

**Social networking technology, NetGen Learners, and emerging technology:
Democratic claims and the mythology of equality**

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Introduction

Social computing environments (SCEs) promise opportunities to rethink and rediscover the practice of teaching and learning with technology (Alexander, 2006). These environments, represented by user-created content, organization, and prioritization of content, can be seen as the use of networked computer technologies to create social contexts to engage in various cultural activities including work, entertainment, and learning. While computer-based social networking has existed for decades in selective communities, recent years have seen the diffusion of social computing environments including blogs, wikis, and collaborative bookmarking, to name a few, that have created new discourses in the ways that individuals conduct their lives and construct knowledge while being utilized by new populations. These discourses have filtered into the ways in which educational technologies and learners are framed.

The fields of instructional technology and design are primary sites in which to examine the cultural impact of social computing and the claims made by proponents of SCEs. These claim include the observation that SCEs are able to address “digital natives” and the way that they naturally experience electronic communication and media (Pensky, 2001). In addition, the fact that these sites are available to anyone with an Internet connection provides justification for the claim that these technologies promote equitable access to the communication and knowledge creation networks provided by these technologies. This later has lead to assertions that the learning processes that are promoted and the knowledge that is produced by SCEs are democratic because there

are few gatekeepers of knowledge and students are able to process their learning in ways that make sense to them - multitasking and multimodal. This paper shows that these claims are flawed and that the imagined users of this technology and social processes that exist create specific exclusions that need to be addressed. We base this argument around three main areas:

- 1) Digital natives are a false construct, a technological determinist's mirage;
- 2) SCEs are not accessible (in technology and discourse) to all, that there are specific exclusions that take place. (e.g., accessibility and the MySpace ghetto)
- 3) The knowledge that is created on SCEs is not democratic. It is still being manipulated by the power and technology elites.

Part of the analysis of this paper will contrast the discourses of social computing with the practices of Instructional Technology delineating how these discourses can potentially create exclusion in the implementation and use of learning with these technologies.

Standard views of Instructional Technology are grounded in some form of “scientific” practice: behaviorism, cognitivism, systems theories, or various forms of constructivism. These traditional approaches to instructional technology are typically predicated on the principles of systematicity of the design and evaluations process, replicability of learning outcomes, and predictability of teaching approaches (Smith & Ragan, 2004). Many of these models do not integrally consider the social and cultural aspects of technology in any context, and certainly not in the ad hoc world of social

technologies. In other words, they do not address the ways in which technology and media impact the very nature of knowledge and experience. These perspectives can be limiting because they focus primarily on how to teach with technology, not on how those technologies shape the world in which we live, the ways in which we work, learn, are entertained, communicate, and form relationships. Conversely, social technologies, even when used in instructional or education contexts generally cannot be considered “instructional technologies” because they have not been subject to the instructional design process.

Social computing environments provide opportunities for explorations of different forms of literacy and knowledge (i.e. visual vs. textual) that extend beyond current common instructional technology practices in course design and pedagogy. In this paper we examine the ways in which the discourses and practices of social computing communities can exclude, essentialize, and marginalize the very groups that they purport to include.

The following section describes the theoretical frameworks that were used to identify the social and cultural inequities and positions that are created when instructional technology discourses subsume and take up social computing concepts and technologies.

Theoretical Framework / Methods

This study is grounded in understandings of power and discourse in which subjectivities and agency are co-constructed by cultural and historical dynamics. In this framework, individual choices, desires, learning and knowledge arise from and are

regulated by discourses (Foucault, 1980). Discourses can be defined as the use of pedagogical, technical, theoretical, design, and personal languages in contexts including classrooms the home, places of work, and social computing web sites. We are interested in the social and historical location and positioning of technology, educators, and students and how these subject positions are regulated by the discursive formations of social computing, popular culture, and educational technology.

According to Foucault (1972), a discursive formation is defined by how communities and institutions regulate “truth” and contribute to the construction of subject positions, concepts, and strategic choices. In other words, discursive formations shape subject positions for students and educators through concepts like democratic knowledge, community, and equality that are dispersed through strategies including design, access, and implementation. In this context, subject positions represent locations of identity and agency in relation to specific forms of practice and knowledge. Subject positions are fluid reference points that create myths, narratives, metaphors, theories, epistemologies, and ontologies from which an individual draws meaning when using social technologies to teach and learn. Our analysis begins with a discussion of a particular subject position, a generation of students (e.g., Digital Natives, Net Genners) whose brains are supposedly wired to learn with SCEs.

