**Navigating a Raging River:
A Canadian Teacher-librarian's Experience
Implementing Information Technology**

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Abstract:

The writer of this narrative is a Canadian teacher-librarian. In 1996, she began a 6-year journey down a raging river called information technology (IT). This experience resulted in a gradual increase of tension in her professional life. After much pondering, she has made necessary adjustments in her teaching that enhance rather than hinder her practice. She no longer blindly integrates IT, as she once did. Rather, she discretely chooses technology tools that clearly benefit her particular community and are manageable for those affected by her choices.

Introduction

More than a decade ago, computer and Internet technologies became widespread and alluring classroom tools for locating and applying knowledge in a variety of contexts, settings and situations. Many school administrators made Information Technology (IT) curricula a priority. In response, educators started down the raging river of IT implementation, ready or not. Often, teacher-librarians were singled out to lead the flotilla.

Like all good riverside hawkers, IT curriculum promoters appealingly pointed out the journey's benefits for both high and low achievers, the global connection possibilities, and the multi-sensory enhancements to teaching and learning. As a teacher-librarian leader, I willingly jumped aboard the offered craft, not realizing how much time I would spend bailing in the days to come. My following readers' theatre piece illustrates the mood:

Voice One: The Technology Curriculum Promoter. Time: 1996

[Riverside hawker tone of voice. Build to crescendo.]

"Come on, teacher-librarian,
Survive and thrive with information technology,
A powerful teaching tool with instant kid appeal.
Use the computer, connect to the Web,
Increase global perspective,
Transform student learning,
Sail away with that great explorer's spirit!"

Voice Two: The "Progressive" Teacher-Librarian. Same time. 1996.

[Best incredulous voice. Project complete enthusiasm.]

"Access to Internet magic?
Communication beyond the library walls?
Smarter students through computer wizardry?
Interactivity and self-initiated learning?
An enhancement to teaching!
I'll buy it. I mean, I'll try it..."

Over the last three decades in Canada, the school librarian's role has evolved from being an authority on library resources to being a facilitating teacher, choosing student activities and resources that maximize learning and discovery. The advance of technology further altered these library activities and, in so doing, shifted the teacher-librarian's role closer to library media specialist, the designated term for an American school librarian. Some teacher-librarians welcomed this trend; others rejected it outright; while many remained skeptical about technology's promise. Retaining competence and flexibility in the face of

technological change requires educators maintain a delicate balance – this is especially true for veterans like me who have taught for 30 years. As Neil Postman (1995) writes:

All technological change is a Faustian bargain. For every advantage a new technology offers, there is always a corresponding disadvantage...A new technology usually makes war against an old technology. It competes with it for time, attention, money, prestige, and a 'worldview'...A new technology does not merely add something; it changes everything. (p. 192)

My Faustian pact was the promise of instant enhanced learning in exchange for the loss of more traditional curricula. The condition, though, involved a new role with little or no experience and only a vague idea of purpose. The river was full of invisible currents that could terrorize the inexperienced navigator. Not too far down the river, dissatisfaction, dismay and guilt set in, and I came to deeply regret the bargain I made.

Swept Along By Currents

Feeling hopeful, I boarded a rather flimsy craft in 1996 and edged into the raging river. The rage was an accumulation of pressures from sectors hailing the merits of computer technology and pushing schools to get wired: the school administration, the local community, business interests in particular, the media, and even the greater global community. Invisible currents immediately buffeted the boat and alarmed me. Equipment difficulties and inadequate training were the most troubling. With little training, my first IT lessons were based on trial and error. Moreover, in my school of 500 students, there were only five computers with Internet access, lodged in a cramped room abutting the library. All but one of my colleagues peeked in and wisely put IT implementation on hold. However, I clearly remember one classroom teacher who joined my craft, bravely planning and teaching a research unit with me. We grouped her class of 30 eleven-year-olds in pairs to work at the computers. Prior to class instruction, we spent most of our 20-minute recess break desperately setting up tables and daisy-chaining an extra five teacher laptops in the library's central area with the hopes of providing enough workstations to accommodate at least half the class. Collaborative teaching allowed us to keep those students not on computers otherwise occupied. We even tried using an LCD display projector for group instruction, but the extraordinary setup time only discouraged further use. Only one or two of the laptops worked properly in any session and the five library computers were never at 100%. Sometimes malfunctions were due to simple student ignorance about accurate Web site address input, but this took us time to discover. Teaming expert student with neophyte, we hoped to eliminate confusion but we found we had to monitor the student wizards to allow the neophytes access to the mouse! At the end of most 40 or 80-minute lessons, we usually accomplished little or none of our prepared lesson. Due to equipment failure, we were steered toward the mechanistic rather than instructional side of technology. We spent our time in the early years bailing furiously in order to keep afloat. This gave us no time to think where we had traveled or where our journey was leading.

