

# *BU Journal of Graduate Studies in Education*

Volume 1, Issue 2, 2009



York Landing, Manitoba



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**ABORIGINAL AND RURAL EDUCATION STUDIES**



# *BU Journal of Graduate Studies in Education*

**Volume 1, Issue 2, 2009**

(also available online from [www.brandonu.ca](http://www.brandonu.ca))

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The *BU Journal of Graduate Studies in Education* is a publication of Brandon University's Centre for Aboriginal and Rural Education Studies (BU CARES). The journal is sponsored by the Social Sciences and Humanities Research Council of Canada (SSHRC) through its Aid to Small Universities Grant.

## INTRODUCTION BY THE EDITOR

Marion Terry, Ph.D.

Welcome to the second issue of the *BU Journal of Graduate Studies in Education*, devoted to rural, northern, and Aboriginal education. Our authors for volume 1, issue 2, range from first-year M.Ed. students to university professors. I thank these current and past BU Faculty of Education graduate students for sharing their work. Together, they have produced a collection of articles on a variety of topics with one feature in common: a commitment to education.

- Lyliam Jardine's research report summarizes her study of online learning in southwestern Manitoba high schools.
- Nadia Binda-Moir's scholarly article examines issues related to multicultural education in Canadian schools.
- Chris Brown's scholarly article uses Foucault's notion of power analytics as a tool to understand how power and identity operate in his post-secondary classroom.
- Susan Gilleshammer's scholarly article advocates school connectedness as a means to mitigate the challenges of cultural diversity in schools.
- Jackie Burrough's scholarly article explains how technology can be used to enrich the teaching of mathematics.
- Joe Stouffer's scholarly article argues the importance of including Reading Recovery in undergraduate literacy methods courses.
- Koralie Mooney's scholarly article considers revision strategies to improve high school students' writing.
- Shelley Zander's scholarly article explores how professional learning communities can help struggling readers to succeed in middle years classrooms.
- Bridget Wright's scholarly article analyses ways to combat the effects of colonialism on Aboriginal students' literacy skills.
- David Nutbean's opinion paper encourages teachers to make learning relevant by using students' technology tools as the tools of instruction in school.
- Angela Voutier's opinion paper endorses school enrichment and magnet schools as part of a concerted effort to improve Aboriginal graduation rates.

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## RESEARCH REPORT

### **Students' Success and Satisfaction with Online Learning: An Examination of Online Learning Systems for Secondary Schools in a Rural School Division in Southwestern Manitoba**

**Lylia Jardine**

Secondary institutions have adopted technology as a means to attract more students, to offer differentiated instruction, and to deliver online courses. However, delivering online courses comes with a challenge. In public high schools that offer distance learning, a lack of success and a lack of satisfaction with online courses among students are noted. Kalmon (2003) concluded that "the success rate is less than 50% to 90% as reported at a recent conference of state-wide online program administrators" (p. 1). The biggest challenges are increased dropout rates, lack of success, and lack of satisfaction (Bernard, Brauer, Abrami, & Surkes, 2004, p. 34).

This study was designed to provide insight into how students succeed and feel satisfied in online courses offered in a rural school division in southwestern Manitoba. The results may be used to evaluate online learning programs offered by rural secondary institutions in Manitoba. The data may also give divisional administrators a better understanding of the supports that could be provided to online teachers and coordinators, in order to increase students' satisfaction.

The research question was articulated as follows: What are the factors that contribute to or detract from student satisfaction in taking online courses? The construct of student satisfaction was defined as the student's perception of the course as a good experience, his or her indication of intention to take another online course, and/or the student's willingness to recommend an online course to his or her friends.

The data were taken from 56 participants: 50 grade eleven and twelve students; 5 teachers delivering business, social studies, art and English courses; and 1 online coordinator. The class sizes ranged from eight to seventeen students. A wide range of tools and activities were employed in instructing the online courses. While not all of the tools and activities listed here were used by all of the teachers, students were exposed to some of the following: blogs, email, wikis, Moodle course software, video, links to web pages, announcement board, discussions, book readings, case studies, chats, creative projects, electronic tests, group activities, journal writing, peer review, photo stories, PowerPoint presentations, and video conferencing.

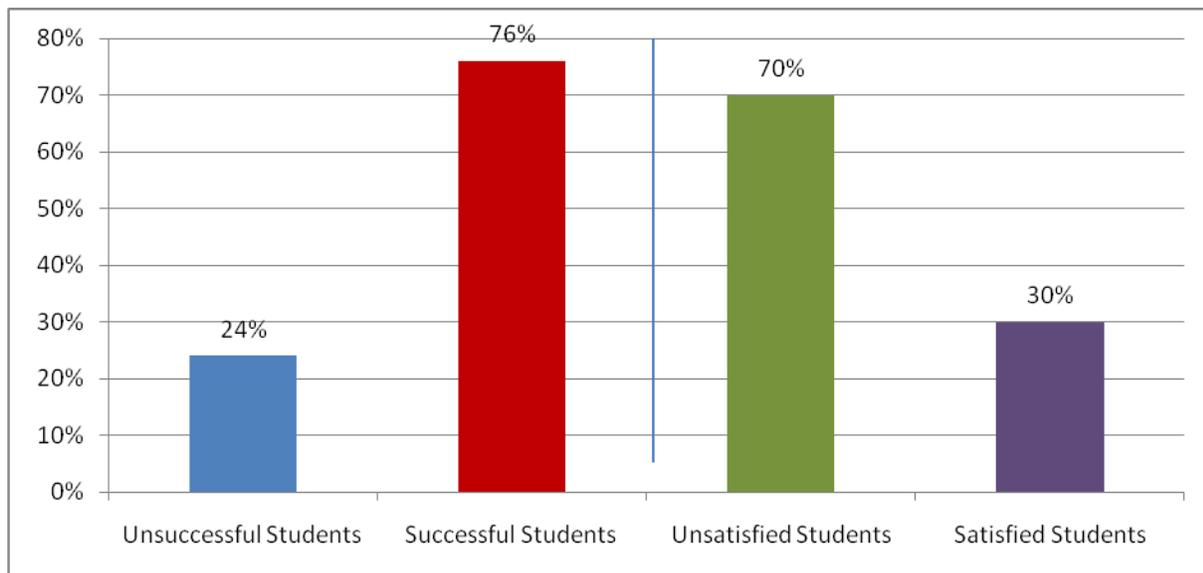
#### ***Data Collection and Recording***

Data were obtained through the following methods: electronic and on-paper surveys with both open and closed-ended questions, interviews conducted through face-to-face meetings, and email correspondence with individuals associated with online learning programs. The surveys consisted of 37 items for the students, 71 items for the online teachers, and 68 items for the online coordinator, including demographic information. The interviews were delivered to the online teachers with the same components included in the surveys, in order to provide convenience for the teacher.

#### **Results**

Figure 1 illustrates the overall levels of success and satisfaction of students. Satisfied students were considered to be those students who had answered more than four of the satisfaction-oriented questions affirmatively. A final grade of 50% was considered the demarcation line for success or lack of success.

Figure 1. Student success and satisfaction.



The factors that students identified as most satisfactory when taking an online course included course delivery methods: online programs, chats, etc. (64%), relationship and communications with the teacher (64%), course content (60%), and technical support (60%). Factors that students were least satisfied with while taking the online courses included group activities or the lack thereof (74%), the lack of time given to reflect on learning (64%), the types of assignments and projects (54%), the time given to complete assignments (52%), and the level of support provided by the school (50%). It was puzzling to discover that some students who were not successful in their online work were still satisfied with the course, and that some other students were successful but felt unsatisfied with the course.

Teachers commented that they did not have enough time to prepare the courses from scratch, the course delivery was time consuming, and they wished that they could see the students in person and get to know them better.

A shortened list of my recommendations as the researcher follows:

- Course Quality
  - The school division should offer professional development sessions for the teachers, in order to establish course quality standards across the division. These professional development sessions should be ongoing for teachers to share their experiences and their new ideas, and to problem-solve together.
- Course Clarity
  - The first week of the course, there should be an information session for parents and students to get to know each other and to understand the course expectations, the guidelines for communication, and the instructions on how to use the online tools. The parents and students could also sign a contract of commitment to the course.
  - Clear instructions and a place online where students could answer their own questions could be provided – a place where they could give or get help.
- Course Delivery
  - There should be an online system for students and teachers to report a computer problem. This computer system should be accessible to the online coordinator and all technical support personnel. Prior to the implementation of this system, students and teachers could receive a training session in which they learn how to report different technology problems. During this session, the technical support personnel

- should provide guidelines for the average time required to respond to these requests.
- Teachers could have one session per month in which they incorporate activities for the purpose of relationship building and enhancing the level of social interaction. These monthly activities could help students to feel a part of a learning community, rather than feeling that they are working in isolation. Activities may include games, ice breakers, or role-play activities.
- Course Content
  - The courses could incorporate more activating strategies to help students make connections to their prior knowledge of the content.
- Course Difficulty
  - Teachers could provide students with the opportunity to select their own projects with clear guidelines. Projects that are more flexible would allow the students to be creative and work to their own individual capacities. These projects could be assessed with a well-designed rubric.
- Group Work
  - In the middle of a project or assignment, students could share their progress and give each other constructive feedback. The teacher could provide some guidelines about the type of feedback that the students could provide to their peers.
- Course Development Time
  - amount of time committed per week by students to work on the course
    - There should be a video conference joining students who have taken online courses with the new students, to talk about what is required to be successful with online learning, including the time that students need to commit to the course. This video conference could be combined with a face-to-face session.
  - communication with the teacher
    - Teachers could schedule interviews in which to talk with individual students about their progress, in order to build a better connection with each student.
- Other factors
  - timely and meaningful feedback
    - Teachers could provide feedback with audio messages. These audio messages could take less time than typing the messages on individual assignments.

Delivering online courses can be very interesting and exciting, but along with this interest and excitement come challenges to satisfying the needs of all learners. This study identified a number of these challenges and barriers to student success and satisfaction. It also provided an inventory of strategies for offering online learning.

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*Lylia Jardine is originally from Colombia and lives with her husband and son in Brandon. She has a degree in Systems Engineering from The Colombian University of Engineering, a Certificate in Adult Education from Red River College, a Bachelor of Education from Brandon University, and a Master of Education in curriculum and instruction from Brandon University.*

## SCHOLARLY ARTICLE

### An Analysis of Multicultural Education in Canada

Nadia Binda-Moir

#### **Abstract**

*As the population of Canada grows in diversity, the need for multicultural education increases. However, most Canadian schools do not adequately incorporate multicultural practices into their daily operations. Attempts have been made to increase the diversity of teaching in many schools; however, these attempts have been relatively unsuccessful due to a plethora of issues that plague the development of multicultural education. Teacher preparation programs, curriculum development, and student learning environments are a few areas that must be completely overhauled in order to implement multicultural education in Canadian classrooms.*

Canada is known as a cultural mosaic because it celebrates the diversity of its citizens. Recent statistics indicate that approximately 20% of Canadians are foreign born (Statistics Canada, 2009). As a result of the influx of new Canadians, today's classrooms include many students who have different backgrounds. Despite the growing number of culturally diverse students, the Canadian curriculum still represents a predominantly Eurocentric point of view (Jay, 2003). Efforts such as the inclusion of Aboriginal perspectives have been made to incorporate culturally sensitive teachings into the curriculum. However, most Canadian schools do not recognize the diverse nature of their students. The following three areas are critical to understanding the dynamics of multicultural education in Canada today: (1) the importance of multicultural education, (2) current issues in multicultural education, and (3) requirements for providing multicultural education.

#### **The Importance of Multicultural Education**

Because Canada is a multicultural society, logic dictates that it must have multicultural schools. Multicultural education is important because it addresses controversial issues such as discrimination, racism, colonialism, and imperialism (McDonough, 2008). Education has been used to teach about these issues in a democratic fashion. When it is properly implemented in schools, multicultural education can reduce racism, prejudice, and the discrimination of oppressed groups (Jay, 2003). Multicultural education also helps to build personal dignity while promoting the democratic ideals of society (Campbell, 2003). Furthermore, it can be used as a tool to ensure equal access to school and equal opportunities in school.

#### **Current Issues in Multicultural Education**

Multicultural education has been in the foreground for nearly thirty years (Manitoba Education, n.d.); however, its practice and theory are still worlds apart. This disparity could be due to the lack of consensus over how multicultural education should be addressed in Canada (Chan, 2006). Multicultural education can be taught as a distinct subject or incorporated into individual classes. Teaching multicultural education as a discrete subject requires specific teacher training, similarly to other subjects such as mathematics and science. Because educators are unsure about how to present multicultural education, it has not had a noteworthy impact on today's youth (Jay, 2003). Peck, Sears, and Donaldson (2008) noted that junior high students in New Brunswick had very little understanding of the concept of ethnic diversity, and they did not think that ethnic diversity existed in Canada. Peck et al.'s findings indicate that the ideals of a multicultural Canada may not be taught or adequately represented in Canadian

schools. Three main concerns impede the practice of multicultural education in Canada: teachers, curricular problems, and power struggles.

The main concern regarding teachers is that they lack the training and experience required to teach diverse students (Chan, 2006). The gap between the cultural backgrounds of students and teachers is widening. Educators are left to teach about cultures with which they are unfamiliar (Jeevanantham, 2001), such as when a non-Aboriginal teacher is expected to incorporate Aboriginal perspectives into social studies lessons. Most teachers do not have the knowledge that is required to incorporate cultural teachings into their regular lessons. Not only is multicultural education taught from the teacher's perspective, and not from the perspective of the person of that culture (Oberg, Blades, & Thom, 2007), but teachers could be transmitting false knowledge to their students. Another factor is that not all people of the same ethnicity have the same culture. Because ethnic and racial groups can be just as diverse within groups as between groups (Louie, 2006), grouping all ethnic and racial groups into one category could lead to further stereotyping and the possible transmission of prejudicial attitudes to students. Implementing multicultural education preparation programs and ensuring that teachers have experience in diverse settings would give educators the necessary tools to teach culturally diverse students.

Another concern that plagues the progress of multicultural education is that school curricula may not adequately address the topic of multiculturalism. Most Canadian curricula do not sufficiently acknowledge the wisdom that diverse students bring to the classroom (Ross & Chan, 2008). Similarly, points of view from women and visible minorities tend to be marginalized or omitted in most school subjects (Agada, 1998). When diversity is addressed in the curriculum, it is usually presented in an "us-versus-them" fashion (Joseph, 1994). In most cases, the contrast is drawn between a dominant European culture and a minority non-European culture (Wilhelm, 1998), as seen in many of the history text books used in high schools. As a result of this comparison, unintentionally racist opinions may be passed on to the students – the types of opinions that multicultural education is trying to eliminate. Severe curriculum reform must occur if Canada's multicultural citizens are to be represented positively in the curricula.

The third concern that hinders multicultural education is that it challenges the power inherent in Canadian mainstream culture. Opponents of multicultural education claim that its introduction into school systems could lead to the breakdown of the common national culture (Skerrett, 2008), whose teachings would be lost to the non-dominant cultures of Canada. Some authors have gone so far as to say that multicultural education is a disruptive threat to Canada's national unity (Wilhelm, 1998). Advocates of multicultural education claim the opposite; they say that this so-called shared national heritage propagates racist, sexist, and prejudicial attitudes, by favouring the beliefs of the dominant class and marginalizing the contributions of minorities (Agada, 1998). Students are taught the values and beliefs of the ruling class, through a hidden curriculum (Jay, 2003) that functions to keep the marginalized cultures suppressed. Langhout and Mitchell (2008) noted that low income students, and ethnic and racial minorities, are more likely to disengage because of the hidden curriculum. Empowering minorities by implementing multicultural curricula would therefore not be in the best interest of the dominant class. A multicultural curriculum that takes into account the needs of all students, regardless of their level of power, must be implemented in all schools.

### **Requirements for Providing Multicultural Education**

Every school, teacher, and student is unique; therefore, there is no single way to implement multicultural curricula. However, a few vital areas can be addressed in order to put multicultural education into practice. These areas are teacher training programs, acknowledging teachers' life experiences, teacher empowerment, developing the learning environment, and recognizing students' experiences.

