* On the Internet *

Revisiting Multiliteracies in Collaborative Learning Environments: Impact on Teacher Professional Development

By Vance Stevens
Petroleum Institute, Abu Dhabi, UAE

Editor's foreword: At this time last year I wrote an article for the *On the Internet* column, "Multiliteracies for Collaborative Learning Environments". (Stevens 2005; http://tesl-ej.org/ej34/int.html). As indicated in the editor's note at the foot of that article, it was prepared partly as a rough guide for the participants in my TESOL, Inc. Certificate Program course of the same name [http://www.tesol.org/s_tesol/sec_document.asp?CID=664&DID=2642] which completes its third rendition this October. As can be imagined where ever-evolving technologies are becoming accepted (almost) to the point of approaching seamlessness by (some) educators, it's worth revisiting the topic and taking a second look at where we've come in the intervening year.

This article derives from a presentation given virtually via recorded video at the 12th International CALL Research Conference *How are we doing? CALL & Monitoring the learner*, DIDASCALIA, University of Antwerp Language Institute 20-22 August 2006 [http://www.didascalia.be]. You can read the text of the presentation itself at http://snipurl.com/vance2006antwerp and you can view the video of its delivery at http://blip.tv/file/62861.

Basic concepts

This article revisits applying <u>multiliteracies</u> in collaborative learning environments, and particularly the impact of this on teacher professional development. This impact includes developing effective strategies for understanding and utilizing current technology-enhanced collaborative learning environments, which ideally will foster and nourish the formation of <u>distributed learning networks</u> and lead to the development of <u>communities of practice</u> whose members learn from one another through exercising principles of constructivism applied to <u>informal learning</u>. The impact of this extends beyond teacher training, getting into issues of how power is shifting to individuals in peer-to-peer distributed networks from traditional information distribution patterns inherent in top-down information networking.

The term '**multiliteracies**' was coined by the New London Group (1996) to address "the multiplicity of communications channels and increasing cultural and linguistic diversity in the world today" for students and users of technology through "creating access to the evolving language of work, power, and community, and fostering the critical engagement necessary for them to design their social futures and achieve success through fulfilling employment." From an educational standpoint, the concept

of multiliteracies refers to how people must adapt to the changing nature of communication in a digital age and to what must be inculcated in students in order for them to succeed in lives where productivity depends on keeping up with technology.

My course on multiliteracies is run from Venny Su's OpenSource for Educators server (see Su, 2005). Guest access is allowed at times of the year when the course is not actually in session: http://www.opensource.idv.tw/moodle/course/view.php?id=23.

The concept of **Distributed learning networks** has to do with the notion that knowledge is distributed; i.e., not resident in any one person or repository. It turns out that peer-to-peer networks are preferable to hierarchical ones, and well suited to knowledge distribution, when working through the Internet. The conundrum associated with widely distributed storage is how best to organize and access the information. I find that my understanding of distributed networks and how to utilize them for my own professional development is especially enhanced through following the blog and podcasts of Stephen Downes [http://www.downes.ca/]. Stephen does such a good job of articulating the most relevant concepts (see, as one example, Wise, 2006) and referring so comprehensively to the work of others that a good overview of the field can be obtained through frequent (daily) reference to just this one location.

Communities of practice are groups of practitioners which form spontaneously for the purpose of participants' sharing information and developing their expertise in a particular domain of knowledge. Spontaneity is crucial to such groupings; they can't be forced, they must come together naturally. The concept has been elaborated particularly by Etienne Wenger in numerous publications (e.g. Wenger, 1998; Wenger, McDermott, and Snyder, 2002).

Such communities devoted to exploring various aspects of educational technology are proliferating on the Internet. One good example is Webheads in Action, http://webheads.info, a community of teaching professionals whose members were in many individual cases committed to learning from one another and developing each other's expertise online (and occasionally in person) in innumerable distributed collaboration projects even before its official kickoff in 2002. Another fascinating and prolifically engaging community of this nature is Worldbridges http://www.worldbridges.net/, which uses an innovative mixture of webcasting and podcasting to capture conversations with people whose interest in educational technology ranges from expert to peers, keeps extensive archives on its Web sites, and arranges training for those wishing to emulate the successes in evidence on its sites. Worldbridges subsumes dozens of other domains with their own portals and foci, such as http://educationbridges.org/, http://webcastacademy.net, and http://www.webheadsinaction.org. This community was featured in the last *On the Internet* column (Lebow, 2006).

