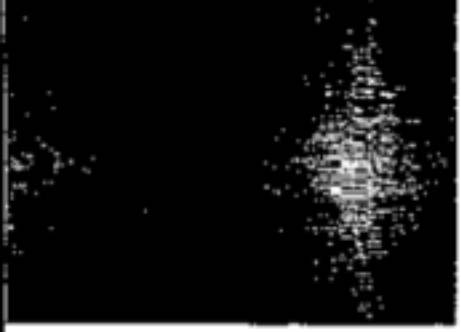

Social Media Revolution

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The advent of Web 2.0 and the spread of social software tools have created new and exciting opportunities for designers of digitally-mediated education programs for adults. Whether working in fully online, blended, or face-to-face learning contexts, instructors may now access technologies that allow students and faculty to engage in cooperative and collaborative learning despite being separated in space and time. By supporting the use of interactive methods and multi-media materials, social software offers educators more ways to engage learners than any preceding educational technology. Social software also empowers curriculum designers to more effectively accommodate many of the core principles of adult learning than was possible with earlier e-learning technologies. This article offers a basic introduction to some new possibilities in the design and delivery of digitally-mediated education, and an overview of the compatibility between the capabilities of social software and the principles of adult education.

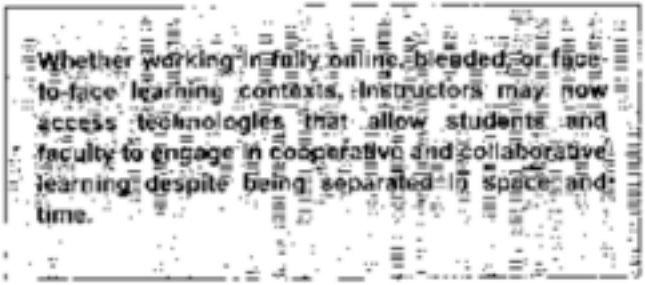
Digitally Mediated Learning

Self-directed learning is largely unconstrained in terms of time and location and has traditionally been a primary affordance of distance education (Holmberg, 1995). From its inception, distance education has been marketed as a solution for adults whose occupational, social, and/or family commitments limit their ability to pursue educational goals (Holmberg). In the decades since the 1970s, demand for distance programs has increased as the globalization of national economies creates a competitive atmosphere that drives people to become life-long learners in order to be successful in the workplace (Merriam, Caffarella, & Baumgartner, 2007).

For many people, the term distance education now conjures up images of computers, the Internet, and online learning. In fact, with advances in mobile technology, the delineation between computers and various other electronic devices (e.g. mobile phones, music players, personal digital assistants, digital tablets) is blurring, and what was once termed e-learning or computer-mediated learning has become more commonly referred to as *digitally mediated learning* (DML). This term implies that a medium for learning is provided by digital technology of some sort, and that interaction between participants and between participants and learning materials is not direct but rather carried out through the technology (Gaudin, 2000). The use of networked devices, local networks, and the Internet is a key facet of DML, and online networked technologies are the delivery systems of choice for distance education offerings (Allen & Seaman, 2006).

The accessibility and convenience of online DML is positioning the online environment as the primary context for adult/post-secondary education and training in general (Allen & Seaman, 2007; Kim & Bonk, 2006; McLoughlin & Lee, 2007). A Sloan Foundation study of more than 2,500 colleges and

that 80% of content is delivered online and reported that over 4.6 million students were taking such courses during the fall 2008 term.



