Digital literacy: Integrating technology into language arts instruction

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Introduction and Rationale

In 2007, a survey revealed that reading performance among U.S. adolescents and young adults had declined during the last twenty years while the use of digital media had risen (National Endowment for the Arts, 2007). However, the same institution reported in 2009 that a sharp increase in the overall number of readers had occurred.

Best of all, the most significant growth has been among young adults, the group that had shown the largest declines in earlier surveys. The youngest group (ages 18-24) has undergone a particularly inspiring transformation from a 20 percent decline in 2002 to a 21 percent increase in 2008—a startling level of change. At the Arts Endowment we have paid particular attention to this crucial cohort. During their high school years, they were the target of the largest literary initiatives in the agency’s history, and we note their progress with particular satisfaction. (National Endowment for the Arts, 2009, p. 1)

The Arts Endowment viewed this as a result of combined efforts on the part of educators, librarians, and organizations committed to fostering literacy. A significant finding of their report indicated that young adults (18-24) do more reading online than older Americans. Eighty-four percent of adults who read literature (fiction, poetry, or drama) online or downloaded from the Internet also read books, whether in traditional print or online. For adults who read online articles, essays, or blogs, the book-reading rate is 77 percent. Nearly 15 percent of all U.S. adults read literature online in 2008 (National Endowment for the Arts, 2009). It appears that the rise of digital technology did not cause the literacy decline that they had so direly predicted in the 2007 report. Perhaps, it contributed in part to the rise? Many are seeking an answer to this question.
In fact, The John D. and Catherine T. MacArthur Foundation has launched a $50 million, five-year initiative to investigate online culture and media literacy and its impact on modern youth. They want to know how and why young people use the Web, computer games, cell phones, and other gadgets to learn, play, and communicate (McConnon, 2006). Adolescents’ reluctance to read is a problem that plagues secondary teachers throughout the curriculum. It is becoming evident that savvy educators need to capitalize upon the resources of the digital age to link teens’ engagement with their own literacy practices to the traditional practices of language arts instruction. Why not incorporate these popular practices with educational instruction?

In my own English classes, both regular English IV and AP, I have observed that students find the size of a book to be a determining factor when they choose for themselves something to read. They also tend to like the graphic novel format better, somehow believing it is easier to read. With digital devices such as Kindles, they ignore the size of a book. I have often argued with other English teachers that I could teach all literacy skills best using just poetry. For some reason, it doesn’t seem to intimidate as much as a Shakespearean play or a novel. I have wondered if I only distributed chunks of a novel, would it have the same effect? What if I posted these on a wiki or other digital server?

Making use of popular digital practices would serve multiple purposes. It would enhance students’ interest in participating in reading, familiarize them with technology that may be used at school, in the workplace, or socially, utilize skills with which they are comfortable and competent, and, hopefully, generate interest in further reading through traditional modes. Keeping literacy new and fresh through technological innovations might just be the gateway
through which to stimulate reluctant or struggling readers to read more, to read more critically, and to read with more comprehension.

Research Questions

What constitutes digital literacy? The range of devices and the uses to which they may be put steadily increases. Besides computer based literacies such as researching information upon the Web, entering, revising, editing, and publishing with word processing applications, we now have communication through You Tube, blogs, wikis, on-line learning communities, email, cell phone capabilities such as IMs, and, of course, interactive games. It can also be argued that E-books and Audiobooks should be considered as “real reading” (Moyer, 2011). How can we as educators use these resources effectively and does research show positive outcomes from doing so?

Research Process

Databases such as Academic Search Complete, ERIC, Gale, JSTOR, and EBSCO provided many of my studies and articles. I used keywords and phrases such as digital media, digital literacy, technology in the classroom, technology integration along with source names such as Reading Research Quarterly, The Reading Teacher, English Journal, and Journal of Adolescent and Adult Literacy. I also used author’s names and titles gleaned from the bibliographies of some of the articles where they appeared relevant. I Googled the keywords
along with case studies which yielded a surprising number of hits. Another fertile source was the author’s web pages at their home universities.

