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Message from the President

Ryan Layton

A story was recently shared with me about a concerned parent. This parent was worried about the interactions between her child and a few others in the class. Frustrated, she wanted to share her thoughts with the parents of the kids she felt were harassing her child. Instead of looking to the school to act as a mediator, she used a Facebook parent group and shared the names of the kids involved, asking anyone who knew the families to pass on the message that she wanted to talk to

them about what had happened. When asked why she would post children's names in such a forum, the parent responded that it wasn't a big deal because it was a "private" group—even though screenshots of her post were being circulated publicly among other parents at the school.

Stories like this are becoming more and more common. The idea of what is private has changed dramatically in our social media world. Technology has always been a promising tool in schools, but many perils and pitfalls also exist. How can teachers ensure that they are creating a safe, caring, welcoming and respectful working and learning environment while still using technology as an effective tool?

Education is the key! If we want to ensure that the technological tools

we use allow us to respect privacy and that our students remain productive and safe, then we must learn about the technology that is out there, how students are using it and the best practices associated with its implementation for education.

I encourage all educators in Alberta to visit MediaSmarts (<http://mediasmarts.ca>) to learn about the current research being done in Canada and to access digital and media literacy guides. With these tools, we can safely implement technology in our classrooms, enhance the learning experience, and connect students with each other and with repositories of knowledge. Ultimately, we must serve as an example of what we are expecting of our students by being responsible in our own use of technology and modelling that behaviour. 

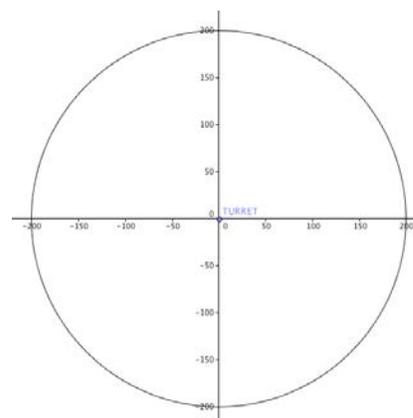
Coding and the Equation of a Circle

David Martin

A student was creating a tower defence game in my computer class, and in doing so he learned about the equation of a circle. This is a Grade 12 math concept, and he did this in Grade 10. Here is what happened.

He was coding a certain tower in his game, and he asked me, "How do I code the tower to attack only units that are within 200 pixels?"

I first asked if he could draw me a picture of what he wanted. Here is a rendering of what he drew:



I asked, "What do you have?" He then showed me that he had created variables:

t_x = x value of the turret

t_y = y value of the turret

u_x = x value of the unit

u_y = y value of the unit

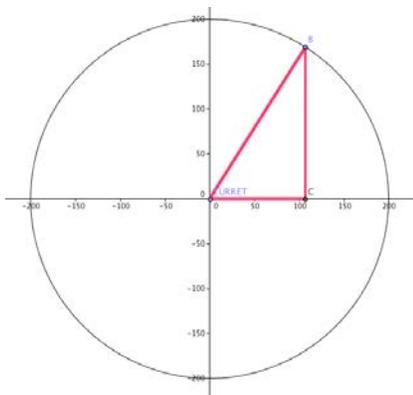
He had currently coded that if the following two inequalities were true, the tower would attack:

$$|t_x - u_x| \leq 200$$

$$|t_y - u_y| \leq 200$$

At a quick glance, we saw that this would create a square around the turret, not a circle. This he had already realized.

He then asked, "How do I test if the straight line distance is less than 200?" We drew a diagram as follows:



He then said, "Well, I know that once the line from the turret to the unit is less than or equal to 200, the turret will attack, but what inequality do I create?"

The student next to him asked, "Would Pythagorean theorem work?"

The problem we had was to label the other two sides. Minutes passed while I let him think, and finally he asked if this would work:

$$(u_x)^2 + (u_y)^2 \leq 40000$$

I said, "Let's try it."

Sadly, the turret would attack the unit if the unit was within 200 units of the origin, not the turret. Once again, I refused to simply give him the answer and I asked him, "What could we do to change from the origin to the turret?"