I had jumped on board with the best of intentions, fully expecting to tame technology and teach other cherished aspects of my library program simultaneously. For instance, I expected my students to continue appreciating the wonders and depth of literature that transforms their thinking. I fully intended to continue transmitting a research process that allows students to construct their own meanings from relevant, quality information and make informed, thoughtful decisions. However, my intentions were overpowered by a river that was definitely controlling me, rather than me controlling it. Discovering that I could barely stay afloat created a gradual crescendo of tension in my professional life. I know I was not alone in feeling troubled. With the introduction of new technologies into school and public libraries, many librarian colleagues experienced *technostress*, a term coined by Michael Gorman (2001):

As human beings, we have to resolve the stresses and the discordance of

this phase of civilization and technology so that technology becomes a positive part of society and not a threat to its very existence. There is no reason why technology should be inimical to a harmonious life that balances all aspects of living. However, there is no doubt that few have managed to integrate technology into their lives in a way that enriches those lives. (p. 49) There was little harmony or instructional progress evident in my first experiences with IT implementation. I was seeing it as a high cost/low benefit innovation and a time-wasting nuisance. The sheer expense of IT implementation combined with the inevitable elimination of other curricula was making a more negative impact than I liked.

The River Slows: Time to Disembark

I became quite skeptical about technology's worth. But in the fifth year of journeying with technology, the river fortuitously slowed and I could disembark at the river's edge. My school facility underwent a major renovation and technology teaching had to be suspended for a year. Now I had time to reflect more deeply on my experiences in order to steer a more successful route down the river.

In retrospect, I see how uncritically I welcomed technology. Had I been more cautious initially, I could have avoided later disappointment and guilt about not doing more. Naively, I failed to notice what lay behind the 'hype'. That is, I had not considered the developers' uncritical approach to curriculum design and implementation. I had not fully comprehended how vital teacher support would be for this undertaking. Mackenzie (2001) outlines difficulties stemming from ill-considered implementation:

...it is startling to note how many [school] districts fail to consider all of the key issues while neglecting, ignoring, or underfunding the essential elements of a successful technology/literacy program. It is also surprising to watch the order in which various issues may be considered or addressed (if at all). The metaphor of placing a cart before a horse aptly captures this failure to follow a logical sequence. We should begin by asking what kinds of student learning we hope to promote. Those questions then logically lead to considerations of strategy and resources. Once we have a good sense of our purpose and the activities we plan to launch, we can begin to design a network that serves them well. Design should follow function. In many cases, installation precedes discussions of purpose. Getting wired becomes the goal. (p. 7)

So much money was spent on installing a network that little was left for the human infrastructure. All I felt was unsupported, ineffectual and undervalued.

Doug Johnson (1997) delineated five resources teachers require for effective technology skill acquisition: equipment, software, training, time, and incentives. In my district, policy makers did not properly provide educators with these five requirements in the early years of implementation. In my school, for example, the provision of one computer with Internet hookup in each classroom and an adequate supply of computers and software in a computer lab are now being fulfilled after six years without such necessary equipment. However, as progress is made, other factors intervene. In British Columbia, class sizes are increasing while budgets are shrinking: my school's computer lab is already short of space for additional computers to accommodate larger classes. Other continuing insufficiencies are inadequate funding for teacher development, lack of computer lab proximity to the library and failure to provide adequate technical help for teachers. Inevitable computer glitches happen during teaching time and the immediate help that a technician might offer is still missing. In my school, some classroom teachers are unable or unwilling to teach IT, so I often end up delivering their portion of the IT curriculum by default. If classroom teachers could be trained adequately, then I could devote more time to research and

literature programs that I deem important. In my district there are some short training sessions but they are only offered at the end of the school day. As teachers are often tired and busy with preparation and other meetings, these sessions are not always convenient or conducive to learning. There are no incentives to encourage teachers to increase their knowledge. We often feel we are sailing alone and unprotected.

On my own initiative, I furthered my professional training by completing two university courses in information technology and many technology workshops. As well, I joined a committee that developed a "Web in the Classroom Guidebook" for our district's teachers. Even this experience has not been enough to create any personal sense of fulfillment in attempting to lead with technology. The most frustrating aspects have been the lost opportunities for student learning, partly due to endless technical problems combined with the disorganized nature of the Internet itself. Neither my students nor I have reaped much benefit during our IT journey, but we have wasted much precious time.