There has also been a trend toward the use of blended learning or approaches that combine online and face-to-face delivery modes. As part of efforts to enrich students' learning experience, maximize efficiencies in time and facilities use, and enhance program marketability, many institutions are increasing their offerings of blended courses (Mosawar-Rahmani & Larson-Daugherty, 2007). This method is becoming increasingly common in K-12, higher education, corporate, healthcare, and governmental training settings (Allen, Seaman, & Garrett, 2007; Bonk, Kim, & Zeng, 2005; Watson, 2008). The overall result is a blurring of the boundaries between traditional classifications of instructional approaches. Palloff and Pratt (2007) comment on the changes that digitally-mediated delivery has wrought on our definition of distance learning:

> Today we know that distance learning takes several forms, including fully online courses, hybrid or blended courses that contain some face-to-face contact time in combination with online delivery, and technology-enhanced courses, which meet predominantly face-to-face but incorporate elements of technology into the course. (p. 3)

A future is visible in which schooling is dominated by delivery models that feature multiple instructional modes fluidly combined within the affordances of technology-enhanced delivery and interaction (Bonk, 2009; Kim & Bonk, 2006). The scalability of these delivery models allows for the design of courses that can accommodate larger numbers of participants than has ever been possible in the past (Siemens & Downes, 2008). As experience with delivered at a much lower per student cost (Daniel, 2003; Jung, 2005).

The Social Media Revolution

Designers of online education have tended toward an emphasis on constructivist models of education, with a focus on skills considered to be essential in a knowledge based economy, including knowledge construction, problem-solving, collaborative learning, critical thinking, and autonomous learning (Bates, 2008; Sanchez, 2003). There is a need for delivery systems that can maximize learner independence and freedom by supporting open enrollment and self-paced learning while providing the capabilities for communication and collaboration demanded by constructivist pedagogies (Anderson, 2008).

Learning management systems (LMS) that integrate geographically dispersed learners in asynchronous educational interactions have been widely available for several years. However, they tend to be institution- and content-centric, lacking in support for the affordances that lead to the establishment of flattened communication networks and collaborative information flows (Dalsgaard, 2006; Siemens, 2004). An LMS is well suited for managing student enrollment, exams, assignments, course descriptions, lesson plans, messages, syllabi, and basic course materials. However, these systems are developed for the management and delivery of learning, not for supporting the self governed and problem-based activities of students. Therefore, an LMS does not easily support a social constructivist approach to digitally-mediated learning. It is necessary to move beyond learning management systems to engage students in active use of the web itself as a resource in self-governed, problem-based and collaborative activities (Dalsgaard, 2006).

Web 2.0 technology can facilitate this move. This technology consists of Internet applications (small software tools that can deliver active and interactive content to a browser window) that support interaction between mobile devices and the Internet, and allow interactivity between the user, the web, and the tool itself (O'Reilly, 2005). These applications have provided Internet users with the ability to easily create, contribute, communicate, and collaborate in the online environment without need for specialized programming knowledge. Applications of

for activities, and surround the student with different tools and resources which support the problem-solving process (Dalsgaard, 2006; Lund & Hansmann, 1996). Anderson (2008) referred to social software technology as a new genre of distance education software emerging from the intersection between earlier technologies that generally support delivery and engagement with content, and new interactive technologies that support multimodal digitally-mediated human communication.

Social software can "create opportunities for radically new conceptions of independence and collaboration in distance education" (Anderson, 2008, p. 169)

Social software takes many forms, encompassing but not limited to (a) groupware, (b) internet forums, (c) online communities, (d) RSS feeds, (e) wikis, (f) tag-based folksonomies, (g) podcasts, (h) e-mail, (i) weblogs, (j) virtual worlds, (k) social network sites, (l) instant messaging, texting, and microblogging; (m) peer-to-peer media sharing technologies, and (n) networked gaming (boyd, 2008; Greenhow, Robelia, & Hughes, 2009; McLoughlin & Lee, 2007). Well-known applications include Google Groups, Wikipedia, MySpace, Facebook, YouTube, Second Life, Flickr, and Twitter. The use of social software centers on contacts between people (Shirky, 2003). Social software supports fluid interaction among people, and between people and data, that may lead to the creation of user-generated online content (boyd, 2007).