He replied, "Well, the turret isn't always the origin, so we would have to test the distance, and so we can do this":

$$(u_x - t_x)^2 + (u_y - t_y)^2 \leq 40000$$

I asked, "Why did you use the absolute value before?"

He responded, "Because the code needs to take the positive value, and if the unit was to the left or below the turret, I need it to become positive. But wait. Squaring is positive, so can I just remove the absolute value?"

We tried, and here was his final test:

$$(u_x - t_x)^2 + (u_y - t_y)^2 \leq 40000$$

When tested, this worked perfectly. Keep in mind that this student is in Grade 10, and he completed an outcome from Grade 12 mathematics. 📌

God, What Is Your E-Mail Address?

Gerald Logan

It is easier for a camel to pass through the eye of a needle than it is for me to hear God in a Twitter storm. (My apologies to Matthew for taking the liberty of adapting the words from his gospel [19:24].)

As I prepare for Lent and all that it entails, I have been thinking about technology and spirituality. I know that seems an odd combination, but I have been immersed in educational technology for years, as I have been in my faith. In my mind, and only there, these two worlds have been unrelated, much like a Venn diagram with no overlap among the circles. Is that just in my mind, or is it real?

When I think and pray about this, a much different image comes to mind. My spirituality is much like a fertile garden, growing a cornucopia of fruit, vegetables and flowers—a true miracle of God. This garden gives me, and those around me, life and richness in faith. It is only with the fertile ground in this garden that my spirituality can grow and I can deepen my relationship with God. Think of this as Gerald's Garden of Eden.

So, then, what is technology? In my mind, technology is the dark cloud that obscures the sun. It casts a deep, dark shadow over this beautiful garden and keeps the life-giving sun from the plants that so need its nourishment. A small cloud obscures the sun for only a short period of time. A large storm system can obscure the sun for days, or even for weeks. When this happens, the plants become weak and unhealthy and may even die.

My spirituality is no different. If it is clouded over for a short time, my spirituality suffers a small loss and it can recover through prayer. But if it encounters a long-term storm and shrivels up and dies, recovery may be impossible.

As I think about the obscuring clouds in my life, I reflect on Pope Francis's comments. In his Lenten addresses in 2015, he asked us to fast from gossip.¹ He pointed out that gossip is the daughter of evil. In my world, gossip is not much of an issue; instead, I need to fast from technology. In the past, I have written about the benefits of a technology Sabbath. This Lent, it is time to start that fast. Let's be honest—I could not do my job if I walked away from technology altogether, so I have to be much more specific. I need to fast from technology for personal use—think Facebook, Twitter and other forms of social media.

As I said in my opening line, I can't hear God in a Twitter storm. Many authors and theologians have told us

that we need to listen in order to hear God. I have to be honest, with my phone in vibrate mode and bouncing all over the table, I can't listen to God. I can hear only that silly little motor in my phone. So, like Jesus, I have to go into the desert to pray. My desert will be quite different from that of Jesus or from Saint Anthony's Egyptian desert. My desert will be one where the cellphone, iPad and laptop have been turned off and where I place myself in the presence of God. I will deliberately remove the distractions of technology just like Saint Anthony isolated himself from the world for days, weeks and months, and like Jesus isolated himself for 40 days. Forty days is the length of Lent, as well as the length of time the Israelites wandered in the desert on their way to the Promised Land in the book of Exodus. Forty days is a long time, but more important than the exact number of days, the length of time must be significant so that the sacrifice is not trivial and so that I have time to get past mourning the loss of technology and tune my ear to God. Investing in personal time with God will nourish our relationship.

Just as Jesus learned about himself and his ability to resist the temptation of evil in the desert, so can I learn to resist temptation while I am in my desert. Make no mistake, in his 40 days Jesus was tempted by the Devil to turn stones into bread and to save himself and become the Messiah that the Israelites so wanted, so that they could

overthrow the Romans and establish a kingdom on earth. Jesus taught us that these short-term wins—bread and power—are not worth it. So, I have to say no to the short-term technology fix, stay the course and reap the benefits of a deepened personal relationship with my God.

