

Bits and Bytes

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Message from the President-Elect

Ryan Layton

Ever since the days of the green-screened Apple IIe, I have been enthralled with technology. I still remember the first time my modem connected to a bulletin board system, then to the Internet, and when I burned my first CD and sent my first e-mail. I have always understood the value of technology and have tried to take advantage of everything it has to offer.

Years later I am just as mesmerized by the ever-increasing uses and forms of technology, but my focus has shifted. I used to see technology as gadgets and toys, but now I see it as tools to enhance learning. This was brought home to me again as I worked through courses in the educational technology program at the University of British Columbia. Strangely enough, one message that has resonated repeatedly with me is that technology alone is not the answer.

This may seem to be a strange statement to make in an Educational Technology Council newsletter, but I believe it is true. Technology can be a force for positive change, but it can also affect our districts, schools and classrooms negatively unless that technology is united with strong pedagogy. I feel that this combination is the key.

As a council we understand the value that hardware and software hold, but we strive to enable our membership to succeed in their spheres of influence by providing professional learning opportunities and other resources that cultivate strong teaching practices. As you read through this and future issues of *Bits and Bytes*, I encourage you to evaluate the tools and processes that are shared, then incorporate the elements that suit you best into your environment.

We live in an exciting time in both education and technology. I wish all of you the best in the coming months and look forward to learning with you in the future. 📧

Ryan Layton is an assistant principal at a French immersion school with Elk Island Public Schools. He recently completed his master's degree in educational technology. He has been married for 12 years to his wife, Jacky, and they have two daughters, Claire (9) and Madeline (7).



**EDUCATIONAL
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of the Alberta Teachers' Association

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AGM

The annual general meeting (AGM) of the Educational Technology Council of the ATA will be held on March 13, 2015, at 12:15 PM at Barnett House, 11010 142 Street, in Edmonton. The room number will be posted the day of the meeting.

2015/16 Nominations

President-Elect: Vacant

Secretary: Marion Rex

Treasurer: Shelley Friesen

Communications Codirectors: Gail Reid and John Korassa

PD Directors:

Southern Alberta: Luigi Pollio

Calgary: Richard Tapp

Central Alberta: David Martin

Edmonton: Nicole Lakusta

Northwest: Jennifer Clevette

Northeast: Vacant

Conference Director 2016: Vacant

Notice of Motions

ETC is looking to change the job descriptions for two of its executive members, requiring a notice of motion to its membership. These motions will be voted on at the AGM.

Motion: Nicole Lakusta moved that the communications director(s) be responsible for both the ETC newsletter *Bits and Bytes* and www.etcata.ca Web presence, and work with the social media coordinator(s) to promote the Educational Technology Council. Shelley Friesen seconded.

Motion: Marion Rex moved that the past president's job description be rewritten to include liaising with the Education Students' Associations of the various postsecondary institutions across the province that have ATA-approved teacher education programs. Nicole Lakusta seconded. ■

QR Codes in the Grade 2 Classroom

Amanda Hutchinson

I teach at Almadina, a charter school that focuses on supporting English language learners. As a Grade 2 teacher, I enjoy challenging my students to do their best. I enjoy integrating technology wherever I can to enhance engagement and learning. After speaking with the school's educational technologist, Gail Reid, we teamed up to use QR codes to practise social studies vocabulary.

After weeks of learning land-formation vocabulary, students had the opportunity to test their knowledge. Through the use of Google Drive and the QR code Treasure Hunt website (www.classtools.net/QR), Reid and I collaborated on the words, images and student sheets that were appropriate for these young English language learners. We both felt a mixture of images, and the definitions were good for the students to succeed.