Like Jane Healy, my view of information technology has moved from "bedazzled advocacy to troubled skepticism" (1998, p. 23). Currently I am building a more balanced and refined view of the policy-practice relationship where I acknowledge my professional responsibilities to curriculum implementation, but use greater discernment in using IT tools. My political voice is growing stronger as I realize the importance of speaking up and collaboratively solving problems with likeminded educators. As Maxine Greene points out, "...adopting the interpretivist logic of justification for inquiry means foregoing the aspiration to *get it right* and embracing instead ideas of *making it meaningful*" (cited in Pinar et al, 1995, p. 63).

The central ideas I have distilled from reflection are that 1) IT teaching must be counterbalanced by vigorous teaching of other essential curricula; 2) retention of a variety of communication modes (print and non-print) is vital; and 3) taking a comparative approach to using library resources is a very worthwhile instructional activity. In an elementary school comprised of students, ages 5 to 13, I am concerned that the technology curriculum has brought about the reduction of other effective, more traditional curricula. IT has also changed how teachers and learners communicate with each other. With the advent of email, I lament the demise of traditional letter writing. I fervently hope that cyberspace learning communities will not underestimate the value of print-based resources and face-to-face encounters for making meaning.

Uncritical technology teaching usurped a good portion of my energy that previously contributed to successful print-based experiences. Working within the fixed length of a school day, the introduction of IT lessened my time to promote the power of literature or imbue students with the lifelong learning advantages of mastering the research process. Now I am much more selective about how I teach and plan IT and am experiencing more success with student learning. I have freed up some time to promote literature again. As well, the technical aspect has improved dramatically with a functioning new computer lab. Glitches still abound, but are less time-consuming, as there are more teachers with whom to collaborate.

Decision-makers seem preoccupied with implementing IT to mirror technology use in the 'outside world' of the workplace. The keynote speaker at an IT conference I attended in 2001 extolled the merits of getting a high-paying job with computer skills. A curriculum should reflect more than acquisition of skills for the workplace (Cuban, 2002). As Neil Postman (1995) contends, "schooling can be about how to make a life, which is quite different from how to make a living" (1995, p. x). Making a life is about being an active, collaborating community member. Students often work alone in front of computer screens and the physical space allotments for computers do not encourage group work. By emphasizing workplace preparation, the developers of IT are diminishing rather than enriching school life where teachers and students concentrate on developing a socially intelligent community through the sharing of worthwhile experiences and social concerns.

It is worrisome to discern how best to prepare students to handle information overload. Internet tools give immediate access to a world of more and more information, and this requires critical thinking. Teacher-librarians, as knowledgeable promoters of literature and information literacy, can blend critical thinking with IT instruction so students hone their metacognitive abilities with both IT and literature.

Sturdier Custom-Built Craft

While information technologies brought considerable change (both positive and negative!) to school library programs, it is I who changed the most. I became more selective and sure of what produces successful student learning. As I grapple with solutions to the negative impact of technology use within library programs, my craft is becoming sturdier and I am more satisfied with the choices I make. One example is my inclusion of students' online searching tempered with equally important searching of the library's print resources. Afterwards we discuss which resources, print or electronic, are best for the students' particular research questions. We consider searching time, convenience and information accuracy of both print and non-print resources. For lifelong learning, this is time well spent.

Some teacher-librarians are condensing IT lessons such as Web evaluation and search techniques, choosing to concentrate their energies instead on teaching students to telecommunicate effectively with other students, experts and teachers worldwide. Internet technology has the potential to enhance global education through its powerful communication tools. However, one must still battle against a disorganized, unregulated, commercial World Wide Web and paucity of up-to-date, reliable computers and maintenance help. Computer-addicted students become isolated in their learning so I am committed to collaborative IT learning where individual needs are connected to group interests. I encourage students to use print, human and electronic resources that increase consultation and meaning making. I have found very rewarding the results of teaching interview technique, to see that students know how to introduce themselves to interviewees, how to ask questions that produce rich answers, and how to conduct interviews in a variety of formats, such as face-to-face or over the Internet. This kind of learning enhances their telecommunicating abilities and power to learn from others.

Nothing is more professionally satisfying than observing students making their own meanings from their learning experiences, whether it is from the study of literature or from library research, using metacognition and the critical thinking skills of fair-mindedness, open-mindedness and creativity. A large part of my job involves collaborative planning and teaching of research units with every classroom teacher in my school. I will retain my pre-technology traditional approach as long as it continues to generate valuable learning experiences, and include technology when it is effective and efficient. In this way, I can be more successful in encouraging students to become informed and thoughtful decision-makers in all aspects of their daily lives, not just in their future workplaces. John Dewey (1916) wrote about the importance of educating students in the present and not just preparing them for adult life:

The conception that the result of the educative process is capacity for further education stands in contrast with some other ideas which have profoundly influenced practice. The first contrasting conception considered is that of preparing or getting ready for some future duty or privilege. Specific evil effects were pointed out which result from the fact that this aim diverts attention of both teacher and taught from the only point to which it may be fruitfully directed – namely, taking advantage of the needs and possibilities of the immediate present. Consequently it defeats its own professed purpose.
(p. 68)

Until decision-makers make provision for adequate equipment, maintenance and teacher

training for computer-based technology, I plan to infuse it sparingly, that is, where it is appropriate and efficacious. Any more widespread use would be detrimental to the Deweyan notion of community-based learning where social cohesion and responsibility are crucial elements (Simpson & Jackson, 1997).

