

Integrating technology into the classroom

How effective school administrators can use Universal Design for Learning to integrate technology into the fabric of the learning space.

by Kerri Steel



A student works on his Vancouver Island Marmots PowerPoint. Other photos show: page 8) material that was hi-lighted in Kurzweil; page 9) Colleen Nicholson with the Tasmanian Devils, the grade three and four students who worked with her on the project.

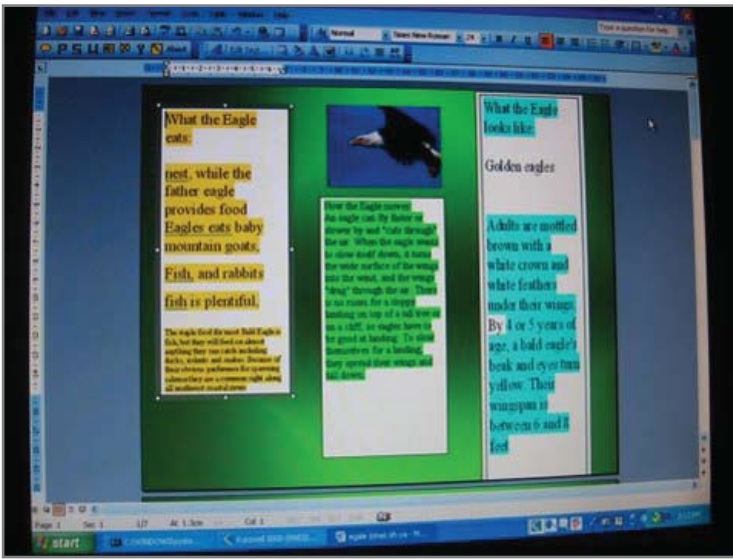
Let me start out by saying that I'm biased. This article is about the reasons that all principals and vice-principals need to become more tech savvy and to work actively to support teachers toward incorporating Universal Design for Learning (UDL) into every learning space. Some of us would argue that many teachers are providing quality programs without ever turning on a computer. *Can UDL be implemented?* It has been. *Should it?* I'd argue that we're doing all of our learners a disservice if we don't try.

There is a growing body of research supporting the use of technology in classrooms. "Information technologies impact how people work, play, learn, socialize, and collaborate.

Increasingly, technology skills are also critical to success in almost every arena, and those who are more facile with technology will advance while those without access or skills will not" (*Johnson, Smith, Levine and Haywood, p. 4*). Our learners are living in a world that is changing rapidly, and if we are sincerely and ethically preparing them for their futures, we need to help them to build their skills and understanding using the tools they will be using as adults. Having technology in the building is not enough. As school leaders, it is our responsibility to ensure that our students are provided with universally designed learning opportunities that are supported by the integrated use of technology in

all classrooms. This does not mean we need to be experts in all of these technologies ourselves, but it does mean that we need to be fostering environments where the technology leaders in our buildings are given both a voice and the opportunity to support and encourage other teachers in the school.

UDL is all about access and opportunity. It's about framing each and every learning experience in a way that all learners are able to engage in a meaningful way. It's about creating a flexible framework that invites everyone in the room to participate, regardless of learning or physical challenges. UDL allows both teachers and learners to embrace the diversity of learning styles and challenges in our classrooms; without the need for cumbersome, time-consuming adaptations to curriculum after lessons have taken place. Although technology is an integral part of UDL, it "is not defined by or confined to technology. The technology must be combined with effective pedagogy" (*King-Sears, p. 201*). In a universally-designed classroom, technology is about far



more than word processing “good-copies,” or about making posters or diagrams to go with a project. UDL is an integration of powerful teaching practices with a variety of digital and technological tools. Dave Edyburn explains that “the reason why UDL is possible today as opposed to the 1950s or 1970s is that digital technology provides a high degree of flexibility. Paper-based instructional technologies (e.g., worksheets, textbooks) commit information to fixed formats and cannot match the array and flexibility of supports provided in a digital environment” (*Edyburn, p.38*). UDL isn’t about how often students go to the computer lab to complete projects. It’s about knowing how and where to provide access to tools that deepen engagement and understanding, targeted at specific goals and learning outcomes.

