

Connecting Informal and Formal Learning Experiences in the Age of Participatory Media: Commentary on Bull et al. (2008)

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The recent editorial in this journal by [Bull et al. \(Vol 8, Iss 2\)](#) discussed the challenges of bridging formal learning practices and informal learning opportunities within the context of today's Web-enhanced world. In this commentary I first summarize key points in the article, addressing what I see as its central questions. Next, I offer three recommendations for bridging the gap between informal and formal learning and address the constraints the authors identify, which I hope will fuel further discussion.

The Bull et al. editorial stated that we are in the midst of a “renaissance stimulated by the World Wide Web,” where youth, especially, are creating more, sharing more, advocating and communicating more in their online everyday lives. The *cognitive surplus* is a concept attributed to media scholar Clay Shirky to describe the collective mental energies of society, which were once masked and consumed by, for example, passively watching television. Today, he says, this cognitive surplus is unmasked and made apparent in the emergence of hundreds of “special cases” of people excitedly pooling their time, effort, and knowledge into the making of new potentially beneficial online resources (e.g., Wikipedia).

Various sectors, not just education, are inquiring into how to harness such a cognitive surplus to advantage on a national and global scale. For instance, businesses are looking into how to tap their employees' “social connections, institutional memories and special skills – knowledge that large, geographically dispersed companies often have a difficult time obtaining” by using social networking software to connect a company's employees into a single private Web forum (Stone, 2008, p. C2; Gratton, 2007).

News media are increasingly tapping viewer participation in the form of online comments and testimonials, independently produced videos, and citizen journalist blog entries to enhance the accuracy, power, and spread of centrally produced stories (e.g., CNN's documentary *Black in America*) [a]. And of course, apparent in the 2008 presidential election campaign is a new style of “Netroots” politics: “open-sourced and inclusive, multi-racial and multicultural” where potential voters don't just consume campaign propaganda but help shape and distribute it via online meet-ups, blogs, videos, and Internet social networks (Sheehy, 2008, p. 79).

Can educators similarly tap students' enthusiasm and creativity to shape and carry out their education agenda? Can educators link students' in-school learning and out-of-school living to make education more relevant, meaningful, and connected to kids? Can we bridge conventional schooling practices (where content, in many ways, is centrally determined) with informal learning practices (where students spontaneously create content to share)?

Bull et al. (2008) suggested several barriers to bridging informal learning and participation in the Web outside of school with learning in school settings. These constraints include specific learning objectives; time constraints; increase in classroom management complexity, which often accompanies technology integration; prior investment in and commitment to print tools; limited models for teachers on how to facilitate students' learning with interactive technology; and limited research to guide best practice. In considering how we might bridge the gap between formal and informal learning, I suggest taking a closer look at three of these constraints: learning objectives, lack of practice models for so-called "digital immigrant" teachers, and research-based guides. I offer three corresponding recommendations.

Revisit Learning Objectives in Light of Economic, Social, and Technological Trends

As the examples from sectors outside education suggest, revisiting objectives in light of economic, social, and technological trends will require loosening up philosophies, restrictions, and assumptions to create a space for re-imagination and grassroots ideas. It will require reconsidering how educational agendas can be fulfilled and enhanced beyond classrooms with participatory pedagogies and everyday technologies used outside of school. Conversely, it will require considering how new technological affordances and students' needs reshape traditional agendas, pedagogies, and the content taught.

For example, this re-imagining is already taking place within content specialist organizations such as the National Council of Teachers of English (NCTE) and the International Reading Association. These organizations have taken note of how "new global employees engage with a technology-driven, diverse, and quickly changing 'flat world'" to question traditional learning objectives and consider new desired competencies (NCTE, 2007, p. 1; National Center on Education and the Economy, 2006). They have identified a decrease in students' reading novels for pleasure and an increase in students' out-of-school online reading and writing through online sites like fanfiction (<http://www.fanfiction.net>) and social network sites (National Endowment for the Arts, 2007).

