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Student Literacy for Succeeding in a Pervasive Digital Environment

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Abstract

Today's net-generation college students were weaned on multimedia, regularly viewing, sharing and loading video with YouTube and other social networking sites. At University of Southern California (USC), students across curriculum are producing video for their assignments and class assignments. Faculty in diverse disciplines now assigns projects requiring some manner of video feed. Not surprisingly, we're seeing universities across the nation considering video production and related skill sets as part of their undergraduate core curricula[1].

Today's growing digital environment, new education programs are merging traditional information and research skills with IT fluency, digital and multimedia literacies demanding more-and-more knowledge of emerging technologies. A successful literacy education requires collaborative efforts from stakeholders including librarians, information technologists, faculty members, and media specialists on campus.

This presentation will first define the scope of digital and other technical literacies and their collective impact upon current higher education. Based on our home example, we'll discuss how USC Librarians corroborate with other campus colleagues in developing a coordinated, discipline-oriented literacy program meeting the pedagogical goals of the new undergraduate curricula. Furthermore, we will also talk about how to empower a culture of learning and innovation among faculty and graduate students.

Marshall McLuhan stated half-a-century ago, "the medium is the message." Digital literacy is becoming integral to higher education and contributes to students' success in technology-enriched environments.

Towards a Digital Nation and Citizenship

It was just 20 years ago when the first Web page was launched (Blum 2011). Today, the Internet has become such an integral part of our daily life that more than 96% of working Americans use new communications technologies (i.e. going online, using email, or owning a

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[1] Jeffrey R. Young. "Across More Classes, Videos Make the Grade." *The Chronicle of Higher Education* May 8, 2011. http://chronicle.com/article/Across-More-Classes-Videos/127422/

smart phone) as part of their daily life (Pew Research Center 2008), while U.S. domestic online transactions in 2009 were estimated at a total of $3.3 trillion annually (U.S. Census Bureau 2011). This turbulent wave of digital technology evolution will continue to advance the nation toward its next technological frontier. It is even critical to prepare its citizens' online skills necessary for today's evolving workplace.

In the U.S. at the national level, President Obama noted the skills crucial for all Americans to navigate the Information Age by declaring October 2009 as National Information Literacy Awareness Month. In his proclamation, he points out a new type of literacy that "requires competency with communication technologies, including computers and mobile devices that can help in our day-to-day decision making." Furthermore, he urges all educators and institutions of learning to equip our students with, "the ability to seek, find, and decipher information [which] can be applied to countless life decisions, whether financial, medical, educational, or technical." (Obama 2009)

The 2010 National Broadband Plan further sets a concrete federal government agenda on developing a robust Internet access infrastructure for Americans, but also recognizes the importance and training needs of digital literacy as an essential skill for civic engagement, educational success, and economic growth in the digital age (Clark and Visser 2011). Subsequently, a digital literacy initiative website (http://DigitalLiteracy.gov), aimed at helping Americans build their online skills, was launched by Commerce Department's National Telecommunications and Information Administration (NTIA) in 2011. Partnered with nine other federal agencies, the web portal offers resources and tools to teach and help develop computer and online skills (White House 2011). NTIA also has developed a partnership with the American Library Association and the Institute of Museum and Library Services (IMLS) to promote the use of this portal by the nation's 16,600 public libraries (DigitalLiteracy.gov 2011).

Another leading agency at the federal level in advocating a digital literacy program is the Institute of Museum and Library Services (IMLS), an independent federal agency that support libraries and museums. Its 2012-2016 Strategic Plan, titled "Creating a Nation of Learners," is based on the 21st Century Skills Framework for Libraries and Museums and includes a set of necessary skills needed to support productive participation in the 21st century workforce. Adapted from a concept by the Partnership for 21st Century Skills (http://www.p21.org), a non-profit coalition, the Framework delineates a set of nine (9) literary skills: basic literacy; civic literacy; environmental literacy; health literacy; information literacy; information, communication, and technology (ICT) literacy; medical literacy; scientific and numerical literacy; and visual literacy (Institute of Museum and Library Services, 2009, p. 3). To assist libraries and museums, the framework also includes detailed implementation plans, guidelines, self-

assessment tools, case studies, policy analysis and skills definition, as well as an online assessment site (http://imls21stcenturyskills.org/).

