CODE ISTE-HP Project: Exploring Technology Use in the 21st-Century Classroom

Suzanne Kennedy, North West Area Resource Teacher
Bluewater District School Board

Recognizing the omnipresent use and importance of technology in the twenty-first century, the Bluewater District School Board continues to explore how we offer access to technology to all students, whether at home or at school, and ways to provide professional development to our staff through alternatives to face-to-face instruction. With this in mind, a group of Bluewater employees worked for 14 weeks in the fall of 2010 on a project through CODE and Hewlett-Packard (Canada) in collaboration with ISTE (International Society for Technology in Education) that explored Universal Design for Learning, existing software, and online means for networking with students or teachers.

The group represented various departments who all work toward improving learning for students: Donna Torrie, Speech and Language Pathologist; Suzanne Kennedy, Area Resource Teacher; Wendy Louwerse, System Curriculum Lead Teacher; and Patti Ottewell, Crystal Stobbe, and Pam King, Communicative Disorders Assistants. Together with Chris Bugaj, adjunct professor at George Mason University, host and producer of A.T. TIPSCast podcast series, and an assistive technology trainer for Loudoun County Public Schools in the United States, the group developed a goal for the project geared specifically to our board's needs: to experience technology to help teachers differentiate instruction and to help develop professional development materials/experiences for teachers.

Since the project's focus was technology, the method of communicating and participating was online using Moodle. Once comfortable with this format, the team was able review materials for the weekly online discussions. Discussions were generally based on watching videos or podcasts, reviewing articles online, exploring websites, and experimentation. We started the project with a general discussion on Universal Design for Learning, in the forefront with the Ministry of Education's *Education for All* and, more recently, *Learning for All* documents. Although in the past, our board has focused on the use of specific software for students with learning disabilities, developmental disabilities, or specific physical disabilities, we have recently been working toward providing more access for all students through the use of software that all students can access. This fall, we were excited to purchase an additional "at home" license (in addition to the school license that has been in place for some time) for Premier Assistive Technology that allows access for all students and parents/guardians to software that can meet a variety of learning needs.

We also spent some time at the beginning of the project reviewing and discussing alternative PD initiatives. The Bluewater District School Board encompasses a large geographical area, with the majority of schools situated in rural settings. This means that driving distance for employees is a factor in planning professional development. Added to this is our infamous setting in the traditional snow belt of southern Ontario. Our close proximity to both Lake Huron and Georgian Bay translates into frequent snow squalls in the winter months (and sometimes spring), which close schools and roads, necessitate cancelling events, and generally make driving dangerous. For example, a recent board-wide professional development day for elementary educators held in early February was a lovely sunny day. However, the day before, when out-of-town presenters were travelling to us, many roads were closed due to stormy winter conditions. Presenters flying in for very popular workshops on Premier Assistive Technology were unable to make it and we were left scrambling to place people in other workshops. As a result, participants were not able to experience the full level of professional development. Online learning and discussion groups make sense, but we also need to take into account the fact that some areas within our board do not yet have access to high-speed internet. As part of the project, the team discussed traditional PD models versus new technology-based models (Moodle, podcasts, Twitter, and other methods of social networking) and the pros and cons of each. Alternatives to traditional face-to-face interaction included discussions about video-conferencing or the use of online services such as Skype to bring people together without necessitating travel far from home or school.

From this discussion, the team proceeded to focus on software available to students and how this can be used to differentiate instruction for students. Most notably, the team looked at voice recording and screen capturing: how to do them, what is available, ease of use, and how they would be useful to both teachers and students. Many people in the group are part of the Specialized Equipment Technology Team (SETT) for the board. SETT provides training and support for students and teachers in their access to technology. From the CODE HP Project, SETT further explored voice recording and screen capturing and is implementing these methods to create video tutorials which provide step-by-step instructions for a number of features already available to all students through board-licensed software. Recently, the team has posted these tutorials in the board's electronic communication system so that, combined with some face-to-face workshops, more teachers have access to the information and can, in turn, implement it in classrooms.