The key to providing proper multicultural education lies in strengthening the educators who teach in multicultural schools. Sogunro (2001) claims that “today’s monocultural and monolingual teacher is becoming less competent in a culturally, racially, and linguistically diverse classroom setting” (pp. 19-20). This incompetence hinders effective teaching in a diverse school setting. Educators need to be taught the correct skills, knowledge, and attitudes if they are to teach in multicultural classrooms. For example, teacher preparation programs should address topics such as inequality and racial difficulties (Skerrett, 2008), as well as teach skills for integrating students from various cultures into the classroom. An essential part of a multicultural teacher preparation program is the completion of practicums in multicultural schools, because theoretical instruction alone cannot prepare a potential teacher for the realities of diverse classrooms. The combination of teacher training programs and practicums would give educators the skills and experience needed to teach in multicultural schools.

Because the face of multiculturalism is always changing, training in the form of professional development (PD) opportunities should be available on a regular basis (Chapman, 2008). PD sessions should enable teachers to uncover their own beliefs relating to multiculturalism, acquire knowledge about the diverse groups that they encounter in school, understand how current practices can perpetuate stereotypes, and acquire the skills needed to implement equality into their teaching practices (Banks et al., 2001). Information regarding social class, religion, and gender should also be discussed in PD sessions, because these variables influence the cultural behaviour of students. It is the duty of the administrative staff to ensure that PD sessions are attended by all teachers and that new teachers have adequate multicultural training.

Teachers’ life experiences influence their educational practices (Chan, 2006). Teachers who have had positive experiences with multiculturalism are more likely to employ multicultural education in their own classes (McNeal, 2005). These positive experiences could stem from the teacher training programs, time spent in diverse settings, or experiences that were similar to those of the students. Recognizing one’s own past experiences with multiculturalism and multicultural education may help an educator to understand how multicultural education could be used positively in the classroom.

Teachers need to feel confident and empowered when implementing multicultural education. Teachers need to recognize and assess the disparity between the ideological goals of society and the realities of society (Campbell, 2003), in order to modify the curriculum to suit the needs of their diverse students (Sogunro, 2001). They must actively think about how they want to implement multicultural education, what lessons and assignments will be included, and what sorts of interactions will occur in the class (Gollnick & Chinn, 1998). Ongoing support from other teachers and the administrative team can empower a teacher to make these essential changes (Chapman, 2008).

Creating a positive learning environment can aid in the implementation of multicultural education. A positive environment starts with a strong administrative team, which acts as an advisory council for cultural issues that may arise within the school (Sogunro, 2001). The administrative team’s stance on multicultural education affects how multicultural education will be implemented in a teacher’s classroom. The school must invite the difficult conversations about the goals and purposes of multicultural education (Langhout & Mitchell, 2008). A supportive and knowledgeable administrative team enables teachers to provide an environment that is conducive to learning.

Multicultural schools need to take extra care in providing equal learning experiences to all students. Teachers should focus on their students’ personal experiences (Ross & Chan, 2008), because drawing on students’ life experiences can lead to many teaching moments while increasing the personal relationship between teachers and students. Teachers should expose students to as many different cultures as are present in the classroom. Drawing on students’ cultures can create bonds and build compassion between students, as well as foster positive attitudes about other cultures. These personal connections foster both teacher and student

engagement. Students who are engaged in their learning are more likely to achieve in their studies (Langhout & Mitchell, 2008).

### Conclusion

The topic of multicultural education has been in the forefront of educational theory for nearly thirty years. Although strides have been made towards the development and implementation of multicultural curricula, teaching practices have not kept up with the theory of multicultural education. Serious issues of power struggles, poor teacher preparation, and inadequate curricula hinder its success. Establishing new and improved teacher preparation programs can promote multicultural education, as can professional development sessions based on new cultural developments. Ultimately, the success of multicultural education relies on the students themselves. If students are provided with a safe environment that fosters positive learning experiences, multicultural education will succeed.

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## SCHOLARLY ARTICLE

### Being Educated by Foucault: Power Relations in the Classroom

Chris Brown

#### **Abstract**

*In this article, the author troubles his teaching practice so that it may be improved. He teaches pre-service teachers at a small Manitoba university, and is concerned that some of the educational psychology content and pedagogy that he uses is problematic. Using an auto-ethnographic approach and discourse analysis, Gore's micro-techniques of power are developed through Foucault's notion of power analytics, in order to understand how power and identity operate within his classroom and the implications that the micro-techniques of power may have for students and teachers. The purpose of this examination is to create student awareness of how, through discourse, knowledge and power work in classrooms to construct both the subject and what is viewed as truth.*

I have come to trouble the epistemology and pedagogy that I once saw as sacrosanct in supporting social justice in my educational practice. The terms *trouble* and *subject* are scattered throughout the article and herald to the reader that this article is conceived as a post-structural piece. Youdell (2006) wrote, "serious attention is increasingly being paid to the problematic relationship between the 'knowing' subjects implicit to empirical research and the 'troubled' subjects of post-structural writing" (p. 514). As an educator of pre-service teachers at a small Manitoba university, I am concerned that some of the educational psychology content I teach, as well as my own pedagogical process, may be problematic. This article has been written as an attempt to trouble what I consider to be my own democratic teaching style, in order that it may improve. I do not consider myself to be a poor teacher, but as educators we constantly need to strive to be better.

I was first exposed to the ideas of Foucault and other post-structural writers this past winter (see Carabine, 2001; Gore, 1995; Tavares, 1996). I wanted to see, at the micro-level, how Foucault's power relations operated within my classroom, and the implications that power relations had for the students and me. I also wanted to bring about awareness of how knowledge and power work to construct truth through discourse, by having students read this critique. In particular, I wanted to acknowledge that the ideology implicit in my own pedagogical practice may be furthering an egalitarian myth that education creates equity (Brantlinger, Majd-Jabbari, & Guskin, 1996).

To achieve this end, I analyzed the discourse in one classroom period, using Gore's (1995) micro-level techniques of power. Gore's work was based upon Foucault's analytics of power. Gore contended that the "subtle but pervasive exercises of power relations, in educational institutions and processes . . . remain untouched by the majority of curriculum and other reforms" (p. 166). My stance is that Foucault's notion of power relations needs to be explicitly taught to pre-service teachers in the courses that I teach, in order for pre-service teachers to understand the impact that power relations have on students in their own classrooms.

It is worth noting that this article does not examine the concept of resistance and agency in the social construction of identity as proposed in the later works of Foucault (Butin, 2001, pp. 158-159). Foucault helps us to understand how students position themselves in relation to power, and how they may be transformed through the interaction of power/knowledge. Although it is important to examine how student resistance is a form of identity (re)construction (Butin, 2005, p. 6), that investigation is not the intent of this article.

While the primary goal of my androgogy is to teach pre-service teachers about educational psychology and exceptional learners, there is also a critical nature to my teaching content. I explicitly discuss gender, class and race as part of the course that I teach about students with exceptionalities. I also lead discussions and activities that embrace issues of social justice. The critical pedagogy that informs my teaching practice is grounded in a “social and educational vision of justice and equality” (Kincheleo, 2008, p. 6). I try to teach in a way that makes clear that our current educational model has not been, as Willinsky (1998) stated, “so much the great redeemer of prejudices as the tireless chronicler of what divides us” (p. 1). As well, I try to create “a state of emotional discomfort and disorientation” (Kumashiro, 2004, p. 28) through which I can work to challenge pre-service teachers’ prejudices. I am also trying to teach for the liberation of the student, but my current pedagogy may still conceal issues of power and privilege (Walton, 2005). According to Flyvbjerg (1998), Foucault believed that “it is precisely those social systems which have turned freedom into theoretical formulas and treated practice as social engineering . . . that become most repressive” (pp. 222-223). This form of repression is what troubles me.

Foucault argued that genealogies are the most appropriate method for the investigation of power relations and the technologies that support it (Carabine, 2001). However, this article falls short of a genealogy because it is not archaeological in nature, given that I do not examine the change in the discursive practices over time. One element that distinguishes Foucault from other philosophical historians is that he saw truth as being constituted by the subject, and produced through discourses mediated through power and knowledge (Prado, 1995). Foucault sought to understand “how power produces discourses of truth” and how this produces the subject (DeAngelis, 2008, p. 121). For Foucault, “disciplinary power functions at the level of the body” (Gore, 1995, p. 167). It is not the mind but the body that is disciplined by the socializing techniques found in society; it is here that the docile body is created (Prado, 1995). Mechanisms of disciplinary power are hard to identify, because they are the “actions, attitudes, discourses, and in the learning process in everyday life” (Gore, 1995, p. 139). As well, the identity of the subject is created through the performative nature of discourse without the explicit awareness of the individual. It is through our discourse that teachers constitute power over the bodies whom we educate.

Discourses are the ways that we communicate; they occur both verbally and nonverbally. According to post-structural theory, it is through discourse that the subject is created (Prado, 1995). The discourse analysis that follows is based upon auto-ethnographic notes generated after teaching a class to pre-service teachers in one of my courses. This discourse analysis demonstrates how the Foucaultian notion of power relations operates in this class. The primary aim of the class in which the notes were taken is to provide pre-service teachers with requisite skills, techniques and knowledge to enable them to work with students who are exceptional in some way. A secondary aim of this course is to model appropriate pedagogical practice. Therefore, I teach from a constructivist perspective.

There are two key factors to keep in mind as we proceed. The first is the performative nature of identity construction and how the subject is created through discourse through the body. The subject is most often unaware of this process. As soon as there is awareness, there is agency to work to understand how discourses and power knowledge work. The second key factor is that “rather than knowledge yielding power, through accurate description and hence the enabling of manipulative control, ‘power perpetually creates knowledge and conversely, knowledge constantly induces . . . power’” (Prado, 1995, p. 20). It is in the construction of identity and in the performative nature of power that pre-service teachers could gain new insights.

## Discourse Analysis

*I am the instructor. The twenty-five pre-service teachers have class with me on the second floor of the Education Building at Brandon University. I teach them how to work with exceptional learners. We meet in a smaller classroom where there is plenty of light coming in from the windows on the west wall. A number of trapezoid tables have been placed together to allow four or five pre-service teachers to sit together in a group. The chairs are plastic and are the same as what can be found in most high schools in Manitoba. They make that distinctive sound as pre-service teachers pull themselves, pens at the ready, snug to their tables.*

*It's 8:25 a.m. and the classroom is almost full. I stand at the front, anxiously awaiting the start of class. Usually, I tell a joke or two to anyone within earshot. Today, I mentioned how the Brandon Wheat Kings are playing quite well and are guaranteed a playoff spot. A few of the boys are more engaged with this exclamatory statement.*

*There is a platform at the front of my classroom. Not wanting to appear to need it because of my short stature, I often switch between standing below the stage and enjoying the over-watch that the extra 8 inches provides. Sometimes, I start early, but not today. I wait until exactly 8:30.*

I have legitimate and institutional power over the pre-service teachers whom I teach. One essential element in this discourse is how my own discursive practices suggest that what I teach is the truth. Given that I teach at a university, the institutionally mediated discourse is seen as absolute, and when I put "The research says . . ." in front of my comments, this prefix statement anchors the truth to which I speak as beyond any reasonable doubt.

I teach using constructivist approaches, in order to give everyone in the class an opportunity to be a part of creating the experience in the classroom, and to give the impression that there are other equal discourses occurring in the classroom. Upon reflecting, I recognize that I have my own truths that I want to impress upon the students, and I can present them more easily if I lead pre-service teachers to believe that we collectively co-create knowledge. Behind the guise of constructivism is inculcation.

*The LCD projector hums with the class "Topics for the Day" beaming onto the whiteboard wall. Before any pre-service teachers arrived, I had placed name cards at the tables, indicating where I wanted the pre-service teachers to sit. The name cards had been shuffled to ensure random groupings. Sometime during the class, most likely when the pre-service teachers are working on a question, I will come around and collect the cards, recording who is absent.*

*We have been together as a class for a week now, so I know everyone by name. I make eye contact with as many pre-service teachers as I can throughout my presentation.*

In my classroom, I establish standards of behaviour that I hope pre-service teachers recapitulate as standards in their own classroom. For instance, I encourage discussions and questions. I do not ever presume to have the true answer for the student, and I often refer to the power of the group in coming up with appropriate answers. However, I certainly try to lead students to my own conclusions of what the truth of the matter is.

I try to make eye contact with my students and call them by name. This surveillance is a part of what I do in class. I try to engage pre-service teachers who appear disconnected from the conversation. Gore (1995) explained that surveillance is "supervising, closely supervising, watching, threatening to watch or expecting to be watched" (p. 169). Many pre-service teachers may connect with my teaching because they are being "watched." I adjust my teaching space so

that I am proximal to students who may not be attending to the class discussion. Within the class, there are also many occasions when I work to create an implicit norm. These include how I ask questions and whom I ask to respond.

I have the pre-service teachers sit in randomly created and distributed groups of four or five per table. The pre-service teachers are distributed in an effort to equalize them and have them work with different individuals in the classroom. I also have students sit in pre-determined groups, in order to ensure that the usual groups of students do not always sit together at the same table or sit at the back of the room. This is a classroom management technique that also works to create an inclusive environment because all students have an opportunity to be involved with each other. However, I now see the class distribution as a function of regulation. The process of assigning seats also reinforces my role in the teacher-student power relationship. I decide, even for adults, where everyone will sit.

Standing in front of the class and taking attendance is how my surveillance of the group begins every day. I am obligated to do so and to report pre-service teachers who have missed more than four classes to the Dean's Office. These students may be withdrawn from my class due to nonattendance, but I have yet to bring any student's name forward. By this time in the students' careers, they have internalized the mechanism of surveillance. I also teach pre-service teachers how to identify and create self-regulatory behaviour in the students whom they will teach, especially those who have attention deficit problems, because we want all students to be able to self-regulate.

*I start my lecture with "Today we will discuss standard deviation, the normal distribution curve, and how some students fit within this norm and others don't." I point to the graph of a normal distribution curve, which I had constructed on the whiteboard earlier in the morning. I begin the protracted teachings on how to work with those students who are outside the norm.*

*This topic will take us to the end of the term. We will discuss differentiated instruction and what it looks like, so that all students may succeed in a teacher's classroom. All of the ideas that I will teach are based upon a behavioural model. Although I am not an advocate of this model, all of the procedures and plans to support students who require adaptations, accommodations and funding in Manitoba have been developed through a behavioural approach.*

*I assure my students that, while the information they are learning may be on the test, what I want them to understand is how to differentiate instruction as part of their teacher praxis.*

One of the most significant issues in this course about adolescents with exceptionalities is how I have established the need for students to examine the psychological literature when they are working with an exceptional student. Exceptional students are to be understood as individuals outside the norm. This is exactly what this course is about – defining the abnormal. It is about looking at clusters of students whose behaviour or academic success lies outside the norms. As Tavares (1996) stated, the discourses that label students rely "on categories that are presented as professional rather than punitive. These categories appear as objective attributes rather than as discursive productions, so that current classroom management appears innocent of power-related interests" (p. 196). I use the normal distribution curve on the board to define (by standard deviation) who is inside and outside the norm.

I create groupings of pre-service teachers in order that they may examine the issues surrounding exceptional students, based on a paradigm wherein those outside the norms are seen as deficient and in need of support. This activity and the students' class presentations become their course project. These techniques "assist in the process of normalization and authoritative control" (Tavares, 1996, p. 199). Pre-service teachers are expressly taught how to

identify and work to remediate students existing outside the norms, so that the students can better fit into the norm.

Classification, defined as “differentiating groups or individuals from one another” (Gore, 1995, p. 174), is what I do as a function of this course. This process works to exclude the very population meant to be included (Dunne, 2009, p. 52). I actually have the pre-service teachers classify the normal and the abnormal students with whom they will work when they are teachers. Classifying students as normal and abnormal is done at the start of my course, in order to establish who will work on what information. Fundamentally, this process works to “establish degrees of deviation and the boundaries of acceptable behaviour; the measure of deviation points to the form of the intervention” (Venn, 1984, p. 121). Individualization is one of the most important elements of psychology. It is about measuring ourselves in relation to the norm and being distinguishable as the other. Totalization is essentializing and seeing everyone as the same by some essential attribute. This is a fundamental aspect in creating binaries. At the end of the course, pre-service teachers will understand and be able to reify the binaries that they have internalized.