Themes

Several themes emerged from the research. First, literacy encompasses many expressions, and it is vital for educators to expand the opportunities for all students to participate in meaningful, contextual ways, and to prepare them for the technological world in which they live. Second, adding technology to a curriculum can be a viable means to encourage transnational connections and bridge language barriers for all students, but especially for English Language Learners (ELLs). Third, recognizing, respecting, and utilizing elements of “Pop Culture” establishes connections between educators and teens. Fourth, technology use enhances motivation and engagement.

Literacy’s many expressions and the new skills required

Educators and policy makers are working diligently to try to find ways to improve adolescent literacy achievement. “More than eight million students in grades 4 to 12 are identified as struggling readers” (Grigg, Daane, Jin, & Campbell as cited by Sternberg, Kaplan, & Borck, 2007, p.416). The Alliance for Excellent Education, the National Council of Teachers of English, the International Reading Association, and the National Association of Secondary Principals all speak to the need for technology to be part of any effective adolescent literacy program (Sternberg, Kaplan, & Borck, 2007,p.416). However, some teachers (those of us not of the Gen X era) are often uninformed of the many modes of digital expressions and of the ways in
which they may be utilized in the classroom. The following case studies and articles may provide some enlightenment.

While there are many perspectives associated with digital literacies or the term *new literacies*, the most recent view concludes that most share a set of common assumptions: (a) new skills, strategies, dispositions, and social practices are required by new technologies for information and communication; (b) new literacies are vital to full participation in a global community; (c) new literacies change as technologies change; and (d) new literacies are multifaceted and benefit from multiple points of view (Castek, et al., 2009; Coiro, Knobel, Lankshear & Leu, 2009). Leu and members of the New Literacies Research Team at the University of Connecticut are examining what new practices are required to access successfully, evaluate critically, and use optimally today’s electronically available information. Leu and his team have identified five skills necessary when reading online: reading to construct useful questions, reading to locate information, reading to evaluate information critically, reading to synthesize information, and reading and writing to communicate information (Castek, et al., 2009). Their research and theories support using both traditional and new literacies practices, as well as development of classroom resources and approaches that can enhance literacy for students at all grade levels (Sternberg, Kaplan, & Borck, 2007). In addition to the Internet are other Information Communication Technologies (ICT), such as the use of iPods to store textbooks and novels, wikis to capture class discussions, YouTube to distribute video lectures, games to learn about international diplomacy, and podcasts to share speeches and presentations (Bernholz, 2006). Larson’s (2009) research with collaborative on-line learning communities has shown an increase of students’ assumption of diverse responsibilities and that their effective learning experiences are increasingly dependent on social learning strategies. She found
“Students established a community of inquiry in which their sundry literature prompts elicited divergent responses inspired by multiple opinions and diverse perspectives” (Larson, 2009, p. 646).

Whitin (2009) argues that “incorporating multimodal responses into everyday literacy instruction builds comprehension and literary interpretation while giving learners purposeful experience in using these modalities.” In her study, preservice teachers taking a graduate methods course in reading and language arts participated in a literature study of Through My Eyes (Bridges, 1999). She tracked their progress through three stages: Phase 1 gave them experience in recognizing the potentials of modalities other than language (visual design, picture books, PowerPoints using color, font, animation, and images); Phase 2 used a range of multimodal strategies to respond to the text and images including online postings, visuals, music, and drama; Phase 3 composed digital movies and analyzed them for the ways in which various expressive modes intensified the intended message. Her study showed that effective use of digital media involves knowledge of the potentials of all communicative modes. Further, she adds, “the use of digital software allowed for expanded and transformed meanings made possible by highlighting relationships among visual, audio, verbal, and animated texts,” thereby heightening comprehension (Whitin, 2009, p.417).

