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## Using A Smartboard Smartly: Considering Digital Tools for Interaction, Collaboration and Storytelling

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### Abstract

This paper shares a book project completed in an urban Grade 1 school. While the project itself is not unique, the authentic use of multiple technologies to support the process to develop it is. The terms interaction, collaboration, and student ownership are often used to describe inquiry-based teaching and learning, and the project described here illustrates what they might mean in actual practice. Further, this paper situates the book project within the literature of Information, Communication Technology (ICT) and arts based instruction, providing an example of classroom-based technologies to enhance teaching and learning.

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## **Using A Smartboard Smartly: Considering Digital Tools for Interaction, Collaboration and Storytelling**

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### **Abstract**

*This paper shares a book project completed in an urban Grade 1 school. While the project itself is not unique, the authentic use of multiple technologies to support the process to develop it is. The terms interaction, collaboration, and student ownership are often used to describe inquiry-based teaching and learning, and the project described here illustrates what they might mean in actual practice. Further, this paper situates the book project within the literature of Information, Communication Technology (ICT) and arts based instruction, providing an example of classroom-based technologies to enhance teaching and learning.*

Interactive whiteboard technologies, typically Smartboards™, have become standard equipment in many schools. As early as 2005, school boards have purchased these devices as flagships in technology integration plans, almost suggesting the number of interactive boards in classrooms somehow reflected innovation and adherence to reformed or changed teaching practices.

However, by 2010 educators were consistently questioning how “smart” these purchases actually were, asking (1) what had been gained or lost as these boards took increasingly large amounts of privileged real estate in overcrowded classrooms, and (2) whether teaching and learning had actually been improved. It was the desire to answer these questions that brought the authors of this paper together. Susan was delivering the keynote address for a Reggio-Inspired Educators conference in Calgary, Alberta, Canada and Jennifer was offering a session entitled “Using Your Smartboards™ Smartly!” Susan attended Jennifer’s session, hoping to see an example of the power of interactive whiteboards in actual practice. It was there the synergy behind this paper was born.

### **Literature Review**

When Papert (1980, p. viii) suggested a new perspective for education research by “creating the conditions under which intellectual models will take root,” he recognized the computer as “the Proteus of machines. Its essence is its universality.” He further suggested computers could “be carriers of powerful ideas and the seeds of cultural change [further] they can help people form new relationships with knowledge” (p. 4). Thirty years later, educators are still grappling with what this might look like in classroom and what would be required to foster and sustain these relationships in a thoughtful, scalable way.

Along the way teachers have seen computers move from lab settings directly into their

classrooms, along with a variety of peripheral devices to support teaching and learning – interactive whiteboards among the most pervasive and obvious. While researchers (Schmid, 2010; Schrum & Levin, 2009; and others) have suggested educational technologies have the potential to change teacher practices and support the educational reform called for both nationally and globally (ISTE, n.d.), the evidence has been spotty and inconsistent. Cuban’s 2001 work, *Oversold and Underused: Computers in the Classroom*, shone light on the problem, suggesting information communication technologies (ICT) were not making the significant impacts they had promised.

Therefore, educators found themselves in a conundrum – on one hand they were being called upon to embrace educational reforms and integrate ICT to support and enhance teaching and learning, and on the other hand they were searching for evidence of the value of their investment in ICT infrastructure – in terms of time, physical space in the classroom, and impact on dwindling discretionary budgets. Specifically, if teachers were participating in professional development activities focusing on computer software and hardware what were they not learning about or honing their skills on? If interactive whiteboards were taking up an entire classroom wall and desktop computers were sitting on table tops, to what degree was student work not being displayed or manipulatives not out and available for student use? If money was being spent on ICT, in what other areas of the curriculum was funding reduced – art materials, sporting equipment, musical instruments?

Further, researchers probed the use of ICT to support “personalizing learning - differentiating the curricula, including expectations and timelines, and utilizing various instructional approaches so as to best meet the needs of each individual” (Schmid, 2010, ¶10), recognizing technology “is the conduit for teachers to move to a learning approach that features materials developed for each individual student.” Personalization is embedded in most contemporary educational reform in North America, but when coupled with the ICT skills required to support it, the teachers’ workload increases, often causing some teachers to revert to traditional practice and use the ICT for rather ordinary teaching and learning activities.