Net Gen Learners / Digital Natives and Teachers

A popular trend in discourses surrounding teaching and learning with technology labels young, technology literate students as “Net Gen Learners” or “Digital Natives” (e.g. Brown, 2000; D. G. Oblinger, 2003; Prensky, 2001) and their teachers as “digital

immigrants.” While this is a vivid metaphor in which to describe some of the changes technology is bringing to educational context, such generalizations run the risk of obscuring the diversity and difference that exists across groups of students.

When teachers begin to refer to themselves as digital immigrants and their students as digital natives, they create artificial barriers that often overdetermine their students’ perceived technical skills to include literacy capacities that do not really exist. In turn, teachers may undervalue their own literacies that are crucial for students to go beyond being consumers of media to critical consumers of information and communication technologies.

This bifurcating rhetoric has crept into the areas of faculty development (e.g. Junco & Mastrodicasa, 2007) particularly with regard to teaching and learning with technology in higher education. For many university faculty, the only teaching “methods” they are exposed to come through faculty development offerings on their campuses. At the college and university level, professional instructional technologists and web developers who come from backgrounds in instructional design and often from corporate environments heavily influence most technology professional development. These backgrounds do not necessarily equip those individuals providing professional development to faculty with the tools to critically analyze the trends in their fields while understanding diverse theories of learning and robust notions of knowledge.

Dividing the world across generational lines in superficial ways perpetuates myths about people’s access to (and use of) technology and marginalizes those who don’t fit the stereotype. There has been an absence of critical analysis of discourse in

the nature of the learner – that is, much of what is being disseminated and published as a broad trend is anecdotal or highly localized. Much of the discourse surrounding this phenomenon occurs in the forms of conference sessions sponsored by professional organizations that cater to technology professionals (e.g. EDUCAUSE) that feature NetGen learners giving their perspectives, (e.g. Windham, 2007); presentations where “older” experts, who Prensky (2001) refers to as “Digital Immigrants,” conflate emerging technology with learning and interaction styles (e.g. Hartman, Dzubian, & Campbell, 2006); and “how-to” books for teaching this new breed of students (D. Oblinger & Oblinger, 2005). These types of representations result in a tendency to consider these students as a monolithic and uniform group. This tendency simultaneously oversimplifies the nature of today’s student, and diminishes the diversity and distributedness that makes this group different from many that have preceded it. Additionally, these representations suggest that the only way to reach these students is through the use of certain technologies (the newer the better) and by embracing interactivity, instantaneousness, and technological ubiquity.

There is some accuracy in the discourse about Net Gen learners. Trends in technology ownership and usage among college students are increasing rapidly. An annual survey in student technology use conducted by the Educause Center for Applied Research (ECAR) in 2007 surveyed over 28,000 students from 103 institutions across the Carnegie rankings and found growing trends in student technology use. The ECAR survey found that 86% of the study respondents owned a cell phone, 61% a desktop computer, and 73% a laptop computer (53% of respondents owned 4 or more electronic

devices which accounts for the overlap in laptop and desktop ownership). Three-year trends in the survey indicate a 20% increase in the number of students owning laptops. Only 1.6 % of student respondents reported not owning a computer at all.

While these numbers are impressive, it is easy to over-generalize about both students' technology proficiency and their background. Interviews with faculty at three of the institutions included in the survey paint contrasting views of students' use and understanding of technology. When asked about students' use of technology in her classrooms, a professor of English at a two-year institution noted:

This topic more than most reminds me that much of what we hear about this generation of students doesn't apply to our students. Is [this state] that different from other states? Do students with money and with college backgrounds in their families go out of state, or only to [elite state university]? Where does this data about this generation come from? Is it from the coasts, and the midwest is lagging behind? I'm not sure. (N. Chick, personal communication, March 4, 2008)

A professor of Information Systems at a regional comprehensive university observed:

I was surprised at how little they know. Some of them may know what a blog is, but of the couple hundred students I have polled in the past 2-3 semesters, only one or two have run their own blog, and maybe a handful have left comments on one. It's usually pretty difficult to get a class to describe what a blog is.