Informal learning is how we actually tend to learn in real life as distinguished from how many people think we learn in the course of more formal 'training'. According to Jay Cross (2003), "We discover how to do our jobs through informal learning -- observing others, asking the person in the next cubicle, calling the help desk, trial-and-error, and simply working with people in the know. Formal learning - classes and workshops and online events - is the source of only 10% to 20% of what

we learn at work." This is an important point in the context of teacher professional development. When teachers complain that they have neither time nor opportunity for professional development, they are generally thinking of their chances to attend workshops and conferences, or to avail themselves of formal training in utilization of technology tools, both software and hardware. In practice, this training is all around us, and the more multiliterate among us are able to tap into it while relaxing after hours, through listening to podcasts or meeting online for discussion and discovery with like-minded peers, who scaffold one another as they form bonds characteristic of those between members of communities of practice.

Web 2.0 vs. 'Web 1.0'

Web 2.0 is a term generally credited to Tim O'Reilly (2005), and refers to web sites and services which are free, where server space is granted in return for signing up for an account on that server, and which are under control of the individuals who add content to the sites. The domain of knowledge in communities of practice associated with language learning is typically the mechanism of communicating with students and other teaching professionals through the proliferation of Web 2.0 tools. These tools render meeting in real time effective and second nature, and can be applied to particular teaching, or more properly, learning situations. In implementing learning within such communities, the communities themselves become models of how teachers might configure effective learning environments to meet the challenges in their own local or online situations, in which they teach or work to expand their knowledge, as when seeking to further their professional development *informally*.

Web 2.0 is where anyone can not only *take* information down *from* it but also create content and upload *to* it. In this respect the Web is not simply a one-way means of *obtaining* knowledge, but also a place where you *interact* with the materials and *annotate* and *contribute* to the content. Such sites frequently display other Web 2.0 characteristics such as automated access through RSS feeds and ability to find related materials through tagging and other social networking devices.

Listening to a podcast on the EdTechTalk Network the other day [http://edtechtalk.com/], I heard someone explain that Web 1.0 was (to paraphrase) the era of the 'read-only' Web, when some millions of Web sites were created by thousands of 'webmasters'; whereas Web 2.0, the 'read-write' Web, is where many millions of Web sites have been created by many millions of users interacting together over the Internet. The concept is aptly illustrated in the Cluetrain Manifesto [http://www.cluetrain.com/], which neatly encapsulates the zeitgeist of the Web 2.0 era in its lead statement, "Markets are conversations." (Levine et al., 2001).

To further illustrate what is meant by Web 2.0 through comparison with Web 1.0 sites and services: in Web 1.0 users might create HTML-based Web projects having arranged their own hosting, with severe constraints on storage space and download speeds for multimedia. In Web 2.0 anyone who wants to get on the Internet can create a blog or wiki and augment it with multimedia hosted at other Web 2.0 sites such as http://www.podomatic.com or http://www.youtube.com (for video) or http://www.flickr.com (for photos, or any number of other hosts which allow users to store photo albums and display them in various ways).

Blogging is another example of Web 2.0; social networking sites like Facebook or

MySpace are others. As an example from my own routine: I easily got the video associated with this article onto the Internet by creating an account at http://blip.tv/ and uploading my file. I also uploaded it to http://video.google.com/ which then generated the code which I could copy and paste into the code of any web page, blog, or wiki to create a video player on that site. I then podcast the audio (podcasted?) through another Web 2.0 site, http://www.podomatic.com.

What is Web 2.0 *exactly*? There is a complete listing (or a best attempt at one) here: http://www.allthingsweb2.com/.