Now, they are tackling questions that open up new possibilities for bridging formal and informal learning experiences, such as the following: What does it mean to read in the digital age? Does online reading build on traditional reading skills? Does being information- and Internet-literate require new reading skills like the ability to navigate the Web and to synthesize information in many different forms? (Rich, 2008; NCTE, 2005, 2007).

To begin addressing these questions, recent policy briefs and position papers on the NCTE Web site discuss how these multiple and digital forms of expression can be integrated into the overall literacy goals of the curriculum. Their recommendations include the following:

- Explore technologies students are using outside of class and find ways to incorporate them into your teaching.
- Use a wiki to develop a multimodal reader's guide to a class text;
- Include a broad variety of media and genres in class texts;
- Ask students to create a podcast to share with an authentic audience.
- Use sites like Internet Public Library for children (<http://www.ipl.org/youth>) to expand both the range of available texts and the social dimension of literacy. (NCTE, 2007, p.5)

Moreover, new iSkills testing from the Educational Testing Service (ETS, 2007), which sets out to assess students' digital information and research fluency on the Internet, and similar testing efforts underway in other countries may further stimulate efforts to develop and evaluate students' informal learning (e.g., Internet reading and writing) alongside traditional reading skills (Rich, 2008).

Similarly, in social studies, a look at emerging political, social, and technological practices can illuminate ways to fulfill standards while also bridging formal and informal learning. Although the National Council for the Social Studies (NCSS) is currently working on updating the *Curriculum Standards for Social Studies* (NCSS, 1994) reviewing the current standards in light of today's students' out-of-school learning experiences may be instructive.

Consider this example from a recent study we did to uncover how high school students are engaging in social network sites and with what, if any, educational benefits (Greenhow, Robelia, & Kim, 2008). One student we profiled, 18-year-old Tanya (a pseudonym) with no political affiliation or interest in the political process was drawn into the Obama campaign through "friends" on her MySpace.com social network site. The Power, Authority, and Governance strand of the social studies standards states, "Learners should have opportunities to apply their knowledge and skills to and participate in the workings of the various levels of power, authority, and governance" (NCSS, 1994).

Through the senator's MySpace page (<http://www.myspace.com/barackobama>) Tanya was able to see and hear the candidate, learn about his interests and the issues; "friend" him and add him to her network; and engage in the political process (i.e., register to vote; volunteer; find an event near her; and leave her thoughts on his page). When Obama came to caucus in her home state, she was invited through MySpace to join him. She said she would "never have learned about this event otherwise." Other candidates have similar profiles on social network sites.

Consider the questions central to the *National Social Studies Standards*: What is power? What forms does it take? Who holds it? How can we keep government responsive to its citizens' needs and interests? How am I influenced by institutions? What is my role in institutional change? (NCSS, 1994). Incorporating and building on Tanya's experience could engage her in deep thinking about what it means to be part of a participatory democracy, which is at the heart of the social studies curriculum. Juxtaposing students' experiences in MySpace-like networks with content-focused, Internet-supported dialogue might catalyze new insights, resources, and co-created "content" around entrepreneurship, taking initiative, assessing situations, taking risk, and engaging in digital citizenship, all desired 21st-century competencies and concepts embedded in standards for economics and civic participation.

Students might even create digital documentaries of their out-of-school experiences (e.g., participation in the caucus event), upload them to a Web 2.0 site and, with guidance and

scaffolding from their instructors, demonstrate greater understanding through the peer review and feedback such everyday technologies afford (T. Hammond, personal communication, July 20, 2008).

Another impetus and resource for revisiting content-oriented learning objectives is the revised *National Educational Technology Standards for Students* (International Society for Technology in Education [ISTE], 2007), unveiled in June 2007 and currently adopted by thirty-two states (NCTE, 2007, p. 1). Crafted based on input from multiple stakeholders in education, business and other fields, these guidelines outline “what students should know and be able to do to learn effectively and live productively in an increasingly digital world” (ISTE, 2007, p. 1).