They do know Wikipedia, but most have no idea that you can edit it - Some of them are shocked at the notion, and it takes a good discussion to convince them of what makes it possible for Wikipedia to work. Consequently, they don't know what wikis are as a general technology. I've also asked about things like Second Life, shared bookmarking etc. and they generally don't know what they are.

In general I find that students use Facebook (and a few are still on MySpace), but otherwise they are not participating much in the digital Web

2.0 revolution. Apart from Facebook, they still regard the Web as largely a read-only medium - no uploading video on YouTube, no sharing bookmarks on del.icio.us, no creating documents on Google Docs, no shared calendar, no blogging etc....they download music from iTunes, and they know Facebook, MySpace, IM, and web-based email. But other than that, I have come to think of the students I see in my classroom as more digital[ly] naive than digital natives. (J. Iversen, personal communication, March 3, 2008)

The ECAR study findings point out that most students now have a computer addressing what David Attewell (Attewell, 2001) has termed the “first” digital divide – access. What the ECAR findings do not illustrate is the lack of consistency across student populations with respect to how they use technology. Attewell calls this the “second digital divide,” or the disparities across individual difference.

A professor of Communication at a third regional comprehensive identifies class as a critical determining factor in her students’ access to and use of technology:

A generalization is that social class is critical because that determines whether students have computers at home, which determines the extent of their use of them. We asked a series of questions about what technologies they currently were using, and it looks like there's a correlation between those who knew a lot of different technologies, who said they're comfortable learning new technologies, and those who knew little and said they were uncomfortable. If students are familiar with any technologies, it looks like their learning curve for new technologies such as wikis is much faster. At [regional comprehensive university] where most students are first generation college-bound, easy access to computers is an issue. (W. Leeds-Hurwitz, personal communication, March 2, 2008)

While these observations are not generalizable, they point towards a great deal of anecdotal evidence about the difference among college students – difference that is obscured by totalizing discourses like Net Gen. This evidence points both to how student subjectivities are constructed and oversimplified and the ways in which the

content validation processes are romanticized on SCEs.

The Wisdom of the Crowds

In a parallel dynamic to conflating students' technology comfort with their general literacy skills, the ways in which SCEs and their supporters claim the democratization of content also confuses participation with reflective practice. Many of students labeled as Digital Immigrants and Net Genners use reference sites like Wikipedia, social bookmarking sites like del.icio.us, and media delivery sites including YouTube. These sites are said to draw their truth claims and authority from the notion of the "wisdom of crowds" derived from James Surowiecki's 2004 book. Surowiecki (2004) suggests that decisions made by groups of independent thinking individuals make better, more rational, decisions than individuals in a group. This claim has been used to describe the strength of social networking web sites as places for the democratization of knowledge.

Educators and educational discourses are adopting social networking ideas and technologies in order to create educational opportunities for students under the assumption that creating knowledge using these technologies is more democratic compared to experiences in traditional classrooms where unequal power relations may be more oppressive and where content comes from monolithic and static sources like textbooks. Subject positions are created for students on social networking sites that offer the appearance of equal participation but actually contain their own social hierarchies and oppressions. For example, one underlying problem with this idea of democratization is that anyone can contribute and that everyone has an equal voice. This is, however, not the case.

Social networking sites, like search engine results, can be manipulated to skew how knowledge is tagged and weighted in importance. This requires special technical knowledge that is not available to every student writing a blog for a class project. While a post on a blog has the possibility to be read and commented on by anyone the chances of that happening are small unless the student or teacher knows how to promote that post in the “blogsphere.” In addition when a student’s work is made public through a blog posting there is nothing to prevent unhelpful, insincere, and sometimes-hurtful comments from individuals hiding behind the relative anonymity of the Internet.

On many SCEs where content that receives the most votes from participants receives the highest profile, there is a constant cat and mouse game between individuals who try to manipulate the visibility of their content and site owners who create algorithms in their software to thwart those efforts. Even online virtual ballot box stuffing occurs. Many of the top posters on Digg¹, a popular social networking news site, have admitted to being on the payroll of PR and marketing firms. In addition these same firms pay individuals to vote for specific stories. What occurs when owners place so much attention on not being manipulated? How does that create new exclusions?

In examining the democratic claims of social network sites one must ask, “does everyone have an equal voice”. Related to this question is, who determines what is seen, read, and viewed on a social site. Corporate and government IP addresses continue to show up in wikipedia entries (Fides, 2007; Hafner, 2007). In the same manner that the content creation and visibility on SCEs is purported to be equally available to all, the sites themselves are often described as accessible to anyone.