So, I should start this fast during Lent. I need to make my technology sacrifice a long-term behaviour change. I need to take time each day to go to my desert and spend time getting to know God and letting our conversations grow beyond Twitter's 140 characters. My hope is to cultivate a more profound relationship with the Creator.

Rather than reading a how-to manual for Twitter, I need to read more about *lectio divina* and other prayer methods. Well, maybe not read about prayer methods—because I already have—but practise them.

So, no, I don't need God's e-mail address. That channel is overloaded with distractions and noise. I need to tune into God's channel and give him my sole attention. That is when the clouds will clear and my own Garden of Eden will flourish and provide fruit and nourishment for my soul.

Note

1. See <http://time.com/3714056/pope-francis-lent-2015-fasting/> (accessed April 25, 2017). 

Makerspace in Education: The Best Thing You Did in School Today

Trish Roffey



Trish Roffey, maker parent and maker educator

Have you ever asked your child, “What did you do in school today?” only to be answered with “Meh,” “I don’t know” or “Nothing”? Parents want to know what their children have spent their day learning but are often faced with unenthusiastic responses. This leads to the concern that the children haven’t learned anything, are struggling or are unhappy with school.

The year 2015 brought about a change to this passive response to education with the entrance of makerspace in education. Now, before we all roll our eyes at yet another educational buzzword, makerspace is the resurgence of the foundational

educational pedagogy of constructivism that is changing the nature of teaching and learning. Now when they ask, “What did you do in school today?” parents are being given detailed descriptions of the best seven hours of their children’s life.

Makerspace is a global trend that is part of the do-it-yourself (DIY) movement. These spaces started as community centres where the average Joe could meet up with local experts to pursue a passion project or hobby. Imagine a facility with tools and materials for inventing, tinkering and constructing. This movement has recently found its way into education. Our libraries and classrooms are being transformed with 3-D printers, robots and bins of recycled materials.

What is exciting is that makerspace is more than just a space; it is an educational mindset. Makerspace allows educators to shift away from ready-made knowledge to a classroom environment ripe for exploration, creativity, innovation and collaboration, with hands-on materials and real-world problems. In short, teachers are changing the way they teach, which is leading to students changing the way they learn—and this is a very good thing.

As Kurti, Kurti and Fleming (2014, 11) write, “Ultimately, the outcome of maker education and educational makerspaces leads to determination, independent and creative problem solving, and an authentic preparation for the real world by simulating real-world challenges. In short, an educational makerspace is less of a classroom and more of a motivational speech without words.”

This is not your typical science fair or a project at the end of a unit. A makerspace allows for authentic innovation and invention, embraces new ideas and failures, and allows students to pursue their passions and to learn and apply the foundational curriculum throughout a project as opposed to at the end. Gone are the days of passive recipients waiting to have knowledge poured into their heads. Makerspace allows educators to personalize learning, to work as a guide with students of all abilities and to dig deep into projects that combine many subject areas.

Last summer my husband and I had the opportunity to care for our nieces and nephews, along with our own three children. We decided to turn our garage into a makerspace for this vast range of ages and abilities. Thanks to an idea from Mark Frauenfelder’s (2014) book *Maker Dad*, the project was to make skateboards for everyone. Our garage became our classroom, and we learned about weight, angles, design, speed and friction. We sought out community experts; we researched blogs; we used tools; we created art; we tested, designed and improved; we made mistakes; and, finally, we made skateboards.

This was a passionate group of learners committed to a goal. Some of our “students” couldn’t read, some had trouble sitting still, and some needed a little more help than others—but all had a chance to shine. This turned out to be the greatest summer of fun learning ever, something we all still talk about. Shouldn’t school be the same way? By moving makerspaces from our garages and community

centres into our schools, we have this chance.