The standards emphasize creativity and innovation, communication, collaboration, research and information fluency, problem-solving and decision-making, and digital citizenship. Overlapped with content learning objectives, they support a range of performances that would seem to require connecting students’ formal and informal learning experiences with technologies used in and out of school. For example, students

- Create original works as a means of personal or group expression.
- Interact, collaborate, and publish with peers, experts or others employing a variety of digital environments and media.
- Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
- Develop cultural understanding and global awareness by engaging with learners of other cultures.
- Advocate and practice safe, legal, and responsible use of information and technology.
- Demonstrate personal responsibility for lifelong learning.
- Exhibit leadership for digital citizenship.

The majority of U.S. teachers use computers and the Internet with their students *less than 15 minutes per week* (Norris, Sullivan, Poirot, & Solloway, 2003; although this amount may have increased since this report was published), while students spend 1 hour and 41 minutes per week online outside of school (Kaiser Family Foundation, 2005). Thus, incorporating students’ out-of-school experiences into expectations for formal learning may be the only way to surpass classroom constraints and develop proficiencies that are increasingly desired and assessed.

Digital Immigrants, Go Native!

Another constraint to capitalizing on Web 2.0 technologies for creative expression in schools identified by Bull et al. (2008) is a lack of models for teachers on ways to facilitate students’ learning with participatory media. The newly released *National Educational Technology Standards for Teachers* (ISTE, 2008) call for today’s teachers at all levels, preservice through veteran, to “model and apply the National Educational Technology Standards for Students.” Furthermore, teachers are expected to “exhibit leadership in their school and professional community” by promoting and modeling “digital etiquette and responsible social interactions,” as well as “cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools.”

Bull et al. suggested that schools of education can help teachers translate informal use of communication technologies outside of school into applied activities inside school by

fostering intergenerational collaboration. Gen-Y teacher education students, who have “lived their lives immersed in digital technologies” and may have advanced technology knowledge but emerging pedagogical and content knowledge, can team up with digital immigrant teacher educators who have extensive content and pedagogical knowledge. Thus, the collective wisdom of the group fosters deeper “understanding of the ways in which technology, pedagogy and content knowledge can be combined.”

As a complement to this strategy, digital immigrant teachers can help bridge the gap between learning in and out of school by *going native*, exploiting their own cognitive surplus and spontaneously immersing themselves, even if for a short period of time, in the tools for creative and collective expression that are popular among youth. For instance, the majority of online teens in the U.S. have a profile on a social network site, primarily MySpace or Facebook, and these sites have even surpassed Google in the amount of Internet traffic they receive (Lenhart, Madden, MacGill, & Smith, 2006).

With little start-up cost – these sites do not require downloading and installing software, paying fees, or undergoing lengthy registration procedures – teachers can create a social network site profile and try out the kinds of activities students are engaging in. Such activities include 15-20 minutes of near daily commenting, instant messaging, posting status updates, evaluating friend requests, reading blog entries, reading news sources, sending out requests for information, engaging in groups, and sharing and tagging videos, photos, and scanned artwork (Greenhow, Robelia, & Kim, 2008).

Educators who are uncomfortable simultaneously learning about and making public their initiation to such popular Web 2.0 sites, can try out similar online communities geared toward professionals (e.g., LinkedIn.com or Classroom 2.0 on Ning.com). A little investigation of the range of capabilities and guidelines for participation such social sites promote (e.g., MySpace published new terms of agreement in March 2008) could fuel engaging dialogue between teacher education students and teacher educators about what enacting and modeling these new digital age competencies mean in the context of today’s curriculum, technologies, and learner needs.