Each student was provided with an iPad and taught to use the app iNigma. This is a Quick Response (QR) scanning app. The students were taught that some information will appear right on the iPad while others will want them to go online. They moved around the room at their own pace, scanning QR codes that revealed a definition and a picture of different land formations such as mountains, rivers or islands. They needed to figure out the word that went with the picture and definition. It was a digital scavenger hunt! Through this formative assessment, I was able to see which words the students were understanding and which ones they struggled with and why. The activity was engaging for students, as they were able to use technology, and it provided them valuable review. The students now notice QR codes all around them and understand the needed vocabulary. I strongly recommend using this technology to make your own digital scavenger hunt. ■

Creating E-Books on Arctic Animals

Amynah Bhaidani

My Grade 2 English language learning (ELL) students at Almadina Language Charter Academy worked on a research project on Arctic animals, which had curriculum connections with social studies (Iqaluit), English language arts (expository writing), fine arts (expressions) and technology (developing skills to work on iPad).

The object of the project was to familiarize students with the advantages of technology and show the process of creating an expository e-book using painting, drawing, writing and recording skills. Another underpinned object was for the students to understand that their grandparents back home could read the e-book that was made in Canada and listen to their grandchild read.

First the students chose an Arctic animal to research by using books, asking an adult and searching the Internet. They were encouraged to use the educational sites and library books. Students used a super three-animal project template to make notes and understand the plan for a research process. Then they organized the information using the structure of the expository pillar (Mariconda Writing Program) and wrote paragraphs in their writing books as an expository writing. Next they drew and painted (using watercolours) a setting of an Arctic landscape and placed their animal in the Arctic setting. Further they typed the expository writing of the Arctic animal using Microsoft Word on laptops and learned to save it on the students' server. This was followed by peer editing with teacher- and teacher-assistant support.

Next students learned how to save an image from a recommended site to a folder on the server and learned how to cite (introduced the word *plagiarism*). Last, Ms Reid, our school's educational technologist, scanned the artwork (Arctic landscape with animal) and saved it in the folder on the server.

Reid and I met several times to choose an app to create an e-book and plan the process. Unanimously we chose Book Creator. Reid

transferred the student folders from the student server to the iPad and downloaded the app on the iPad. Now the groundwork was done, and the iPad was ready for the students. Reid came to class for several periods to teach each process step by step.

First students learned to digitally draw, colour and label the body parts of another Arctic animal to better understand the academic vocabulary. Later students learned to create an e-book using the structure of the expository pillar (Mariconda Writing Program). The students organized and labelled each page of the e-book using the headings *appearance, habitats, diet, self-defence* and *uses*. Each page was accompanied by watercolour artwork, digitally coloured and labelled pictures and a picture from an educational site. This involved transferring information, scanning artwork, saving information, making digital pictures, saving pictures, cutting, pasting, editing and recording students' sounds. When the books were ready, the students did a presentation and practised it using the Smart Board. During the second parent-teacher interview, all students presented their e-books at the student-led parent-teacher conference. Finally a letter went home asking parents to download a particular program to allow them to access the e-books.

At the end of the year students from my grade acted as tech buddies to Mrs Chaulk's Grade 1s and helped them use the Book Creator app on the iPad. I also shared my experience with my colleagues at an in-school PD session.

It was a long and tedious process, but students enjoyed learning the skills for using the iPad. Moreover they learned how to do research, how to organize, how to develop expository writing and how to produce digital art. They also reflected on some of the differences and connections between traditional writing and writing using technology. All students succeeded—some independently, others with support and a few with significant support. ■

Doctopus: The Kind of Doctor You Don't Mind Seeing Every Day

Sabrina Rawji

Until Doctopus was introduced to me, I didn't know how to create a schoolwide newspaper with my Grade 6 newspaper class. I heard about Doctopus but was not keen to use it at first, because I was highly confused about how to begin. The school educational



technologist, Gail Reid, took time out of her busy schedule to show me what was required. We spent one evening setting up the program, and since then I have had a lot more time on my hands and less weight to carry home with me.

To start using Doctopus, templates (documents placed into Google Docs) must be created outlining the tasks at hand. Then, a roster (list of students and their school e-mails) must be made; a column can be added to the spreadsheet placing students in groups (if needed). Once this tedious process is complete, it is a guaranteed time saver. Students were taught how to use Google Docs, which I found to be rewarding, because this is probably their one-time experience using technology academically. Students are more engaged in the classroom and are amazed at what they are able to produce using technology. Students learn how to type and begin to understand the use of keyboard shortcuts.