In the movie *Cast Away*, starring Tom Hanks, there was a moment where the protagonist made fire—a passionate event in which he was the creator of an epic moment of learning, so much so that he shouted to the heavens, “I made fire!” This is the moment we want for our children. We want school to be an opportunity to make fire and to love learning so that when they come home, they cannot stop talking about that moment. The greatest seven hours of

their life. That is an educational makerspace.

References

Frauenfelder, M. 2014. *Maker Dad: Lunch Box Guitars, Antigravity Jars, and 22 Other Incredibly Cool Father–Daughter DIY Projects*. Boston: New Harvest.

Kurti, R S, D L Kurti and L Fleming. 2014. “The Philosophy of Educational Makerspaces.” *Teacher Librarian* 41, no 5 (June): 8–11. Also available at www.teacherlibrarian.com/wp-content/uploads/2014/07/Kurti-article.pdf (accessed April 24, 2017). 

Trish Roffey is an emerging technology consultant for Edmonton Catholic Schools. In this role, she specializes in supporting teachers and students to explore makerspace, assistive technology, coding and robotics, and blended learning. She is also an avid maker who is always tinkering on her next project. You can follow her on Twitter (@MrsRoffey) or e-mail her at trisha.roffey@ecsd.net.

The Common Sense Census: Plugged-In Parents of Tweens and Teens 2016

Common Sense Media

It’s no secret that tweens and teens spend a lot of time with media. But what about their parents? For the first time in a Common Sense Census, we put the spotlight on parents to understand how they manage their kids’—and their own—media use.

This national report is based on surveys from more than 1,700 parents of children aged 8–18, who share candidly about their own media use and their perceptions of their kids’ engagement with media and technology.

The findings create a comprehensive picture of parent strategies for mediating, monitoring and managing media issues for their children. Results show that parents actively keep tabs on tech use at home and are supportive of the positive benefits of

media in their kids’ lives. The study provides insight into how families can use media in healthy ways and how parents can be good digital role models for their kids.

Watch our video (www.common sense media.org/video/modal/5526701/) and see our blog post (www.common sense media.org/blog/common-sense-media-census-measures-plugged-in-parents/) for highlights.

Reprinted with permission from www.common sense media.org/research/the-common-sense-census-plugged-in-parents-of-tweens-and-teens-2016/. Minor changes have been made to fit ATA style.

PLUGGED-IN PARENTS: ATTITUDES, BEHAVIORS, AND ROLE MODELS

Time Spent



Nine hours and 22 minutes is the average time parents spend with screen media daily, including for personal and work use. 7:43 of that time is devoted to personal screen media.

Role Models

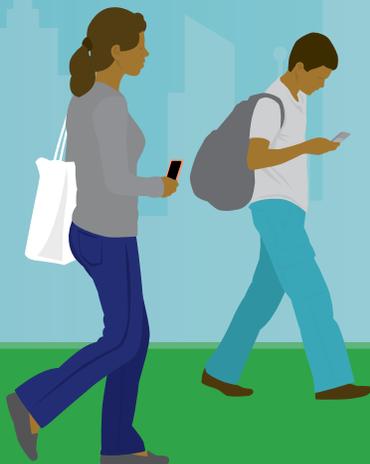


78% of all parents believe they are good media and technology role models for their children.

Technology and Education



94% of parents think technology positively supports their children with schoolwork and education.



Monitoring



85% of parents say that monitoring their children's media use is important for their children's safety.

Bedtime

63% say mobile devices are not allowed during bedtime.

34% think that using technology disrupts their children's sleep.



Social Media Perceptions

 50% believe that social media hurts physical activity.

 34% believe that social media hurts face-to-face communication.

 44% believe that social media helps their children's relationships with friends.



This report provides a comprehensive picture of parents' media use, attitudes toward their tweens' and teens' media use, and a look into the ways that parents mediate, monitor, and manage media. The report is based on a nationally representative survey of 1,786 parents of children age 8 to 18 living in the United States that was conducted from July 8, 2016, to July 25, 2016.

Personal Privacy



of parents check the content of their children's devices and social media accounts "always" or "most of the time."