*After a fifteen-minute introduction to the topic, each group is given an activity to report on. The activity involves plotting where particular students lie on the normal distribution curve and what can be done to assist these students. One group member stands and reports the findings to the class. A “best teacher voice” is encouraged.*

The act of normalizing works at the level of the body. It is through the process of group work in my class that the body begins to constitute that which it is normalizing. Gore (1995) stated that “norms are different from rules . . . power functions in capillary style, seeping its way into everyday practices, subtly delimiting appropriate behaviour and requiring teachers and students to take responsibility for themselves” (p. 172). Pre-service teachers respond to the normalizing effects of power in different ways. They tend to learn how to appear to be the normal student. Pre-service teachers will make eye contact, sit quietly, and ask questions as a function of their having internalized normalcy. They also have learned how to speak as teachers. The process of normalizing is performative and has a large impact, through discourse, in the creation of the subject in the class.

Those less efficacious in normalizing behaviour will still show signs of this process. Some pre-service teachers will seek solace. Others will show measured signs of anxiety as the instruments designed to measure normalcy – quizzes and tests – are discussed. Pre-service teachers will appear fatigued or anxious at certain times when I am challenging them to internalize a norm. Distribution is the way that we “arrange, isolate, separate, and rank,” and this distribution “contributes to the functioning of disciplinary power” (Gore, 1995, p. 176). The content will be recalled on a test or through some other demonstration, and then students will be ranked. Pre-service teachers feel this micro-technique at the level of the body. There is anxiety and tension for what they will need to know and be able to share so that they can be highly ranked in this course.

The psychological model that I use conveys the message that this knowledge is truth. Although they have certainly been advised to be critical, pre-service teachers will not be introduced to the concept of troubling or deconstructing what we do as educational practice. At least in my class, they have never been introduced to the notion that the psychological perspective is a social construction. Although I have taught that there are many rumblings within psychology itself, these pre-service teachers have certainly not been introduced to the notion that knowledges are relative and determined by power relations (Prado, 1995).

The better these pre-service teachers recall what they believe I value, the greater their chance of being distributed through the reporting of marks in a way that affirms the normalization process. Normalization is the key to creating teachers who will be successful in

classrooms today. Normalization is a critical element in modern disciplinary power. It occurs through social judgement whereby the individual is seen, through comparison, to be different or the same as the group (Gore, 1995). According to Gore, “norms differentiate individuals from one another by reference to a minimum threshold, an average to be respected, or as an optimum towards which one must move” (p. 171). I am “norming” them for the group of which they will become members. The pre-service teachers are tested on the material that I give them. For most, a test is quite a visceral experience. The body is very much involved in every aspect of learning prior to a test. They will have internalized this norming process and will understand it implicitly.

*One student asks about how we can reach students who seem bored and whether we can “accommodate students who lack motivation.” This question leads to a discussion of an “essential concept” that has been covered in another class: we talk about Vygotsky’s zone of proximal development and other psychological constructs that will support my students’ own practice as teachers. Another student brings forward the notion that children’s personalities sometimes make them difficult to work with. The notion of temperament and personality is put out to the group for discussion.*

Vygotsky’s zone of proximal development is a psychological model helpful in understanding optimal student learning conditions. In this model, if students are taught something that is too far from the norm, they will be anxious. If students are taught something that is too close to the norm, they will be bored. According to Tavares (1996), when we teach students from a psychological position that honors an internal locus of control, we “psychologize rather than politicize issues of social regulation and differential power” (p. 199). The key is to create the right amount of cognitive dissonance in order to create optimum learning conditions.

Exclusion is the opposite of normalization; it is “the defining of the pathological” (Gore, 1995, p. 173). Exclusion operates in many ways. For example, it happens when pre-service teachers try to “normalize” a peer who is operating outside the norm. If exclusion is not successful, they will either consciously or unconsciously exclude themselves from the peer whom they see as operating too far into the negative norms. Some students actively ask questions, and the group responds positively. Other students are ostracized by their peers for asking too many, or for asking odd questions.

One of the topics that I teach in this course is personality development. I teach that identity comes from one’s temperament and is mediated by the environment to become personality. Identity is the ego made public. According to this model, one’s personality resides within the individual and is significantly fixed in adulthood. Tavares (1996) pointed out that “insofar as this psychological discourse regards ‘identity’ as personal, rather than discursively constructed, power relations are reduced to personal attributes” (p. 197). I teach that individuals have agency. In many ways, agency takes away from the nature and influence of power relations. Foucault would see the constitution of the subject to be the most important element of his early work. The subject is produced when an individual has internalized the rules and techniques needed to function successfully and ethically in society (Prado, 1995). Not recognizing the social construction of the individual and how power relations influence the individual may recapitulate the social belief that individuals always have the freedom to choose their behaviour.

*The class ends quietly with a few concluding remarks. There is a bustle as people pack up their binders and make their way to the door and out. This class is over; the cohort makes its way next door for the Classroom Management course. The next professor, like me, tries to make the course interesting for the pre-service teachers.*

I also teach students to use a behavioural approach. I teach pre-service teachers that they have legitimate power over their students, and I give them skills to exercise this power. Behavioural management techniques have moved away from executing control over the student by “external means with the teacher as privileged change agent” (Tavares, 1996, p. 198). Instead, behavioural approaches have begun to work through the body to make it docile through the techniques of power incarnate in behavioural modification techniques. Flyvbjerg (1998) asserted that “not even entire institutional systems, according to Foucault, can ensure freedom, even though they are established for that purpose” (p. 222). To me, this is the danger of the behavioural approach present in education and society.

We regulate pre-service teachers in virtually every way. Regulating is part of all of the preceding functions of power relations. According to Gore (1995), regulation becomes clearly explicit when actions are taken to control “by rule, subject to restrictions, invoking a rule, including sanction, reward, punishment” (p. 180). The pre-service teachers, like those whom they will teach, will have to go from classroom to classroom with short breaks in between.

In this brief analysis, I have made explicit the incongruent messages embedded in the multiple discourses found in my own teaching practices. There are numerous ways to explain the disciplinary techniques operating within my classroom. That said, I acknowledge that I, too, am a social construction made in a manner that allows for this (re)construction. The notion of human agency in social constructionism is problematic (Burr, 1995). However, for me, social (re)construction is when I become an agent in the social change process. As a result of this analysis, my own subjectivity and personhood has started to be (re)conceptualized. This is the point through which power relations, directed through the body, begin to lose their bond on us. It starts with me. Our discourses are performative and work on the body. I shall begin to deconstruct that which I did not even understand had been my construction from the beginning. Our subjectivity can reify itself and then be recast.

I need to take the time to discuss power relations with students, because it is important that pre-service teachers are aware of power relations and how their bodies are involved in internalizing the deployed instruments of social control. For example, it would be beneficial for pre-service teachers to understand that some students are disadvantaged because of how power relations operate in classrooms. These students are often “managed” with negative consequences through classroom management techniques. However, I suggest that students labeled in psychological terms as *attention deficit* or *oppositional defiant* might also be seen, through a post-structural perspective, as being more cognizant of power relation forces at work.

We all need to trouble our epistemology in order to be successful teachers (Kincheleo, 2004; Kumashiro, 2004). The issue is not that teaching from a psychological perspective through a constructivist philosophical lens is inappropriate. I believe it is appropriate. Nevertheless, we also need to recognize other knowledges by problematizing our axiology, ontology and epistemology. After all, this is the function of higher education. It is my hope that pre-service teachers will benefit from learning about the implications of power relations on the creation of the subject through this self-examination, so that they can apply it to their practice. Foucault has given us a tool that enables us to see our cultural constructions for what they are: social constructions of truth.

Using critical pedagogy to deconstruct binaries that currently exist is a useful pedagogical exercise to assist in our understanding of power and privilege (Walton, 2005). However, Foucault’s technologies of power provide an even more critical way for teachers to understand how power and knowledge are constituted and perpetuated through discourses in the classroom. The effect of the dominant discourse upon the non-dominant group is important to discuss, because many people do not understand how the discourses work to constitute knowledge. This is the application of issues of social justice and equity.

I teach educational psychology from a perspective respectful of social justice, but I do not expose pre-service teachers to the notion of power relations. I may have been re-inscribing the same pattern of social injustice back onto itself. Through an analysis of the micro-techniques of

power, I have moved toward change. I hope that my students will be able to conduct a similar analysis, in order to trouble their own teaching so that they may also recognize how power relations operate in their classrooms – and change them in order that they can be truly exceptional teachers.

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## About the Author

*Chris Brown is an assistant professor in the Faculty of Education at Brandon University, where he teaches courses in educational psychology, counseling, and special education. Chris has experience as a teacher, principal, resource teacher, and guidance counsellor in provincial and First Nations educational systems in Manitoba.*

## Appendix

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## SCHOLARLY ARTICLE

### Diversity: Challenges for Change

Susan Gilleshammer

#### **Abstract**

*This article examines how school leaders, teachers and students experience the challenges resulting from the changing demographics of student populations in our schools. Increased cultural diversity in schools results in complex issues that require a proactive approach from school leaders. By utilizing strategies found to increase feelings of school connectedness in culturally diverse students, schools can mitigate negative outcomes and create the possibility of greater academic success for these students.*

For some time, there has been a call for greater attention to be paid to multicultural education, due to the changes in demographics in many schools (Cooper Shaw, 1997). School administrators, teachers and students all experience different challenges in dealing with this diversity. When educators meet these challenges openly and proactively with effective strategies, all students can experience success as they move into the future.

#### **Three Different Perspectives: School Leaders, Teachers, and Students**

School leaders, teachers, and students experience cultural diversity and demographic change in a school community in different ways. Each of these perspectives must be considered when examining the effects of increased diversity in the school setting. From its unique position in this complex system, each group has its own understanding of diversity and the challenges that diversity creates.

School leaders play a significant role in facing the challenges presented in schools that are becoming increasingly culturally diverse. School leaders must consider numerous stakeholder groups as their schools' demographics change. The school board and community exist outside the walls of a building, but still have a significant influence on school leaders and their decision making. Communities often undergo other social and economic changes that drive the demographic change in a school. A school leader must be sensitive to these changes, without sacrificing the good of the institution in order to serve these outside interests. The administrative team, the school staff, and the students are all part of the internal school context. To further complicate matters, all of these groups can be broken down into various subgroups that should be considered by school leaders when dealing with any school-related issue. These multiple contexts create a complex and multilayered environment that a school leader must navigate in order to face the challenges that changing demographics present (Gause, 2008).

School leaders can set the tone in a school for the response to changing demographics, reflecting the multiple contexts of the school environment (Evans, 2007). Some school leaders choose to consult stakeholder groups and to open lines of communication, in order to facilitate progress. Others may delegate responsibilities to the level of the classroom teacher, without clear direction for the action that should be taken. Depending on how these leaders understand the changing demographics in their school systems, school leaders themselves may actually become one of the challenges to creating a successful school experience for culturally diverse learners. If school leaders move too quickly in trying to institute change, they may lose the support of their staff or their leadership may be delegitimized by staff members (Evans). School leaders may choose to take no action, thereby legitimizing the status quo, for better or for worse. School leaders may only grudgingly recognize the issue of racism in their learning

communities, for fear of tarnishing their own reputations or that of their schools (Evans). Often, acts of racism must be blatant in nature for school leaders to be propelled into action. Unfortunately, it is the more subtle resistance to fully integrating non-dominant cultures into a building that goes unrecognized and unchecked. It is imperative that school leaders address issues of diversity directly, so that a school can adapt in a positive manner as a system to meet the needs of all students.

Teachers are directly affected by demographic change as their classrooms transform in composition and they struggle to meet the requirements of learners with unfamiliar needs (Gause, 2008). These students' needs may be academic, linguistic or social-emotional in nature, and many teaching staff feel ill equipped to offer effective support in any of these areas. Conversely, some teachers see no need to change their teaching methodology to accommodate the racial make-up of the student population, adopting a Darwinian philosophy of "survival of the fittest" in building their classroom climate. Some claim "colour-blindness" (Gause, p. 184), using denial of the impact of racial differences as an excuse not to alter the way things are done (Evans, 2007). By denying that differences exist, teachers and administrators may feel that they are being more even handed in dealing with students and with people in general. However, denying racial differences sometimes results in equal treatment that can actually be discriminatory towards a group (Knight, 2008). Equal is not always fair. Teachers must recognize that differences should be explored in order to find the best instructional practices to produce success for all students.

Many teachers feel empathy towards groups of students whom they assume are living without necessary resources. Evans (2007) identified the danger of "deficit thinking" (p. 176), whereby certain racial groups are viewed as lacking such basics as a stable family, economic security, proper housing, and access to healthy food; these areas of deficit are assumed to be causally linked to students' being at risk of academic failure. Stereotypes are reinforced when responsibility is placed on the students, their families, or their racial group for academic problems, allowing teachers merely to tolerate these pitiable, underprivileged students. This view relieves the responsibility of those working in the system to examine institutionalized racism, and to acknowledge historical and present-day conditions that have contributed to the disadvantaged situation of certain racial groups (Knight, 2008). Without a critical examination of systemic racism and the accepted stereotyping in schools, no gains can be made towards a truly inclusive school system that supports students of all racial backgrounds.

Students who are culturally and linguistically diverse in relation to the dominant culture face many challenges that affect their school experience (Kaylor & Flores, 2007). These students may have difficulty engaging or connecting to school, due to language barriers. Their academic performance may be below grade level as a result of differences in prior school systems or gaps in past schooling. Behavioural problems may be an issue with these students, perhaps resulting from misunderstandings encountered in communication or from frustration while dealing with cultural differences. The cultural contrast between home and school may cause culturally diverse students distress and create barriers to their success (Faircloth & Hamm, 2005).

Students may find that they are in the same classroom or the same school as cultural groups with whom they have a political or historical context of conflict. This type of negative, shared past between two cultures may result in an eruption of cultural wars in a school (Gause, 2008). Violence between cultural groups is an extreme example of potential conflict. More pervasive – and more common – is the quiet discrimination whereby the dominant culture students fail to recognize racial differences or passively exclude racially marginalized students.

Schools may fall into the practice of celebrating diversity as their main method of including cultures other than the dominant one. Knight (2008) referred to these types of celebratory events as "exoticizing the Other" (p. 95), whereby cultural identities are reduced to costumes, dances, and traditional foods. While these types of celebrations are socially acceptable and encouraged within school systems, they fail to address the discrepancy of power inherent in the construct of the quaint foreigners entertaining the dominant cultural group (Knight).

Many challenges emerge with changing demographics and cultural shifts in a school's population. School leaders face the responsibility of charting a new direction for their schools, while balancing the expectations of their school communities, their staff, and their students. Teachers are confronted with classrooms more diverse than ever before; the old way of doing things will not suffice. Culturally diverse students battle stereotyping, language barriers, and discrimination in their quest to succeed in a school system that is foreign to them. These three perspectives reveal the complex issues created by increased cultural diversity in schools.

### **Possibilities for Success**

Culturally diverse students can benefit in many ways from an increased connection to school. A greater sense of school belonging has been attributed to improved academic motivation and performance, and to reduced misbehaviour, drop-out rates, delinquency, and substance use (Brown & Evans, 2002). Students can become more engaged in their school experience through instructional practices that connect their identity to the material being studied (Faircloth, 2009). Positive relationships with teachers and other caring adults bolster a sense of belonging in students, resulting in higher academic achievement (Kaylor & Flores, 2007). Students' involvement in extra-curricular activities also enhances their feelings of school connection (Brown & Evans, 2002). Increasing culturally diverse students' connection to the school context offers hope for greater success with this student population.

The search for identity can be a powerful process for teachers to draw upon in their campaign to make course content relevant to adolescent students (Faircloth, 2009). When students are directed to draw upon their own experiences, family history, and cultural background to make sense of their learning, they are empowered to build meaningful connections to the subject matter. These connections, in turn, support students' sense of belonging in the classroom and in the school. Students in Faircloth's study reported that they felt a stronger relationship to their teacher and to their classmates after participating in the identity development exercises. There is compelling evidence that identity exploration, linked to classroom subjects, can increase school connectedness.