Working with a New Generation of Learners

In the higher education arena, today's net-generation students were weaned on multimedia, regularly viewing, sharing and loading video with YouTube and other social networking sites. With constantly evolving technologies and new tools as well as overflows of information presented in various formats, higher education institutions are in an exciting and challenging era to work with the new generation of learners.

EDUCAUSE, a professional organization that promotes the use of information technology in higher education, explored the top challenges in teaching and learning with technology in 2008. Through surveys, focus group study, and community vote, it identified "Developing 21st century literacies (information, digital, and visual) among students and faculty" as one of the top five challenges in the next two to three years (EDUCAUSE 2009).

Another leading barometer that identifies emerging technologies impacting learning, teaching, and creative inquiry in higher education is the annual Horizon Report, a collaborative project between EDUCAUSE Learning and Initiative and the New Media Consortium. Since 2008, digital media literacy has been identified as one of the critical challenges for the next five years. The key issues pointed out in these reports include (New Media Consortium 2008-2012):

- A rising need for formal training programs in information, visual, digital media, and technological literacy as well as in how to create meaningful content with new tools for the students in every discipline.
- Shortage of training in the supporting skills and techniques of digital media literacy in teacher education programs.
- Lack of training and expectation for faculty to develop media literacy skills.
- Lack of new and expanded definitions of what skills constitute digital literacy.
- The need to update the curricula and assessment rubrics for applying these new competencies.
- Rapid technological shift and change is outpacing curriculum development and skill acquisition by faculty members.

As new technology, media, and tools emerge, concerns of their conversion with existing tools and the needs to incorporate them in current literacy education are discussed (Jones-Kavalier & Flannigan 2006; Craig 2011; Weiner 2010; Lippincott 2007). Discussion includes visual literacy

(Bleed 2005; Metros & Wollsey 2006); mobile literacy (Yarmey 2011; Futhey 2011; Parry 2011); and social media literacy (Rheingold 2010).

In the Academic Library setting, "Project Information Literacy" at the Information School at the University of Washington is a large scale and on-going research project studying college students' information seeking behaviors, competencies, and the challenges in conducting research. Since 2008, the project has conducted surveys and interviews of more than 8,000 college students on 25 campuses across the U.S. The latest report, published in 2011, makes the following recommendations for educators, librarians, and administrators based on their findings (Head and Eisenberg 2011):

- Assessing the library's role as refuge
- Designing mobile apps to support new study practices
- Exploring the viability of social media one course at a time
- Learning beyond self-styled techniques for managing IT devices

Digital Literacy at University of Southern California

Located in Los Angeles, the University of Southern California (USC, http://www.usc.edu/), established in 1880, is now one of the world's leading private research universities, and a member of the Association of Research Libraries (http://arl.org/). With a strong tradition of integrating liberal and professional education, USC fosters a vibrant culture of public service and encourages students to traverse academic as well as geographic boundaries in their pursuit of knowledge. With a total student population of 37,000, USC enrolls more international students (8,000+) than any other American university.

USC has 23 libraries and information centers (http://www.usc.edu/libraries/locations/) as well as the USC Digital Library (http://digitallibrary.usc.edu/). USC Libraries owns 4.1 million print volumes, more than half-a-million electronic books and journals; fueled by an annual budget of approximately $40.2 million and a staff of 250 professionals.

At University of Southern California (USC), students across curricula are producing video for their projects and class assignments. Faculty from diverse disciplines now assigns projects requiring some manner of video feed. Unsurprisingly therefore, we're also seeing universities across the nation considering video production and related skill sets as part of their undergraduate core curricula (Young 2011).

USC began integrating digital literacy into its curricula when filmmaker George Lucas met with Professor Elizabeth Daley, now Dean of the School of Cinematic Arts, about incorporating "the language of sound and music" into its curricula in the late 1990s. As a result, the Institute for Multimedia Literacy (IML, http://iml.usc.edu/) was born in 1998 to develop educational programs and models of teaching and scholarship based upon the usage and development of new digital media technologies and applications. (Daley 2003)

Over the years, the IML initiative has grown from offering courses incorporating work in multimedia for non-cinema majors to establishing two undergraduate programs: 1. Honors in Multimedia Scholarship with a Minor in Digital Studies; and 2. The "Multimedia Across the College" program, in which undergraduates work with images, sound and text to create multimedia class projects. Concomitantly, two state-of-the-art multimedia labs were built to strengthen and facilitate these programs.