Top Parental Concerns

56%

TECHNOLOGY
ADDICTION



43%

TOO MUCH
TIME ONLINE



38%

OVERSHARING
PERSONAL INFO



36%

ACCESS TO
PORNOGRAPHY



Family Rules

78% do not allow mobile devices during family meals.

34% do not allow mobile devices when guests are visiting.

9% do not allow car passengers to use mobile devices.



Talking About Media

Percent of parents who discuss content with their children "always" or "most of the time," by media type.

TELEVISION

44%



SOCIAL MEDIA

42%



VIDEO GAMES

34%



Parents of tweens are more likely than parents of teens to discuss the media their children use.

Put on Your Collaboration Hat and Pick up Your KIBO



PHOTO COURTESY OF KINDERLAB ROBOTICS

Cory Roffey

As described on the KinderLab Robotics website (<http://kinderlabrobotics.com/kibo/>),

KIBO is a robot kit specifically designed for young children aged 4–7 years old. It is different from any other kit out there because it

appeals to both technically minded kids and those that connect more to arts and culture or physical activity. Young children learn by doing. Children build their own robot with KIBO, program it to do what they want, and decorate it. KIBO gives children the chance to make their ideas physical and tangible—exactly what their

young minds and bodies need. And KIBO does all this without requiring screen time from PCs, tablets or smartphones.

KIBO can wear many hats—literally (with the art platforms) and figuratively. Students can use KIBO as a tool to think with, as a platform to make and invent, and as a medium to share

the knowledge and understandings they have constructed.

Over the past few months, I have had the privilege of working with two teachers at St Pius X School, in Edmonton, as they explore how KIBO can strengthen cooperation and collaboration skills. The school has approximately 300 students aged 4–12. The teachers regularly use coding and robotics to uncover curriculum and support students in strengthening learning competencies such as collaborating, problem solving and thinking critically.

After providing their kindergarten and Grade 1 students with initial experiences working in small groups to code KIBO, the teachers noticed that not all the students had their hands and minds fully engaged as they programmed. After some professional dialogue, the teachers came up with the idea of scaffolding the collaboration using KIBO Job Cards.

The KIBO Job Cards divide the work of coding KIBO into four distinct tasks. The Coder is in charge of clicking the blocks together (the whole group collaborates on what the code should be), the Scanner scans the actual blocks of code, the Checker makes sure the green light comes on with each scan, and the Button

Pusher makes sure the button is flashing green and pushes the button to run the code (that person is also in charge of clapping if that block is used).

After introducing and briefly explaining each job, the teachers allowed each student to choose the job he or she would like to begin with. If too many students chose the same job, the teachers facilitated a discussion about how the groups would be uneven and how too many people would be doing the same job. During the course of this discussion, students volunteered to switch jobs and even out the groups. Once the groups were set, the students went to work coding KIBO, each completing his or her specific job. In reflection and discussion, the teachers found that the KIBO Job Cards raised students' levels of engagement in the task and allowed everyone in the group to contribute.

The high level of student engagement fostered by KIBO, combined with the hands-on nature of the tasks and the elements of problem solving presented by the coding blocks, makes KIBO an excellent tool for building collaboration skills in students—and it is fun to decorate KIBO and put hats on it! 🧢



PHOTO COURTESY OF KINDERLAB ROBOTICS



PHOTO COURTESY OF KINDERLAB ROBOTICS



Cory Roffey is a school-based instructional coach in Edmonton. He has coached in a variety of educational settings, from kindergarten to Grade 9. He holds an MEd in elementary education from the University of Alberta and has a particular interest in supporting teachers as they explore educational technology and constructivist practices. You can follow him on Twitter (@coryroffey).

Tech Tools for Assessment and Review

John Korassa

Have you ever wondered, *What tech tools can I use for help with assessment or for helping students with review?* You are not alone!

Assessment and reviewing of student work are among the most researched topics in education today. So, we thought we would share some of our favourite assessment and review tech tools.

As with any tech tools, we encourage you to try these tools out before bringing your students on board and, of course, to use only what you need. Too often we see educators trying every tech tool out there because the tools are cool, new or shiny. Finding the best tool that meets the needs of your students is the key to success in education.