Enlarging The Craft: Welcoming Parents Aboard

Michael Fullan (2001) asserts that the most powerful combination for learning is the family and school complementing each other. With more effective two-way communication, I can assist parents to help their children more productively with research work at home. Again, my readers' theatre interpretation best describes my commitment to enriching the learning experiences for students through better home/school communication:

Voice Three: The "Transformed" Teacher-Librarian.

Time: Six years later - 2002.

[Voice more confident, more hopeful.]

Remember...

Language, not technology, is the true evolutionary miracle.

Keep reading, writing and meaning at the centre,

Create your own quality control.

Adopt the Webmaster role.

Facilitate access and find resources for your entire community of learners.

Collaborate with parents, students and staff.

Become a communications connoisseur.

For the next stage...

I'll be reconstructing my digital world, in tune with my own values

Shifting from using an awkward instructional tool

To creating a dazzling communications network.

Stay tuned.

Telecommunicating with parents can enhance the collaboration of parent, student and teacher and

extend the parameters of parent assistance to students. A direct relationship exists between the ease of parent/teacher-librarian communication and the success of such collaboration (Shaw, 1999).

Having said that, there is the problem of equity of access to the Internet. One of my colleagues made abundantly clear the unfairness of communicating in this way when so many parents simply cannot afford the required technology. Here is my version of her thoughts:

Fast and easy communication with parents? Web sites to help with research projects? Oh, God, what next! How does Joan come up with these highfalutin' ideas. What planet is she on, anyway? If I were a parent at this school, I wouldn't be able to access these Web sites. Has she thought of that? I'm already reeling from not being able to provide the right kind of computer for my teen-aged daughters. And she thinks we should smile and nod and be happy to incur the cost of Internet hookup! The pressure on me for more and more is unrelenting. Doesn't she get it? In the old days, it didn't cost extra to keep up with the status quo. It does now. If this is going to be the trend, my girls are going to fall further and further behind. (Sigh).

Oh, and then Joan says, "Well, there is the public library, you know." In that isn't-that-obvious-kind of voice. It reminds me of the Christmas Carol, when Scrooge replies, "Are there no prisons? Are there no poorhouses? They had

better go there then!" The indignity of it all. For sure, she isn't a parent and that's the truth. As though it's always convenient to dash over to the library, too. My daughter tells me about an assignment at 10:00 on the night before it's due. Has it happened to her? Has it?

I wish I didn't feel so guilty, though. I cannot provide the tools my children need to be really successful in school. It's very disheartening. And, on top of all that, there's the teachers...their judgments. My girls will start out with great ideas and content and then it gets blown with poor presentation. Let's face it...handwritten simply doesn't look smart. No nice little spellcheck for them. And whose fault is it? Whose? Mine... Mine... Mine...(Sigh).

Such parents suffer guilt in not providing adequate computer resources and feel their children are getting further and further behind. It is important to provide alternatives for parents who cannot afford this technology.

Conclusion

Echoing the Deweyan idea that we all have a responsibility to make a difference because we are all connected, I am beginning to realize the importance of persisting with revisions to the IT curriculum, of connecting with other educators and having our teacher voices heard. Working with technology is a mixed blessing and it requires teacher-librarians to make choices about its wisest use. Easing the IT journey for all educators and learners is not much more than a dream as yet, given the reality of the financial, political and ideological situation in British Columbia schools. For those who want to share in meaningful experiences with technology, this is somewhat disheartening. Nevertheless, I intend to proceed with a reasonable set of goals regarding IT. As a teacher-librarian, my three goals will be to: 1) infuse technology in library programs where appropriate and effective; 2) work to have teacher-librarians' voices heard by the policy makers; and 3) build an effective cyber communications network. This work requires much patience, but it needs doing. I am determined to have library programs in which technology serves the learners and not the other way round.

I would like to create an electronic network, so that community-centred learning can be strengthened. My use of network technology to support local collaboration is becoming more refined as my experience grows. More convenient and frequent parent-teacher communication may be achievable, but there are parents' financial constraints to consider. But, lack of access is not sufficient reason to cancel a journey that really does hold promise. We must provide alternatives until the Internet is as available as the telephone. I feel more optimistic now about continuing down the IT river. With greater control and harmony, the students, parents and I should journey more productively.

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