As the twenty-first century commences, we need to recognize the importance of technology in everyone's life. "Talking to friends" has a much different meaning to our students than it did a couple of decades ago, as cell phones are no longer just for phoning and social network sites grow in importance. By being able to explore a variety of means to share professional development with teachers and allow alternative ways for students to access the curriculum, we will be able to reach more learners and provide them with the tools to demonstrate their learning in many more ways than the traditional book, paper, and pencil methods of the past.

✉ Comments about this article? Email suzanne_kennedy@bwdsb.on.ca

Universal Design for Learning for Adults in Online Courses

Christopher R. Bugaj

Multiple Ways to Experience the Content Within this Article –

A. Listen to this content (www.cyberears.com/cybrss/12035.mp3)
B. Watch a short video about this content (www.bit.ly/udlexplained)
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On February 1, 2011 The Center for Applied Special Technology (CAST) released an updated version of the guidelines for the Universal Design for Learning (UDL) framework. Like version 1.0, the guidelines continue to focus on educators structuring curricula and lessons so as to provide options to meet the variety of needs of all learners. Educators using these guidelines consider multiple ways to represent information, multiple means for individuals to express what they know, and multiple methods of engaging the participants. A wide array of technologies are utilized by educators to provide these options to participants in the learning environment.

One of the major changes embedded within version 2.0 of the UDL guidelines is an adjustment in terminology. Rather than calling the participants "students," the new guidelines address those participating in the educational environment as "learners." This change in terminology was applied to help widen the scope of UDL to include any individual, regardless of age.

With this change in mind, the underlying principles of UDL should be applied not only to school-aged students, but to adult learners as well. When conducting online professional-development workshops, educators providing the training can use the UDL principles to differentiate the experience for every learner. To do this, the professional developer can use the three pillars of UDL to provide a rich, multi-modal learning experience. Online professional development courses provide an opportunity and environment for educators to plan a variety of modalities by which the participants can experience content, demonstrate knowledge, and make meaningful interactions.

When creating an online course, the educator develops a plan of learner outcomes. Similar to the curricula for school-aged learners, these become the goals of the course and provide a foundation upon which the entire course is designed. From there, the educator begins to think about all the different methodologies for presenting the content. Traditionally, text can be used as a starting point, but in order to engage all learners, multiple means need to be incorporated from the beginning. Therefore, along with text, professional developers might consider providing audio clips, images, video clips, and interactive simulations for the learner to experience.

Audio clips can be auto-generated by using a text-to-speech converter, such as www.vozme.com. Alternatively (perhaps preferably), the educator can create audio through the use of a voice-recording system, such as www.vocaroo.com or the open-source software program Audacity (www.audacity.sourceforge.net). Yet another way to provide content using audio is to refer the learner to a podcast episode on the topic. A wide range of free and openly shared content is available in audio format via podcasts. The iTunes application is one example of a free podcast aggregator that can be used to find relevant audio content.

The old adage "A picture is worth a thousand words" continues to ring true for 21st-century learners. Creating images or sharing found images provides visual representation of concepts. Still images, such as individual digital photos, are only one type of visual representation. Multimedia slideshows, such as those found or created on sites like www.photopeach.com or www.vuvox.com, can also be used. Furthermore, comic generators, such as www.bitstrips.com and www.pixton.com, enable users to create visual representations using cartoons.

Video provides another medium to engage learners. As with audio and images, professional developers can choose to generate their own video clips or use the multitude of free and openly shared content available on the Internet from sites such as www.youtube.com, www.schooltube.com, and www.teachertube.com. Even the most basic of digital cameras can be used to create short video clips, while tools such as web cameras or digital video cameras can also be used to create digital videos. Sites like www.xtranormal.com, www.voki.com, www.blabberize.com, and www.kerpoof.com enable users to create short digital videos and animations without the use of a digital camera. Using the tools built into the websites, professional developers can quickly incorporate an engaging and entertaining video into their courses as a way to demonstrate a topic.

Interactive websites enable users to engage in active learning. Reading text, listening to audio, and viewing video are all passive ways to acquire information. Interacting with an environment (or others within an environment) provides learners with a dynamic experience. Sites like www.secondlife.com allow users to create a three-dimensional representation of themselves which navigates and interacts within a virtual environment. Two-dimensional games, simulations, and social interactions can help learners to experience content.