Another significant factor contributing to school connectedness is the influence of positive relationships with teachers and other caring adults in the school community (Kaylor & Flores, 2007). Successful students in Percy Calaff's (2008) study were able to identify at least one adult in the school context who had encouraged them and helped them to feel a sense of belonging. Percy Calaff was careful to point out, however, that "authentic caring" (p. 105) was valued by the students and seen as positively affecting motivation and learning; those teachers deemed lacking in sincerity were either endured or outright rejected. Those teachers who are naturally endowed with the ability to form genuine, positive relationships with students must themselves be nurtured so that they can continue to grow and to influence young people (Stewart, 2009). According to Brown and Evans (2002), "One theme in any successful outreach or involvement effort is the quality and sensitivity of staff" (p. 55), emphasizing the importance of having caring individuals involved in projects that target diverse student populations. Students' engagement in learning and sense of belonging can be improved by the encouraging influence of understanding adults, but support for these adults must not be overlooked.

Participation in extra-curricular activities can create a stronger school connection for many students (Brown & Evans, 2002). As hours spent involved in extra-curricular activities increase, there tends to be a corresponding increase in academic effort and achievement (Faircloth & Hamm, 2005). Taking this evidence into account, there is a strong argument for creating greater access to extra-curricular activities for all students. Greater accessibility may mean providing transportation, changing the time that activities take place, or providing more user-friendly information. The most important strategy to increase at-risk student involvement in extra-curricular programming is to involve those at-risk students and their families in the discussion, so that their concerns are addressed (Brown & Evans, 2002). Strategies that give culturally

diverse students greater access to extra-curricular activities would certainly be worth the investment, especially when higher academic engagement can be a result.

Culturally diverse students can gain a sense of school connectedness from curriculum-based tasks that include identity exploration, from positive relationships with adults in the school, and from extra-curricular activities. Each factor has a significant effect on school connectedness, and therefore on academic motivation and achievement. One wonders what the impact might be if all three factors were employed in concert.

### **Conclusion**

Cultural diversity in our schools creates challenges on various levels, but with these challenges come significant opportunities for positive change. There are strategies and approaches that have made a difference and contributed to success for many schools facing diversity challenges. It is imperative that school leaders and teachers examine the challenges of diversity honestly and openly, so that true progress can be made for all students.

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## SCHOLARLY ARTICLE

### The Impact of Technology in Mathematics Classrooms

Jackie Burrough

#### Abstract

*Technology has become an important part of our lives, so educators have incorporated it into the curriculum, particularly the mathematics curriculum. How technology is perceived, by both students and teachers, is a factor in how successfully technology has been integrated into the classroom. There have had to be changes in the methods used by teachers in order that technology can be used effectively, and additional teacher training has been necessary. There is a vast range of technology available to teachers, but it is important that appropriate technology is used to enrich the learning experience.*

Technology has become an integral part of our lives and the classrooms in which our children learn, especially mathematics classrooms. Mathematics classrooms have traditionally been dominated by pen-and-paper methods, but technology in the form of calculators and computers is now frequently being used. The use of technology can result in rich learning experiences, but it can also emphasize shortcomings in students' understanding (Forster, 2006). The views of both students and teachers are a major factor in the success, or failure, of lessons involving technology. A balanced approach, using both pen-and-paper techniques and technology, is needed to teach mathematics efficiently (Waits & Demana, 2000), with technology introducing new learning opportunities into the classroom. Change has been required in order to utilize the new technologies: change in the curriculum, change in teaching methodologies, and change in teacher training and professional development. Teachers have incorporated a wide range of technology into their classrooms, including (but not exclusively) the internet, numerous software application programs, and the interactive whiteboard. New technology has also allowed teachers to teach to a wider audience, offering students new opportunities for learning. Technology is a fact of life, so teachers have incorporated it, in its many forms, into their classrooms and have found it to be a particularly useful tool in enhancing the understanding of mathematics.

#### How Technology is Perceived

Technology is viewed in different ways by different people. In this author's experience, most students enjoy using technology and are often more proficient than their teachers. Some teachers see technology as a useful tool, to be used so that the learning experiences of their students are enhanced, but others are intimidated by the wide choice available and their own lack of expertise. How technology is perceived usually depends on previous experience, so it is important, for both students and teachers, that the experience is positive.

Most students have a positive attitude towards technology, and teachers capitalize on this enthusiasm by incorporating the use of calculators and computers into their lessons. Mathematics is considered boring by many students, so technology can be used to rekindle the interests of apathetic students (Neurath & Stephens, 2006). In the past, students have seen mathematics as the memorization of rules to be used to solve problems, a tedious pastime, but appropriate use of technology can help students see past this tedium, and understand the dynamic nature of mathematics (Toumassis, 2006; Waits & Demana, 2000). Positive attitudes towards technology can be used to encourage students to see mathematics in a more constructive manner. If students in the class have negative attitudes towards technology, then

the teacher must ensure that future experiences are positive; otherwise, these students will not benefit from the use of technology.

Technologically minded teachers are already providing students with enhanced learning opportunities in mathematics classrooms, while others are failing to utilize the resources available. There are issues – cost, lack of software, ineffective software, insufficient time – involved in using technology (Alejandre, 2005), which discourage many teachers from trying, but if they are encouraged to start with what they have, perhaps one computer being used as a reference station, then they should be able to provide their students with an enriched lesson. By starting in a small way, even the most reluctant teachers should be able to incorporate technology into their classrooms, providing a positive experience for themselves and their students.

The perception of technology comes from the experience that the individual has had when using technology. Students and teachers may have different perceptions of the use of technology in the mathematics classroom. Students should find that the use of technology makes their lessons more interesting while bringing their understanding of mathematical concepts to a higher level. Teachers should see that, by using technology, they are enhancing the learning opportunities provided for the students. Although the perceptions of the student and teacher are different, the use of appropriate technology in the mathematics classroom can lead to more interesting and relevant lessons.

### **Change Due to Technology**

In order to integrate technology into the mathematics classroom, there have been changes: curriculum has been developed in such a way that embraces the available technology, teachers have been encouraged to adapt the structure of their classroom activities to take advantage of the technology within their schools, and teacher training and professional development includes the use of technology in the classroom. Despite these changes, only a relatively small number of teachers appreciate the potential that technology has for enhancing learning in the mathematics classroom (Lagrange & Erdogan, 2009). Technology is constantly changing, so how it is applied to the curriculum, how it is used in the classroom, and how teachers are trained also have to be changed and updated.

In some cases, the curriculum has been adapted specifically for the use of technology, while in other courses the emphasis of the lesson has changed in order to capitalize on the available technology. The Applied Math courses were designed to use the graphing calculator and other technologies, such as spreadsheets and graphing software, as tools to enhance the learning experience of the student. Instead of students studying calculus in order to obtain accurate graphs, students are now able to study the concepts of calculus using accurate graphs obtained by using technology (Waits & Demana, 2000). Technology can be, and has been, used to revitalise a worn curriculum (Smith, 2009). Readily available digital resources have changed the curriculum (Gueudet & Trouche, 2009), and teachers have had to change the way that they teach, using less elucidation and more investigation (Ruthven, Deane, & Hennessy, 2009), so curriculum reform involving technology is dependent on the classroom teacher (Toumasis, 2006).

Teachers of mathematics have been encouraged, and are now expected, to use technology in their lessons. They need to be well organized in order to implement the guidelines coming from professional mathematics organizations to improve the teaching and learning of mathematics in schools (Toumasis, 2006). Shifting classroom goals have encouraged teachers to revise the methodologies used, in order that students can explore and analyse mathematical problems for themselves, resulting in a significant change in the behaviour of mathematics teachers (Pierce & Ball, 2009). They have realized the importance of discovery and creativity by using a discovery approach in their lessons, encouraging students to look for patterns, to make generalizations, and to guess and check, thus helping students to appreciate the dynamic

nature of mathematics (Toumasis). While some are still reluctant, a growing number of teachers have incorporated technology into their classrooms with varying degrees of success.

In order to maximize the potential that technology has to offer, teachers need to be trained in how it can be used within their classrooms. Both new and existing teachers should have time set aside during teacher training, or professional development, so that available resources can be used in a learning context (Gueudet & Trouche, 2009). The use of the internet requires a change in the way that many existing teachers think (Ameis, 2002), so professional development is needed to change the current mindset of teachers, if the full potential of such technology is to be realized. At the same time, professional development can be used to make teachers aware of the limitations of the technology that they use (Waits & Demana, 2000). Teachers need to reflect on classroom activities that are both more and less successful in helping students to learn mathematical concepts, in order to develop strategies that enhance learning opportunities (Lagrange & Erdogan, 2009). Teacher training and professional development are essential factors in helping teachers to integrate technology successfully.

New technology is being developed continually, so it is important that mathematics teachers develop their lessons to take advantage of what is being offered, provided that it is going to enhance the learning environment. Resources and curriculum should interact (Gueudet & Trouche, 2009); therefore, software developers need to work with teachers and curriculum writers to ensure that that new software dovetails with curriculum requirements without the need for adaptation by the teacher. Teacher training and professional development also needs to be updated on a regular basis so that teachers can take advantage of the latest technology available to them. Teachers must change with the times and use current technology in their lessons, not only to enhance learning, but also to keep students interested (Smith, 2009).

### **Available Technologies**

It is impossible to consider all of the technologies available within the scope of this article, so only a small selection, those that the author is familiar with, are discussed. The internet is probably the most widely available teaching resource. Two examples of computer software commonly used in school are spreadsheets, a data-handling application that was not developed for use in education, and Geometers Sketchpad, a graphics application that was designed to be used in the classroom. Teachers can now use projectors in conjunction with a computer to display the screen to the entire class, while interactive whiteboards take this technology a step further, providing the opportunity for teachers and students to interact with the computer via the whiteboard. The use of technology has also opened up opportunities in distance education courses, and interactive television courses have enabled rural schools to share resources. The diversity of technology available to teachers is mind boggling, and teachers have the difficult task of finding the technology that best meets the goals of their lessons.

The internet, probably the most used technological resource, is growing at an incredible rate. Resources found on the internet can help teachers in their lesson planning, and the use of simulations and interactive games can be used to engage students during lessons (Ameis, 2002). The internet is also a vast source of information for projects that relate to students' interests; inquiry-orientated activities can be developed as co-operative group projects wherein data are collected and processed mathematically, with findings being shared with the rest of the class (McCoy, 2005). There are many ways to use the internet, but finding what is required to meet lesson requirements can be daunting.

Of the wide range of software application programs available for use within the classroom, only the spreadsheet and Geometers Sketchpad are discussed in this article. The spreadsheet was not originally designed to be used in education, but teachers recognized its potential and have adapted it for use in the classroom (Dick, 2008). It is now an invaluable tool in the analysis of data, enabling students to process large amounts of information, perform complex calculations, and produce sophisticated graphs quickly and accurately. On the other hand,

Geometers Sketchpad, an interactive graphics program, was designed for use in the classroom. It allows students to investigate geometric properties of shapes, which can then be shared and discussed with others in conceptual conversations (Knuth & Hartmann, 2005). These are two examples of software applications that have been used successfully in the mathematics classroom, one adapted by teachers and the other designed to be used in the classroom.

A vast range of hardware is available to teachers, but probably the one that has made the most impact is the development of projection technologies, in particular the interactive whiteboard ( IWB). Integration of technology into the classroom through the use of an IWB not only enhances whole-class direct teaching, but also encourages creativity (Wood & Ashfield, 2008). The IWB can be used as a traditional blackboard, but with the advantage that work can be saved and referred to, or changed, later on in the lesson, or it can be used to interact with software in front of the class rather than on a single computer screen. Student engagement and motivation increase when the multimedia capabilities and fun enhancements of the IWB are combined with more traditional teaching strategies. The IWB is an excellent example of how technology can be incorporated into the mathematics classroom.

Technology is also increasing opportunities for distance learning, both in and out of school. Rural school divisions are developing interactive instructional television resources (IITV), whereby a teacher can teach his or her own class and students in another school simultaneously, through the use of television, cameras, and an IWB. A wider range of courses can be offered to students using IITV than would otherwise be possible. In addition, many high school courses can now be taken via the internet. Course material is available online, and assignments are submitted and returned electronically. Help is also available online, and many courses have discussion forums for students to interact with each other. While most students like web courses, it is advantageous for students to have access to printed materials as well, so that they concentrate on the content and are not distracted by the format of the presentation (Macedo-Rouet, Ney, Charles, & Lallich-Boidin, 2009). Opportunities for learning, particularly for students in small rural schools, have increased because of advances in technology.

## Conclusion

Our lives have all been affected by technology, so it is not surprising that it is also affecting the education of our children. Some teachers of mathematics have become particularly adept at combining traditional methods with technology, in order to enhance the learning opportunities of their students, while others have questioned the value of using technology. Positive attitudes towards technology, by both teachers and students, play a major role in the successful integration of technology into lessons. In order to incorporate technology, changes have been made to the materials and the methods used to teach mathematics, so changes have also been required in teacher training and professional development. The wide range of technology available has meant that teachers can incorporate more interactive activities into their lessons, increasing interest and understanding in the mathematics classroom. The development of online courses and IITV has provided opportunities for students to take mathematics and other courses that were not previously available. Technology has become a central part of all our lives, so it is important that education is seen to be relevant by using current technology.

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## SCHOLARLY ARTICLE

### Literacy Lessons for Teachers: Imparting Reading Recovery Principles to Teachers in Training at Brandon University

Joe Stouffer

#### Abstract

*In this article, the author discusses the rationales for the incorporation of Reading Recovery principles within the course work of a recent undergraduate level literacy methods course at Brandon University, Brandon, Manitoba. He asserts that the inclusion of a specialized perspective of literacy instruction will enhance the skill set and pedagogy of the teachers in training.*

*Don't try to fix the students, fix ourselves first.*

*The good teacher makes the poor students good, and the good students superior.*

*When our students fail, we, as teachers too, have failed.*

(Collins & Tamarkin, 1990, p. 6)

Arguably, the primary goal of education systems should be to ensure that all students emerge literate, with flexible and adaptable skills, and thrive amidst the ever-evolving forms of communication in our society. Clay (2005a) made the case that one factor in reducing literacy difficulties rests on having “a good curriculum for literacy learning in the early years of school taught by well-trained teachers” (p. 7). It is my position that increasing the competency of the teaching pool will result in more successful children and decreased severity of difficulties encountered by students who struggle in classrooms. In this article, I discuss some of the principles of Reading Recovery that were shared with a group of undergraduate Faculty of Education students in a literacy methods course at Brandon University, as well as the rationale for including an additional dimension of early literacy pedagogy in their program.

A comprehensive volume of research has been produced investigating causal and predicative factors of children’s reading development. Reviews of this work have found overwhelmingly that “teacher quality matters” (Bean & Morewood, 2007, p. 374). A position statement made by the International Reading Association (1999) suggests that there is no one single or combination of methods to teach reading to all children: “Therefore, teachers must have a strong knowledge of multiple methods for teaching reading and strong knowledge of the children in their care so they can create the appropriate balance of methods needed for the children they teach” (para. 3). The way that teachers structure the learning environment and how the children spend their time influence the reading proficiency that students have attained at the end of the year (Cunningham & Allington, 2007; Leinhardt, Zigmund, & Cooley, 1981; Routman, 2008).

Routman (2003) also argued that while there is no one best or perfect program that will fit all learners, “effective teachers are constantly re-evaluating and rethinking their practices in the light of the students in front of them, curriculum requirements, new information and research, and the daily demands of teaching” (p. 186). The Language and Literacy Researchers of Canada (2003) hold the position that teachers “should have specialized education in language and literacy pedagogy and develop extensive knowledge of language and literacy development and process” (para. 4). It would seem that teacher training could be fortified by giving undergraduate students access to current and diverse research in literacy instruction and the opportunity to apply this thinking to authentic experiences with children learning to read and write.