Over time, IML has successfully shifted its financial dependence from research grants to tuition-based funding. The number of faculty involved and the students enrolled in IML-sponsored programs continues to mature steadily. Affiliated courses have likewise been conducted at California Institute of Technology and University of California, Berkeley.

USC leadership fully recognizes the importance of multimedia literacy in a student's learning experience. In 2010, an IML Advisory Committee was established by the Provost with a mandate to make recommendations for extending the role and scope of IML. Committee membership constitutes faculty representatives from several academic programs, campus information technology services, and USC Libraries. In their final report, the committee offered the following recommendations to the University:

- Continue to expand rigorous and credible IML-based academic programs and courses.
- Make multimedia coursework a requirement in all undergraduate core curricula, with emphasis on cultivating high levels of skill sets and deep knowledge in understanding and utilizing digital information and multimedia technologies.
- The "Multimedia Across the College" program should be expanded to all colleges and schools.
- IML should provide training programs and facilitation to faculty members who are interested in incorporating a multimedia component into their courses.
- IML should also develop resources for integrating multimedia literacies into capstone courses and projects.
- IML must take a leadership role in advocating multimedia literacy and form partnerships with academic and supporting units on campus, including the Center for Scholarly

Technology, USC Libraries, the Center for Excellence in Teaching, and USC research institutes; in tandem with academe's germane individuals: IT professionals, researchers, and faculty with expertise in multimedia literacy.

- IML should continue to lead research in *digital literacy* on campus; provide consultation to faculty members; identify opportunities, and proactively seek grant support.
- IML ought to develop resources for integrating multimedia literacy into USC Library's Information Literacy offerings.

Moreover in 2010, the Committee on Academic Programs and Teaching, which advises the Provost about multi-school curricula and undergraduate curricular issues and policies, published a set of ten (10) recommendations concerning the University's global connections and engagement. Among these: Developing a program to assist students and faculty in gaining fluency with new forms of digital communication. The Committee sees "*digital literacy* as an essential tool to giving USC students and faculty a competitive edge in a global world." (University of Southern California 2011a)

The new USC Strategic Plan, released in December 2011, further incorporated digital and multimedia skills into the student learning process. Under the section, "Transforming Education for a Rapidly Changing World," the plan promulgates:

> *New technologies demand new literacies and modes of academic inquiry that students must master. This is particularly true of **digital and multimedia literacy**. USC is a national leader in the study of new literacies and new media with its strengths in cinematic arts, the humanities, communications, visual and cultural studies, advertising, and new technologies. Competence in new media is, in many ways, an extension of traditional forms of literacy. An appreciation of this connection can instill respect for intellectual depth and rigor.* (University of Southern California 2011b)

In addition to the Institute for Multimedia Literacy, the Information Technology Program (http://itp.usc.edu/) in the USC Viterbi School of Engineering offers credit courses in multimedia, 3D animation, and introductory courses on user experience, Internet technologies, and mobile application development. ITP furthermore offers major and minor programs on video game programming, web development, 3D animation and special effects, along with video game production.

USC Libraries' Instructional Services

USC Libraries has created an active information literacy program and developed close partnerships with key academic departments (Bahavar, Hanel, Howell, & Xiao 2011). During 2009-10 Fiscal Year, USC Libraries proffered 1,326 instructional sessions with 21,596 participants. To assist students in accessing and making the most of our rich collections, librarians have developed online guides, instructional websites and tutorials, in addition to traditional classroom-based instruction and training. USC Libraries' Instructional Services has further partnered with the Writing Center, the Engineering Writing Program, Freshman Academy, Ph. D. Summer Institute, American Language Institute, and the USC Language Academy to provide specific literacy programs.

Among the 20 USC libraries, the Leavey Library is a 24/7 technology-enhanced facility that strongly supports students' multimedia needs. The state-of-the-art Information Commons is equipped with 39 iMacs, 140 PCs, two hands-on interactive computer learning classrooms, 35 collaborative workrooms equipped with a PC, white board, high-speed network connections, audio/visual area with 18 viewing workstations, video conferencing rooms, and an auditorium. The Multimedia Commons is facilitated with higher-end workstations (iMacs and PCs), scanning and other technology and audio-visual equipment. All these workstations come with multimedia productivity software. The Library itself provides extensive multimedia equipment for checkout, including digital cameras, camcorders, digital audio records, headsets, pen tablets, microphones, and an LCD data projector. USC Library's video collection now contains more than 4,000 DVD titles, including foreign-language, documentary, independent and instructional films.