The effectiveness of community-based constructivist learner collaborations

The effectiveness of online communities can be measured in the number of online collaborations engaging students in learning opportunities which expand their potential for constructivist, student-centered learning though exploiting online resources that carry learning well beyond the confines of face to face learning environments. Several examples of such collaborations are given in Stevens (2004). More recent examples can be found by exploring Worldbridges podcasts; for example, the collaborations regarding the wikibooks project archived at http://educationbridges.org/. Frequent collaborations between teachers and students are also abundant in the most most recent of the more than 13,000 messages in the Webheads listserv archive, which is available to non-members so that an RSS stream can be generated [http://groups.yahoo.com/group/evonline2002_webheads/messages]. These archives document where exchanges between students using blogs, wikis, podcasts, and other multimedia presentation forums, seem to be especially productive in instigating collaborative work leading to enhanced language learning outcomes.

The importance of multiliteracies approaches to education

Participants in such communities develop a first-hand awareness of the multiliteracies required to function effectively in any distributed milieu. This awareness is crucial because it affects not only how we keep abreast of our profession, but impacts what we should be teaching students (and one another) about coping in a world of information overload, where information must be accessed quickly, constantly filtered, and distilled efficiently into useful knowledge in order for us to remain competitive in any walk of life. So much of the learning that takes place within these communities is done so not only through multi-modal media of communication and expression (multi-media being but one aspect of skills subsumed under the term multiliteracy), but also in ways that inculcate means to efficiently harvest what is most relevant to the individual from the constant and unending influx of available information (how to "sip from the fire hose"), and also how to critique and respond to the input of relevant others in such a way that dialogs and conversations are set up that improve on, if not supplant, the learning that takes place through more traditional means that are increasingly becoming outmoded.

Selber (2004) presents a framework in which he argues in favor of an awareness of multiliteracies on three distinct fronts: functional, critical, and rhetorical. In his book he suggests ways that these awarenesses can and should be incorporated in what educators teach their students, and each other. For example, children these days are becoming so <u>functionally literate</u> that even elementary students can easily navigate

social networking sites such as MySpace. This has challenged schools to take steps to regulate the use of MySpace, raising many issues of critical literacy such as how to appropriately consider ownership and privacy on the Internet (i.e. use of photos, exposure to pedophiles). Many schools avoid the issue by blocking MySpace, and the U.S. congress is on the verge of passing DOPA, the Deleting Online Predator's Act [Wikipedia is a consistently reliable source for encapsulations of up-to-the-minute current events and terms: http://en.wikipedia.org/wiki/Deleting_Online_Predators_Act_of_2006]. This brings up a rhetorical literacy issue: how to counter knee-jerk stances (which tend to prevail where litigation is a threat)? How can educators articulate the reasons why children should be taught to use MySpace appropriately, or why we should consider more than just the salient aspects of regulating student use of such sites via draconian measures like DOPA? The task of arguing cogently enough to counter conservative political expediencies by reaching policy-makers who don't truly understand these issues in the first place requires vocabulary and expressions of concepts that must first be grasped and then explained.

These literacies are interlinked in certain strata of society (those most exposed to the impacts of technology). The most functionally literate are rising to the critical and rhetorical demands, and a new literacy is emerging through the medium of blogs and their accompanying RSS feeds. The next logical step goes beyond text into audio podcasting, which currently appears to be the preferred and possibly most effective new medium of information distribution because it allows learning to take place on demand and conveniently, in conjunction with the more mundane aspects of life such as jogging, commuting, washing dishes, ironing, and at other routine moments which can now be converted from down-time into further opportunities for enhancing one's grasp of educational technology, or any other topic brought to the user through a basic understanding of new literacies and access to them through educational technology.

Video podcasting is also possible and will perhaps become more common in the near future as the new generation of video mp4 players become more ubiquitous (if indeed it develops that concentrating on a small screen is how people really *want* to spend the time they now spend multitasking: listening to podcasts while *concentrating* on something else such as driving, jogging, or ironing, etc. This remains to be seen, but manufacturers should not count on there being increasing numbers of consumers who will sit and *stare* at almost anything. The trend suggested in this article would argue that those consumers are going to want to *interact* with their palmtop 'flash' video players.)

