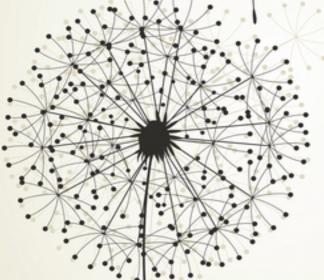# Envisioning
New Technologies
in Teacher Practice

Moving Forward,
Circling Back using a
Teacher Action Research Approach

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INTRODUCTION

…first gestures contain everything; they are a kind of map

Anne Michaels, The Winter Vault

THIS book is about teachers and the changes that occur as teachers learn to teach with new technologies. Computers have become a ubiquitous presence in society—and not only computers, but an intricate and integrated network of new electronic technologies (digital cameras, cell phones, iPods, iPads, to name but a few). In becoming part of our social, economic, and political landscape, electronic technologies have become integral to educational formation, primarily outside of schools, in homes, libraries, community centers, on the street, in cafes; in short, anywhere where new technologies can be accessed or shared. The Internet has played a central role in propelling these social and economic changes. While teaching using new technologies may be expected, it is far from being realized. Research repeatedly shows that new technologies do not insert themselves in schools.

Our book explores questions of how six teachers took up the challenge to integrate new technologies into their teaching over a two-year period. How did they respond to changing literacies and learn new practices? In the process, what was carried forward and what was left behind? The book interweaves stories about how the teachers became attached to changing literacies and in the process, committed to new teacher identities. We also trace the teachers' learning within the collaborative social structure, which attempted to create conditions propitious for teacher change while sowing seeds for future professional development.

By 2012, four two-year cohorts of teachers will have passed through Learning with Laptops (LWL), a professional development initiative offered at a "rurban" school board south of Montreal, Quebec. "Rurban" is the term used by the school board to refer to the mix of students from rural and suburban areas covered by its jurisdiction. Although the school district is small and dispersed over a large geographical area, and has limited resources at its disposal when com-

pared with larger urban boards, it sought the meaningful and sustained integration of new technologies within classrooms through developing a professional development model based on applying the adage "teachers first" (Lankshear & Snyder, 2000, p. 61). Between 2004 and 2011, nine of the board's twelve schools (elementary and secondary) will have participated in LWL: in all, 25 teachers and six principals. This book centers on one cohort (2006–08) of the LWL teachers who moved from print-based to electronic practices within a university–school-board research partnership called "Learning with Laptops/Changing Literacies, Changing Formations" (hereafter: LWL-CLCF).

Our research has suggested that sustained use of new technologies is tied to teachers' re-envisioning their social identities (Strong-Wilson, 2008b; Strong-Wilson, Harju, & Mongrain, 2008); this finding is consistent with new literacies research, which sees new technologies as grounded in the formation of social identities rather than as an add-on (Coiro, Knobel, Lankshear, & Leu, 2008). The more involved their identities became in teaching through new technologies, the more teachers became attached and committed to changing literacies (Strong-Wilson, 2008b). Based on this, we conclude that to take hold, new technologies need to become a sustained, meaningful part of how teachers see and imagine themselves. Teachers need to perceive new technologies as "convivial." As Ivan Illich (1973) once said, convivial tools "are those which give each person who uses them the greatest opportunity to enrich the environment with the fruits of his or her vision" (p. 21).

Relatively few scholarly studies have looked at the problem of technology integration from the point of view of story, storied formation being a primary way in which social identities are constructed. Storied formation refers to the process by which meaning is made by turning events into stories as well as how we draw on stories to construct meaning (Eakin, 1999, 2008; Miller, Potts, Fung, Hoogstra, & Mintz, 1990). The stories we come back to are the ones told to us (at bedtime, in libraries, at school), the ones we had to read and those we chose ourselves, as well as the ones we narrate based on our life ex-

periences and that become part of a storied repertoire (Bruner, 2003; Greenway, 2005; Randall & McKim, 2008; Strong-Wilson, 2008a; Tatar, 2009). Through the stories a teacher tells about teaching as well as those selected for use in teaching, the teacher "stories" his/her practice (Clandinin, 1985; Grumet, 1988, 1991; McEwan & Egan, 1995). Building on Henry Giroux (1988), the teacher is an "intellectual" (Mellouki & Gauthier, 2001), especially a "storied intellectual" rooted in the classroom stories that he or she tells and retells through how he or she teaches the curriculum (Strong-Wilson, 2008a). Drawing on notions of "remediation" and "turning points," a key question that the book takes up is the relationship between memory and identity: how teachers respond to change within their lives by how they story themselves and their practice. We consider evidence of teacher resistance to change through the remediation of stories as well as how teachers create "agentive selves" through digital storytelling (Hull & Katz, 2006, p. 47).