Among social media, social network sites (SNS) are particularly useful in digitally-mediated education delivery. SNS are defined by boyd & Ellison (2007) as web-based services that allow individuals to (a) construct a public or semi-public profile within a bounded system, (b) articulate a list (network) of other users with whom they share a connection, and (c) view and traverse their list of connections and those made by others within the system. Although SNS users may be able to meet strangers online and make connections that would not have been made otherwise, this networking function is not the primary feature of these sites. The unique aspect of an SNS is that it allows users to articulate and make visible their social networks (boyd & Ellison, 2007). In educational contexts, articulation and visibility may recede in importance, giving way to other common SNS features including (a) a suite of associated social media tools that support interaction, communication, and collaboration, (b) provisions for the storage and display of content delivery capabilities that facilitate and stimulate broad and dense interaction patterns, collaborative information discovery and processing, and multiple-style learning opportunities.

Andragogy and the Internet Age

An array of technological media can be an ideal educational tool, when correctly deployed within effective instructional designs. However, instructors working in technology-enhanced learning environments must understand that it does not replace good teaching (Stammen & Schmidt, 2001). To maximize learning, instructors must be able to accommodate the needs of a student population that is becoming more and more diverse due to factors including increased access to learning, lifelong learning pursuits, recertification needs, immigration, longer life spans, and better course marketing (Book, 2009). Instructors also need to be equipped to meet the demands of teaching in an age when "the Internet is, inexorably, becoming the dominant infrastructure for knowledge - both as a container and as a global platform for knowledge exchange between people" (Tapscott & Williams, 2010, para. 6).

Trainers and educators today will encounter cohorts of learners who have come of age in the presence of the Internet. They make up what Tapscott (1999) termed as the net generation, and are "forcing a change in the model of pedagogy, from a teacher-focused approach based on instruction to a student-focused model based on collaboration" (Tapscott, 2009, p. 11). Students today want to participate in the learning process; they look for greater autonomy, connectivity and socio-experiential learning, have a need to control their environments, and are used to instant connectivity and easy access to the staggering amount of content and knowledge available at their fingertips (Johnson, Levine, & Smith, 2009; McLoughlin & Lee, 2007; Oblinger, 2008; Tapscott, 2009).

A world increasingly characterized by high digital connectivity and a need for life-long, demand-driven learning calls for the development of andragogies (Knowles, 1980) specialized to DML environments. In a context of limitless access to information, instructors must take on the role of guides, content providers, and quality controllers while simultaneously helping students make their own contributions to content and evaluations of the learning experience (Prensky, 2009). Palloff and

structional content, and frame learning as a participatory, social process intended to support personal life goals and needs (McLoughlin & Lee, 2007; Tapscott & Williams, 2010).

Social Software and Adult Education

The ideals of quality online education as noted above can be seen to mesh well with the basic principles of effective adult education. Drawing on the work of Knowles (1980), Knowles, Holton, and Swanson (2005), Tough (1979), Merriam (1991), and MacKeracher (2004), some of the primary principles of adult education can be summarized:

- Adults develop readiness to learn as they experience needs and interests within their life situations.
- Adult learners in general are autonomous individuals capable of identifying their personal learning needs and planning, carrying out, and assessing learning activities.
- Adults have a need to be self-directing in their learning processes.
- In adult education, the teacher should be positioned as a facilitator engaged in a process of mutual inquiry rather than as a transmitter of knowledge.
- Relationships and collaborations with others make important contributions to the adult learning process.
- Adults learn throughout their lifetime and engage in many informal learning projects outside of educational institutions and programs.
- Individual differences among people increase with age; therefore, adult education must make optimal provision for differences in style, time, and pace of learning.
- Adults bring life experience and prior learning to bear on current learning projects.