In another study, researchers noted a revealing example of the benefits of multimedia. Visuals are no longer limited to pages of a textbook when streaming videos can focus children on sounds and actions that make learning come alive. After being shown a video of the March on Selma during a lesson about Martin Luther King, Jr., one student remarked that he never knew
there were white people there. That simple comment and the extended conversation that followed brought a deeper meaning to the learning experience (Hansen, 2008).

In digital media, learning by doing is the norm, with peer-to-peer emulation and tutorials. The idea is for users to do the work of networking and content creation (Hartley, McWilliam, Burgess, & Banks, 2008). Digital storytelling, Flickr photosharing network, and Fury (a massively multiplayer online game (MMOG)) were the subjects of three case studies researching the question of how digital literacy can and should be taught and the efficacy of their potential as an “informal pedagogy of digital literacy. Their claim was that these methods follow Popper’s educational philosophy in that they “do no harm, are more responsive to user demand, and create independent participants better equipped to choose, and learn, for themselves in the digital age” (Popper, 1945 as cited in Hartley, McWilliam, Burgess, & Banks, 2008).

Another approach to digital literacy was undertaken by Creative Partnerships Bristol who commissioned a digital media initiative involving four local community media organizations to work with eleven schools over the period of an academic year with the aim to engage school staff and children in using media technologies to enhance the curriculum and to encourage schools in exploring new ways of working (Sobers, 2008, p.54). Their premise was that the process of media production and deconstruction has the potential of containing high educational value across the curriculum. They concluded that moving image production and exhibition can be used in education to complete the cycle of inspiration, intrigue and re-inspiration, to generate more interest in creative writing and in the use of language. Furthermore, “the use of digital media in the classroom can help to promote a culture of knowledge exchange between teacher and pupil allowing the child to develop their own learning, moving them towards becoming
confident, literate individuals” (Sobers, 2008, p.62). However, they warn by quoting Buckingham (2007) that “technology by itself will not improve education and it would be misguided to have a superficial infatuation with technology for its own sake” (Sobers, 2008, p.62).

A study conducted in ten U.S. Schools in California and Maine examined literacy practices where students had one-to-one access to laptops and computing programs. They noted that the technological, economic, and social transformations of the digital era pose three important literacy and learning challenges that can be summarized as “past/future, home/school, and rich/poor” (Warschauer, 2008, p.52-53). The first refers to the gap between required skills that focus on mastery of written texts and the broader set of digital skills used in 21st century life. The second refers to the gap between the media rich experiences the child has at home and the more restrictive practices at school. The third refers to the inequity between the literacy and learning successes of students from high and low socioeconomic status. Their study found three important changes in the teaching and learning of reading in the laptop classroom: Scaffolding or provision of support so students can read material that is more challenging, more active involvement in knowledge building, and increased amount of reading online. Online dictionaries, graphic organizers, text-to-speech programs, and teachers using special programs like Soft Chalk to mark up online texts provided scaffolding. Laptops provided opportunity for students to work together to interpret and create meaning from texts through online discussions, book reviews and publications as well as enhancing their projects with music and visual embellishments. Low performing students were more actively engaged and read more than when in the traditional classroom (Warschauer, 2008, p.58). Another principal finding was that writing with laptops provided seven advantages. First, computer based writing became more integrated into
instruction. Second, students revised more often. Third, writing became more public and collaborative. Fourth, writing became more authentic and purposeful. Fifth, students took advantage of the formatting features of the computers to write in multiple genres. Sixth, students produced higher quality writing, and seventh, students engaged in creative writing during their free time (Warschauer, 2008, p.63-64; Warshauer, Arada, & Zheng, 2010). In conclusion, their study revealed that laptop classrooms can bridge the gaps between past and future and between home and school, yet the inequity between rich and poor was not dispelled. In fact, the low SES schools in their study had more difficulty developing and sustaining successful laptop programs. They also found no evidence to suggest laptop instruction had any effect on reading, writing, or English language arts scores on standardized tests (Warschauer, 2008, p.64).