Since 1998, there has been a recognized set of ICT standards for students, teachers, and administrators that form a baseline of necessary knowledge, skills and abilities (ISTE, n.d.); however, most school jurisdictions wrestle to adopt them universally across their systems and have been embraced by all teachers in every classroom. Inherent in the ISTE standards is the understanding that ICT must be imbedded within daily teaching and learning rather than being sidelined to the occasion trip to the computer lab. Initiatives such as one-to-one laptop projects for both teachers and students (Pegler, Kollwyn, & Crichton, 2010; Maine International Center for Digital Learning, 2007) have gone along way to making ICT more accessible and ICT integration into teaching and learning more possible.

Art educators (Eisner, 1998), specifically those in Reggio-inspired schools, have been early adopters of ICT. Their philosophy is based in the deep understanding that children must have a voice in their own learning and that they must experience the world around them, documenting their learning through a range of materials (e.g. art, media, etc.). Increasingly, they are recognizing the potential of technology to document learning in meaningful ways, stressing the importance of making learning visible (Project Zero, 2003). “Documentation is an essential component of the Reggio Emilia philosophy and is vital to the process of on-going professional development for educators there. It situates teachers in the position of researchers of themselves and of the children whose lives they share” (Tarr, 2010, p. 10). Reggio inspired schools are typically considered arts based schools, but those who have seen them in action

would suggest they are vanguards of reformed education while building from the work started in Reggio, Italy after World War II.

The project shared in this paper is offered as an example of exemplary teaching and is situated in a Reggio-inspired, arts based school in the Calgary Catholic School District (CCSD) - the largest Catholic School Board in Alberta. CCSD has been operating for more than 125 years, with 106 schools serving approximately 45,000 Catholic students from Kindergarten through Grade 12. Calgary became Canada's third largest municipality in 2006, and the CCSD is committed to addressing the diverse learning needs of its increasingly multicultural students. CCSD currently operates four schools where the arts form the foundation for all learning and students with unique abilities or interests in the arts can congregate and participate in an arts-intensive program. This is consistent with the Alberta's commitment to charter and alternative schools. The demand for these specialized programs throughout the City of Calgary is high and attracts those students with both unique abilities and a passion for a creative learning environment. CCSD schools specializing in the arts enable students to enhance the depth and breadth of their expression and intuitive response to the fine arts. The integration of fine arts in core curriculum requires highly skilled teachers and has the potential of increasing student engagement, creativity and making learning interactive and meaningful.

While stellar in terms of ICT and curriculum integration, the project shared in this paper is ordinary in terms of the teaching and learning going on in this teacher's classroom on a daily basis. Jennifer has been teaching for eight years, and would be classified as an expert teacher (Steffy, Wolfe, Pasch & Enz, 1999) – one who understands their students' learning needs and effortlessly adapts their teaching style to support them.

### **Project Description – Jennifer's Description**

The grade ones and I went to the library for our weekly visit. Our wonderful librarian had chosen the book *Knuffle Bunny* by Mo Willems to read to the children. I had never even heard of the book or read it. The children were entranced. They loved the story about the little girl and her bunny, and they were really excited about the photographs and the illustrations in the book. They immediately told me that they wanted to make a book like *Knuffle Bunny*.