“Anyone can join Facebook” - Social technologies – access for all?

While social networking sites are increasingly widespread, the question of exclusion is an important one. As these tools are increasingly discussed as educational tools, their limitations both technically and conceptually are important to consider. Popular sites like Facebook² and MySpace³ reflect assumptions about the users (or learners) engaging with them to the extent that while their underlying function is very similar, their external appearances are quite different. An important and concrete way in which these sites exclude certain users is in their accessibility. The basic accessibility of most of these sites is very poor.

Web accessibility involves making web content accessible for persons with disabilities, including visual disabilities, hearing disabilities, physical disabilities and cognitive or neurological disabilities, and is usually accessed based on comparison of a website to a set of accessibility standards. Because of their reliance on technologies like AJAX (Asynchronous JavaScript and XML), which change the content in a page without refreshing the entire page itself, and the assumptions about users that drive the design of the sites, entire groups of people who rely on assistive technologies cannot utilize social technologies to their fullest (or often at all).

In this context, disability provides a useful lens for understanding the issues revolving around identity and exclusion because as Alan Roulstone (1998) notes, “the way that new technology is experienced cannot be understood in a social and

¹ <http://www.digg.com>

² <http://facebook.com>

³ <http://myspace.com>

theoretical vacuum” (p. 7). Disability has physical properties, but also social and contextual properties, which affect those who are marginalized by understandings or lack of understanding about disability. Given the rapid changes in the development of technology, technology development and implementation is often outpacing accessibility standards or dealing with accessibility issues as they arise. Both the pace of technology development and the tendency to focus on trends in developing technology to meet niche markets results in a good deal of technology work and research that considers either technology as “immune” from ideology or ignores it, and which considers (ironically, given the social nature of these technologies) identity as a static construct; not considering the fluid and socially constructed aspects of identity so mediated by information technology

These views of technology and identity as ideology-free impact the ways technology is designed for construct for diverse populations including considerations for acculturation, ethnicity, educational media design, proficiency, or culturally specific learning strategies. For example, “objective” statements about ability and disability position people within particular and often inflexible subject positions that are neither value neutral nor often accurate (Charlton, 1998). Furthermore, conceptualizations of disability are not static. What is considered a disability changes in different social and historical contexts (e.g. Foucault, 1988). There have been significant strides in theorizing the conceptualization of disability that move beyond highly medicalized, deficit-based understanding of persons with disabilities toward a “social model” of disability that contends that disability is a social status resulting from cultural values and

practices that stigmatize, marginalize, and oppress disabled people (e.g. Erevelles, 2000; Peters, 1995; Pugach & Seidl, 1998; Ware, 2001). Unfortunately, the vast majority of educators and policy makers still conceptualize disability according to dated models that tend to view disability as a medical condition – a deficit in the person with the disability (i.e., as “sick,” or “not normal) (Pfeiffer, 2002). Thus, discourse in technology discourses construct disability as something that must be identified discretely and accommodated

It is important to point out some concrete ways in which technology determines our interaction with it. These limitations within the technology are a reflection of the values of those who design, implement and maintain technology applications. For example, the decision to utilize CAPTCHA⁴, the visual verification tool used to keep spam out of sites that provide online services makes it very difficult with some with a visual disability (or a reading disability even) to join Facebook without assistance.

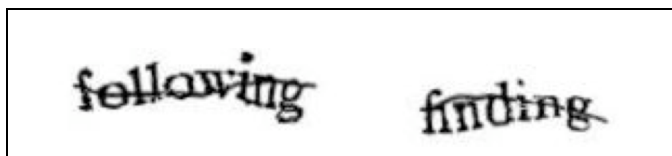


Fig 1 – CAPTCHA graphics in the Facebook registration page.

Facebook did add email and audio alternatives to the CAPTCHA functionality, but only after people with disabilities advocated for this, and the solution is still not ideal as the audio is difficult to hear.

The distinctions between Facebook’s and MySpace’s audiences.