Reading Recovery (Clay, 2005a) is short-term, early intervention designed to reduce dramatically the number of children struggling as they transition into literacy. Successfully implemented in thirteen countries, in four languages, Reading Recovery annually trains experienced classroom teachers to work with the lowest-achieving grade one children, and individually design a series of lessons that will lift each child's performance based on his/her unique competencies and daily performances in reading and writing tasks. Reading Recovery training is conducted within a peerless model that incorporates an apprentice style of learning, professional discussion, and peer demonstration as primary learning vehicles. Teachers teach children throughout their training year and evolve in their skills, assessing and delivering programs to accelerate the learning of each child. In twice-monthly meetings during their training year, teachers have the opportunity to discuss the research-based practices of Reading Recovery and their evolving understandings with their teacher leader and their peers.

A hallmark of a Reading Recovery professional development session is the live lessons taught behind a one-way glass. During these demonstration lessons, teaching colleagues have the opportunity to discuss the events of the lesson and a theoretical topic at hand, then relate the conversation to their own teaching practice. Simpson and Montgomery (2007) commented on the effectiveness of Reading Recovery training as professional development:

Reading Recovery maximizes the intellectual potential of professionals. Authentic teaching sessions promote rich interactions among the learning community of teachers, teacher leaders, and university trainers. These become the foundation of the evolving literacy apprenticeships. The collaboration of professionals provides an excellent means to expand the collective learning of all participants when discussing topics of teaching, observing, and assessing students within the Reading Recovery intervention. Reflection upon the actions and responses of the teachers and children connect the theories of literacy development to teaching practices, thus investing in the people strategy. (pp. 36-37)

The year-long Reading Recovery training is intensive and demanding, and produces broad shifts in teachers' understandings and practices. The training model (Clay, 2005a) was carefully designed for the professional development of experienced teachers, to prepare them to work with the lowest achieving children in their schools. Interestingly, both throughout and after their training, Reading Recovery teachers often comment on how profoundly the year-long professional development changes their knowledge of children's literacy development and their pedagogy as classroom teachers. Many teachers' comments also express a longing, in hindsight, to have made different teaching decisions prior to training, as they now reflect on their career from the perspective of a trained Reading Recovery teacher. These newfound understandings and reflection often lead to questions from the teachers over why they did not have access to this professional development earlier in their careers, or a more comprehensive theoretical base as part of their preparation as pre-service teachers (Stouffer, 2006).

When I was recently presented the opportunity to work with an undergraduate group at Brandon University as a sessional instructor of a course titled *The Detection and Prevention of Reading Difficulties*, some issues and challenges in literacy education and teacher preparation were brought forward. Early in the course, one student recorded in her learning journal,

I am really excited about this course. I think that it will be one of the most practical and useful courses that I will take here at Brandon University. I personally feel that in the Faculty of Education there should be more of a focus on these crucial skills because I do feel very unprepared when it comes to teaching kids to read and write.

When designing the course, I felt that diffusing three key principles of Reading Recovery throughout the lectures and course work would be helpful in extending my students' understanding of literacy development as part of their undergraduate preparation:

1. skills to carefully observe children engaged in reading and writing tasks
2. a deeper understanding of a complex theory of literacy processing development
3. consideration of how to make teaching decisions by linking valid observations of children

to sound theory

Lyons (2003) argued that the theoretical discussion of literacy development alone is insufficient in developing teacher expertise. Teachers also require experience in working with children, in order to develop their understandings and expectations of progress. To this end, a lab component was built into the course. The undergraduate students spent several sessions at a nearby elementary school, practising assessment with grades one and two children and observing their classroom teachers' and literacy support teacher's programming. The lab sessions broadened the students' experience working with children, and gave them opportunity to implement, observe, discuss, and reflect upon theory from the course.

### **Sensitive Observation**

Teachers need to become skillful observers of children, in order to inform their teaching decisions. A classroom program that endorses formative assessment (Manitoba Education, Citizenship and Youth, 2006) relies upon meaningful and reliable observation tools to steer forthcoming program and teacher interactions with the class. Clay (2002) advocated for teachers who "can observe how individuals change over time by keeping good records; and they can allow children to take different learning paths to the same outcomes because they are clearly aware of the learning that is occurring" (p. 7). In the context of children's learning to read and write, two extremely revealing assessments include Clay's (2002) Observation Survey of Early Literacy Achievement and the recording and analysis of running records. The observation survey provides teachers the opportunity to observe young children's competencies in early reading and writing tasks from a viewpoint of readiness versus deficit. Clay (2002) wrote,

All children are ready to learn more than they already know; it is the teachers who need to know how to create appropriate instruction for each child, whatever his or her starting point. To do this effectively they need to observe how literacy behaviors change throughout the first years of school. (p. 10)

The administration of running records provides teachers a neutral means to record and later analyze their students' reading responses. The teacher not only can consider the level of challenge offered by a text, but also has a record over time of development in children's means of solving problems as they read. A teacher recording a running record is an observer, and refrains from the role of teaching. Through this practice, the teacher can carefully observe what the child can do independently, and base instructional decisions upon direct evidence from the child. From this perspective, teaching is based on children's present competencies, rather than a prescriptive, sequential program that may not authentically address the immediate needs of all learners.

### **Exploring a Complex Theory of Emergent Literacy**

Teachers' beliefs and understandings of literacy development are foundational to the programming that they design for children. Daily decisions – over what should be emphasized, how much time to allocate to certain activities, and what the teacher should pay attention to – are driven by how the teacher believes that reading and writing unfold and function. For example, teachers who believe that reading is merely a matter of learning letters and sounds might implement a classroom program that fixates upon phonemic awareness and phonics instruction. Clay (2005a) argued that "the literacy processing systems constructed by learners during beginning literacy are massively influenced by the expectations and opportunities of the school curriculum and by the teaching practices of their schools" (p. 3). Good first teaching relies on teachers' understanding of reading and writing processes (Boushey & Moser, 2006; Clay, 2005a; Fountas & Pinnell, 1999). Reading Recovery teachers view reading as a "message-getting, problem-solving activity, which increases in power and flexibility the more it is practiced" (Clay, 2005b, p. 103).

Becoming a successful reader, who draws messages from and responds to texts, involves developing a robust processing system that efficiently solves problem and eventually becomes self-extending through thousands of successful interactions with texts. It is critical that “children use their brains to attend to certain things, to work out certain things, to find similarities and differences, to build complex processing systems, to use the language they already speak, and to link it to visual squiggles on paper” (Clay, 2005a, p. 3). Reading, then, becomes less a matter of teaching children items of knowledge (although this knowledge is constantly called upon when reading and writing and needs to be easily accessible), and more about teaching young readers *how to think*. Effective literacy teachers need to consider not only what knowledge successful learners bring to the task of reading and writing, but more importantly how they use that knowledge and how effective they are making decisions as they read and write. Understanding more clearly how thriving readers and writers think will shape teachers’ goals for their students, and underscore positive signs that teachers should attend to as they observe their students making their way along their various paths to becoming literate.

### **Thinking Like an Expert Teacher: Linking Theory to Practice**

Just as Reading Recovery teachers consider how successful readers think, it would seem logical to endeavor to cultivate the characteristics and decision making of effective classroom teachers when working with pre-service teachers. Lyons (2003) identified six points of convergence about how expert teachers thought, reasoned, and acted:

1. Expert teachers have a thorough understanding of reading and writing at the acquisition stage, and know how these processes change over time as children become more proficient.
2. They can assess children’s progress and identify roadblocks to learning.
3. They know how to provide a dynamic, flexible scaffold that assists children in mastering new competencies. Every day, they systematically observe and evaluate what children can do independently, and use this information to inform their teaching the following day.
4. Expert teachers are reflective before, during, and after the lesson.
5. They never stop working to make the children’s experiences positive and rewarding.
6. Expert teachers convey through their actions and words that all children can and will learn, and that they will find a way to teach them.

Enhancing the undergraduates’ learning experience within the course with live experiences with children provided them occasion to think along these lines. Midway through the course, one student reflected on her experience working with a child:

Yesterday this one young girl in grade one wanted to read to me a story about Sam’s day at the beach. As she was reading I thought about what we have been learning in class and I paid more attention to how she was reading. I found it interesting because she was reading word for word and I wondered if she was getting the meaning of the book. She would sound out the words using the syllables rather than trying to find the meaning.

It is interesting to see how this student was linking the theory from the course to her observations of a child reading, making an astute observation that would be very helpful in deciding what teaching move to make next. It was heartening to hear a new teacher consider the reading processing of a child (how the child might be thinking), as opposed to merely commenting on the accuracy (what had been read).

This type of reflection exemplifies assessment for instruction – basing the upcoming teaching on what has been directly observed in the student’s performance. Thinking along these lines will enable a teacher to be more constructive and effective when guiding students. Ultimately, pre-service teachers will need to construct their own self-extending system of processing their teaching decisions. This strategic thinking of truly effective literacy teachers would involve –

- Ensuring early “behaviors” are appropriate, secure and habituated
- Monitoring their own teaching and thinking
- Searching for several kinds of information
- Discovering new things for themselves
- Checking that one kind of information fits with other available information
- Repeating themselves to confirm a teaching decision
- Correcting themselves
- Solving new problems by these means

(Clay, 2002, p. 22)

Early “behaviors” for literacy teachers might include authentic observation skills that can be administered accurately and straightforwardly by the teacher. As part of the course, it was important to give the students many opportunities to practice the taking and analysis of running records (Clay, 2002). Students worked with video clips of children reading as part of their in-class work, not only to deepen their consideration of the implications of children’s reading behaviors, but to enable them to become more confident in the conventions and build their own automaticity in taking the records. Two students commented on their development of confidence in taking running records through the course as follows:

Student 1: The workshop on running records itself was amazing. I was blown away with how one step at a time each part made sense and then was applied to a practice immediately. I found the concept easy to understand at this point. By the end of the morning I couldn’t believe what I was able to do and make sense of. It was like learning shorthand for assessing reading. This shorthand then becomes very useful to plan the direction for the student to gain the most from. Just to practice, practice now.

Student 2: I am still not very confident in my record taking ability and I feel as though I may let too many things slide when I am doing a record. I feel as though I am always playing catch up while doing the records because I still have to stop and think about many of the errors that the student is saying when they read. I am getting faster as I get more practice but I am still having a few problems when I have to stop and think. Working with a student helps because they can be asked to slow down for a second without interrupting their focus on the words. I can try to see how that student is thinking by their expressions and this helps me to get an overall idea of the reader’s ability.

Undergraduate instruction that expands the students’ knowledge of reading theory, and provides opportunities for them to see and apply pedagogy from the course with children, reaches toward an ideal: to provide teacher training that fosters critical thinking about the programs teachers are designing and delivering to children (Routman, 2008). Can we prepare teachers so that they are confident and competent to a degree that they are able to be reflective (Lyons, 2003) before, during, and after teaching?

In a recent position statement, the University of British Columbia charged that large studies are needed to determine what Canadian teachers do and do not know about literacy instruction, and to consider those findings in light of what is known about best practice (as cited in Purcell-Gates & Tierney, 2009). Conversations and partnerships between universities and schools will also help to inform the training of future teachers. We cannot expect student outcomes to change if we do not change what we are doing in classrooms; such a change requires thought towards the preparation and professional development of teachers. While I did not have the intent of instructing this course to train undergraduates as Reading Recovery teachers, it is my hope that some of the principles of Reading Recovery will assist in their construction of effective early pedagogy as future classroom teachers. It would seem difficult to improve literacy outcomes for children if we do not first meaningfully address the daily practice of their teachers. It is only when we truly become schools of effective literacy teachers that we will become communities of readers.

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## SCHOLARLY ARTICLE

### Motivating High School Students to Revise

Koralie Mooney

#### **Abstract**

*Students often resist revising their writing, and the final copies often look much the same as the first draft. Additionally, the high school environment often quells student revision. Many teachers lack writing training, and therefore struggle to give direction to students. However, as the author of this article discovered, incorporating and teaching revision strategies is manageable. If teachers can start teaching revision strategies, and change the practices that hamper the writing process, student writing can only improve. Learning how to revise is an important and necessary skill for all writers, no matter their level or ability.*

“Do I really have to do a good copy? My handwriting is really neat in this one.” How many times do teachers hear similar types of student comments? An even more troubling thought is where the student received the idea that a good copy simply meant more legible handwriting. Students usually understand the necessity for editing because they want to catch their spelling, grammar and capitalization mistakes. However, revision – the adding, subtracting, and reorganizing of ideas – is a difficult concept to teach and the process to which students are often the most resistant.

Many ineffective practices are currently employed in high school classrooms, which actually undermine the writing process. Part of the problem is the need for teachers to record copious marks in high school, and cover a vast curriculum. This need for marks, combined with a lack of training in teaching writing (Kolling, 2002), can result in a hurried or often sparse approach to revision. For effective revision to take place, high school teachers must scrutinize their role in terms of the feedback that they give to students. Teachers must teach students revision strategies. Additionally, peer evaluation plays a fundamental role in the revision process, and teachers need to experiment with different models, even if the implementation can prove challenging. Finally, teachers need to seek out new audiences for their student writers, in order to give them a reason for writing, beyond the threat of grades. In effect, the goal is to create a flexible system that encourages writing as a process delivered by teachers who equip students with strategies to evaluate and improve their own writing.

#### **The Teacher’s Role**

Writing anxiety’s effects upon student achievement are well-documented (Thompson, 1980). Revision can often be the spot where many writers either surrender, hoping to finish the piece as quickly as possible, or become open to the idea of developing a stronger piece. Teachers can be an important variable in this decision. Beginning writers, and even the more experienced, resist revision because they interpret it as meaning they have not done it correctly the first time (Kolling, 2002). Students “like it the way it is” (Kindzierski, 2009) and, as teachers, we must try to remember the frustrations of revision: a lengthy and messy process. Student writers may feel protective of their first draft, and be resistant to any modifications or omissions. If teachers are more sensitive to the messages that they send to students (usually via written feedback), it may ease anxiety, which in turn could produce a stronger piece.

Time is an essential ingredient in the writing process. Teachers, and the high school system, need to allow the space and time for revision to happen. Many teachers are under constraints to get the product finished and move on to the next assignment. Timed essays, which are often a

constant in high school classrooms, do not fit well within the structure of the writing process (Worden, 2009). One only needs to scan literature on Writer's Workshop instruction to see that many of the ideas are directed at elementary or middle school (Graves, Atwell & Newkirk, 1998). Perhaps this middle school focus is because middle school is perceived as having the time and space for the writing process, or perhaps teachers assume that by high school students have mastered writing skills, and the teacher merely needs to give the assignment, determine the due date, and tell students to begin. The reality, as any high school teacher knows, is that large deficiencies exist in many students' writing skills.

The challenge is to encourage revision in a rigid system with students who are unmotivated to make changes because they are either too attached to their first draft or simply want to get the assignment completed. The first step in making that system more accommodating for student writing is recognizing that writing is a process that requires time for all its stages. As any writer knows, writing an original piece of writing can be more difficult on a strict timeline. Writers often need time to discuss their work with fellow writers, as well as with the teacher. Teachers need to encourage on-task behavior, but also recognize that for some students, on some days, the process may take longer than the teacher had planned.

### **Changing Teacher Feedback**

Teacher feedback, both written and oral, is fundamentally important, but teachers cannot focus on every aspect of the writing; to do so would undermine student confidence (Treglia, 2009), resulting in a weaker product. Teachers often have the feeling that students, particularly weak students, will not revise unless teachers make copious comments on the rough drafts. Then teachers are dismayed when the students hand in the good copy with none of the suggested revisions completed. This practice of marking every mechanical error on a paper can be attributed to the pressure that teachers feel to correct all mistakes, because society has come to believe this is the role of the English teacher (Zemelman & Daniels, 1988). Moreover, teachers cannot focus only on mechanical errors, for students then think that revision is only fixing mechanical errors (Zemelman & Daniels). Furthermore, by correcting every single mechanical error, often at the expense of ideas and organization, students lose ownership over their work (Atwell, 1987, p. 75). The question then becomes, who is the real author: teacher or student?