Power alignment in constructivist Web 2.0 learning environments

The impact is simply this: a revolution in information distribution is taking place as we (literally) speak (and listen) and those tuning in are growing aware that what you listen to through your iPod or other mp3 player *can* be as important to your professional development, and that of your students, as what you read carefully or are exposed to in print format. Meanwhile, the entrenched arbiters of knowledge are losing their power to determine what the rest of us learn through control of traditional print and other mainstream media. In so far as it is increasingly possible to use new means to replace for free what previously had to be paid for or accessed through distribution systems operating top-down, the new means of distributing

information tends to subvert traditional power bases. Subversion is a word that recurs in the podcasts of Stephen Downes, who regularly speaks on this topic, and podcasts what he says. I did a Google search to try to turn up in print what I have often heard Stephen say in podcasts (the words subversive, subversion), and though it is possible to search podcasts through search engines dedicated to that medium [e.g. Podzinger http://www.podzinger.com/] I was only able to find the idea of wikis being the "epitome of subversive technology" - from highlights of Stephen Downes Seminars in ACT in Sept. 2004,
http://community.flexiblelearning.net.au/ProfessionalDevelopment/content/article_632:

So, we see emerging a new world of distributed learning where the network is peer-to-peer, with each node (each individual) having the power to instantaneously access any other node in the network (assuming that node, or individual, is broadcasting) and to instantaneously respond in a variety of ways, normally using Web 2.0 tools. George Siemens (2005) has developed this idea in his notion of connectivism.

Order vs. chaos in distributed learning networks

One might intuitively think that this would be a world of chaos and information overload, whereas the print-dominated world was one of order and legitimacy, and so it was, with information access being effectively filtered through established publishers at one end and driven by the economics of being able to afford the output on the other, despite the inconvenience of having to obtain that output (from libraries, bookstores, magazines, journals) and then find a time apart from other daily obligations to consume it (by reading the hard copy). This served to compartmentalize information in such a way that deriving knowledge from it was a clear-cut process to those whom Prensky (2001) calls 'digital immigrants', or those who have been brought up and educated in the context of print media prior to the ubiquity of digital resources. Meanwhile, the new generation of 'digital natives' - those who take digital resources for granted and who are sometimes called the 'twitch' generation (Prensky, 1998; Katz, 2000) because they expect things to happen online and at their computers quickly and with no unnecessary hassles - may increasingly be feeling that print is not their medium of choice, and that distributed learning networks providing free content on the peer-to-peer model make more sense to them than the prior top-down model where fees are charged to compensate and sustain the top level content providers. Prensky (2005) and others make the further point that digital natives used to working at 'twitch speed' might be turned off (*enraged*, as he puts it) by tedious, dry, text-based materials, whereas digital imagery and interaction have great potential to *engage* them in the education process.

Clearly, lives that revolve around computers, where one's productivity and one's access to information are funneled through a single device that's always 'on', might find a more wired process of converting information to knowledge more convenient and efficient than working through traditional print resources. The only drawback is that information-rich systems require some means of indexing them so that information is accessible, and this was not straightforward in the early stages of the Internet. Fortunately a workable system of access is emerging through search engines, social networking, meta-tagging, and other pull technologies such as RSS. Accordingly, emerging concepts of multiliteracies must take into account how these ordering processes work and ensure that students (and teachers) understand these

processes (Richardson, 2005).

Re-aligning power: The long tail

It is interesting to observe how the potential for chaos in a distributed peer to peer network sorts itself out to avoid the worst-case outcome. With print media we have situations where authors must convince publishers that their works are worthy of publishing, which might mean that they make significant contributions to human knowledge OR simply that they might be considered marketable to the greatest number of buyers. In this milieu, what is known as the 'long tail' (Anderson, 2004) of developers whose works will not sell to the popular market, is therefore of little interest to mainstream print-media publishers, and those in the long tail might never be heard from.

