating executive function altogether, as well as destroys impulse control making it virtually impossible to attend or learn (11). Schools allowing playground equipment to become antiquated and in disrepair is not only unconscionable, but also short sighted and just plain stupid.

What do children need for optimal development and productivity, and how can playground equipment meet those needs? Cris Rowan, pediatric occupational therapist and sensory specialist reports that children need adequate sensory input to their vestibular, proprioceptive and tactile systems in order to achieve optimal core posture, bilateral coordination of the body and eyes, and praxis – or ability to perform planned movement patterns. Posture, coordination and praxis form the foundation for all fine and gross motor activities, such as printing, reading and sports. Engagement in 3-4 hours per day of unstructured rough and tumble play ensures children get what they need to grow and succeed (12). Rowan states that playground structures are an integral component for attaining literacy, as they ensure children meet critical developmental milestones necessary for eventual printing and reading. Playground structures should contain elements that contribute to the development of the vestibular, proprioceptive and tactile sensory systems. The following suggestions for sensory playground structures will optimize sensory and motor development and enhance academic productivity, and can be gym, classroom or playground based. This information has been condensed by Rowan from her Zone'in Foundation Series Workshops that she offers to education and health professionals and parents, and is really all about learning how to play outside.

Sensory Playgrounds

Vestibular System – Posture and Arousal

Equipment that causes a child to move off their centre of gravity serves to activate the core stabilizer muscles, bringing the child back into their center and facilitating midline postural tone. This strong core is required for integration of both sides of the body, and coordination of both eyes. Vestibular stimulation also optimizes a child's arousal state, enabling attention. Examples of vestibular equipment would be a variety of types of swings (frog, traditional, hammock, platform, tire, inner tube, rope, disc), trapeze bars, zip lines, slides, merry-go-rounds, trampolines, spring rockers, gliders, therapy balls, spin boards (can make with two pieces of plywood and Lazy Susan), plastic spin discs, and scooter boards.

Proprioceptive System – Strength and Coordination

Equipment that makes a child's muscle and joint systems work hard promotes strength and coordination of the muscles, and also serves to calm down a child who is agitated and aggressive. Examples of proprioceptive equipment would be a variety of types of climbing devices (ropes, cargo net, frames, climbing mounts

on walls), jungle gyms, parallel bars, pulling on deflated bicycle inner tubes (get from local bike shop), Tug-Of-War rope (children who fight should be required to do a Tug-Off), crawling through plastic tubes, chin-up bars, and exercise bikes.

Tactile System – Praxis and Calming

Equipment that administers deep pressure to the mechanoreceptors found in a child's tactile or touch system, serves to help that child know where their body is in space, a precursor for planning specific movement patterns essential for fine and gross motor tasks known as "praxis". Examples of tactile equipment would be lycra pod swings, crawling inside large inflated truck tire inner tubes, rolling children tight in blankets (called "burrito"), rolling down grassy slopes, crawling through lycra tubes, getting squished in between two bean bag chairs or gym mats, and running and jumping onto a large duvet cover filled with foam chips (get from local foam shop).

Children are our future, and there is no future in the unconscious use of technology. Bringing the "technology train" back to the station, will allow schools necessary time to plan responsible and informed use of technology. Curtailing or freezing technology expenditures, and diverting this money toward upgrading gyms, classrooms and playground equipment, will result in immediate improvements in children's ability to attend and learn. Technology awareness programs that teach children how to manage balanced technology use, would result in reductions in child aggression and obesity, as well as long term improvements in literacy and academic performance.

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