Effective comments, whether written or oral, are those that focus on ideas or organization (Treglia, 2009) in student-friendly language. Specific comments such as "You're off the subject here" and "Now talk about another disadvantage" (Treglia, p. 80) have been found to be the most effective in resulting in changes. Reviewing the rubric during the revision process will also encourage students to revise for ideas and organization (Dean, 2006). Many times, teachers give the rubric to students, but do not spend time reviewing it with them. Students need to be encouraged to use the rubric, and feedback comments should be in language similar to that of the rubric. There is no point in using terminology such as "vague" or "awkward" if it is meaningless to the student. Comments need to be specific to the writer's work and in language comprehensible to the writer.

Conferencing with students, either during class or after class, can be an extremely effective way to assist students, as well, but teachers need to be aware of their conferencing style. Atwell (1986) encouraged teachers to listen carefully and ask questions about the piece, but to avoid writing on the paper: "Remember the centrality of ownership in students' growth as writers. The piece of writing belongs to the writer" (p. 95). Teachers should guide the students towards revision, rather than telling them what to change (Stemper, 2002).

## Fat Drafting and Revising Strategies

Before revision begins, the student needs to have a lengthy enough piece, or there will be little to revise. Bishop (2004) noted that sparse drafts are often the case for student writers and that “drafting generously offers writers more ways to saying it – some of which they’ll like and some of which they won’t” (p. 14). Bishop called this process of elaborating upon the ideas “fattening up” (p. 17), and used a number of strategies to teach revision. Hyperlinks were one strategy that involved “drawing in imaginary hyperlinks with markers and then writing the text for these links” (Bishop, p. 19). As a writing teacher at Al Bayan Bilingual School in Kuwait, I asked a grade 10 writing class to take this idea one step further. Students created actual hyperlinks with Microsoft Word for their drafts, and later incorporated the links back into the revision copy. Each hyperlink was evaluated for the expansion of the ideas and the organization of those hyperlinked texts. Some students had difficulty understanding why they were not doing actual hyperlinks to websites, as they had done in other classes. However, the final result was that students did add more detail to their drafts, and the placing of the hyperlinks forced them to think about the organization of the paper, as well. It also resulted in some students doing additional research for their topic when they realized the skeletal structure of their drafts. I would repeat this process, substituting markers for computers.

Once students have developed a draft with stronger ideas, they need strategies to determine how to organize the entire piece, the individual paragraphs, and the sentences within those paragraphs (Dean, 2006). Dean asked students to outline their ideas after the draft, or write a brief summary for each paragraph. If the students are unable to do this task, it may be because there is more than one idea in each paragraph. Local revision is about the effectiveness of sentence fluency and understanding that sentence length is an important tool. I am following Dean’s recommendation by asking my grade 10 class to count the number of words in the sentences of one paragraph to determine lengths. Dean gave her students the following guidelines regarding sentence length: “Short sentences will give the idea some punch. Long sentences are good for background information” (p. 153). Dean also recommended sentence-composing activities, such as those given by Killgallon & Killgallon (2007), as a way of strengthening sentence structure and variety. Organization is a difficult concept for weak writers to grasp, but giving students concrete strategies to follow makes the process much more tangible.

## Peer Evaluation

Another important element in revision is peer evaluation. Teacher feedback is not enough; students need their peers. Peer evaluation gives students a larger audience for their work (Dean, 2006). It also gives them an opportunity to discuss their writing. Student discussion is a key component of the process, but it is sadly often discouraged in many writing classrooms (Stemper, 2002). For weaker writers, peer evaluation exposes them to stronger writing, and allows them to reflect upon their own work. Finally, peer evaluation is something students generally enjoy that can also serve to ease writing anxiety (Gokce & Atay, 2007). Thus, peer evaluation, while difficult to manage, should be a staple in all writing classrooms.

However, in order for peer evaluation to work effectively, students must be trained to recognize effective and ineffective peer comments (Dean, 2006). Dean asked students to rate their partner’s paper on its ability to maintain their interest level, and assigned marks for the task of peer evaluating another’s paper. This rating system dissuades students from marking papers of their classmates as merely “excellent” (Dean, p. 163). Neubert and McNelis (1990) advocated training students to determine, rate, and categorize peer comments as “useful” or “vague” (pp. 52-53). As a result of direct instruction of peer editing, Neubert and McNelis noticed an increased percentage of useful comments, while the number of vague comments dropped. The

process of training students can be time-consuming, but hopefully, if done at the beginning of the year, these training techniques will be effective for the remainder of the year.

Peer editing can be done in small groups with everyone reading the same paper, or with partners exchanging papers. However, the least productive type of peer feedback is what Dean (2006) called the “read-a-neighbor’s-paper-and-tell-him-what-you-think kind of peer readings” (p. 163). Teachers need to model how to peer edit. They also need to recognize that this process may not work successfully the first time. Thus, the research supports the idea that perseverance with peer editing pays off and results in stronger revisions (Kindzierski, 2009).

### **Authentic Purpose and Audience**

It is incumbent upon teachers to discover ways to motivate students to revise. Obviously, grades are the ultimate motivating force for getting the writing done, but ironically not motivation to do a strong job. However, when students are aware that someone other than the teacher is reading their work, an authentic reason for writing is created. Even when that audience is a pretend audience, it can still be a motivating force (Dean, 2006). I am currently searching for forums for students to publish their work for a wider audience, and have found a blog to be very helpful as a publishing venue. High school students, who initially complained about the blog, are now commenting on each other’s work without being asked to by the teacher. Next semester, I plan to set up Wikispaces for each student for use as a writing portfolio and as a tool for collaborative writing. In another effort to promote purpose in writing, I will give grade 9 students the assignment of writing and sending business letters. This assignment may take the form of a fan club letter, a complaint letter to the school’s administration about dress code, or suggestion letter to the makers of a video game. The student will generate the topic, and in generating the topic, take more ownership over the writing. In the past, I asked students to write a letter to S. E. Hinton, author of *The Outsiders*, after studying the novel. These letters were perhaps the strongest piece of writing from the class all year. Even though the class received only a generic response from the publisher, the letter hung on the wall for the entire year.

### **Conclusion**

As a result of writing and researching this topic, I have implemented new revision strategies such as changes in teacher feedback (more individual conferencing, less focus on marking all mechanical errors), the use of fat drafting strategies, and the introduction of peer evaluation. Will these changes produce stronger writing? While that remains to be seen, it is apparent that the status quo is not working with many students. Thus, if student writing is going to improve, it will not happen if teachers view writing as a product simply to be graded, given back, and forgotten. Student writing will, however, improve if teachers see the value in revision and understand that it needs to be taught as a series of strategies with the goal of empowering students in high school and beyond.

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## SCHOLARLY ARTICLE

### Professional Learning Communities: What They Are and How They Help Older Struggling Readers to Succeed

Shelley Zander

#### **Abstract**

*This article examines the use of professional learning communities in middle year classrooms, and how they can help struggling readers learn. The author discusses what literacy is and why it is an important skill. Five necessary components of effective reading programs are discussed. The concept of professional learning communities is explored and how they can possibly assist teachers in helping struggling readers to become successful.*

Literacy is a skill that constantly changes as society's needs change. The literacy skills of Canadians are falling below average, and schools are constantly looking for ways to improve student performance in this area. Five necessary components have been identified in effective reading programs, yet consistent instruction in these five areas still leaves some students struggling throughout their school years. Professional learning communities may be the solution. Professional learning communities are a shift in culture from teaching to learning. Collaborative teams work together to achieve a common goal. These communities focus on learning, creating a collaborative community, and achieving results. In this learning community, students are expected to achieve at higher levels and, if they do not, interventions are put into place to help them to succeed.

#### **Literacy**

Literacy is a common word heard daily in schools and education buildings around the world. It is the focus of many discussions, but what is literacy and why is it important? Literacy has been defined many ways and is constantly changing with society. According to the Programme for International Student Assessment (PISA), "Reading literacy is understanding, using and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential and to participate in society" (Statistics Canada, 2006, p. 46). Literacy involves the skills necessary to function in our society. In order to have a full understanding of texts, five processes are required: people must be able to retrieve the information, form a broad general understanding, develop an interpretation, reflect on and evaluate the content of the text, and reflect on and evaluate the form of a text. In the past, the focus of literacy was on reading and writing, but the definition has been extended to include listening, speaking, and even technology. The ultimate goal of literacy is to construct meaning, or comprehension.

The definition of literacy offered by the PISA states that literacy is a skill necessary for people "to participate in society" (Statistics Canada, 2006, p. 46). However, the literacy skills of many adults are below average. The Canadian Council on Learning (2007) revealed that "more than four in ten adults score below the level of literacy considered necessary to succeed in today's world" (p. 121). Thus, almost half of the people in Canada do not have the literacy skills necessary to be successful in today's world. According to Booth (2006), "about one-third of our population in North America lacks basic literacy skills to function successfully" (p. 9). Booth cited the soaring prison and homeless populations as evidence. However, beyond these very visible examples, many more "invisible illiterates" (Booth, p. 9) belong to that very large population that is lacking basic literacy skills. We need to prepare all students to function in the world, but this goal is not possible with low literacy skills.

Literacy is important for many reasons. According to the Canadian Council on Learning (2007), “the benefits of literacy include improved health, a higher quality of life, more access to training opportunities and an increased likelihood of holding better paying, more highly skilled jobs” (p. 121). Higher levels of literacy skills benefit a person for a lifetime. Competent readers “take charge of their learning, participate fully in society, and enhance their lives through the pursuit of new information and new experiences” (Salinger, 2003 p. 79). Higher levels of reading competency are important tools for individuals to include in their foundation of skills for lifelong learning.

Literacy skills are important for success in education and lifelong learning (Canadian Council for Learning, 2007, p. 83). People with low literacy rates are more likely to drop out of high school, whereas people with higher literacy rates are more likely to be successful in school. It is more probable that students who are successful in high school will pursue a post secondary education, which generally leads to a better paying job (Statistics Canada, 2006). Students who have high levels of proficiency in reading are more likely to accomplish their goals. Students need to perfect these reading skills at an early age in order to flourish later on in life. The 2006 National Longitudinal Survey of Children and Youth “showed that children aged eight or nine whose reading ability in school was better than their peers had significantly higher test scores in literacy a decade later when they had reached eighteen or nineteen” (Statistics Canada, 2006, p. 1). Students who learn these skills early will continue to improve, and are more likely to be successful in the future.

Children who do not obtain these basic literacy skills will not only struggle in school and increase their risk of dropping out of high school, but they are also more likely to engage in high-risk activities such as substance use and criminal activity. Maxwell and Teplova (2007) reported that “65% of social assistance recipients and 70% of offenders have low literacy skills” (p. 2). These setbacks in their early years will continue to follow them and impede their success as they get older. These students are also more likely to report a lower health status than other students who have obtained higher levels of literacy and are on a more successful path. Higher literacy levels have a direct effect on our society and on student successes or failures later on in life.

We must maintain higher levels of literacy, in order to ensure our country’s economic growth and standard of living (Canadian Council on Learning, 2007). We need contributing members of society who are involved in sustaining the accomplishments of our country. Green and Ridell (2007) stated that “without literacy, individuals cannot take a full and equal role in social and political discourse: they become less than equal members of society without the basic tools required to pursue their goals” (as cited in Statistics Canada, 2008, p. 1). In order for people to be contributing members of society, they must have basic literacy skills.

### **Necessary Components of Effective Reading Programs**

Focusing on reading strategies may assist in improving the literacy strategies of students who are struggling. For any student who is struggling with reading, certain strategies need to be in place no matter what program is being used. Campbell and Kelly (2008) listed these components as follows: “(1) phonics instruction, (2) listening comprehension, (3) reading comprehension, (4) tutoring opportunities, (5) extending reading from the classroom to home” (p. 5). The National Reading Panel Report (2000) emphasized the following five components: “phonemic awareness, phonics, fluency, vocabulary, and text comprehension” (as cited in Salinger, 2003, p. 80). Some themes reoccur in both reports. Whichever approach is decided upon, with respect to older struggling readers two things are clear: whatever has been used in the past is not working, and, whichever intervention is used, the purpose is to close the gap quickly. A brief description of each of these components follows.

Phonemic awareness is children’s ability “to understand that what they hear represents sequences of sounds” (Salinger, 2003, p. 80). Sentences are made up of individual words, and

these individual words can be broken down even further into individual sounds. New words can be created by blending these individual sounds together. Phonemic awareness is an integral part of effectively teaching students to read. Research has repeatedly shown that “students who lack phonemic awareness experience difficulty learning to read” (Salinger, 2003, p. 80). Students need to be able to take words apart and put them together using these sounds, in order to become efficient readers. Phonics is the second component necessary for reading acquisition, because it is “the relationship between the letters of written language and the sounds of spoken language” (Glasgow & Farrell, 2007, p. 9). Students may begin to decode new words by applying what they have learned about letter-sound connections.

Fluency is the third component necessary for reading achievement. As defined by Glasgow and Farrell (2007), fluency is “the capacity to read text accurately and quickly” (p. 10). Students who are fluent readers are able to read naturally and with expression. They concentrate on what the story is about and can identify most of the words in the text automatically. Students who have poor fluency are very choppy readers and often do not comprehend what they have read because they have been concentrating on decoding the words. Repeated readings can be helpful to struggling students if the passages are linked to instructional outcomes or if the students are given several examples of vocabulary that they will encounter (Roberts, Torgesen, Boardman & Scammacca, 2008, p. 65). In order for the reading to make sense, students must be able to read the text fluently.

The fourth component that is critical to early reading success is vocabulary. Vocabulary consists of the “words students must know in order to communicate effectively” (Glasgow & Farrell, 2007, p. 10). Students must build their vocabulary and have an interest in these words and their meanings. Being able to identify these words and their meanings is critical to being a successful reader. Proficient readers often have “sophisticated vocabularies, nurtured by reading a great deal across a wide variety of genres” (Roberts et al., 2008, p. 65). Two of the most effective strategies that Roberts et al. suggested for improving vocabulary skills are exposing students to many different genres and a lot of reading material.

The fifth and final component necessary for an effective reading program is comprehension. Comprehension is the students’ ability to understand and make sense of what they have read: “Good readers are active and purposeful users of text; they know how to extract meaning from what they read, connect what they read to what they know, and expand on the ideas presented in text” (Salinger, 2003, p. 81). Comprehension is the reason for reading and is, therefore, our ultimate goal. Many students have difficulty with comprehension because of weak fluency skills. Students may have to stop and sound out words repeatedly, which leaves them with no understanding of what they have read. Other students may have difficulty with comprehension because of their lack of background knowledge. They cannot make connections between what is happening in the text and their own real-life experiences. In order to be successful readers, students must comprehend what they are reading and expand their thinking.

Structural elements are just as important as the reading strategies in improving students’ literacy skills. If the environment is not conducive to learning or the support is not available, then it is very difficult for students to make any gains in their reading abilities. Therefore, it is imperative that the following structural supports are upheld: “extended time for literacy, professional development, ongoing summative assessment of programs and students, teacher teams, leadership and comprehensive and coordinated literacy program” (Biancarosa, 2005, p. 18). Struggling readers require extra instruction above and beyond their regular class instruction in literacy skills. This instruction requires a coordinated literacy program that provides extended time and the additional resources that students require to improve their literacy skills and reading strategies.

Other structural supports that are necessary to improve literacy instruction are professional development and ongoing summative assessment of programs and students. Teachers need to be educated on the best teaching practices to improve literacy skills. Summative assessments of student progress are especially important, in order to know how the students are doing, and

in what area they are struggling, so as to provide specific support. By participating in professional development on teaching strategies and providing ongoing summative assessments of programs and students, teachers can provide better support for students and their literacy needs.

Another important factor in providing effective literacy instruction is teacher teams. Teachers who collaborate with other teachers have another person with whom to discuss strategies. Combining the knowledge of several teachers gives teachers more strategies to assist their struggling readers. In the words of Dufour and Eaker (1998), “teachers increase the effectiveness of their schools when they collectively identify and work toward the results they desire, develop collaborative strategies to achieve their goals, and create systems to assess student learning” (p. 152). When they work in teams, teachers are more accountable for their instruction and the results of their instruction. Summative assessments can be compared between collaborating teachers. Wren (2003) asserted that “a team of strong teachers, working collaboratively, can help students who are only a few years behind to get on grade level within a school year” (p. 4). This is a simple strategy that is inexpensive and readily implemented. Simple collaboration of the teachers in a school, sharing their ideas and knowledge, could have struggling readers reading at grade level in one year.