Enter the world of open source, of creative commons, where content and the vehicles for distributing it are not driven by the economics of commerce, but simply by a desire to share and learn from others (and of course, being in those strata of society with access to Internet connectivity). Anyone with connectivity, in other words, can be published. Everyone in the 'long tail' (those waiting their turn behind what the much more constrictive culture of print media is capable of producing) has a voice. Even Albert, a blind refugee in Western Sahara, who uses Skype in the few hours of the day when the power is on in his camp, and who pieces together in his mind what most of us take for granted on monitors, since his is replaced by a device which reads to him whatever appears on the screen ... even Albert, who is known to the community of Worldbridges (where Albert has found an audience that listens) ... even Albert has a voice in the new world of digital, peer to peer, distributed publishing. [http://worldbridges.net/Worldbridges_meets_Albert_Part2]

Albert's story made a considerable impression on all who chanced to talk with him, but does his story contribute to order, or chaos? On a recent Worldbridges podcast Jeff Lebow mentioned that in a more recent venue, someone calling himself 'Robert' called in with a voice and story much resembling that of 'Albert', casting doubt on the integrity of the original Skyper. A better documented deception was recently played out in the cyberworld of YouTube. As reported on the NPR and WNYC station *On the Media* in their broad/podcast on September 1, 2006 [https://www.onthemedia.org.proxy.cheri.shyou.org/otm090106.html - the segment entitled: Lonely Girl And All Her Friends] Bree was credited with pioneering a literary form comparable with Jane Austin's since she had gathered a following who felt compelled to watch each of her home-grown *Lonely Girl 15* episodes and then discuss the interesting details that might provide clues to who this ingenue was. But by the *On the Media* broadcast of September 15, Bree had been 'outed' and audience reaction ranged from betrayed to irritated to bemused [https://www.onthemedia.org.proxy.cheri.shyou.org/otm091506.html - the clip entitled lonelygirl Just Not Herself Anymore]. Lonelygirl was neither ingenue nor 15 (she was an actress, 19 - interviewed at http://www.youtube.com/watch?v=0AluoY2Tepc&mode=related&search=).

Does multimedia include imagination? (literature and art certainly does). We leave long tails and power alignments with a replay of the mantra by The Who: "Then I get on my knees and pray ... we don't get fooled again!" (that's what's in my head, at any rate).

When *push* comes to shove: Filtering information through *pull* technologies

The examples of Albert and Bree serve to illustrate another important concept of this system of indexing the content available. Albert's, Robert's, and Bree's voices are not a part of a clamor of sound that users of the new technology have to fight off like so much spam. This would be ***push*** technology, where information is pushed to you almost at random by disinterested parties (or, shall we say, parties you are not interested in). You would only be aware of Albert if you had *chosen* to listen to Worldbridges or used ***pull*** technology to *select* to download its podcasts (Bootheby, 2006). And you would decide to do that if this seemed a good idea to you based on whatever other literature (text, audio, video) that you were following online. I'm not suggesting that books are any less integral a part of literacy, but only that in this aspect of our professional lives, you would never read about Albert in a book (unless it were way after the fact, as an archival record which would appear too late for you to join the conversation online). Albert's existence and influence on those who know about him is firmly rooted in the present. Somehow, those who are constantly engaged in conversations about their profession, which they could never have had in traditional media, had tuned-in to conversations where Albert simply dropped by unannounced and became a memorable part.

What about the integrity of documents where anyone can create content?

The real issues here are how those conversations came to take place, how important they are to professional development as opposed to more traditional media, and most importantly of all, how they are regulated efficiently in the peer-to-peer network so that rather than a chaotic free-for-all, we have considered and reflective information flow and knowledge generation that is subject to critique in some ways more exacting than through a publisher, more pertinent and focused, and infinitely more useful to certain practitioners than the system that was in place before these new developments (Downes, 2005).

Another interesting development in consideration of the new literacy is the effective control that this peer review has over it to prevent its becoming chaotic and to regulate its integrity and authority. Since the read-write web is not only a place where anyone can write, but where

- anyone can comment, correct, and annotate
- thanks to tagging and meta-tagging, information can be retrieved in a number of effective ways
- and, with RSS information streams, content can be accessed by individuals as soon as it is created and posted on blogs or other sites that generate RSS feeds

-- all this makes it possible for individuals to publish at will and be read almost immediately by anyone who has selected to follow the musings of that particular content creator (anyone who subscribes to the feed of that author or podcaster and who decides to read or listen to it through his or her online aggregator). This will prompt responses which will again be read and critiqued. Unlike with other media, where deception can stand uncorrected for some time, the truth or falsehood behind Bree and perhaps Albert/Robert tends to be examined, exposed, and corrected by community members, resulting in a high standard of integrity of information for the community in the long run.