This lack of correlation between test scores and implementation of technology may be a deciding factor for some districts decision to not engage in a laptop program. In another study involving three California schools (one low SES largely Hispanic junior high, one largely Asian, high SES K – 8 school, and one gifted program medium SES elementary school), they found that laptop use promoted all of the National Educational Technology Standards, as well as increased autonomy, productivity, and collaboration. However, ELA test scores declined the first year (which may have been due to the change in the tools of learning) and rose again in the second year (Grimes & Warschauer, 2008, p. 326). The researchers maintain that standardized test scores are not an ideal measure of a laptop program’s benefits since the advantages of such a program are not measured by standardized tests: computer based writing, information literacy, or multimedia skills, although the impact on test scores is what drives and affects adoption of technology in schools (Grimes & Warschauer, 2008, p. 329). Warschauer also reports on an educational reform called Inspired Writing employed in Littleton Public Schools, near Denver,
Colorado. All students were provided netbooks outfitted with a customized version of the Linux Ubuntu operating system which comes with a wide range of free educational software such as Open Office. The district implemented the free cloud-based Google Apps district-wide so all students could write and store via Google Docs and use Gmail. Classes also used tools such as Blogger, PBWorks, and Twitter (Warshauer, Arada, & Zheng, 2010). The authors point out that all those tools could be “distracting if not accompanied by the appropriate pedagogy” (Warshauer, Arada, & Zheng, 2010). According to student surveys, the students’ positive responses to the program centered on several themes: “Tools for Better Writing” (spelling, grammar, formatting tools); “Access to Information” (easy access to knowledge); “Share and Learn” (strengthen sense of authorship); “Self- Directed Learning” (individualized and differentiated which increases their sense of agency); “Remaining Relevant in a Technological World” (perception of place in global future); and “Engagement with New Media” (enthusiasm and motivation) (Warshauer, Arada, & Zheng, 2010).

Bridging transnational relations through technology

Can digital media influence the literacy practices of students learning English? Some of the very practices that digital literacy entails are often banned activities in schools; yet, since e-mailing, IM, text messaging, and cell phone talking require skills in reading, writing, listening, and speaking, we need to find ways they can assist adolescents in the development of these literacy abilities (Sternberg, Kaplan, & Borck, 2007). A study of an immigrant Chinese girl tracked the progression of her literacy through Instant Messaging (IM) and found that forming a transnational (across nations) set of social networks allowed her to access and develop multiple linguistic resources including vernacular forms of English and multiple dialects in Chinese. As
she was learning the dominant language of her new country, English, she was simultaneously learning Cantonese, the language of her new community, as well as communicating in Shanghainese at home and with her friends in her former country. Analysis shows that “by developing and maintaining her affiliation to multiple groups, the youth’s literacy practices moved across life worlds and developed multiple reference points in the positioning of self, enabling her to thrive in multiple linguistic communities and mobilize resources within these communities” (Lam, 2009). Besides using IM, the study participant also chose to play an online game called Maple Story in the English version to enhance her English learning, although she played with mostly Asians. The relationships and literacy practices she adopted allowed her to interact more easily with other teenagers at school and to position herself beyond the social status of a new immigrant (Lam, 2009). According to Lam,

The increased intensity and scale of multilingual transactions that are carried out in tandem across local and translocal settings and diverse communicative media provide an opportunity for educators to consider the literate resources and funds of knowledge that young people of migrant backgrounds may bring to our schools. We need to recognize how these textual resources mediate young people’s access to different kinds of knowledge that come from diverse communities. We should reconsider how our educational practices may enhance the literacy development of these youth and leverage their linguistic and cultural repertoire as resources for learning. (Lam, 2009, p. 394)