### **Professional Learning Communities**

Professional learning communities (PLCs) have the characteristics necessary to help struggling readers. A PLC is a community of educators committed to working collaboratively in ongoing processes of collective inquiry and action research in order to achieve better results for the students they serve (DuFour, DuFour, Eaker, & Many, 2006). People who belong to a professional learning community determine what they want the students to learn, how they will know when each student has acquired the intended skills and knowledge, and most importantly, how they will respond when a student experiences difficulty with the intended skill or outcome.

Professional learning communities may also be considered a shift in culture. This shift from an old model to a new model has a focus on learning instead of teaching and is always characterized by a culture of collaboration (Eaker, DuFour, & DuFour, 2002). Shifting the school culture can be a huge undertaking, but is necessary if our goal is for all students to learn. According to Eaker et al., “changing the school culture so that it becomes a professional learning community involves many elements: collaboration, developing mission, vision, values, and goals, focusing on learning, leadership, focused school improvement plans, celebration and persistence” (p. 10). These elements are specific and focused in order to obtain the desired results. The three main ideas that demand the most attention in a professional learning community are focusing on learning, building a collaborative culture, and focusing on results (DuFour et al, 2006).

### **The Three Big Ideas of Professional Learning Communities**

The first big idea of a professional learning community is a focus on learning. Previously, the focus was on teaching. As indicated by the new model, teaching has not occurred if students have not learned. This shift from an emphasis from teaching to learning is given meaning by addressing three questions: (1) What do we expect students to learn? (2) How will we know what students have learned? (3) How will we respond to students who aren't learning? (Eaker et al., 2002). Ensuring that students learn is a priority for a professional learning community.

Expecting students to learn the entire curriculum is unfeasible. In a professional learning community, teacher teams get together to examine their learning outcomes and determine which outcomes are essential. Students are not expected to learn every outcome in the curriculum. With a focus on learning, teachers concentrate on making certain that students learn the predetermined outcomes, rather than merely covering all of the outcomes.

In a professional learning community, student learning is measured through regularly scheduled formative assessments. According to Ainsworth (2007), “the true value of assessment is its ability to help educators make accurate and timely inferences about student progress so that they can modify instruction accordingly” (p. 80). It is imperative to identify, as early as possible, any students who are having difficulty, so the school may provide appropriate interventions. Teacher teams determine what outcomes they will use to assess student learning, and they develop a similar test for all students. Through this equivalent assessment, teachers are able to determine where student learning is taking place and where it is not. Then the school team can determine where additional assistance is needed and what resources can be provided. Thus, formative assessments guide teachers in their planning for student learning.

A professional learning community needs to have a process in place for students who do not learn. The intention of the intervention is to provide support as early as possible, in order to assist the students in meeting their educational needs by reaching the required outcomes. These interventions must be in place early and they must be accessible to all students. DuFour, DuFour, Eaker and Karhanek (2004) explained that, “rather than placing responsibility for student learning solely on the back of the classroom teachers, the school will develop a collective response to assist teachers by providing extra time and support” (p. 35). This support may be available in various strategies, but the system of interventions is more successful when it is provided by supporting teams instead of individual teachers (Du Four et al., 2006). These systems of interventions should also be flexible so that students can access the help when it is needed. In a professional learning community, teacher teams not only identify which students are struggling, but they also provide interventions to guarantee that student learning occurs.

Building a collaborative culture is the second big idea of a professional learning community. Teachers are required to work together instead of remaining in isolation, because invitation to collaboration is ineffective. The success or failure of a professional learning community is dependent upon the ability of the people involved to make this cultural shift (DuFour et al., 2004). Developing a collaborative culture is critical to the success of the professional learning community and the success of the students’ learning (Eastwood & Louis, 1992).

Collaborative teams work interdependently towards a common goal: to focus instruction on less, but more meaningful, content. Collaborative teams determine the most significant outcomes that all students should learn, because “schools can guarantee all students have access to the same essential outcomes, only when the teachers in that school work together to clarify and commit to those outcomes” (DuFour et al., 2004, p. 174) Student learning outcomes are no longer specific to individual classrooms, as all students within that collaborative team learn the same essential outcomes.

Collaboration allows teachers to learn from one another, in order to improve the effectiveness of their instruction. Just the process of a collaborative curriculum motivates teachers to improve continually (DuFour & Eaker, 1998), as teachers become accountable for what and who they are teaching. A teacher will refocus on an outcome in which student performance was less than the goal that was established. The collaborative team will examine the results and consider the instruction that was provided. Mednick (2004) explained, “Teachers learn best from each other – from trial and error in the classroom, from talking to colleagues, from instructional coaches and leaders and from doing this over the course of their careers” (p. 11). It is through this ongoing collaboration that teachers have the opportunity to discuss and ultimately improve their instruction.

The third main idea of a professional learning community is the focus on results, because “school effectiveness should be assessed on the basis of results rather than intentions” (Eaker et al., 2002, p. 43). By collecting and tracking the data, teachers will have the information that they need to determine the effectiveness of the instruction for student learning. The assessments are developed together in their collaborative teams and are linked to their common essential outcomes. This focus on results facilitates the shift from a focus on teaching to a focus on learning (Dufour et al., 2004). Teachers are able to review their students’ results

and compare them with their collaborative team, in order to assess student learning. In a professional learning community, the data is collected and then, more importantly, is turned into useful and relevant information for staff (Dufour, 2004, p. 5).

A professional learning community has a system of supports for struggling students. Monitoring school results is ineffective and does little for student learning unless the school is prepared to give additional time and support to those students who continue to struggle (DuFour et al., 2004). The goal is to help all students learn at high levels. Therefore, it is important to monitor student learning regularly, and create procedures to ensure that struggling students receive the additional support in a school wide and systematic way. The professional learning community's response to struggling students must also be timely, based on intervention rather than remediation, and a requirement instead of an invitation (Dufour, 2004).

Interventions may be offered in many different ways and are specific to individual schools. The important issue with interventions is that they are in place and available to all students, whether in the form of a study hall, mentoring program, floating tutors, or a counsellor watch program. Dufour et al. (2004) referred to a pyramid of interventions available at Adlai Stevenson High School. Students who are experiencing difficulty begin at the bottom of this pyramid with an advisory or mentor program. Special education is the final intervention at the top of the pyramid. Each intervention is specific to each student's needs. However, all interventions are in place and accessible at all times, to all students.

The literature provides evidence of the success of professional learning communities. The All Things PLC website includes links to research articles that support the use of professional learning communities ("All Things PLC," n.d.). It also has a section that includes over a hundred examples of schools that are successful professional learning communities, with statistics regarding student achievement and improvement. Vescio, Ross, and Adams (2008) reviewed six studies of professional learning communities, and found that student learning improved in each case. For example, in three struggling elementary schools, student test scores on state achievement test rose from 50% to more than 75% (Strahan, 2003, as cited in Vescio et al., 2008, p. 14). In a study of a rural elementary school, students "improved from struggling – with slightly more than 50% performing at or above grade level – to rapidly improving with more than 80% of students meeting grade level standards" (Berry et al., 2005, as cited in Vescio et al., 2008, p. 14). DuFour (2007) listed nine different researchers who found that the concepts in a professional learning community represent the best practices available for meeting the needs of all students. There is definitive evidence in the literature that professional learning communities can have positive effects on student learning.

As with any program, issues can arise with using professional learning communities. The biggest issue is that professional learning communities require all teachers to be on board. It takes a lot of commitment for a professional learning community to be implemented in a school. It is not a program as much as it is a way of believing. If teachers do not believe in the idea of a professional learning community, then it will not be as successful.

### **Helping Older Struggling Students by Using the Three Big Ideas**

The focus on learning is the primary benefit of using a professional learning community with older struggling students. Often, there is no goal set for these students at the beginning of the year. Sometimes, the only goal is surviving the year. Teachers may have the idea that nothing else has worked so far, so why bother? The students' individual learning needs are not really taken into consideration. In a professional learning community, it is the collaborative team that plans for learning and, in the end, is responsible for that learning. When planning for student literacy needs, the outcomes should revolve around the five essential components (Campbell & Kelly, 2008; Salinger, 2003). Once teachers have determined which outcomes will be taught, they can begin to plan for instruction. In this environment of sharing results and teaching strategies, student learning is everyone's responsibility.

Frequent monitoring of each student's learning is an essential component in professional learning communities. The assessments reveal not only whether progress is being made, but also what areas need more attention. These interventions could include focused group instruction on specific reading strategies or specific one-on-one tutoring. When the assessments are done well, they do more than just check for student learning. They can also motivate and provide feedback to students, which help them to make improvements in their learning.

The second idea in a professional learning community that would benefit older struggling readers is a collaborative culture. Students who are struggling often feel like they are on their own, but in a collaborative culture, everyone works together and no one is left on his or her own. There are no pull-out programs. When time is set aside for study hall or intervention, no one is excluded. Students who are not having trouble with the particular concept participate in enrichment programs. Struggling readers belong to a group of other struggling readers who receive support specific to the area in which they are having difficulty, as determined by the assessment. In a professional learning community, the teachers refer to the students as "our" students instead of "my" students (Rentfro, 2007). Teachers take responsibility for all students in the school, not just the students in their own classrooms for that year.

Collaborating teachers improve instruction for students struggling with reading. Teachers who collaborate learn from each other. If a student is not learning the determined outcomes, the teachers collaborate to come up with a solution so the student may experience success. They examine their instruction and the student's results in order to plan for intervention.

Professional learning communities are data driven, and a focus on the results is the third main idea. In many schools, the resources stop when students are identified as having a reading difficulty. Classroom teachers are left to their own strategies to program for these students. In a professional learning community, however, teachers use data to plan strategies to meet each student's learning needs. The focus is on specific competencies or skills, not general ones (Hord & Sommers, 2008). The students are constantly monitored through a variety of assessments to determine whether progress is being made and in what areas the student needs more instruction.

## Conclusion

Learning for all students is what we want to accomplish in schools. Literacy is one of the most important skills that students need in order to be successful in society. Providing focused instruction, in the area the of reading acquisition that a student is having difficulty with, helps the student to gain as much as possible in as little time as feasible. Structural elements are also necessary for the improvement of reading skills, and it is these structural elements that are addressed by a professional learning community.

Professional learning communities focus on student learning, using collaboration and data to ensure that students are learning and, if they are not, the professional learning communities use the data to set up appropriate interventions. A professional learning community is reflective of what we would like to see in society: a collaborative group of people working together to achieve the best results possible. The three big ideas in a professional learning community are a focus on learning, building a collaborative culture, and achieving results. High literacy levels are necessary for success in society, and professional learning communities are the means to guarantee this success.

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### **About the Author**

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## SCHOLARLY ARTICLE

### Western Literacy and First Nations Education

Bridget Wright

#### Abstract

*Many First Nations people in Canada struggle in the acquisition of the skills associated with western literacy, that is, with the skills necessary to communicate through reading, writing, and numeracy in either English or French. Rooted in the history of colonial education, this problem continues to have a negative impact on the lives of individuals and communities. Its solution requires a change of attitudes, respect for Aboriginal knowledge and teachings, recognition of the importance of lifelong learning opportunities, academic research, political will and, most importantly, the real and continuing participation of all stakeholders.*

Western literacy in Canada is primarily concerned with the skills necessary to communicate through reading, writing, and numeracy in either of the two official languages, English and French. For many First Nations people, the acquisition of these skills is a persistent problem. Students and adults often demonstrate lower literacy levels than other groups in the general population, with long-term consequences for the quality of individual lives and the community as a whole. Low skill levels in western literacy continue to affect the lives of many First Nations people in Canada for a variety of reasons and, while some solutions have been suggested, the problem has not yet been effectively addressed.

There is considerable documented evidence of poor literacy skills and lower levels of educational achievement among Aboriginal adults and students. A recent survey of Canadians aged 16 years and over found that 71% of urban Aboriginal people in Manitoba and Saskatchewan scored below the minimum requirement for successful participation in society, compared to 41% in the non-Aboriginal population (Statistics Canada, 2008). Comparisons of Aboriginal and predominantly White military recruits in Canada revealed that the Aboriginal recruits performed less well on verbal tests of cognitive ability than the predominantly White group (Vanderpool & Catano, 2008). Vanderpool and Catano attributed these findings, in part, to differences in educational background. In 2001, 48% of Aboriginal people had attained less than a high school graduation diploma, compared to 31% of the general population (Helin, 2008, p. 210). With regard to post-secondary education, 4.4% of the Aboriginal population held a university degree, compared to 15.7% of the general population (Helin, p. 210). Recognition of a significant gap in achievement at all levels of education is widespread (Cherubini & Hodson, 2008), and Aboriginal children are perceived as lagging behind their peers in reading development (Hayward, Das, & Janzen, 2007). In my experience, Aboriginal children consistently perform at one or two grade levels lower than their actual grade on standardized tests. The evidence shows that the education system has not been successful in teaching literacy skills to Aboriginal students in the past, nor has the situation improved much in the present.

The effects of low literacy levels and low educational achievement can persist throughout life, affecting personal well-being as well as the well-being of the community, and ultimately the country. Poor education impacts negatively on self-esteem and employment opportunities, which can lead to apathy and welfare dependence (Helin, 2008). A low income can often mean poorer nutrition and relegation to sub-standard housing, which in turn can cause or exacerbate health problems. Poverty can lead to illegal ways of making money and, while this behaviour is obviously a choice, incarceration rates decline as education and employment situations improve (Statistics Canada, 2009). Childhood poverty, which was supposed to have been eradicated in

Canada by 2000, is actually increasing and is linked to low levels of parental literacy skills (Antone, Gamlin, & Provost-Turchetti, 2003). Parents with literacy challenges cannot help their children with schoolwork and may be reluctant to be involved in their schooling, priming the cycle to repeat itself. Given the cost of low literacy levels to the individual and to society in general, it is very surprising that more government attention is not given to this issue.

The causes of low literacy levels are deep rooted and complex, and have their origins in Canada's colonial past. Residential schools are gone now, but the full intergenerational impact of their legacy is frequently misunderstood. The purpose of the schools was to eradicate the Aboriginal identity of the students, and to create a permanent underclass of labourers and servants without equality or genuine education, and without cultural identity (Sabourin & Sabourin, 2004). If an underclass can be characterized by persistent poverty, unemployment, low education levels, poor health, high incarceration rates, addictions, and violence, situations that plague many Aboriginal people today, then the pernicious influence of residential schools persists into the present. Living with any or all of the factors listed above can jeopardize a child's chances of educational success. Serious family dysfunction, fetal alcohol spectrum disorder, and fetal drug effects can make successful learning all but impossible (Fournier & Crey, 1997). Although these situations stem from behaviours that involve choices on the part of the parents, they also have their roots in the intergenerational effects of residential schools and the subsequent normalization of dysfunctional behaviour (Tait, 2003). Even if a student does not suffer personally from any of these effects, the behaviour of his or her classmates who do will hinder his or her success in school. Canada's past colonial policies continue to cast a long shadow over the present.

Another cause of school failure to teach literacy skills is that Aboriginal youth find school itself to be irrelevant, and disconnected from their experience and culture (Cherubini & Hodson, 2008). In my experience, Canadian society in general often seems very reluctant to be honest with regard to its historical treatment of Aboriginal people. Perhaps this reluctance is because the lie goes to the very heart of the nation, its view of itself, and its prosperity. Land was taken under false pretences, using treaties that were not honoured, and claims issues continue to be largely ignored ("The Battle," 2009). Government policy with regard to residential schools was designed to eradicate Aboriginal people, culturally and politically, and those who survived were not given an equitable chance as farmers or as participants in the Canadian economy (Miller, n.d.). These truths and many more seem to have been conveniently erased from the collective memory of Canada, replaced by stereotypes that make blaming the victim easier. Until recently, this denial has been reflected in school curricula, allowing Canada's memory lapses to pass from one generation to the next (Battiste, n.d.). This lack of a "true history," and the consequent excluding and dishonouring of Aboriginal culture and experience, to say nothing of pervading colonial attitudes, may be part of the reason why school was, and still is, often seen by Aboriginal youth as irrelevant, unwelcoming, and alien.