The information that passes through this process is current, publicly vetted and discussed, and freely available to all interested parties. The result is a literature of immediate import, highly relevant to its consumers, and of greater value to those concerned than anything else they could read or listen to from any other source, in particular traditionally published print media, which tends to appear months or years after an idea is first conceived. This might be acceptable in some fields and professions, but in the domain of educational technology, it is impossible for traditional media to keep pace with developments anywhere near as effectively.

Wikis are a case in point. A wiki is software that allows anyone with permission to do so to write to a common space. This permission can be restricted, but where it is granted to the public at large, to anyone at all, one would expect vandalism to occur. Wikis also have built into them the capability to view a history of changes and revert to previous states, just in case, but in practice it is rarely necessary for wiki webmasters to repair thoughtlessly damaged wikis. The opposite normally occurs: the information in the wiki improves over time thanks to the input of so many users who buy into the process because they benefit from it. One theory of how this works is described by Chul (2003), who sketches how P2P networks are self-regulated based on trust and other social factors.

Perhaps the most significant and widely-known wiki project on the WWW is Wikipedia, http://en.wikipedia.org/, the online encyclopedia where anyone can start a topic or add to, or erase, what anyone else has written. There are several observations we can make relevant to this discussion. First, Wikipedia is generally considered to have high credibility. Considering that mistakes can be made in printed encyclopedias (and once made, cannot be changed) the information found on Wikipedia is generally felt to be trustworthy, and it can be assumed that mistakes there can be corrected (if you spot one, change it yourself!). The question is sometimes begged: what about matters of opinion? It has been pointed out that people who write to one side of an issue tend to be careful about what they say, to avoid provoking rejoinders or having their input deleted, so again the integrity of the information found there tends to be preserved. Secondly, the information in Wikipedia is current. There are topics there which may not appear in printed encyclopedias for years, information on topics of greatest currency in educational technology being a case in point (the Wikipedia article on DOPA cited earlier is a case in point). Third, the content in Wikipedia is completely free and those involved in creating it work without remuneration, which is pretty amazing considering the result. And finally, Wikipedia is rarely vandalized, and if it is, the vandalization would likely be found and corrected before it was allowed to stand for very long, and considering the number of users, that could be a few seconds or a few days.

In conclusion

This output of users in a peer-to-peer distributed network in effect pooling their expertise and creating their own encyclopedias turns out in many ways to be superior to other means of creating, storing, and later accessing content. (How is this superior? let me see, one way - where can you get your hands on an encyclopedia right now? It would have to be an online one ...). The concept can be extended to what we do in class when one considers having teachers, or students for that matter, create their own textbooks. You can look up and read a wide variety of wikibooks already, just Google the term and see how extensive the choices are.

- See the Wikibooks wiki at http://en.wikibooks.org/wiki/Main_Page.
- See the Wikipedia description of wikibooks here: http://en.wikipedia.org/wiki/Wikibooks.

Again, as with other forms of wikis, the content in these efforts can be as high as in paper-published works. They are a lot cheaper to produce and use year to year, a compelling argument for school districts, who are coping with other issues such as whether to use Moodle or Drupal for free, or purchase Blackboard / WebCT or Desire to Learn. Aside from the possibility now of getting sued for using a non-patented platform (Google 'blackboard patent' for the latest on that saga) which is better? Assuming no legal ramifications, it's difficult to make a convincing case that the better product is the one you pay for.

So, to get this back to the point at which we started, what does this have to do with you and your informal professional development? The question teachers often ask is ... "Stop! I don't even know what questions to ask! This is already way beyond me!" This is where your community of practice comes in. You can join one, start meeting peers online, get in conversations with others in your situation, find out how others have found solutions to their problems, learn in a non-threatening way how to use the tools you want to learn with students by practicing with them in communications with other teachers trying to learn the same thing. If you don't know already, learn what the tools ARE. There is no point in waiting for your administrators to finally approve the training program you've been asking for all these years. The training you need might be at your fingertips, just a click away. Go ahead, try, and see.

References

Anderson, C. (2004). The long tail. *Wired*, Issue 12.10 (October 2004). Retrieved October 4, 2006 from: http://www.wired.com/wired/archive/12.10/tail.html.