Through multiple modalities the learner has the opportunity to experience content by listening to it, watching it, reading about it, and interacting with it. These same modalities can then be used by the learners to express what they have learned. Learners can be expected to use text, audio, images, video, or simulations to create rich projects that are meaningful on a personal level. In this way, learners aren't just completing a project to demonstrate what they've learned, but creating something authentic that can be used in their own practice.

It is important to remember that the professional developer is not requiring each participant to experience every modality, but rather is providing options from which the learners can choose. Some learners may choose to read blog posts about the topic,

« **Universal Design,** continued

while others might choose to listen to audio, while still other might choose to play an interactive game or watch a video. Of course, some learners may choose to experience content in more than one way as well. The role of the professional developer of an online course is to provide learners with as many options as possible to experience the content and express what they have learned. When an online course is developed and executed using the principles of Universal Design for Learning, the result becomes something that transcends the traditional learning experience. Participants leave the course with a sense that the experience was customized to their unique styles of learning, which ultimately results in a more internalized synthesis of the content.

Chris Bugaj is an author for The International Society for Technology in Education (ISTE) and also facilitates an online course in Assistive Technology. ISTE is the premier membership association for educators and education leaders engaged in improving learning and teaching by advancing the effective use of technology in PK–12 and teacher education. ISTE represents more than 100,000 education leaders and emerging leaders throughout the world and informs its members regarding educational issues of national and global scope. ISTE is home to the NETS, the leading digital age education standards in the U.S. and many countries. ⬤

Chris Bugaj

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Digital Student Profiles

Deb Heslinga, Co-ordinator of Special Education
Nicole Simpson, Special Education Consultant
Peterborough Victoria Northumberland Clarington Catholic District School Board

The Team
- CODE Special Education Team – John Fauteux and Michelle Forge
- HP (Hewlett-Packard) – Joan Rocha and Kim Hammond
- ISTE (International Society of Technology Education) – Janice Krause and Susan Brooks Young
- PVNC CDSB (Peterborough Victoria Northumberland Clarington Catholic District School Board) – Deb Heslinga, Nicole Simpson, and Gerard Winn

This dynamic partnership worked on a variety of projects that examined the Special Education Leader's role in relation to technology. It included research-based strategies, online training, and methods of integrating technology to improve teaching and learning. One successful project from this initiative was the development of a Digital Student Profile. HP and ISTE provided support through consultation, online conferencing, and the CD resource titled The Digital Briefcase for Administrators. This support assisted us in acquiring the necessary skills to develop and design templates to meet our needs. This student profile was originally developed for consultants to use at School Resource Team meetings but has grown into an effective tool for all administrators.

Education for All (2005) initiated the importance of student profiles, and *Learning for All (2009)* reinforced this practice to provide more personalization and precision.

> *"Developing class profiles and student profiles can help teachers plan daily instruction that enables every student to learn and achieve success—instruction that is **necessary for some and good for all"***
>
> Learning for All

What is a student profile?
- Provides one-page summary of critical student information
- Provides outline of formal and informal student assessment data
- Provides overview of background information including strengths, needs, and learning style
- Provides information gathering prior to and throughout IEP development
- Summarizes accommodations, DI strategies, and services provided
- Provides information about health services and agency support and assessments
- Provides synopsis of report card data and additional academic information

Who develops and uses a student profile?
- Classroom teachers
- Special Education Resource Teachers
- Administrators
- Special Education Consultants
- Specialized Assessment Staff (SLP, Psychology)

How to use student profile?
- Created from a teacher OSR search
- To track differentiated instruction and assessment
- To share information at a School Resource Team Meeting
- To develop programs based on student strengths and needs
- To assist teachers in developing student groupings by ability, learning style, and interest
- To provide a gap analysis for targeted instruction

A student profile will:
- Identify gaps in learning
- Help drive further programming
- Determine if additional assessments are required
- Investigate outside services or agency involvement