This coincides with the findings of other researchers. What counts as literacy and effective literacy instruction for older ELL students must take into account students’ self-
perceptions as readers and writers and their own purposes and motivations, and it must extend beyond traditional school reading and writing to encompass the print and non print literacies students engage in outside of the classroom (Alverman, 2006; Ivey & Broaddus, 2007). Ivey and Broaddus (2007) advocate using students’ personal literate practices and cultural knowledge along with interesting content and concepts rather than instructing with a focus on low-level language skills. Literacy teachers face the challenge of designing instruction that makes sense for the new English readers and writers who are engaging with new kinds of texts and learning new ways of presenting themselves in writing. One means of recognizing students’ culture while furthering their literacy development is to let students use technology to capture, record, and explore the print media in their community (Jimenez, Smith, & Teague, 2009).

Building teacher/student relationships

Teachers have a powerful capability to motivate and engage students in learning, as well as to foster students’ self-esteem. One way to do this is to recognize and respect the practices in which they engage, sometimes referred to as “Pop Culture.” “During adolescence, as well as later in life, it is the belief in the self (or lack of such belief) that makes a difference in how competent a person feels. Perceptions of self-efficacy are central to most theories of motivation, and the research on exemplary literacy instruction bears out the hypothesized connections” (Alvermann, 2001b). Validating students’ knowledge as worthwhile and not simply as “lowbrow,” bridges the gap between teacher and students. Similarly, creating technology environments that heighten students’ motivation to become independent readers and writers can increase their sense of competency (Kamil, Intrator, & Kim, 2000). A case study of four struggling, offline readers found that their online reading comprehension benefitted from online
reading experiences and instruction including shorter units of text, the opportunity to make choices and construct their own texts through the links they followed, and supportive multimedia features (Castek, et al., 2009).

Effective instruction builds on elements of both formal and informal literacies. It does so by taking into account students’ interests and needs while at the same time attending to the challenges of living in an information-based economy (Alvermann, 2001a). Simultaneously, teachers learn from student-generated texts about adolescents’ everyday literacies and the competencies they exhibit when reading, talking, and writing about things that matter to them (Knobel, 1999; Wade & Moje, 2000).

However, integrating technology and “Pop Culture” practices into curriculum has its difficulties in a traditional classroom setting. In an after-school media club with subjects who were struggling students, researchers analyzed the many conflicts that arose between educators and students over the use of popular culture texts and techs. Some of those were non-standard language (Hip-Hop, gangsta), forbidden use of the Internet (downloading lyrics, songs, videos, images), inappropriate materials (violence, sexuality), and what was perceived by students to be a lame attempt on the part of one teacher to be cool (Heron-Hruby, Hagood, & Alvermann, 2008). Yet, the researchers concluded that the conflicts in themselves offered opportunities for the students and the teachers to reflect upon the motivations behind their practices and to engage in discussions. Their findings also suggest that teachers and students may possess some similarities in their orientation towards popular culture, or that they might have some cognitive dissonance regarding how much to censor adolescents’ interests. Reflection on such similarities or dissonances might serve as impetus for teachers to re-imagine their respective approaches to
popular culture texts and to shape student exploration in different and productive ways (Heron-Hruby, Hagood, & Alvermann, 2008).

The challenge is to rectify opposing belief systems, which Lankshear and Knobel (2005, 2006 as quoted in Callahan & King, 2011) referred to as insider and outsider mindsets. The insider acknowledges that the world is very different from the past, due in great part to new technologies, and “radically reconfigures” the role of technology in learning, not just adding them to existing practices (Callahan & King, 2011); whereas, the outsider tries to serve “old wine in a new bottle.” Data exists that confirms this dichotomy of agreeing that there is a need for technology integration, yet, treating it as a supplemental, not integral, strategy. A national survey of 1,441 United States literacy teachers about perceptions of integrating information communication technologies (ICTs) into literacy instruction revealed relatively low or superficial levels of curricular integration and repeated perceptions about obstacles to integration, including lack of professional development (Hutchison & Reinking, 2011). Such staff development needs to include demonstrations of effective computer use, mentoring and modeling, hands–on training, time to reflect on computer-related activities, targeted feedback, and sustained grade level collaboration. In addition, technology support resources should be available (Labbo, Leu, Cammack, Kara-Souteriou, & Sanny, 2003)

