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Examining Literate Lives as Students Engage With Multiple Literacies

Our conception of the new literacies (those associated with digital technologies and multimodal representations) is grounded in an understanding of multiple literacies as social practices. Based on our observations of students in supportive classroom environments, individuals and groups afforded opportunity to engage as teams with digital literacies learn an array of new ways to explore and share ideas. These individuals are able to contribute together and separately to enhanced explorations of their worlds with new and dynamic genres that afford an image-enhanced, complex layering of concepts, as well as the means for rich explorations, exchanges of ideas, and problem-solving. Depending upon how these new literacies

are introduced/situated, they can make a significant contribution to shifts in the lives of individuals and groups politically, economically, and socially. The paradox is that schools may not support the transition of these new literacies to school settings in ways consistent with their potential.

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FOR THE PAST 25 YEARS, we have heard a great deal about the need to engage students with digital literacies beginning with programming, data analysis, word processing, desktop publishing, hypertext, Web-based possibilities, communication technologies, digital videos, and their various interconnections. In North America, today's students have grown up with a variety of multimodal literacies, including new genres of texts that are multilayered and image rich, as well as various forms of text messaging, blogging, podcasting, gaming, and Web environments for purposes of research, documentation, analysis, and presentation. Their ability to navigate across, among, and within the complex array of past and

emerging literacies has become a reality rather than a hope and for many has become core rather than supplemental.

Meanwhile, many educators have struggled with, or been uncertain what to do with, the ascendancy of these literacies. Some of the uncertainty stems from their own knowledge of and use of digital literacies which may pale against that of the students; some of the uncertainty arises from the failure to have understandings or guidelines on the interface between these new literacies and curriculum; some of the uncertainty stems from problems of access to the hardware, software, and support systems needed to ensure a seamless engagement with the tools that they might desire to access or have their students access, as might be needed. Some of the uncertainty could likely be alleviated by professional development.

Contributing to the uncertainty are competing messages. With the increased emphasis on accountability, many teachers have retreated to teaching what is testable. And, what is testable seems tied to traditional teaching objectives rather than the new literacies and multimodal and media based learning technologies. To engage students with these new literacies may not be considered core. In some situations, these digital literacies may involve the purview of a separate subject area and be restricted to laboratories rather than distributed across classrooms. Often, these new literacies are framed as discrete skills such as programming, Internet access, or presentation skills, rather than as learning tools with complex palates of possibilities for students to access in a myriad of ways. It is as if learning with technology is being perceived as *learning the technology* rather than using a range of multimodal literacy tools (supported by these technologies) in the pursuit of learning.

Added to the uncertainty is the lack of sustained study of these literacies from the perspective of social practice. Some have questioned whether or not learning to use technologies does enhance learning. Indeed, some have claimed that they might be perpetuating rote learning or learning which is more gloss than substance, more product driven than process oriented, and more isolating than collaborative. And, for some, digital technologies may be seen as contributing to a wide

range of problems, including inequities in educational access, uncontrolled access to questionable material, or even an imperialistic form of globalization and subjugation.

When we use the term *multiple literacies* in this article, we use it in its broadest application; in order to capture all of its rich complexities. In classrooms, when digital literacies and other multiple literacies (Street, 2003) intersect with multiple literacies as defined by social practices, this results in a myriad of ways to communicate our realities. For ourselves, we are both optimistic and pessimistic about the advancement of multimodal literacies in schools. After over 10 years of study of learning technologies in a unique site for the advancement of these new and emerging literacies in schools, we are convinced that the new literacies and their multimodal possibilities contribute to learning opportunities in ways that support complex and collaborative engagement with problems and issues, projects and topics, process and product, inquiry and discussion. For some they offer the possibility of empowerment (as opposed to disenfranchisement). At the same time, we find ourselves pessimistic when we see the types of resistance—sometimes tied to entrenched practices; sometimes stemming from naivete, uncertainty, or issues of support; and at other times foiled by systemic issues within schools and districts.

In many educational institutions, the focus on learning literacy tends to be on the technical rather than the functional. For instance, with the advent of digital literacies, you will often see courses and workshops offered in teaching the technical aspects of new software—for example, how to create blogs or place a course on the Web. On a more limited basis, you might find courses and workshops that focus on the uses of these new literacies and how they might be integrated into teaching and learning, with limited links to how they might be used for different purposes and in conjunction with other tools. Studies of these literacies often focus on the technical aspects as ends unto themselves.