Benefits of digital student profile application:
- Pull-down menus (for school names, strengths and needs, exceptionalities, etc.)
- Date picker
- Expandable boxes
- Checkboxes
- Easy storage and retrieval

Student Profile Example:

Student: first and last name here				Exceptionality: Choose an item			School: Choose an item
Grade: Choose an item.				Diagnosis:			

Background		Classroom Data				SERT Data	
Strengths:	Needs:		*Date	*Date	*Date	School	
Choose an item	Choose an item					KTEA	TAPS
Choose an item	Choose an item	Letter Rcognition	/26	/26	/26	L&W R %	W.D. %
Choose an item	Choose an item	Sound Rec.	/26	/26	/26	R.C. %	Ph.S. %
						MC&A %	Ph.B. %
Add Other Option Here	Add Other Option Here	Word WII List				MC %	N.F. %
		PM and gr lvl				Sp %	N.R. %
Learning Style:		DRA and gr lvl				W.E. %	S.M. %
Choose an item		Behav. RtingScale	☐	☐	☐	LC %	A.C. %
		LORS	☐	☐	☐	OE %	A.R. %
		EQAO					
		Grade Choose an item					
		N Choose an item					
		R Choose an item					
		W Choose an item					
D.I. Strategies		IEP		System		Outside Agency	
Click here to enter text		Acc ☐		Psychological ☐		Psychological ☐	
				Speech ☐		Pediatrician ☐	
		Mod ☐		Language ☐		Hearing ☐	
				Social Work ☐		Vision ☐	
		Alt ☐		Consultant		OT/PT ☐	
		Click here to enter text		Observation ☐		SLP ☐	
						Social Work ☐	

Summary of Reports in OSR

Report Card Summary

The Digital Student Profile created summarizes student data on one page. This information can be recorded once, while allowing updates. The digital format saves staff time and provides a visual representation of a student that can be stored centrally for administrative access. Thanks are due to CODE, ISTE, and HP, who assisted our team in developing a Digital Student Profile that can be used by our consultants and administrative staff to record data in a streamlined professional manner and that will assist us in providing and recording interventions in an effective and timely manner. ⬤

✉ Comments about this article? Email dheslinga@pvnccdsb.on.ca

HP-ISTE Professional Development Program

Michelle Forge, Co-Chair, CODE Special Education Project
John Fauteux, Co-Chair, CODE Special Education Project

The Council of Ontario Directors of Education (CODE) has supported the 72 district school boards in projects focused on transforming the delivery of special education programs and services throughout the province. Much of our work was to develop processes for knowledge transfer and mobilization of key lessons learned from these projects.

CODE dialogued with HP and discussed endeavours that might support the transfer of knowledge and professional development of staff in matters related to assistive technology. Together we agreed to pilot a program in two district school boards focusing on the individual needs of the boards and their leaders in special education. The outcome of this agreement was that Hewlett-Packard Development Company (HP) partnered with International Society for Technology in Education (ISTE) to provide professional services for 12 consultants and/or coordinators. CODE asked two district school boards—the Bluewater DSB, and the Peterborough, Victoria, Northumberland and Clarington Catholic DSB (PVNCC)—to pilot the activity

As stated in the HP-ISTE Professional Development Program Evaluation Report 2011, "The objective of this joint partnership was to coach the consultant/coordinators who focus on special education and curriculum and provide pedagogical and instructional support to classroom teachers on their mentoring of the teachers they support, on the integration of technology in their classrooms. The program is not about adding technology; it's about transforming teacher practice and increasing student achievement, with the aid of technology tools such as assistive technology. ... With this project, HP will partner with CODE to explore broadening the use of assistive technology for all learners in the classroom. In addition, the scalability of the program could mean positive ramifications for all of the 72 English school boards in Ontario." (HP-ISTE Professional Development Program Evaluation, 3/24/2011)

In this edition of Chronicles, you will find details of both the Bluewater DSB and the Peterborough, Victoria, Northumberland and Clarington Catholic DSB (PVNCC) projects and a response regarding the success of this practice. We invite you to read the details of their projects and contact the board leads to uncover more strategies that work and that could be helpful to your board as you plan for future learning opportunities for staff.