⁴ Completely Automated Public Turing test to tell Computers and Humans Apart (<http://www.captcha.net/>)

How Facebook and MySpace position users with disabilities is illustrative of how identity plays out in a mediated context; however, there is a range of other issues as well. Just like assumptions about users' ability or disability can affect how they are welcomed into the site – or even if they can access it at a fundamental level, assumptions about race, class, gender (etc) also have effects on use. In the social technology sphere, Facebook and MySpace are considerably different spaces. While both have the same overall function – to connect people in ever-broadening social networks – the audiences they hail and the methods they use to hail them are quite distinct. boyd (2007) drew out a number of the distinctions between the two sites, looking at class divisions in the United States in the histories and users of the two sites she observed:

The goodie two shoes, jocks, athletes, or other “good” kids are now going to Facebook. These kids tend to come from families who emphasize education and going to college. They are part of what we'd call hegemonic society. They are primarily white, but not exclusively. They are in honors classes, looking forward to the prom, and live in a world dictated by after school activities.

The visual manifestation of these class differences can be seen in the design of the two sites. As figure 1 below illustrates the layout of MySpace is busy and chaotic, users maintain unfocused and at times unrealistic social trajectories, whereas Facebook maintains a “cleaner” look, one that might be associated with the control, self restraint and order of educated classes.

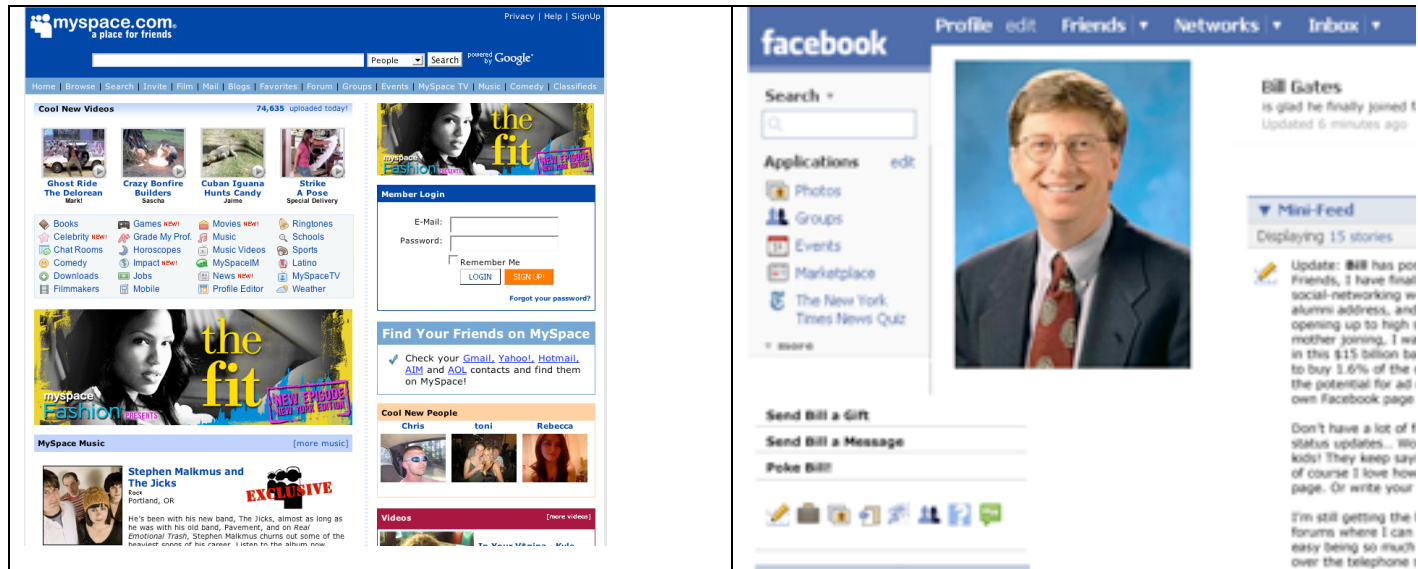


Fig 2 – A comparison of the visual design of MySpace and Facebook

Other Social Technologies

Some social technologies like del.icio.us⁵, social web-bookmarking site and many blogs and wikis are primarily basic HTML and do not present too many issues for users with disabilities; however how these tools are used can still present issues for some users.

YouTube⁶ presents several issues. As a tool for getting video distribution into the hands of the masses and providing a free venue for students and teachers to share work and research YouTube is ideal. From an accessibility standpoint, YouTube presents several issues. The YouTube upload interface employs AJAX technologies, and video itself presents a host of issues that affect the accessibility of the content.