The discourse in which we are engaged was spurred on by new literacy studies examining literacy as social practice and the various discussions which have followed including Luke (2005), the

New London Group (1996), and Street (2003). All of this dialogue urges educators to pursue views of literacy that are informed by the rapidly changing nature of literacies within a globalized world with these new multimodal tools.

On the practical side, our understandings are shaped by our observations of the literacy lives of individuals in a technology-rich classroom who became sophisticated in their engagement with multimodal digital literacy uses. The site of our study¹ was unique, for it afforded an opportunity to examine students engaged with multiple literacies throughout their secondary education. Furthermore, the context itself supported the development of multiple literacies, as understood by the New London Group (Education Queensland, 2000a, 2000b; International Reading Association, 2001; International Society for Technology in Education, 2002; Pahl & Rowsell, 2005). The classrooms were supported by state-of-the-art multimedia technologies that were integrated into the curriculum involving cross-disciplinary and community-based inquiries.

Multiple Literacies as Enhanced or New Ways of Knowing: The Nature of the Genre

Perhaps the single most significant distinction of a school that has become a site for multiliteracies is that the students have a repertoire of literacy practices at their disposal. The students were given the opportunity to explore images, soundtracks, and text interconnected in very complex, multifaceted ways using a plethora of image, sound, and print. As students pursued various projects with these literacies, their sophistication at utilizing them developed. Accordingly, we witnessed shifts in the possibilities that students envisioned for how texts might be used for communicating, discovering, reflecting, and critiquing.

Students would approach projects by exploring a range of media and genres. This often resulted in research designs that were multidimensional not only in terms of the layout, but also in terms of the depth of the perspectives represented. For instance, as students engaged in a study on the

Olympia of Ancient Greece, not only did they incorporate text and images from their research on the traditional games but they also pursued images of variations of some of the events such as Greco-Roman wrestling, including video clips from modern day Olympics and interviews of the Greco-Roman wrestling coach at the local university. Other projects involved cross-curricular explorations such as developing robots or creating a presentation connected to a visiting exhibit from China's Ming Dynasty. What these projects had in common was that they involved the enlistment of various technologies in a problem-solving and inquiry-driven fashion.

Certainly there were differences in terms of variations in expertise, motivation, ongoing goals, exposure, interests, and the types of expertise that developed. The ways in which individuals and groups responded over time varied tremendously. For example, one student might push the limits of hypertext, another student might mix a little knowledge of PowerPoint and digital video, and yet another may work in partnership with peers who provide the expertise that they need. These developments did not occur in uniform ways; in fact, tensions emerged as students with varying abilities followed different routes and different ambitions. The teachers were changing and sometimes their aspirations for the students did not fit with the potential for these new ways of knowing. For example, a teacher might be excited about the potential for using PowerPoint in a certain project while the student was more interested in creating a digital video to present her ideas.

Sometimes media predisposes students to engagements that are secondary rather than primary, and to pursuits of topics that are summary-like. This was not what occurred in this context. The utilized literacies and the teaching goals afforded generative, rather than tightly constrained and predictive, pursuits. Indeed, the media prompted greater use of resources, as well as more in-depth pursuit of topics. The media appeared to prompt a consideration for the concrete and an appreciation of the perspectives that different media provide. It also spurred an interest in audience and authorship, especially in the context of presentations and products that were developed. Students were keen

to produce compositions that were fresh and appealing, in contrast to what standard print-based text could achieve. The graphic dimensions afforded the students a means of developing and testing theories at the same time as it became a way to pilot and assess the potential of certain technologies for such purposes.

Teachers struggled with the shift away from canned and preset lesson plans to emerging possibilities; from views of knowledge as neat and coherent to views of knowledge as case-like and suggested; from learning activities which were asocial and uniform to classrooms where collaboration and differential examinations of topics were cornerstones. Perhaps, for us, one of the most salient characteristics of these teachers was their treatment of media. Oftentimes the class focused on a discussion of the worth of the different media or symbolizations and created what Forman (1998) has described as "the type of constructive conflict we deem to be the power of this multisymbolic approach to education" (p. 187).

Idea Mapping in Multiliteracy Rich Contexts

Our exploration of the literacy lives of the students involved considerable time observing students and teachers engaged in rich literacy tasks. Three overriding orientations informed our analyses. First, consistent with studies of the pursuit of complex situated knowledge (Spiro, Coulson, Feltovich, & Anderson, 2004), we explored how the students engaged in exploring different topics and issues. Second, given the multimedia and multilayered nature of the palates that students were enlisting, we were keen to examine the multimodal nature of genres from a semiotic perspective (Kress & Van Leeuwen, 1996; Lemke, 1998). In particular, we noticed shifts in how students' knowledge might be represented via multilayered and dynamic graphic interfaces along with an increase in experimentation into how ideas might be accessed and ways in which topics might be approached. We also encountered evidence of how the students viewed themselves as learners with

different dispositions, varied aspirations, interaction styles, backgrounds, and desires.