The research also sought to develop alternative approaches to professional development with respect to new technologies. The legacy of teachers and technology is marked by some successes (at the teacher, school, district, and state levels), but by and large, by stories of interruptions and failures. This is due in part to a failure to think through "implementation," a problem that has plagued curriculum reform (Aoki, 2005b; Schwab, 1969; Stenhouse, 2008), including with new technologies. The book addresses how teacher change requires meaningful opportunities for professional development; that "teacher capacity" is built over time; and that schools and universities need to seek innovative ways to ensure that the impact of teacher learning and change will continue to reverberate once the research has officially ended, so that, to borrow a metaphor from John Willinsky (2006), the lights are kept on.

Terminology

Throughout the book, "new technologies" is understood from the teacher's perspective as meaning tools having profound implications for teachers' practices, at a time when teachers are conscious of liter-

acy/ies as moving into a "digital age" (Bawden, 2008, p. 18). The plural term draws attention, first and foremost, to the laptops themselves, but also to supporting technological tools (e.g., SMART Boards, LCD projectors, digital cameras, digital voice recorders) as well as accompanying software and freeware (e.g., GarageBand, VoiceThread), sustained use of which resulted in importing social practices (e.g., blogging, podcasting, digital storytelling) tied to "new literacies" (Lankshear & Knobel, 2003, 2006). At times, other terms may occur: ICT [Information Communication Technologies] or simply, technology.

The Research Site and Participants

The six teachers who were part of the 2006–08 cohort applied to LWL from three schools.[1] One team (Pauline, Murray) taught in secondary school; two teams (Arden and Enza; Genevieve and Colleen) taught in elementary school.[2] Though at different levels of the system, teachers taught groups close in age: Grade 7 (high school); Grades 5 and 6 (elementary school). The teams were organized as follows: an English teacher and a Science/Morals teacher (for the secondary school); English and French teacher teams at the elementary level. School teacher teams taught the same group of students.

The New Frontiers School Board (NFSB) serves nine communities.[3] The four elementary teachers taught in the largest community

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1   Originally seven teachers were involved, but after one year the French teacher in the secondary school team (Christiane) was re-assigned; her replacement was expected to fill Christiane's LWL shoes, but she voluntarily withdrew from the project in 2008.

2   Teachers' names are pseudonyms. Four LWL teachers and one LWL principal use their real names in writing as co-authors of chapter 8. The only individual whose real name is used throughout (with his permission) is the LWL coordinator, Bob Thomas, who is also a co-author on chapter 2.

3   Ethical permission was granted by the school board's director general to use the real name of the board, New Frontiers School Board, as well as the Learning with Laptops (LWL) program that has become its moniker.

(population: 43,000; Statistics Canada, 2006), in which most families had a combined income of $60,000 or more. The community is predominantly white. Two teachers taught in a large comprehensive high school that served a rural population.

The landscape served by the New Frontiers School Board is a mixture of rural fields dotted by suburban communities, referred to as the Valley. Adjoining is Indigenous territory; most Indigenous students attend schools on reserve, but many also attend elementary and secondary schools in the Valley's main suburban centre. While farming once provided the staple income for families in the Valley, many now commute to jobs located over the bridge in Montreal. Post-secondary students attend training colleges in the Valley or commute to colleges and universities on the island of Montreal. Five of the six teachers grew up in the countryside or in communities populating the Valley. They attended college and university in Montreal then returned to the Valley to teach. Four have lived in the Valley all of their lives. One commutes from a Montreal suburb to the rural secondary school.

Those in the 2006–08 LWL cohort who grew up outside the Valley were drawn to community and countryside. For example, Enza enjoyed easy access to grandparents, aunts, uncles, and cousins in an Italian community in Montreal North in the 1960s and 1970s; all of the houses' backyards were connected. Bob Thomas (LWL's coordinator) has vivid childhood memories of standing on a crate to serve customers in downtown Montreal in a local Greek-owned *depanneur* (small grocery store), which was the family business. After he began working for NFSB, he bought a house and land in one of the more rural parts of the Valley, and is known by the teachers as "Farmer Bob."

Portrait of the LWL Teacher

The LWL teacher is a teacher with questions. The first and most obvious question is: How do I integrate new technologies effectively into my practice? This is a disguised version of a deeper question of

All school names are pseudonyms in order to protect the identities of teachers and their students.