Doctopus has helped them gain key computer skills and technical knowledge.

The results were beyond the students' and my expectations. Doctopus saved me a lot of time as it already organized each section of the newspaper

separately. Each group worked online from home to discuss what was required for completion and did not have to meet in person. The final step was tough at first but was easily solved when Google Docs converted the document to a PDF. I printed it off into the final product—the schoolwide newspaper.

I marked the students' work on my computer right away using Goobric. When the students signed into Doctopus at home, they immediately saw their mark along with my feedback. This made the newspaper-making process simple, quick and easy, while marking students immediately during the process.

Therefore, I highly recommend that teachers learn about Doctopus and use it in their classroom. It creates an engaging classroom that is enjoyable for students and creates less paperwork and more time for you. As a teacher, I feel more relaxed and am excited to use Doctopus in other classes. **H**

Call for Articles

ETC would love to publish 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 on) or would like to recommend an article, contact either John Korassa (john.korassa@ecsd.net) or Gail Reid (g Reid@esl-almadina.com). **H**

Discovering Makerspaces

Ryan Layton

As a child I would often try to find a large box that I could turn into a fort, a spaceship, a race car or any other interesting item. As time went by, I spent less time with cardboard but continued to find a creative outlet in building Lego with my niece and nephews or putting together a model car or plane. My desire to explore, create and design has always been important in my life, as it is for students, but how do we encourage the development of these competencies in the 21st-century school?

The answer: makerspaces! A makerspace is workspace where people with common interests can meet together and collaborate on projects that usually focus on computers, machining, technology, science, digital or electronic art and within that space are the tools necessary to facilitate the completion of those projects. The makerspace movement within a school setting enables teachers and students to engage in interactive and hands-on learning experiences. Examples of makerspace projects include musical recordings, 3-D printing, programming, construction with a variety of materials (wood, metal, paper and so on) and creating electronic books.

During the September Educational Technology Council conference, Susan Crichton, associate professor in the Faculty of Education, at UBC, and the director of the Innovative Learning Centre, spoke about the need to create and foster areas in schools where students have the opportunity to plan, collaborate, construct and revise. These areas can include basic crafting supplies or can be as advanced as having CNC laser cutters or 3-D printers.

In order to implement a makerspace, one must have an understanding of design thinking, that is, how to approach “the world’s messy problems

together.” During our ETC makerspace day, participants were led through an activity entitled the Gift-Giving Experience. This activity, created by the Stanford University Institute of Design, introduced everyone to a process of how to approach problems and situations and how to work through those issues in an attempt to come up with solutions. This process required participants to gain empathy for their partner, reframe the problem, ideate solutions to the problem, iterate solutions based on feedback, then finally build and test prototypes. By the end of this one-hour activity, each table was filled with wonderful creations.

Many schools are making the transition from merely having a library to creating a learning commons, but if you have ever wondered what is next, the answer is makerspaces, places where students can create, learn, collaborate, explore, design, ideate and discover. For teachers in the 21st century, makerspaces are the key to helping students develop the skills necessary to become productive and successful leaders of tomorrow.

To learn more about existing makerspaces in Alberta, visit www.epl.ca/makerspace and www.calgarymakerspace.com as well as <http://goo.gl/A4FIOT> to learn more about a makerspace event hosted by Edmonton Catholic Schools on June 9, 2014.

References

- Stanford University Institute of Design. 2011. *Our Point of View—d School*. <http://dschool.stanford.edu/our-point-of-view> (accessed January 30, 2015).
- . 2011. *The Gift-Giving Project—d School*. https://dschool.stanford.edu/groups/designresources/wiki/ed894/The_GiftGiving_Project.html (accessed January 30, 2015). ■

Technology in the Elementary Classroom: A Beginner's Journey

Alannah Muirhead

We teachers have many demands placed on us. How can we incorporate one more thing like technology into our practice? As someone who does not consider herself to be a techno wizard, I challenged myself as a teacher to incorporate more technology into my practice. This article will outline some of the simple tools I accessed to enhance the learning in my classroom and the lessons I learned.