As learners developed a view of text that was more open-ended and less verbocentric (as a result of the multilayered and graphic capabilities afforded by hypertext and various software), their approach to developing text seemed to have shifted. Instead of a linear approach to text development, the students became more willing to experiment with ideas via a consideration of layout possibilities, multilayering, and graphic interfaces. In conjunction with the use of these new multimodal literacies, students pursued strategies by which they could crisscross topics or issues as they enlisted various media in search of different, but complementary, perspectives. The classrooms assumed the feel of a studio and think-tank where artists and scientists worked together on various projects. As one of the participants noted:

I'm in a group of four people where all your work is floated between the group and you've got communication between the group ... the same thing (in the program). You have group projects, group presentations ... you kind of get adapted to ... or learn the ability to get along with the group, and also get in front of people and present what you have to present.

Projects typically were done collaboratively and involved media and a range of collaborative engagements. As students progressed, their learning pathways involved conversations, explorations, compositions that were multidimensional, and products that were multilayered and generative. They were able to explore with media that afforded the use of multiple symbol systems (e.g., Lemke, 1998) and the products were inevitably shared and displayed, so attention had to always be paid to audience. As these were group projects, students depended upon one another to work together and to share their different expertise and perspectives on the plans, research, architecture, development, refinement, presentation, ways to engage others with the topic, and, finally, the merits as well as critiques.

In conjunction with having access to hypermedia-based technologies, students pursued multiple lines of thought and entertained different per-

spectives. Ideas were no longer treated as one-dimensional and sequential, as the technology allowed students to embed ideas within other ideas. As they discovered other forms of multilayering and interconnecting ideas, the students began spending a great deal of time considering layout—that is, how the issues that they were wrestling with might be explored across an array of still pictures, video segments, text segments, and sound clips.

The shifts in students' views of texts were apparent in their conversations during the planning, development, and sharing of projects. Conversations often revolved around ways students might link ideas and craft them in a manner whereby users might become more engaged. The students were keen that the layers of text and links to images were streamlined and had an effect upon the users' engagement. Overall, there was a clear link between text designs and perceptions of how potential audiences might view and engage with text.

The Sociopolitical Dimensions of Multiliteracies

The advent of support for new literacies, and the emergence of the notion of multiple literacies and multimodal literacies, have their antecedent in conceptions of literacies as social practice. The students engaged with projects addressing a wide range of problems, topics, and issues. Some student projects stemmed from requests from community groups for help with a newsletter or other products. In this regard, we found that for our students there was a substantial link between individual social empowerment and the studio-type setting within which they were afforded opportunities to engage and develop multiple literacies. All of these students viewed their experiences with computers as involving complex social dimensions.

The nature of the activities entailed students being engaged in a number of different forms of collaboration/interaction with others (joint construction of projects, cooperative ventures involving differential expertise, coauthoring, parallel development of similar work, side-by-side consultation, and group sharing) in which they assumed a

range of roles (demonstrator, partner, helper, sounding-board, advisor, mediator, supervisor, decision-maker, etc.) across a range of texts/projects. As one student stated:

I think it increases your ability to communicate and to take criticism, because you just get used to it after a while. People are always saying, "Hey, try it this way. That might work out better." And you just kind of look at it, "O.K., I'll try it like that ..." But there'll be a few people who catch on quicker and people will be asking them "How do you do this?" or they'll be offering help—the ones who have learned it faster.

The students became independent and collaborative problem-solvers, theorists, communicators, record-keepers, and learners with the computers. They developed a repertoire of abilities with which they could explore possibilities that would be either too cumbersome or difficult to attain without the technology. While they were likely capable of achieving their independent agendas, their approach to learning was collaborative. They were engaged in the computer use as specialists, team players, artists, and crafts persons. The studio environment they had experienced contributed to their vision of their futures, their strategies, and their sense of authority. The social dynamics became pervasive as students engaged in their own projects and projects for others. As they worked with and for others, the technology came to be seen as socially transforming.