Increase Collective Scholarship With a Focus on Learners

Bull et al. noted that limited research exists to guide best practice. In fact, my own review of the literature addressing teaching and learning with Web 2.0 technologies across four well-established educational research databases and the abstracts of several top journals (2004-2008) confirmed this lack of empirical work. Currently, much of the literature is characterized by speculative, anecdotal, and opinion pieces or studies that focus on populations other than K-16 students and teachers (Greenhow, 2007). More empirical work is needed that critically examines the interrelationships between the affordances of these emerging participatory media, pedagogy, and learning in the contexts within which they occur. Roblyer and Knezek (2003) in their agenda for new millennium research, suggested several categories of research that are relevant today. Such studies include those that monitor Web 2.0 technologies’ impact on important social goals, like equitable digital participation, and those that report on current technology uses to help shape desired directions (p. 69).

In Research Windows, a new column for *Learning and Leading* (Greenhow, in press), I suggested that students and parents increasingly have more choices about how to spend their educational experiences (e.g., in online settings, in private, public, or home school options). Therefore, researchers, policy-makers, and PK-12 educators are wise to follow where the kids are. This means more research on what impact *everyday technologies* are having on students *from their perspectives*.

Spires, Lee, Turner, and Johnson (2008) in “Having Our Say: Middle Grade Student Perspectives on School, Technologies, and Academic Achievement” is a recent example of this type of research. Reporting findings from a stratified random sample of 4,000 students (grade 6-8), they found that students wanted more technologies for learning in school. They wanted to be prepared for the future and envisioned new uses of technology in school that were more creative, interactive, and media oriented, as they are at home. They believed use of such technologies in school would lead to increased preparation and engagement. More studies are needed to reveal the complexities of students learning experiences, preferences, and needs.

Moreover, if we are concerned with connecting formal and informal learning, we ought also be concerned with bridging students’ experiences across the life span. Research efforts must surpass the traditional separation between K-12, college, and formal/informal learning settings and aim to illuminate students’ and teachers’ experiences along this continuum. For instance, examining the nature of the intersection between students’ formal academic writing, or writing for school-related purposes, and their Internet-supported informal social or creative writing might well require examination of students’ school-related practices and perceptions, as well as those online practices outside of school that do not fall within typical content-focused distance learning courses. Such an agenda might necessitate multiple types of data collected from multiple perspectives across multiple sites (i.e., from students of various ages, K-12 and college instructors, and others in the online environment brought into the exchange). Insights from such studies might promote more successful lifelong learning approaches, such as enhancing college preparatory experiences in conjunction with college undergraduate writing initiatives to improve high school achievement and graduation and increase college enrollment and success.

Finally, *social scholarship*, a concept being debated within the educational research and library sciences community, may provide a new way of thinking about how to engage in such research collectively. In many ways, it involves connecting the traditional formal research process with informal “soft peer review,” using online social tools to support the research and publishing process. According to academic librarian, Lauren Cohen (2007), social scholarship, in theory, embodies values such as “openness, conversation, collaboration, access, sharing, and transparent revision.” Social scholarly practices seek to exploit a collective intelligence to grow and validate the research base. Cohen suggested that researchers who embody such practices

- Share important citations by depositing and tagging them on academic-oriented bookmarking sites such as Connotea and CiteULike.
- Place items in social bookmarking sites, thereby contributing to soft peer review, a type of peer review that derives metrics from content on social sites and user interactions with this content.
- During the research process—and depending on the topic—a social scholar consults both traditional and nontraditional sources. The latter might include blogs, RSS feeds, social bookmarking sites, podcasts and other multimedia, document repositories, dot-com full-text search portals, online discussion communities, data derived from mashups, etc.

Applying such practices to our scholarly endeavors, including the scholarship of teaching, might further enable us as teacher educators to understand firsthand how to connect informal and formal learning experiences in the age of participatory media.