UDL mixes a learner-centered framework that is supported by clear learning objectives and goals with a few structures that have been deliberately chosen to put students in the driver’s seat. Given a chance to explore options, our learners quickly discover how they learn best; but they need to be supported by teachers who understand how to provide access and opportunities to explore a variety of formats and tools. Ef-

fective educators begin with explicit, sincere conversation about goals and objectives. The teacher clearly states, and often displays, a learning intention for the lesson or activity. Once everyone knows their end point, the group has a conversation about the critical criteria that they will need to meet, and the learners then develop their own question to help them to find a way to achieve personalized learning goals. Some call this an inquiry question. This part can be done without technology. It’s the conversation and opportunity for individual exploration that create the engagement.

Once clear goals and expectations are in place, students have a road map. This is the point where choice and flexibility step in, and the teacher steps out of the role of “instructor,” and into the role of “mentor.” As long as the students make reasonable choices that help them to achieve the defined learning intention, these choices are available to them. For example, if the learning intention is to “compare the structures and behaviours of local animals and plants in different habitats and communities,” (*BC Ministry of Education, p. 30*), and students have a rubric which stipulates which information to include, they may choose to write a report, do a detailed poster, create an advertisement with a friend, or to make a labeled diorama. If we really want to include everyone, we’ll also offer the options of presentation, movie and word processing software and pro-

grams such as *Kidspiration* or *Kurzweil*. The project is marked against the content outlined in the criteria, so it doesn’t matter if everyone uses a different format to complete it. Classroom teachers don’t need to be experts in all of these technologies; if we create opportunities for our students to use skills they already have, and to collaborate with others who can help to troubleshoot, some amazing results emerge.

Let me illustrate by describing a project completed by a group of grade three and four students in my school last year. Colleen, their teacher, was exploring local animal habitats and characteristics with her class. She wanted to know if the students knew how to focus on the “big ideas” when pulling facts out of their reading, and wanted them to celebrate their learning by presenting it to parents and grandparents. After creating a rubric together, the students did some print-based reading in information circles, to learn how to “Dig for Potatoes,” (a graphic organizer focused on collecting key facts). They followed this learning with creating some dioramas and doing some writing about their animals.

This was a great start, but Colleen really wanted to see what her students could produce more independently, and with over half the class receiving support services for reading or writing, she needed a flexible, inclusive framework to help them to finish their exploration. She also knew there were some free digital tools and other software in the computer lab that would allow her to foster independence and to increase engagement for her students, and she sought the help of colleagues to get started. By providing her with some time to plan with the Information Communications Technol-



(a free add-on program for Mozilla Firefox). When finished, students worked with both Colleen and the ICT teacher to create PowerPoint projects, synthesizing their learning. To facilitate the use of some other tools that she had not

citedly recalled the high level of engagement that this group of learners demonstrated throughout the project, and she was astounded by both the depth of their understanding of the content, and the level of expertise that they demonstrated with the technology.

By the end of the project, Colleen recognized what we all need to; that UDL is all about purposeful pedagogy, combined with the flexibility and choice afforded by the integration of technology into the fabric of the learning space. It is achieved by first establishing a solid foundation and a clear goal that is then explored through a variety of choices that reflect students' preferences and learning needs. This animal project emerged out of a coordinated collaboration between the classroom teacher, support teachers, information technology teacher and administrator. The choices provided for the students were deliberately chosen to support the diverse array of student learning styles and needs in this classroom, arising from both the teacher's understanding of her students, and her willingness to explore new technologies to support their learning. Conversation was not around finding time for adaptations, such as who would scribe or read to the students with learning challenges, nor around finding "easier"

ogy (ICT) teacher, and by spending some of my time in her classroom as she was launching some of these new tools, I was able to support Colleen as she broadened her exploration of these new technology tools with her class.