The built-in iPad camera has become a trusted tool for me. Introducing this tool has allowed students to record experiments in science, which provided an opportunity for them to revisit

and reflect, leading to a deeper understanding of concepts. It also helped students to create beautiful photographs, which they were then able to incorporate into a digital story. The camera also allowed students to be able to use other programs such as Pic Collage. Most important, the camera has allowed me to document student learning providing rich information for assessment purposes.

Technology has also provided the bridge for some of my struggling students. One program, Read & Write Gold, allowed my struggling readers to have a website's content read for them,



thus allowing them to access the same information as their peers. Implementing assistive technology features on the iPad also provided opportunities for all students to be included in the learning of the classroom. Some of the assistive technology includes text to speech, speech to text and the ability to increase font size. The rise of Discovery Education and similar websites has also provided opportunities for students to access the information visually, once again providing an inclusive environment for all students.



So what lessons have I learned on this journey to incorporate technology as a learning tool? First and foremost, technology is not going away and as a teacher I needed to be on board. Second, I found that I already used technology more than I thought I did. Finally, don't be afraid to use it. Students and other teachers were more than happy to help me learn. By involving my students as the experts it gave them confidence and greater ownership, and it enhanced our classroom-learning community.

In my new role as a district consultant, I am excited to see all the ways technology is used in classrooms and how it enhances student learning. ■

Correction

In our last issue, the year for the Edna Dach Award was incorrect. Jim White is the Edna Dach Award recipient for 2014. ■

Technology Trends 2015

Nicole Lakusta

The International Consumer Electronics Show (CES) just ended in Las Vegas after wowing the world with new gadgets. While most of the new technologies shown there are either not yet available on the market or still too expensive for most purchasers, we can get an idea of what will be appearing soon in stores and, eventually, in our schools. Here are the top trends you should be on the lookout for:

Cars of the Future: We don't have the Jetsons's space cars yet, but we are getting close in some ways. New automobiles at the show included their own WiFi and complete synchronization with smartphones. But the biggest change was that they were self-driving. Building on the driverless Google car, new models from Audi and Mercedes actually drove themselves automatically from California to Nevada for the show. What might this mean for school buses of the future?

The Internet of Things: Everything can now be connected to the Internet for easy access and control. Smart appliances, like refrigerators with automated grocery lists, and smartphones with the ability to turn your toaster or oven on, almost seemed old hat compared to all of the new gadgets, including more wearable technology. This may be the trend that could have the greatest effect on the classroom as students are instantly and constantly connected to their friends, their parents, their belongings and each other.

Everybody's Got a Drone: Drone technology was everywhere at CES, from small personal units to larger corporate models costing hundreds of thousands of dollars. Drones can be easily flown with a smartphone and can take aerial pictures and videos. What might your students be

able to do with their own drone to program and use?

No Life Without a Smartphone: Everything shown at CES was operated with a smartphone. Check your health, start your car, pay your restaurant check, see what your pet's doing, turn on your slow cooker at home. But what happens if you lose your phone or it breaks? And can educators ask students to put their phones down if they might be checking their blood pressure or seeing if a younger sibling made it home safely? Not to mention the problem of those students who cannot afford a smartphone with a data plan. This is an area that schools will have to address soon.

Robots Are Finally Here to Stay: Several new and more feature-filled robots were unveiled at the show, signalling that the use of robots in work and at home will only continue to grow. One robot analyzed gestures, expressions and voice tones of attendees and interacted more emotionally with them. This development is especially promising for autistic students who may sometimes interact with robots more easily than they do with their peers.

If we learned nothing else from the International Consumer Electronics Show, it should make us realize that the careers we are preparing students for are radically changing and the education we provide them must change, too. After all, someone will be needed to program those drones and smart cars and robots and take them into the future. And when they break down, someone will need to repair them. A career as a drone pilot or a robot trainer or a smart appliance programmer was completely unknown five years ago. Our teaching must change to embrace these new possibilities. ■