Notes:

[a]The television documentary *Black in America* aired on July 23 and 24, 2008, at 9 p.m. ET. Examples of viewer participation in the documentary can be found at <http://iReport.com/BlackinAmerica> and at <http://www.cnn.com/SPECIALS/2008/black.in.america>. In addition, for a discussion of how *The New York Times* is trying to bridge traditional print media practices with its readers' preferences and new media habits, see "Talk to the Times: Chief Technology Officer; Digital Operations" (July 28, 2008) on *The New York Times* Web site: <http://www.nytimes.com/2008/07/28/business/media/28askthetimes.html>

References

- Bull, G., Thompon, A., Searson, M., Garofalo, J., Park, J., Young, C., & Lee, J. (2008). Connecting informal and formal learning: Experiences in the age of participatory media. *Contemporary Issues in Technology and Teacher Education, 8*(2). Retrieved from <http://citejournal.org/vol8/iss2/editorial/article1.cfm>
- Cohen, L. (2007, May 1). Social scholarship on the rise. Message posted to *Library 2.0: An Academic's Perspective*: http://liblogs.albany.edu/library20/2007/04/social_scholarship_on_the_rise.html
- Educational Testing Service. (2007). *iSkills assessment*. Retrieved July 25, 2008, from <http://www.ets.org>
- Gratton, L. (2007). *Hot spots: Why some teams, workplaces, and organizations buzz with energy – and others don't*. San Francisco, CA: Berrett-Koehler Publishers, Inc.
- Greenhow, C. (in press). Who are today's learners? *Learning & Leading, 36*(1),10-11.
- Greenhow, C. (2007). What teacher education needs to know about Web 2.0: Preparing new teachers in the 21st century. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2007* (pp. 1989-1992). Chesapeake, VA: American Association for the Advancement of Computers in Education.
- Greenhow, C., Robelia, E., & Kim, S. (2008, March). *Examining the intersections of online social networks, pedagogy, and engagement among low-income students*. Paper presented at the annual meeting of the American Educational Research Association, New York.
- International Society for Technology in Education. (2007). *National educational technology standards for students: The next generation*. Retrieved from http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS_for_Students_2007.htm
- International Society for Technology in Education. (2008). *National educational technology standards for teachers* (2nd ed.). Retrieved from http://www.iste.org/Content/NavigationMenu/NETS/ForTeachers/2008Standards/NETS_for_Teachers_2008.htm

Kaiser Family Foundation. (2005). *Generation M: Media in the lives of 8-18 year olds*. Menlo Park, CA: Kaiser Family Foundation.

National Center on Education and the Economy. (2006). *Tough choices, tough times: The report of the New Commission on the Skills of the American Workforce*. New York: Jossey Bass.

National Council for the Social Studies. (1994). *Expectations of excellence: Curriculum standards for social studies*. Retrieved from <http://www.socialstudies.org/standards>

National Council of Teachers of English. (2007). *21st century literacies: A policy research brief*. Retrieved from <http://www.ncte.org/library/files/Publications/Newspaper/Chron1107ResearchBrief.pdf>

National Council of Teachers of English. (2005). Multimodal literacies: A summary statement. Retrieved from <http://www.ncte.org/about/over/positions/category/comp/123213.htm>

National Endowment for the Arts. (2007, November). *To read or not to read: A question of national consequence*. (Research Report No. 47). Retrieved from <http://www.nea.gov/research/ToRead.pdf>

Norris, C., Sullivan, T., Poirot, J., & Soloway, E. (2003). No access, no use, no impact: Snapshot surveys of educational technology in K-12. *Journal of Research on Technology in Education*, 36(1), 15-27.

Rich, M. (2008, July 27). Literacy debate: Online, R U really reading? *New York Times*, pp. 1, 14-15.

Roblyer, M.D., & Knezek, G. (2003). New millennium research for educational technology: A call for a national research agenda. *Journal of Research on Technology in Education*, 36(1), 60-76.

Sheehy, G. (2008, August). Campaign Hillary: Behind closed doors. *Vanity Fair*, 79-86.

Spires, H.A., Lee, J.K., Turner, K.A., & Johnson, J. (2008). Having our say: Middle grade student perspectives on school, technologies, and academic engagement. *Journal of Research on Technology in Education*, 40(4), 497-515.

Stone, B. (2008, June 18). At social site only the businesslike need apply. *New York Times*, pp. C1-C2.

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