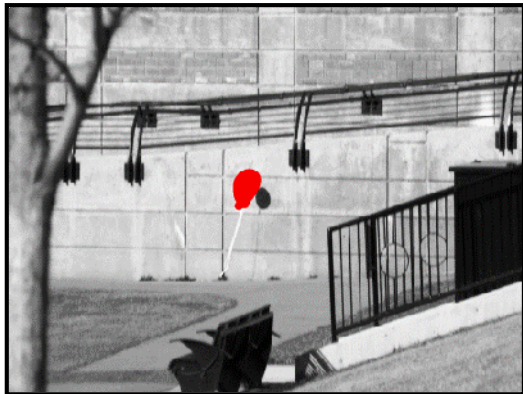
I quickly got to thinking about the lovely community in which our school resides. We're fortunate to be an inner city school, in the community of Bridgeland, with some gorgeous homes and business in the immediate area that are rich with local history. I'd been ruminating on an idea to incorporate this into our curriculum with community but had been unsure how to approach this. I was thinking of ties with our Social Studies curriculum. In Grade One we study community and our local history and compare urban and rural areas, and I thought an activity building from the *Knuffle Bunny* story might be a great way to demonstrate what we thought was important to make up a community.

I quickly decided to take a field trip to Bridgeland and have the children photograph the urban area that is something similar to the New York City vibe reflected in the photographs illustrating *Knuffle Bunny*. Further, I had to consider how to get the children's drawings onto the photographs, at it was the integration of hand drawn pictures with the black and white photographs that give the *Knuffle Bunny* illustrations their charm. I decided that we would use the Smartboard™ as a combined light table and collaborative drawing surface. This would allow the children to view all their photographs, edit them, organize them into a sequence, and then

draw their images directly on top of the images.

With the help of a few parents and armed with cameras, we headed off to Bridgeland. The only direction I gave the students was to take pictures of what they thought was important to illustrate our community. Some of the parents were surprised that I had the children handle the cameras themselves, but I was confident all would be well. The children had been previously exposed to cameras, and they already knew how to work with them. We'd covered that earlier in the year.

The group I was with took pictures of the skyline of downtown Calgary. One of the boys asked about the sign memorializing the Calgary General Hospital, which had been imploded several years ago. While I was explaining what imploding meant, another boy got excited and started shooting pictures in a different direction. He had seen a green balloon floating over the field, and he followed the balloon's progress through his lens, taking pictures until it floated over the buildings behind us and disappeared into the sky. The other children with him encouraged him and helped him with a running monologue of the balloon's journey. They ran after the balloon and tried to catch it but no luck. Philosophically, they shrugged it off, saying the balloon was too high and started chasing shadows instead.



### *The Process*

The next day, I loaded all the pictures onto the laptop and we reviewed them together. The children talked about different parts of the trip and told each other why they took different pictures. When we got to the pictures of the balloon, the student who had taken those pictures jumped up. He was very excited about the balloon and told the other students the story of what had happened. They thought it was really exciting and wished he could have caught it. Then one of the students said, "That's what our story should be about!"

We reviewed the elements of a story at the grade one level. They began to shout out ideas and plots. We voted for the individual story elements, and the majority ruled. The children sequenced the story outline on the Smartboard™. We completed the outline for our story, and they chose the title, *The Boy and the Balloon*.

The next day the children sorted through all of the photographs and decided which ones would be in our book. Then they put them in order on the Smartboard™, correlating them with their story outline. I converted those photos to black and white images as the children wanted their pictures to look like the ones in *Knuffle Bunny*. Then I created a file in Notebook – the Powerpoint-like software included with Smartboards™. Notebook let me create a page for the text and a page for illustration, and it basically provided the organizational structure for the finished book.

Our next major step was to draw on top of each of the photographs. As a class, we had decided that Nicholas was our main character – the boy with the balloon, but we needed to decide what he would look like. The children were insistent that Nicholas must be easily identifiable on each and every page of the book or it wouldn't make sense to the readers. The challenge was to decide how to do that. Interestingly, the children never suggested that only one person would do the illustrations. Instead, they decided that they should all contribute to the

process. I suggested that everyone draw a Nicholas, and then they could decide as a class what to make him look like from there.

They all drew their own Nicholas, and we reviewed them as a class. Overwhelmingly, they choose one of the girls' drawings of Nicholas. The children asked her to show them how to draw him, and then they would decide which colours to use so he would be the same on each page. They were insistent that their readers should be able to tell the character was Nicholas throughout the book.