Bootheby, R. (2006). The next wave in productivity tools - Web Office. Retrieved October 4, 2006 from: http://www.innovationcreators.com/2006/02/the_next_wave_in_productivity_1.html.

Chul, L. (2003). Peercracy: Self-regulating peer-to-peer network using feedback. Retrieved October 4, 2006 from: http://ccgrid2003.apgrid.org/online_posters/posters/021.pdf.

Cross, J. (2003). Informal learning – the other 80%. Internet Time Group, May 08, 2003. Retrieved October 4, 2006 from: http://www.internettime.com/Learning/The%20Other%2080%25.htm#_Toc40161521.

Downes, S. (2005). E-learning 2.0. *eLearn Magazine*. Retrieved October 4, 2006 from: http://www.elearnmag.org/subpage.cfm?section=articles&article=29-1.

Katz, J. (2000). Geeks: How Two Boys Rode the Internet out of Idaho. New York, Villard; *described in Kennedy, William. 2003. Teaching at Tech: Educating the "Twitch Generation"*. Retrieved October 4, 2006 from: http://www.admin.mtu.edu/ctlfd/twitch.htm.

Lebow, J. (2006). Worldbridges: The potential of live, interactive webcasting.

TESL-EJ, 10, 1. Retrieved October 4, 2006 from:
http://www.tesl-ej.org/ej37/int.html.

Levine, R., Locke, C., Searls, D., and Weinberger, D. (2001). *The Cluetrain Manifesto: The end of business as usual.* Cambridge, Mass.: Perseus Publishing.

New London Group. (1996). A Pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review* 66 (1). Retrieved October 4, 2006 from
http://l-by-d.com/Multiliteracies%20HER%20Vol%2066%201996.pdf.

O'Reilly, Tim. (2005). What Is Web 2.0? Design patterns and business models for the next generation of software. Retrieved October 4, 2006 from:
http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html.

Prensky, M. (1998). Twitch speed: Reaching younger workers who think differently. *Across the Board,* January. Retrieved October 4, 2006 from:
http://www.twitchspeed.com/site/article.html.

Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon* 9, 5.
Retrieved October 4, 2006 from:
http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital9

Prensky, M. (2005). "Engage me or enrage me," What today's learners demand.
Retrieved October 4, 2006 from:
http://www.educause.edu/ir/library/pdf/erm0553.pdf.

Richardson, W. (2005). RSS Quick start guide for educators. Retrieved October 4, 2006 from: http://weblogg-ed.com/wp-content/uploads/2006/05/RSSFAQ4.pdf.

Selber, S. (2004). *Multiliteracies for a digital age.* Southern Illinois University Press.

Siemens, G. (2005). Connectivism: Learning as network-creation. Retrieved October 4, 2006 from: http://www.learningcircuits.org/2005/nov2005/seimens.htm.

Stevens, V. (2004). The skill of communication: Technology brought to bear on the art of language learning. *TESL-EJ*, 7, 4. Retrieved October 4, 2006 from:
http://www.tesl-ej.org/ej28/int.html.

Stevens, V. (2005). Multiliteracies for collaborative learning environments. *TESL-EJ* 9, 2. Retrieved October 4, 2006 from: http://tesl-ej.org/ej34/int.html.

Su, C. (2005). Ano pen source portal for educators. *TESL-EJ* 9,1. Retrieved October 4, 2006 from: http://tesl-ej.org/ej33/int.html.

Wenger, E. (1998). *Communities of practice Learning, meaning, and identity.*
Cambridge University Press.

Wenger, E, McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice A guide to managing knowledge.* Harvard Business School Press.

Wise, L. (2006). Distributed learning - Stephen Downes.
http://wisebytes.net/wordpress/2006/04/23/distributed-learning-stephen-downes/.

(*Description of a podcast by Stephen Downes given in Tennessee*, http://www.downes.ca/cgi-bin/page.cgi?post=33993) - Both retrieved October 4, 2006.

For comments, suggestions, or further information on this article, contact Vance Stevens, "On the Internet" editor.

© Copyright rests with authors. Please cite TESL-EJ appropriately.

Editor's Note: The HTML version contains no page numbers. Please use the PDF version of this article for citations.