Motivation and engagement

Finding ways to figuratively, “salt the oats,” has always been a challenge for literacy teachers, and especially for teachers of adolescents who are reluctant to read and write. Adding technology to classroom literacy activities appears to enhance motivation and engagement in many cases. In a study of a techno-literacy poetry project undertaken by two high school creative
writing teachers, the researchers found that the distribution of knowledge, expertise, and agency shifted during the activities. Inclusion students with learning disabilities “came alive and did excellent work;” they engaged with other students and their own poems as they had never done before (Callahan & King, 2011; Warschauer, 2008). According to Callahan and King, “Participation remix suggests that digital technologies may open up possibilities for valuing multiple aptitudes – not just linguistic -- in language arts classrooms and for fostering participatory cultures in schools. It may invite new kinds of collaboration with visual and performing arts, as students are increasingly encouraged to integrate multiple modes into composition”(2011). Since adolescents’ perception of how competent they are as readers and writers affects their motivation, literacy instruction must address issues of self-efficacy and engagement (Alvermann D. 2001a). Creating technology environments may raise their motivation to become more independent readers and writers by increasing their sense of competency (Alvermann, Marshall, MacLean, Bishop, & Kirk, 2006). Beach and Lundell found that the computerized format can encourage participation from students who tend to shy away from participating in face-to-face discussions, and can facilitate the free expression of alternate views (Kamil, 2003). Providing students with an audience and a clear purpose for their writing helped to motivate students to write longer passages and communicate their ideas more effectively (Kamil, 2003).

Implications

More quantitative and qualitative research establishing the validity of the practice needs to be done in order to break down resistance from teachers, administrators and the general public
toward incorporating digital literacies in the classroom. The research has shown positive benefits from integrating students’ digital practices with language arts curriculum. Better teacher/student relationships may be forged, transnational boundaries bridged, and student engagement with the text increased, comprehension improved, and more creative writing produced in more various genres, and reflective of more genuine and purposeful content. If the role of schools is to provide students with the tools and guidance they need to acquire literacy skills in an appropriate way, the new digital media can help to translate some of these goals. Digital tools have already transformed the way we conduct research and write and compose and edit text (Weigel & Gardner, 2009). In addition, professional development must be extended to include teachers’ instruction in digital modes of expression and in sharing the best practices of doing so. Despite the billions of dollars invested in educational technology, many teachers do not feel prepared or know how to juggle technology into an already inflated curriculum. Clearly, technology within literacy instruction has the potential to benefit young learners. Less clear, however, is how to go about integrating technology effectively. Often districts provide technology resources for their teachers without the training or ongoing support to use the resources well. For example, many teachers are introduced to technology through a traditional staff development model of required attendance at an afterschool workshop taught by an expert who delivers the program and then leaves the school. There is help out there. For example, “NewLits.org is a collection of webpages supporting multimedia formats and dedicated to the professional development of educators with respect to new literacies. It provides a context for showcasing, demonstrating and supporting the acquisition and understanding of digital literacies relevant to its scope and purpose” (Knobel & Lankshear, 2009). It is imperative that teachers know as much as they can about various modes of technology, evaluate software and sites before using in class, and scaffold student learning of
basic computing skills including evaluation of information found (Labbo, Leu, Cammack, Kara-Souteriou, & Sanny, 2003).

Discussion

At the heart of any research in education is the ultimate question of what can we as educators do to enhance our students’ learning. We must always be cognizant and aware of the best practices that have been thoroughly proven to be worn paths toward stimulating cognition, while open to experiment with new avenues to reach that destination. The ubiquitous technology that permeates our youth’s lives seems like a sound and wide road on which to travel.

References