The girl created the standards criteria for how to draw Nicholas. She went up to the Smartboard™ and drew her Nicholas. The class voted on the colours to use for his skin, hair, shirt, shorts and shoes, and she demonstrated to everyone how to draw him. I saved the drawings and photographs together as one image in Notebook and then exported them into PowerPoint.

I prefer to use PowerPoint for documentation and knew it was easy to insert text and images together. Moving the images from Notebook into PowerPoint wasn't as effortless as I had hoped. The drawn images did not always come over whole and it took a few tries to get them into the PowerPoint. It was also time consuming, as I had to copy one Notebook page at a time into PowerPoint. A further frustration was that we could not edit the content of the previous Notebook pages. However, it was easier to insert additional pages and type in the story in PowerPoint. The children dictated the dialogue to me for each page, and I typed it in front of them, projecting it on the Smartboard™.



Our last step was to create a cover page with our title and names. Despite having the official title of *The Boy and the Balloon*, we always referred to the book as the *Nicholas Book* within our class as he has become part of our classroom. Later, when I told the children I was sharing their work with other educators, they asked the girl who had designed Nicholas to make a short video using Notebook, illustrating how to draw Nicholas – just in case anyone else wanted to know how.

I thought it very important for every child to have a copy of the book with her / his name on the cover. Fortunately, our parent council generously agreed to fund the printing costs. The book was quite expensive to print as all sixty pages are in colour with a spiral binding. When Susan and I came in contact and she asked for a copy for the University Library, the children were over the moon. As one student said, with a megawatt smile plastered to her face, “How many six year olds get to have a book at the University?” Susan “paid” for her copy of the book by providing each author with a pencil with a carved African animal on it. One of the boys had requested a lion when she had asked what they might want in terms of compensation.

### Reflections - Jennifer

It's fundamentally important to me to allow the children to guide our projects as much as possible. There are, of course, constraints within the curriculum and other realities of our day, but I try to listen to the students, and frame the project work around their interests and needs. When it comes to story writing, I avoid prompts or story starters. Experience has shown me that children write rich stories when they are based on their experience. I follow the old adage - write



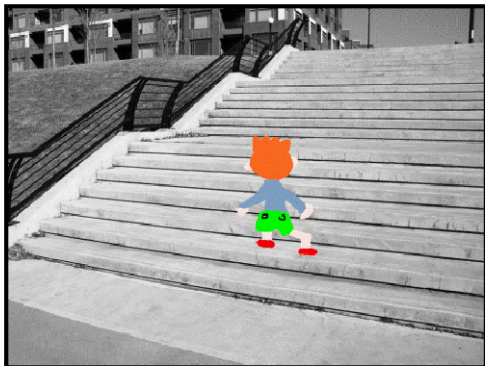
what you know. While many adults would expect the children to write a story that had a fairytale, happy ending, it was not true in *The Boy and the Balloon*. In their story, Nicholas didn't catch the balloon, which was real to the children and reflective of their experiences.

As part of my pedagogical philosophy, I believe it is important for children to have ownership of their classroom. We build the bulletin boards slowly throughout the school year, filling them with the children's work. Much of the space is used for documentation – pictures, writing, sketches, observations and recorded conversations of the children's experiences and learning processes.

The children have input as to where the furniture is placed in the classroom, and they are given access to all the objects that fill our classroom. Vases of rocks and shells, mirrors and bird nests are put at their level and they are encouraged to explore them and make sense of their place in our classroom environment. They feel it is their classroom, and they immediately tell visitors that. They feel pride in their work and how it is displayed. The pride they expressed in the Nicholas book project affected me as an educator. Technology made it possible for the children to be creative in ways that produces authentic, quality work. The technology contributed to shaping their personal identities as writers and allowed collaboration and interactions in ways that would previously have been impossible or very difficult, expensive and / or time consuming.