One of the selling points for many social technologies is the high amount of

⁵ <http://del.icio.us/>

⁶ <http://youtube.com>

individualization and personalization the sites allow users; however, this customizability comes at a cost.

Mediated environments create exclusions. The assumptions that going into the design and implementation of an environment shape the types of interaction that will occur and those voices that will be excluded. Because decisions about accessibility affect how has access to content and how, these decisions are sites of power and exclusion.

Conclusion

We conclude this paper by offering suggestions for a way in which to see learners and teachers co-constructing knowledge in ways that more fluidly and responsively acknowledge the subject positions that each group brings to computer-mediated social learning. Rather than rely on facile definitions of learners, or conflation of students with emerging technologies, we contend it is possible to consider new and emerging technologies and the possibility that learning styles and preferences are evolving as catalysts for re-imagining teaching and learning with technology.

As we have shown, social networking technologies recruit users and construct identities that exclude or marginalize students who do not exist within the technology's "understanding" of the user. While the highest priority should be placed on making social networking sites more accessible to users with different disabilities, there are a number of factors beyond these technical improvements that would make these sites more inclusive. This includes discursive spaces and invitations that exist beyond those

of ability/disability. This might include asking if there are ways to use these technologies that take into account what a deficit understanding of race, disability, or identity might label “liabilities.”? For example, someone navigating a text with screen reader develops skills that allow him or her to engage in a form of audio browsing that allows him or her to find the content in which they are interested. SCEs are ability-centric and do not take into consideration the ways the differently-abled individuals navigate and read texts.

Coming back to the discourses of instructional technology, one of our concerns with the predominant discourses of Instructional Technology is the lack of an integral understanding of the social and cultural dimensions of technology and its use in education. Since social networking technologies are not designed to be educational technologies this provides both an opportunity to utilize them in different ways, but also a need for caution in assuming that because they are popular, they reach all students.

As the use of social networking technologies gains popularity in instruction, educators have opportunities to rethink how the learner-teacher relationship is co-constructed. SCEs have the potential to positively impact the ways in which we teach and learn; however, teachers who are interested in using SCEs should consider the multiple ways students interact with technology and each other. SCEs represent both a new frontier where teachers and learners can interact in new and different ways, but they also can reproduce and reinforce extant understandings of identity. Much like the practice of culturally relevant pedagogy (Ladson-Billings, 1995; Ladson-Billings & Tate, 1995), in a critical and culturally relevant use of SCEs teachers must acknowledge how deficit-based notions of diverse students continue to permeate traditional school

thinking, and critique practices to ensure they do not reinforce prejudice behavior recognize the explicit connection between culture and learning. A culturally relevant approach to SCEs recognizes the various ways users might represent themselves using the technology and does not rely on static and dated understandings of identity. A recent issue of *Wired* magazine illustrates this point (Wolman, 2008). The article describes how individuals with Autism are using technology to challenge essentializing understandings of Autism past current deficit understandings of the condition and challenging understandings of intelligence and cognition. By using YouTube, a woman with Autism has been able to post videos, one fittingly called "Translation," that help her express more fluid representations of people with Autism to a larger community. Such uses of video have challenged notions that persons with Autism are not intelligent because they cannot verbally communicate. The capacity of individuals to represent the complexity of their lives and subjectivities has provoked researchers and society at large to raise questions about testing intelligence with tools predicated on verbal communication.

We end this paper by offering a number of general suggestions for educators and instructional technologists to interrogate the assumptions that they employ when integrating SCEs to support student learning. In culturally relevant and broadly usable approaches to SCEs educators:

1. Recognize the blurring notions of consumer and producer in mediated environments understanding how this both disrupts, but also potentially reproduces the traditional teacher learner construct;

2. Engage in active critical reflection, asking challenging questions about one's own understandings and constructions of individuals from diverse gendered, racial, economic, abled, and cultural backgrounds;
3. Utilize SCEs to provide students with a variety of options for demonstrating knowledge and skills. Those options should not only include traditional tests and term papers but also group activities, demonstration via activities in the community and/or in the classroom, and portfolios to represent their learning processes. The variety in activities and in the ways these activities are comprised responds to the variances in use and understanding of the technology environment by learners;
4. Utilize the variety of media forms to provide course materials and conduct course interactions in redundant but diverse media. For example, information in blogs can be viewed in web browsers, RSS readers, and on phones. Discussions can occur in traditional electronic bulletin board formats or in "the field" in YouTube comment areas.

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