A follow-up study of students who had been through the program reinforced our view that these literacies provided access to further education and were also positive assets in the move from school to work. We did not encounter any students who did not pursue tertiary education, and many of those whom we interviewed eventually pursued graduate studies. It is important to note that many of these students were the first member of the family to have gone on to college. Students recognized the advantages that they were afforded. While the overall high school population had less than a 50% graduation rate, approximately 90% of the students in this program graduated. The participating students were well aware that the literacies af-

forded possibilities that they might not have been afforded otherwise. One participant reflected that:

For students the program offered a whole new set of possibilities as learners, knowers, and doers ... what we could imagine to happen, and how we could imagine ourselves opened a whole new world.

The students realized the possibilities even while they were enrolled in the program. In high school, they recognized that not only did they have certain skills with the technology, but they also had learned how to collaborate toward completion of projects that had relevance to various groups. As one student member described it:

My friends ... understand what it's all about. I have a lot of friends who aren't in it. And they think it's neat too. That I can do some stuff. Sometimes I work with them on projects using the computer, like I just got done working on a newspaper where I worked with a lot of people I knew. Sometimes I'll offer suggestions like, "I could show you how to do that on the computer a lot easier;" things like that. It's kind of just the sharing of ideas.

In many ways, we came to see the new literacies as having served to provide a lifeline for students. Many noted that, without the program, they would not have had the opportunities that they have been afforded. For example, several students we interviewed had even experienced homelessness while in school. These students credited their engagement with the new literacies and their learning environment with affording them opportunities that would have been out of their reach otherwise.

For some students, the new literacies afforded them an advantage that made them preferred candidates for employment with the colleges that they attended. For some, it has directly influenced their profession. For example, one of the students oversees the layout of several newspapers, and another works with the computer systems at a scientific abstracting company. Others are pursuing doctorates in areas less directly related to technology, such as "women's studies" and "social work." It seems as if their engagement and expertise with these new literacies has contributed to a shift

from cautious optimism about themselves to what might be viewed as respect for their own capabilities. They developed a sense of their own expertise, recognizing various functions that these literacies could serve, as well as an appreciation of the skills they needed, including the ability to work with others.

Overall, our explorations of the students' lives confirmed the emergence of a repertoire of rich literacies in a fashion that was empowering in both short- and long-term learning. The newly developing literacies enhanced ways of knowing and had an impact that extended to the sociopolitical fabric of students' lives. As Siegel (1995) has suggested, these multimedia explorations have "a generative power that comes from juxtaposing different ways of knowing ... as a way of positioning students as knowledge makers and reflective inquirers" (p. 473). Examined sociopolitically, we saw evidence of students' engagements with these literacies interfacing with emerging identities and possibilities.² Interestingly, the students' finesse with the use of these literacies served as powerful bridges by which students were able to realize possibilities that might have been outside of their reach otherwise—in the tertiary context, work place and outside of schools.

In the follow-up study, the graduates were still aware three to four years after high school that their views of knowledge had been impacted by the multilayered and multimedia nature of topics and issues. Many offered comments that suggested that the graphic capabilities of technology afforded them a means of developing and testing theories or to explore, reflect upon, and expand their identities. They suggested that these tools helped them represent the complex interrelationships between ideas more easily. Furthermore, their ways of thinking became aligned with the options that are afforded by the less verbocentric, multilayered possibilities. However, many also lamented what they encountered to be the status quo once they left high school and pursued tertiary education. For example, a number of our case study students who pursued a university education commented that, in their experiences, universities tend to hold a reverence for traditional, rather linear, papers, submitted in a print format. Their use of

technology appeared to be often sidelined by the norms and expectations of the universities and the traditional standards of faculty. Some even expressed concern that if they enlisted the kinds of multimedia platforms and presentations that were regular features of their high school program, that their peers and teachers would likely view what they did as “bells and whistles” rather than understand what they were trying to achieve in terms of representing ideas. It is interesting to note that many reported that they maintained more complex views of knowledge and found that on the sidelines they were attractive candidates for many jobs and were often encouraged to pursue these possibilities.

Discussion

Our analyses suggested that digital literacies situated within collaborative learning contexts

have certain attributes that distinguish them from traditional school-based literacy. Table 1 attempts to detail some of these.