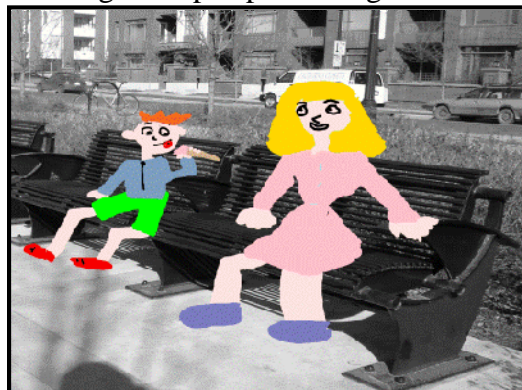
Technology is an important part of my curriculum. I integrate it whenever possible, and the children are familiar with the tools and software we have in our class. We use digital cameras from the first days of the school year, and the children learn to edit those photos. We use slideshows to reflect upon our class experiences following field trips, classroom visits and inquiries.

I try to use technology in context. During the completion of the Nicholas book project, the children used digital cameras to take the pictures, and they worked with the images in a slideshow format, displayed on the Smartboard™, to organize them and make editing choices. The Smartboard™ was used to design Nicholas and then to illustrate the photographs- this was very purposeful and well considered, recognizing the power and potential of each piece of technology. We could not have achieved the same book without using appropriate technologies – both hardware and software.



drawing to put on top of the photos. This also was a critical piece of their learning. If Nicholas was climbing the stairs, the vantage point had to be different from the perspective required when Nicholas was sitting on the bench with his mother. The children recognized this and used the affordance provided by the interactive

Had we done the drawings by hand, it would have been very difficult for the children to achieve a consistent Nicholas on every page. This was very important to them. Further, it was essential to me that all the children have an active role in the collaborative project – truly there was no token participation. I know the standards criteria created by the girl who designed Nicholas would have been very difficult to duplicate on paper for six year olds. Also, it would have been challenging, to say the least, to have them get the perspective right with their





whiteboard to accomplish this task. They could make the edits and corrections, as both they and the group felt were necessary.

The immediacy of the technology was important too. Children can look at their photos right after they take them. Then they can use the computer to crop them or adjust the images. It takes only minutes to upload pictures for the children to view. There is a convenience as well – brainstorming onto the interactive whiteboard and exporting that as a document, allowed me to type the story directly from the brainstorming into PowerPoint. We could then add the photographs relatively effortlessly and efficiently. Because this work was completed on the board in front of the children, they were involved in every part of the work – both the process and product were transparent to them.

### **Reflections - Susan**

By the time I became involved in the project, the book was complete. As I listened to Jennifer describe this project at the conference, I could hear the passion in her voice and picture the students' involvement. Equally important, this was not just one project for Jennifer. Because she has the technology right in her classroom, she uses it constantly – it is part of her workflow.

When I visited the classroom and met her students, their pride in their work was evident. They spoke eloquently about Nicholas and their individual roles in the creation of the book. When I paid for my copy of the book, they were delighted but not surprised. They knew they were authors, and they knew they deserved compensation – especially if their book was to have a real home in the University of Calgary library. Our next step will be to have the students come to the University and meet with the librarian who catalogued the book and to see it actually sitting on the shelf.

Since visiting Jennifer and drawing attention to her work, the Calgary Catholic School District has invited her to present professional development sessions to administrators and teachers. Each time the educators receive the work warmly and recognize that this project is an authentic and well integrated use of ICT to enhance teaching and learning. They agree that the expenditure of the Smartboard™ and other technologies has been a good investment.

### **Conclusion**

As teachers navigate the changing landscape of educational reform, ICT does offer both the promise and potential of innovation. Others can duplicate the project we described in this paper, and we are hopeful that it, and others like it, will be repeated in other classrooms. As teachers become more comfortable with the technologies in their classroom and begin to use them for extraordinary as well as ordinary things, we do believe educational practices will change.

We recognize that this takes time and support and inspiration. We feel teachers need to see authentic, meaningful projects such as *The Boy and the Balloon* and begin to picture themselves doing this work with their students – it is truly only then that teachers and students will own the tools and become confident that they are full participants in an ICT enhanced teaching and learning environment. Once this happens, we can move from the rote use of technologies to simply duplicate ordinary tasks with expensive tools and begin to maximize ICT creative potential.

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