"As individuals mature, their need and capacity to be self-directing, to use their experience in learning, to identify their own readiness to learn, and to organize their learning around life problems increases steadily" (Knowles et al., 2005, p. 62). Adults learn most effectively when new knowledge, understandings, skills, values, and attitudes are presented in the context of application to real-life situations (Knowles et al.). Thus, the problem-based, constructivist, collaborative approaches to learning that have become prevalent in online education delivery are suitable to adult learning styles (Knowles et al.; relevance between learning activities and the necessities of their daily lives (Knowles, 1980; Tate, 2004).

Open-ended learning environments built on the affordances of the Web itself allow for self-direction and individualized adaptation/creation of content and interaction, while social software use is often centered on collaboration. For an example, social bookmarking and tagging tools like Delicious allow learners to develop and share personalized resource sets, while tools such as Google Docs, Wikispaces, and VoiceThread are expressly designed to support collaborative work by allowing multiple users to work together either synchronously or asynchronously in the creation of text documents, slideshows, spreadsheets, and audio/video productions.

For adults, learning is an interactive phenomenon, not an isolated internal process (Jarvis, 2006). Adult learners generally value learning as a way to meet a need for associations and friendships. They need regular feedback from peers and instructors, and readily involve others in their learning projects (Billington, 1996; Lieb, 1991; Merriam et al., 2007; Zemke & Zemke, 1984). Connection, interaction, and dialogue can be considered crucial elements of the adult learning context. These are also primary aspects of community membership, implying that adult learners are predisposed to favor work and study as members of a community. It is now clear that learners build and maintain communities of learning in online environments by engaging in many of the processes and behaviors associated with offline communities (Haythornthwaite, Kazmer, Robins, & Shoemaker, 2004; Kazmer, 2000). These processes and behaviors include (a) sharing common meeting places and histories (e.g. course discussion boards or chat rooms), (b) supporting common goals and commitment to the purposes of the community, (c) establishing identity and membership markers and rituals, (d) taking positions in hierarchies of expertise, and (e) socially constructing rules and behaviors (Haythornthwaite et al., 2004).

Ongoing interaction is the foundational theme underlying all of these community-building behaviors. The media chosen by instructors as the main means of contact for the class will play the dominant role in establishing and shaping the interactions among all class members (Haythornthwaite & Bregman, 2004). Successful course designs for adult online learning will deploy tools and activities that facilitate and encourage

on shared learning objectives. This type of social space can be a positive component of an online course (Palloff & Pratt, 2003), and can encourage the development of the object-centered social structures (Engstrom, 2005) that arise naturally around the content, activities, and learning objectives that constitute the commonalities shared by course participants. Along with providing personal profile pages that afford the establishment of emotional and cognitive presence in the online environment (Dalsgaard, 2008; Garrison & Anderson, 2003; Rovai, Ponton, & Baker, 2008), an SNS will commonly include useful communication tools such as chat rooms, discussion boards, support for blogging, and private messaging capabilities, all of which empower extensive interaction.

A varied set of presentation tools can support dense interaction, and allow participants to establish what Haythornthwaite and Bregman (2004) referred to as visibility in the online learning environment. From the available means of communication, participants must choose the mediums through which they will present themselves to others in the community. More options mean more opportunities for all participants. According to Haythornthwaite & Bregman (2004), it is "important when supporting collaborative activity to provide multiple means of communication so that individuals and subgroups within the full set of participants can use means that suit their needs and preferences" (p. 137). Adult learners have fully-developed personas, and are facile and diverse in their use of self-expression to negotiate social interactions (Knowles, 1980; Merriam et al., 2007). They will readily make use of alternative modes of individual expression including choice in the design of personal pages or spaces, the ability to produce and display digital photographs and art forms, the capability to play and share music, and so forth. Instructors must also go beyond text to make use of all available tools and delivery modalities as appropriate to content and context. Meeting the requirement for providing a diverse set of tools for expression, communication, and content delivery will help ensure a successful experience for adult online learners.