With no further delay, here is our list (in no particular order) of tech tools related to assessment and review.



Google Forms

<https://docs.google.com/forms/>

Did someone say *free*? Google Forms can be used for collecting survey data, providing assessment and even offering self-grading multiple-choice exams. Such a great tool, but be

mindful of best practices: not all exams should be multiple choice, as such exams focus on limited learning styles.



Kaizena

<https://kaizena.com>

Kaizena is an excellent extension to Google Forms that allows teachers to give students audio feedback on their Google Forms submissions. You can sign up with your Google account.



Quizlet

<https://quizlet.com>

With Quizlet, you can create quizzes or study guides with flash cards and other tools. Quizlet Live allows for real-time formative assessment feedback. You can sign up with your Google account.



Plickers

www.plickers.com

With Plickers, you print out cards and then students hold up the cards to answer your questions. Use a smartphone or tablet to scan the held-up cards, and the results are

immediately shown on screen. This is a simple tool for instant formative assessment in the classroom.



Kahoot

<https://getkahoot.com>

Kahoot allows you to conduct a whole-class review in a competitive atmosphere. The student who answers the quickest gets the most points.



Quizizz

<https://quizizz.com>

Quizizz is another tool for conducting a whole-class review by seeing who can answer first. This can get quite competitive, so use it at your discretion! You can sign up with your Google account.

EdGames

<http://people.uncw.edu/ertzbergerj/msgames.htm>

Templates, templates, templates! EdGames gives you access to hundreds of ready-made games to use in your classroom, including template games and other resources that match any curriculum or grade level. 

TinyTap for App Creation

John Korassa

Have you ever found yourself wishing you could code your own app? For most of us, coding an app seems beyond our technological

means. For a long time, programming an app for Apple's App Store meant having extensive knowledge of Swift programming language and familiarizing oneself with the many valuable features of Xcode, Apple's integrated development environment (IDE). However, I recently came across a tool that has changed how I think about coding apps—TinyTap.

TinyTap is a free app that allows teachers to code a customizable basic app to share with their students. More

impressively, students can create their own apps to share with their peers and their teachers in order to further their own and their peers' learning. Another aspect of TinyTap that caught my attention was that educators can create lessons to share with other educators from around the world, covering topics from all grade levels.

If you would like to learn more about TinyTap or try it for yourself, go to www.tinytap.it. 

We the Educators

Education systems around the world are now witness to a variety of educational changes and improvements, numerous social and economic disruptions, and the onset of rapid technological advances that were unimaginable in the past. Within this tsunami of change, innovative teaching and learning practices that employ emerging technologies are sweeping into schools and classrooms, with the broader goal of transforming student learning. While technologies present

education systems with both significant opportunities and challenges, some of the most profound developments are related to standardization, personalization, privatization and the datafication of learning.

To this end, Education International, the Alberta Teachers' Association and the Canadian Teachers' Federation identified a need to explore the interdisciplinary research underpinning technology-driven datafication and its effects on teaching and learning around the world. To stimulate and inform a conversation about this issue, four short (30-second) animations on personalization, standardization, privatization and datafication (in English, French and Spanish) were created and linked to social media conversations on multiple global plat-

forms (such as Facebook, Twitter and Medium). These animations were built from a literature review (also translated into multiple languages) that provides a balanced view of the converging fields of educational technology and datafication of learning. It is part of a larger project entitled We the Educators (<http://wetheeducators.com>) and has already stimulated a global public dialogue—and greater professional scrutiny—about the relationship between the datafication of education systems and the (de)personalization, privatization and standardization of student learning.

We invite Alberta teachers, parents and advocates for quality public education worldwide to draw on this research and to use the videos to continue the conversations.

CALL FOR ARTICLES



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CREATE.



ETCATA would love to publish various articles by its members.

If you attend a wonderful technology conference, have a great review of an application (software, Web 2.0, tablet and so forth) or would like to recommend an article, contact John Korassa (john.korassa@ecsd.net).

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