Librarians at USC are acutely aware of the trends and imperatives in offering training and support to our patrons regarding effectively working with digital resources. As stated clearly in USC Libraries' 2011-2013 Strategic Plan, the goal of "Integration with our Community" is "to become more thoroughly and systematically integrated into the research programs, teaching curricula and learning activities of our users," who arrive with diverse study habits, varied *media literacies* and disparate research methodology practices. (University of Southern California Libraries, 2011)

As pointed out in recommendations to USC's IML Advisory Committee, there are numerous stakeholders involved in the multimedia-literacy effort, including Libraries, Information Technology Services, IML, ITP, the Center for Excellence in Teaching, Annenberg School of Communications and Journalism, and USC Research Institutes. A concerted and coordinated effort will minimize unnecessary overlap and confusion, while maximizing our limited resources.

In summation, higher learning simply makes *profoundly wise educational sense*, when lab facilities, production equipment, common software programs, and digital portfolio archival systems, buttressed by training and support services – *the tools of digital literacy* – are standardized across campuses and academic programs – locally, nationally, and – at the dawn of the 21st century – globally.

Conclusion

There's no going back. Today's mushrooming digital environment and newest educational programs are merging traditional information and research skills with IT fluency, digital and multimedia literacies, thenceforth demanding evermore knowledge of emerging technologies.

Information literacy is the overarching term and concept encompassing all – traditional and emerging literacies – including digital literacy. Information literacy is now the domain and responsibility of all educators and is applicable to all disciplines. A successful "information-literate education" requires corroborative efforts and support from chief higher-learning stakeholders – including top administration, librarians, information technologists, faculty members, key academic advisors and media specialists university-wide.

Marshall McLuhan stated half-a-century ago, "the medium is the message." "The Digital Age" is a major harbinger of that message. Digital literacy is becoming integral to higher education and contributes to student success in technology-driven environments. As Lippincott superbly points out in her article, the campus community needs to develop a "coordinated, discipline-oriented literacy program," to cultivate a "convergence of literacies and frame a discussion of literacies in the context of *academic* work, rather than in the context of organizational structure." (Lippincott, 2007, p. 17)

References

Bahavar, S., Hanel, N., Howell, K., & Xiao, N. (2011). The University of Southern California's Campus-wide Strategies to Reach International Students. In P. A. Jackson & P. Sullivan (Eds.), *International Students and Academic Libraries: Initiatives for Success* (pp. 213-231). Chicago, IL: American Library Association.

Bawden, D. (2001). Progress in documentation--information and digital literacies: A review of concepts. *Journal of Documentation, 57*(2), 218-259. Retrieved from http://search.proquest.com/docview/217954085?accountid=14749

Bleed, R. (2005). *Visual Literacy in Higher Education*. Retrieved from EDUCAUSE website http://net.educause.edu/ir/library/pdf/ELI4001.pdf

Blum, M. (2011). *20 Years Ago Today: The First Website Is Published.* Retrieved from WIRED
      website http://www.wired.com/geekdad/2011/08/world-wide-web-20-years/

Clark, L. and Visser, M. (2011). Digital Literacy Takes Center Stage. *Library Technology Reports*,
      47(6): 38-42.

Craig, K. (2011). The Ouroboros; or, How "Digital" and "Humanities" Will Shape Each Other in
      the Near Future. *EDUCAUSE Review*, 46(5), 58-59. Retrieved from
      http://www.educause.edu/ir/library/pdf/ERM1157.pdf

Daley, E. (2003). Expanding the Concept of Literacy. *EDUCAUSE Review*, 38(2), 32-40. Retrieved
      from http://net.educause.edu/ir/library/pdf/ffp0306s.pdf

DigitalLiteracy.gov. (2011). *Digital Literacy Initiative Fact Sheet*. Retrieved from
      http://www.digitalliteracy.gov/sites/digitalliteracy.gov/files/Digital_Literacy_Fact_Sheet
      _051311.pdf

EDCAUSE. (2009). *The EDUCAUSE Top Teaching and Learning Challenges.* Retrieved from
      EDUCAUSE Learning Initiative website: http://www.educause.edu/eli/Challenges