Informal learning happens naturally in numerous and varied places in the lives of adults as they engage in a wide variety of activities to satisfy needs or provide solutions in everyday life (Merriam et al., 2007). Adults are capable of independently choosing and constructing their own learning experiences in whole or part, and often

structional designs for digitally-mediated learning should exploit the adult propensity for self directed informal learning. This can be accomplished by offering dynamic learning environments where students may go beyond content presented by the instructor to explore, interact with, comment on, modify, and apply the set content and additional content they discover or create through the learning process (Reynard, 2007).

Dynamic learning environments can be constructed from suites of social software tools by instructors working within the Personal Learning Environment (PLE) paradigm. In general, PLEs are digitally-mediated front-ends, or what may be thought of as dash-boards or homepages, that serve as organizers and access points through which students interact with an online information cloud that offers nearly infinite resources for knowledge-building and training of all sorts. Workable PLEs can be built upon individual participant profile pages on a class social network site, or around blogs/web pages such as those offered by *Word Press* or *Blogger*. Another possibility is the use of the online portfolio concept, as with *Digication*, online educational software that combines elements of e-Portfolios and learning networks.

An important characteristic of mature learners is the wealth of life experience that they bring to the learning process (Knowles, 1980; Knowles et al., 2005; Merriam et al., 2007). While this experience is the richest resource for their learning, it is also a source of mental habits, biases, and presuppositions that tend to make it difficult for adults to open up to new ideas, fresh perceptions, and alternative ways of thinking (Knowles et al.). Mature learners may be resistant to the use of new technologies. They may also simply lack experience, skill, or access. Even younger students, those generalized as the net generation, should not be presumed to be fluent in the tools and techniques needed to take advantage of social software-powered online learning (Vaidhyanathan, 2008). Although many desirable social software tools are very easy to learn and use, instructors must be ready with systems of support and plans for scaffolding that will help all course participants get the maximum benefit from the learning opportunities being presented. While this may initially seem to be a substantial downside to deploying these new online tools, any negative effect is easily outweighed by the secondary learning represented by gaining proficiency in the use of the technology tools that are becoming prominent and

all ages. This is a phenomenon of deep import for the way people live, learn, and work. The power of social software is concisely reflected in boyd's (2008) comment that it has "affected how people interact with one another and, thus, it has the potential to alter how society is organized" (p. 93). In net-infused societies, new communities are being created that are native to the new social software technologies. Accessing these new communities requires a new form of online education in which educators are challenged to create and sustain learning opportunities that leverage the learning affordances specific to the technologies upon which these communities are built (Anderson, 2008).

Conclusion

Technology now offers the potential for customization of the learning process to the needs of each student (Reynard, 2007) and for accommodation of any adult learning style. The course interface in an internet-based class is a portal to a literally infinite expanse of material and opportunities, and a correctly designed course will leverage this fact by including a variety of elements that mix formal, informal, and information-based models of learning (Palloff & Pratt, 2007; Russell, 1999). Social software tools empower students and instructors to interact with, and within, the online environment, and efficiently use and benefit from the wealth of resources available in that environment. The flexibility and adaptability of social software applications are driving new paradigms in digitally mediated education delivery and have the potential to support organized approaches to life-long learning.

Teaching in a digital world calls for expansion of the vision of andragogy. In this new vision, learners actively create their own learning process rather than passively consume content, and realize learning as a participatory, life-long social process embarked upon in support of individual goals and needs (McLoughlin & Lee, 2007). The use of social software applications in digitally-mediated education delivery encourages collaboration, while supporting self direction and individuation. In contrast to standard content management systems that are teacher/institution centric and emphasize content handling and two-way communication (Siemens, 2004), social software offers increased opportunities for interactivity and a distributed web of communication paths. In this way, social learning are core ideals of the practice of adult education. Proper use of Web 2.0 technologies and social media can contribute to the achievement of these ideals in the design and delivery of digitally-mediated adult learning.

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