Therefore, based upon an extended examination of the development of multimodal literacies in the lives of students beginning in high school, we would claim:

- Individuals and groups afforded opportunity to engage as teams with digital literacies learn an array of new ways to explore and share ideas. These individuals are able to contribute, together and separately, to enhanced explorations of their worlds with new and dynamic genres that afford an image-enhanced, complex layering of concepts, as well as the means for rich explorations, exchanges of ideas, and problem-solving.
- Depending upon how these new literacies are introduced/situated, they can make a significant contribution to shifts in the lives of individ-

Table 1
Traditional Compared to New Literacies

	Traditional Print-Based School Literacies	New Multiple Literacies
Nature of the genre	Text based and verbocentric	Multimedia—mix of print, image, video, animation, sound
	Discrete skills	Envisioned possibilities
	Flat and linear	Multidimensional and perspectival
	Predictable	Inquiry driven
	Established norms and conventions	Differentiated and student-centered
	Transmission of knowledge	Generative
	Conventional classroom	Studio environment
Idea mapping	Predefined knowledge	Situated knowledge
	Text-based	Multiresources and hypermedia
	Single authored	Collaborative or team-based
	Single text	Multi- or intertextual
	Linear connections	Multilayered interfaces
	Sequenced storyboarding	Sequenced and multilayered story boarding
	Author-based	Audience-based
Sociopolitical	Author or teacher constructed	Social practice
	Subordinating	Social empowerment
	Situated in academic and school-based	Situated in real world and work world
	Individualistic	Collaborative
	Controlled participation	Democratization
	Top-down mastery	Distributed and differential expertise
	Enculturation	Cultural defining

uals and groups politically, economically, and socially.

The students' involvements with the new multimodal literacies were not seen as superfluous, but integral to who they could be and what they might imagine. These students discovered "genres of power"—new texts, new ways of negotiating meaning, and new ways of knowing. The literacies were transformative in terms of lives. Indeed, we would posit that when students developed cutting edge uses of technology in meaningful situations and they were given the authority and agency within the classroom or among peers, these literacies developed in ways that interfaced with the social fabric of their lives within and outside school and into the future. It also involved recognition of the long-term advantages that they had been afforded and the relevance of the skills that they had acquired for their career aspirations and achievement of personal goals. The experience of these students befits notions of *culture capital* (Bourdieu, 1986) similar to the value that Brandt (2001) discussed in her analysis of the literate lives of Americans who were born between 1895 and 1985. As Brandt stated:

Workers these days produce wealth not only by processing raw materials but by supplying those raw materials themselves in the form of knowledge and skills, including communication skills. (p. 6)

While they each accrued certain capital or assets that were similar, they also varied as each of these students had different goals and dispositions that define to some extent what they gained, as well as where they saw themselves headed.

More broadly, the students that we have studied provide support for the idea that the new literacies have the potential to serve functions that can be vital. Certainly our observations resonate with the claims proffered by the New London group and others, and more recently the claim made by Cynthia Lewis and Bettina Fabos (2005) in *Instant Messaging, Literacies, and Social Identities*:

If we mourn the loss of print literacy as we think we once knew it, then we may find ourselves schooling

young people in literacy practices that disregard the vitality of their literate lives and the needs they will have for their literate and social futures at home, at work, and in their communities. (p. 498)

Or, as Selfe and Hawisher (2004) argued:

If literacy educators continue to define literacy in terms of alphabetic practices only, in ways that ignore, exclude, or devalue new-media texts, they not only abdicate a professional responsibility to describe the ways in which humans are now communicating and making meaning, but they also run the risk of their curriculum no longer holding relevance for students who are communicating in increasingly expansive networked environments. (p. 233)

The paradox is that schools may not support the transition of these new literacies to school settings in ways consistent with their potential, including the possible shifts in power dynamics that might occur.

Unfortunately, although the students we observed utilized multiple literacies to discover "genres of power"—new texts, new ways of negotiating meaning, and new ways of knowing that have been extremely beneficial for them—these are not practices that are easily testable. In this era of accountability, how likely is it that schools will value expanded notions of literacies? To really embrace multiple literacies, schools would have to turn to authentic assessments that might allow them to capture some of the exciting dimensions of collaborative and inquiry-based work.

Notes

1. The high school afforded a team approach across subject areas and opportunities for students and teachers to have ready access to a rich array of workstations that included digital video production capabilities, as well as hardware- and software-supported simulations and project-based inquiries. The school was located in an economically challenged area with very few parents having completed high school. The racial mix was Appalachian, African American, and Asian American. Over the course of 10 years we examined over 20 lives in considerable detail and over 120 lives in

more of a survey fashion. With a subset of students, we were able to follow their lives from their reasons for pursuing a high school program that focused on digital literacies to their tertiary education to their first jobs.

2. Our approach builds upon the work of a number of scholars (Barton & Hamilton, 1998; Gee, 1996; Street, 1984, 2003) who explore the functions of various literacy events within different domains or spaces, especially in terms of social practice, including the agency and position that these students assume (Purcell-Gates & Strickland, 2005).

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