Futhey, T. (2011). Embracing Change: An Interview with Tracy Futhey. 46(2), 47-58. Retrieved
      from http://www.educause.edu/ir/library/pdf/ERM1126.pdf

Head, A.J. & Eisenberg, M.B. (2011). *Balancing Act: How College Students Manage Technology
      While in the Library during Crunch Time*. Seattle, WA: The Information School, University
      of Washington. Retrieved from
      http://projectinfolit.org/pdfs/PIL_Fall2011_TechStudy_FullReport1.2.pdf

Institute of Museum and Library Services. (2009). Museums, Libraries, and 21st Century Skills.
      Retrieved from Institute of Museum and Library Services website
      http://www.imls.gov/assets/1/AssetManager/21stCenturySkills.pdf

Jones-Kavalier, B.R. & Flannigan, S.L. (2006). Connecting the Digital Dots: Literacy of the 21st
      Century. EDUCAUSE Quarterly, 29(2): 8-10. Retrieved from
      http://www.educause.edu/ir/library/pdf/EQM0621.pdf

Lippincott, J.K. (2007). Student Content Creators: Convergence of Literacies. *EDUCAUSE Review*,
      42(5), 16-17. Retrieved from http://www.educause.edu/ir/library/pdf/ERM07610.pdf

Metros, S. & Woolsey, K. (2006). Visual Literacy: An Institutional Imperative. *EDUCAUSE Review*,
      41(3), 80-81. Retrieved from http://www.educause.edu/ir/library/pdf/ERM0638.pdf

New Media Consortium. (2008-2012). *New Horizon Report*. Retrieved from New Media
      Consortium website http://www.nmc.org/publications

Obama, B. (2009). National Information Literacy Awareness Month, 2009. Retrieved from White House website http://www.whitehouse.gov/assets/documents/2009literacy_prc_rel.pdf

Parry, D. (2011). On Teaching Mobile Literacy. *EDUCAUSE Review*, 46(2), 14-18. Retrieved from http://net.educause.edu/ir/library/pdf/ERM1120.pdf

Pew Internet and American Life Project, *Most Working Americans Now Use The Internet or Email at Their Jobs*, Sept. 24, 2008. Retrieved from Pew http://www.pewinternet.org/Reports/2008/Networked-Workers/1-Summary-of-Findings.aspx

Rheingold, H. (2010). Attention, and Other 21st-Century Social Media Literacies. *EDUCAUSE Review*, 45(5), 14-24. Retrieved from http://www.educause.edu/ir/library/pdf/ERM1050.pdf

University of Southern California, Committee on Academic Programs and Teaching (2010). *CAPT Report on Global Connections and Engagement.* Retrieved from University of Southern California website http://strategic.usc.edu/CAPT%20on%20Global%20Connections%20and%20Engagement%20-%202010.pdf

University of Southern California. (2011a). *USC Strategic Vision: Matching Deeds to Ambitions*. Retrieved from University of Southern California website http://strategic.usc.edu/USC%20Strategic%20Vision%20Dec%202011.pdf

University of Southern California Libraries. (2011b). *The Essential Library: The USC Libraries' Strategic Plan 2011-2013.* Retrieved from University of Southern California Libraries website http://www.usc.edu/libraries/essential/integration/index.php

U.S. Census Bureau. (2011). *E-Stats*. Retrieved from U.S. Census Bureau website http://www.census.gov/econ/estats/2009/2009reportfinal.pdf

Weiner, S.A. (2010). Information Literacy: A Neglected Core Competency. *EDUCAUSE Quarterly*, 33(1). Retrieved from http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/InformationLiteracyANeglectedC/199382

White House. (2011). *Digital Literacy Initiative Aims to Help Americans Build Online Skills.* Retrieved from White House website http://www.whitehouse.gov/blog/2011/05/13/digital-literacy-initiative-aims-help-americans-build-online-skills

Yarmey, K. (2011). Student Information Literacy in the Mobile Environment. *EDUCAUSE Quarterly*, 34(1). Retrieved from http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/StudentInformationLiteracyinth/225860

Young, J. R. (2011, May 8). Across More Classes, Videos Make the Grade. *The Chronicle of Higher Education*. Retrieved from http://chronicle.com/article/Across-More-Classes-Videos/127422/