There are several other possible reasons for low literacy levels and lack of school success. Getting an education may be seen as pointless, as in the past many doors have been firmly closed to Aboriginal people, resulting in a severe shortage of appropriate role models (Lindsay, 2003). Peer pressure and the perception of school as being a "White" institution, and therefore something to be resisted, is also a significant factor. I have heard the terms *apple* and *potato* used derogatively to describe students who are seen as "un-Indian" – red on the outside and white on the inside – because they are striving for success on the White man's terms by succeeding in school. In addition, political will seems severely lacking in the area of improving Aboriginal education results. Lifelong learning initiatives such as pre-school programs, family literacy, and adult education are given only intermittent support, and the increasing inequity of teacher pay is causing a two-tier education system to develop in Manitoba, as many band-operated schools fall further and further behind the pay scales of school divisions (Assembly of First Nations, 2005). Some schools with high numbers of special needs students, including students with literacy challenges, have great difficulty in providing adequate services due to

funding shortfalls. In my experience, services to Aboriginal students are seriously lacking, which has had a very negative impact on their chances of developing the literacy skills required to be successful in school.

Clearly, some major changes are necessary to support successful literacy development for First Nations people. In theory, there appears to be widespread general agreement with the belief that school curricula must change and become more inclusive and honouring of First Nations historical experience, culture, and values, if Aboriginal students are to become more successful (Cherubini & Hodson, 2008; Reeves, 2009). Some writers go much further, advocating for the distinct concept of Aboriginal literacy, defined as a holistic idea that is much more than reading, writing, and numeracy (Antone et al., 2003). Aboriginal literacy focuses on the learner as a whole person, and involves many different traditional ways of knowing: cultural knowledge, Aboriginal language, oral literacy, communicating through art and music, conventional western literacy, technological skills, and spiritual knowledge (Woman, 2005). It is not so much a skill set as a way of life. These holistic values have been applied with marked success in adult literacy programs (Woman), and have been argued as essential to the success and applicability of Aboriginal-specific early childhood education (Greenwood, De Leeuw, & Fraser, 2007). They have also played a significant role in successful family literacy programs designed for Aboriginal communities (Timmons, Walton, O'Keefe, & Wagner, 2008). Aboriginal literacy programs combine western literacy skill sets with First Nations teachings, and they therefore require the involvement of the First Nations community.

Not all of those involved in teaching Aboriginal children agree with the concept of a culturally appropriate curriculum for Aboriginal students, particularly if this programming involves segregation of the students, which it often does in the mainstream school system (Helin, 2008). The Grandview/ʔuuquinak'uu Elementary School in East Vancouver, British Columbia, radically improved the performance of all of its students, 50% of whom were Aboriginal, by desegregating classes, focusing on academics, and insisting on high expectations for every student (Helin). Subsequently, the school's ranking in the province-wide Foundation Skills Assessment went from the bottom to the top. The COGENT program is another example of marked improvement in literacy skills due to strong, focused, instructional strategies (Hayward, et al., 2007). The COGENT program proved successful in improving the reading skills of remedial Aboriginal students, by integrating cognitive processing strategies with direct instruction in prerequisite reading skills. It is my own experience that the guided reading method of reading instruction, if practised every day in small supervised groups, is a very effective way to improve literacy skills. Investigation into whether Aboriginal children have a distinct cognitive style seems to suggest that this is not the case (Das, Janzen, & Georgiou, 2007). There may be no reason that focused literacy instruction methods that work in other settings cannot be successfully used with Aboriginal students, and no justification for segregating students into Aboriginal and non-Aboriginal groups.

Government also needs to recognize the crucial importance, and the social and financial significance, of proactive funding and support of literacy initiatives. Children with special needs of all kinds require access to appropriate educational supports that will help them to fulfil their potential. Lifelong learning support systems, such as early childhood education, family literacy programs, and adult education facilities, must be recognized as having a very important role to play in improving literacy levels, and be funded accordingly. The fundamental solution to poverty is education (Helin 2008), and proactive problem solving on the part of government may ultimately save much of the money currently spent on welfare, corrections, and health care.

Putting theories into viable practice is the hardest part of real change, and will not happen without the meaningful and consistent involvement of all stakeholders (Cherubini & Hodson, 2008). Manitoba Education, Citizenship and Youth (2005) has taken definite steps towards the goal of making the curriculum more inclusive and honouring of First Nations, particularly in the development of its new social studies curriculum. It is to be hoped that this type of leadership will continue, leading to greater understanding and eventually changing the attitudes of future

generations. Another way to encourage inclusion and relevance is to continue to train and hire Aboriginal teachers, and to ensure that their training equips them to work in mainstream as well as band-operated schools. The presence of Aboriginal teachers will give positive role models of Aboriginal people to both mainstream and Aboriginal students, and it will increase the comfort level of Aboriginal students and their parents within the public school system. The concept of Aboriginal literacy will not be easy to apply to the existing school system, though perhaps, as Western values continue to move slowly towards Aboriginal teachings, it may one day become a reality. Some aspects of a holistic vision for education, however, are already familiar in mainstream schools, for example, the recognition of different learning styles (Woman, 2005). Other holistic practices that are recognized as being preferred by Aboriginal students are collaborative group work, a visual style of representing information, and a more reflective style in processing information (Das, et al., 2007). All of these represent current best teaching practices in mainstream schools, so perhaps the concept of holistic literacy is not as far away as it seems, and these existing practices can be built on and developed with the leadership and involvement of all stakeholders, particularly the Aboriginal community.

Because of their degree of autonomy, and because they are usually situated within Aboriginal communities, band-operated schools may be considered to have more opportunity to develop holistic and culturally appropriate programming. However, deficits in funding, the difficulties inherent in producing appropriate community or culturally based materials, and the requirements of the regular curricula make these initiatives more complicated than they may at first appear. Nevertheless, band-operated schools have significant opportunities to encourage student and community involvement, and to provide positive role models within the community, and some do develop their own unique programs. For example, Peguis Central School in Manitoba offers a required course in either Aboriginal Law or Aboriginal Studies, and one of the community's goals for the school is that senior students should understand and defend Aboriginal rights (Simard & Anderson, 2004). Band-operated schools play a major role in giving Aboriginal people control over the education of their children.

The First Nations students who went to the very first residential schools to learn the skills of Western literacy were secure in their own language and culture. The first schools did not outlaw native languages, and the first students went to residential schools with the blessing of their families, in order to supplement their existing skills with the new skills necessary for survival alongside Europeans (Pelletier, 2001). Wasacase (2004) reported that the residential school students did so well that their success was regarded as a problem by the bureaucrats in Ottawa, who did not intend to have Aboriginal people who were better educated than the Euro-Canadians. Ottawa then introduced the half-day system, whereby students worked half of each day to make the schools less reliant on government funding (Wasacase). Clearly, there is nothing so inherently difficult about Western literacy that Aboriginal people cannot master it; they have not failed, but the system has failed them (Woman, 2005). Fixing our current Canadian system requires a radical change in attitudes that will engender different curricula based on truth, on inclusive and respectful attitudes, and on respect for the value of holistic teaching and Aboriginal knowledge. It requires effective, researched, literacy programs that have high expectations and result in academic achievement. It demands the attention and meaningful support of the government, the real involvement of all stakeholders, including Aboriginal community members and educators, and the funding of early childhood education, family literacy programs, and adult education facilities. Western literacy has become an essential skill in today's society, and First Nations children cannot grow into their full potential or take their true place in society without it.

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## OPINION PAPER

### The Need for Change in Aboriginal Education

Angela Voutier

In spite of collaborative efforts of stakeholders to improve the graduation rates and overall educational success for Aboriginal learners, as a group they remain one of the most pressing concerns of school divisions today, especially in western Canada. On Manitoba reserves in 2001, for example, 70% of young people between the ages of 20 and 24 years had not completed a high school education (Argan, 2006). The graduation rate of Aboriginal students attending public schools is even lower than that of students attending school in their home communities (Richards & Vining, 2004). The lack of success experienced by the current generation of Aboriginal children is partly the result of a colonial system and government educational policies that were meant to marginalize and assimilate an entire group of people (Bennett, 2007). This much damage is hard to repair, and change is slow. There are, however, actions that can be taken to improve the educational experiences for Aboriginal people. The basis for all of these actions is government policy change, which is a slow, tedious process, but other measures are being taken in the meantime. School enrichment and magnet schools are two proven approaches to providing effective educational programming for Aboriginal students.

School enrichment, as presented by Richards and Vining (2004), means “providing additional resources to improve the performance of schools with proportionately large Aboriginal student populations” (p. 22). The budget increases can be used to engage Elders and to hire teachers with experience with Aboriginal learners, both of which will help to meet the needs of Aboriginal students.

Mystery Lake School Division established Wapanohk Community School in Thompson, Manitoba, to provide specialized educational programming for Aboriginal students. Funds have also been provided by the provincial department of education to employ a community school connector and to support other programs in place. These efforts have created success in many areas for this enrichment school, especially in the areas of governance, school programs, community involvement, and staff retention. Such enrichment could easily make a school appealing to Aboriginal students who need a place where they feel comfortable and experience success.

Another option suggested by Richards and Vining (2004) is the magnet school. In this by-product of school enrichment, one or more schools within a school division concentrate on Aboriginal cultural studies. Any student who lives within the within the school district or division may attend these schools regardless of race, and parents and students then have a choice of schools to meet their educational needs. More flexibility in catchment area boundaries, and generous programs of school enrichment, would help to focus resources, programming, and staff to those schools specializing in Aboriginal education, rather than spreading them too thinly across an entire division with everyone getting some, but not enough, financial support. Even the name *magnet school* sounds positive in attracting the Aboriginal students and encouraging them to succeed.

Showing consideration for identified concerns from the Aboriginal community is crucial for rebuilding relationships in education. It is an important step in improving educational programming and improving the relationships of schools with the communities that they serve. Parents and community members see themselves as being internal to the school system, yet “regularly missing for this group are opportunities to enter the school, making differences in their own lives and the lives of their communities” (Redwing Saunders, 2007, p.1034). If parental and community involvement is seen as a problem, then the educational system must be ready to

take their concerns seriously and act upon them. School enrichment and magnet schools provide evidence that this is being done.

School landscape or environment is of extreme importance to the success of students, as reported through the experiences of staff and students of four schools in Manitoba (Van Ingen & Halas, 2006). It is important for students to be able to identify with their surroundings at school and be able to see themselves as part of the school landscape, in order for them to be successful. A large percentage of Aboriginal students entering high school have a difficult time transitioning to a large, diverse institution such as an urban high school. By encountering school landscapes that promote the cultural and identity of the students, Aboriginal students will feel valued and experience more success. School enrichment and magnet schools help to provide this landscape, and give students a place with which to connect.

There are more successful Aboriginal people now than ever before. Essential lawyers, doctors, teachers, and trades people have successfully bridged the gap and become role models for others in their communities (Mendelson, 2006). Sadly, though, “the Aboriginal population continues to suffer from higher unemployment, lower levels of education, and below average incomes” (Mendelson, p. 4) in comparison to the rest of society. These problems have an increasing impact, not only on Aboriginal communities but also on our overall societal well being, as the Aboriginal population continues to grow. Everyone loses when Aboriginal students fail to succeed. School enrichment and magnet schools are components of effective educational programming that should be considered by all shareholders, in order to ensure the success of Aboriginal students.

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## OPINION PAPER

### Student Personal Technology: Great Tools Too Great for Today's Schools?

David Nutbean

The relevance of schools today is often questioned by students, not necessarily because of what schools have done, but rather what schools have not done to address the incredible changes in technology all around us. In a short span of one generation, today's students are more connected to technology than any other before them. The use of cell phones and the internet have given rise to the "hyperconnected" generation of "digital natives." Facebook has received a lot of bad publicity because of privacy fears. Similarly, cell phones have a bad reputation in schools as being a time waster and a distraction. However, they are also excellent communication tools. As teachers, we need to shift our thinking to make students' communication tools our instructional tools if we want to be relevant to today's student.

For many students, the hallowed halls of academia seem hollow and stark, with very little to stimulate their generation. Whereas the exposure of their teachers to new technology was slow and infrequent, today's students are persistently exposed to new technology and use it daily to organize, entertain, and enrich their lives. Many students describe the experience of walking into school each morning as "powering down" as they enter the school building, having to shut off the devices that connect them to their world. "Filter and ban" are common responses that schools have toward the technology that students use.

Modern applications are blurring the lines between the internet and cell phones, allowing students to be "always on" and always connected to their social network. Their devices and internet content are becoming interconnected, allowing them to maintain their presence "24/7/365." Students can use their cell phones to shoot video from a party and immediately upload it to their Facebook, or YouTube, or send it to other cell phones in real time. This convergence means that the World Wide Web also means "Whatever, Wherever, Whenever."

Many parents and teachers look at such connectedness in frightened awe mostly because, as "digital immigrants," adults tend to find this world strange and unfamiliar. Are schools and teachers that are unprepared to use current technology qualified to prepare students for the future? Teachers need to provide an environment that includes students' tools and the way they live because, unless we learn the ways of these digital natives, we will not be relevant to them.

Teachers and schools have concentrated on the negatives of cell phone use with reasonable legitimacy to back up their claims. Teachers have noticed that cell phones waste time when they are used inappropriately, and that students are easily distracted by their use. In addition, cell phones can be used for more nefarious purposes such as photographing or video recording people without their knowledge.

Because of the repercussions of such usage, a common response of schools is to ban cell phone use entirely. However, there are many ways that cell phones could be used for the classroom: as a public speaking alternative or for recording and reciting poetry (via voicemail), collaborating with science partners in a field study, using text messaging as a reporting medium, using the camera feature to record events for playback to the class, and many others. The possibilities for use are limited only by the imagination of the teacher.

Inroads for high schools to accept student cell phone usage as part of teaching seem unlikely, because teachers often feel that students are not mature enough to handle their proper use. This situation is unfortunate, since most parents give their sons/daughters cell phones knowing they are powerful communication tools. The perceived and real lack of appropriate use of technology by few has led to an outright ban on cell phone usage for all. Cell phones, for example, are usually just used in the wrong context, which usually results in a breach of school

rules. Proper contextualization of cell phone usage should be negotiated, just as cell phone usage in cars is allowed if a hands-free device is employed.

New technology is developing at a rate unprecedented in human history. Children today, for the most part, have access to vast resources of information and tools to enhance their lives. Schools and teachers must recognize that these changed students are here, and their minds are trained to work at "twitch speed." The Web and cell phones have allowed students to be always connected to their world, and even though technology can be used inappropriately, as educators it should be our role to train students on appropriate usage.

To be fair to schools, there have been tremendous efforts and successes in bringing technology into the classroom. Smartboards and other interactive devices and software have greatly improved engagement in many classrooms. LwICT (Literacy with Information and Communication Technology) is an implementation of technology integration into pedagogy that is a work in progress. Access to computers and the internet has increased dramatically. Many divisions aspire to the goal of one-to-one computer access, that is, access to a computer and the internet for each student at all times in school. This ubiquitous computing model has tremendous potential and implications for education. Unfortunately, many students already bring their ubiquitous computers to school, which they promptly have to shut off – their cell phones usually, but may also include their PSP, iPod Touch, or other connected device.

The fact is, schools cannot catch up to technology. The planned obsolescence of technology means that, as schools slowly implement their five-year plans, the target moves. As smartphones become the norm and students bring more amazing devices to schools, schools cannot remain a fortress of solitude, allowing only their version of technology. A hybrid approach to classroom technology needs to be considered and negotiated, as students already have valuable educational tools that they can use wherever and whenever to do whatever. Always-on access to information and computers allows teachers to be individual student guides to learning, rather than bureaucratic gatekeepers of knowledge.

Student personal technology should be accepted by the school as an equal partner in students' lives. Students shouldn't have to feel a sense of loss as we give them an education. Students should be empowered to acquire their own education in a context that includes their technology. It is a hand-in-hand approach, which quite literally can mean using the computing device that they have right in their hands.

### ***About the Author***

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