Colleen knew there were some terrific websites with information on Canadian wild animals, so she collaborated with the ICT teacher to support the students with gathering facts on the Internet. Because she was just beginning to work with digital research tools herself, the students worked on this part of the project during their "computer" blocks. Some students cut and paste, some read and typed their discoveries and others used digital hi-lighters to categorize information that they listened to while using *Click, Speak!*

used previously, Colleen also collaborated with the Support Services teachers as the kids worked through their final projects. On the day they shared with their families, Colleen and I watched from the side as the students used the SMART Board to share their projects. Some students simply showed their presentations and read the captions, others used a dollar-store microphone to record what they had typed and then played the voice threads as they showed their slides, and a couple of students chose PowerTalk (another free program), to have the computer read their writing for them. Students sat with rubrics to complete peer evaluations on the presentations, and spoke articulately about what they had accomplished. In reflecting on her students' work, Colleen ex-




Cover story

Our cover art this month is by Erin Rushton, who was in grade 2 at Central Fort George Traditional School in Prince George when she completed this picture last year. The picture was created using masking tape, watercolours, salt and black paint. Her teacher, Shirley McLay, retired at the end of the 2010 school year. Our thanks to Erin, her teacher and Linda Picton, principal.

reading materials for them. It was around creating access and independence for these learners. Colleen is just beginning her journey toward integrating technology into her everyday teaching. It was through discussions with others in the building, facilitated and encouraged by a principal, that she was able to move forward.

It is possible to provide some choice without technology. However, if we do, then we ignore the growing body of research that tells us that our students learn better when they have access to these tools, and we create barriers simply by limiting opportunity. As instructional leaders, I believe that all principals and vice-principals need to be doing more than making sure our machines are up and running. We need to be having deliberate, focused conversations around the ways that technology supports effective teaching and deep learning. We need to be fostering environ-

ments where our technology leaders are given opportunities to share their expertise, and where teachers are collaborating and experimenting with the array of tools that are open to them. Will teachers explore opportunities for integrating technol-

ogy without us? *Some will.* Should we let them? *Not if we truly want to foster innovative, dynamic, and collaborative learning environments that will prepare both teachers and students for the challenges that lay ahead.* It's time. 

Kerri Steel is the vice-principal of Errington Elementary in the Qualicum School District. She has presented on UDL in several school districts. In addition to being vice-principal, she is also the SET-BC district partner. This is her first article for Adminfo. She can be reached at ksteel@sd69.bc.ca

Integrating technology References

Ministry of Education, Province of British Columbia, [Science K-7: Integrated Resource Package](#) (2005).

Edyburn, Dave. "Would you recognize UDL if you saw it?" *Learning Disability Quarterly*, v.33, Winter 2010, p. 33-41.


International Society for Technology in Education, The ISTE National Educational Technology Standards (NETS•A) and Performance Indicators for Administrators 2009. (Retrieved August 27, 2010 from http://www.iste.org/Content/NavigationMenu/NETS/ForAdministrators/2009Standards/NETS_for_Administrators_2009.htm)

Johnson, L., Smith, R., Levine, A., and Haywood, K., (2010). *2010 Horizon Report: K-12 Edition*. Austin, Texas: The New Media Consortium.

King-Sears, Margaret. "Universal Design for Learning: Technology and Pedagogy," *Learning Disability Quarterly*, v.32, Fall 2010, p. 199-201.

Jameel Aziz, continued from page 2

size the importance of reading for life success. Reading is equally important for our leadership success. Students, parents and staff constantly approach us for ideas and discussion. The wider our base of knowledge, the better prepared we are to enter into the fray and to back up our opinions with solid information.

When you make professional reading a part of your daily routine, I am sure you will see the benefits in a variety of ways in both your thinking and conversation. 

Reading professionally References

Vancouver Sun, Report Card, Janet Steffenhagen's education blog
<http://communities.canada.com/vancouver/blogs/reportcard/default.aspx>

Los Angeles Times, Education
<http://latimesblogs.latimes.com/lanow/education/>

New York Times, Education
<http://www.nytimes.com/pages/education/>

The Independent (London), Education
<http://www.independent.co.uk/news/education/>

ASCD (Association for Supervision and Curriculum Development)
Public Policy <http://www.ascd.org/public-policy.aspx>
Community Blog <http://ascd.typepad.com/blog/>

The BCPVPA listserve is an instant network for BCPVPA principals and vice-principals

Recent subjects include: BCeSis, Honour Rolls, Common timetables

To join email rwilliams@bcpvpa.bc.ca