Pedagogy in the Age of Web 2.0

Gary Bartanus

University of British Columbia

Pedagogy in the Age of Web 2.0

Introduction

One does not need to be a child psychologist to know that the earliest stages of human development and language acquisition involve a behaviour known as imitation. Although renowned linguists like Noam Chomsky argue that there is much more to language acquisition than just imitating sounds and responding to positive reinforcement (Chomsky & Skinner, 1959), the fact remains that imitation is still a very important part of that most basic of all early childhood developments—acquiring a language. As Professor Patricia K. Kuhl at the University of Washington puts it, "vocal imitation links speech perception and production early"(2000). Repeated acts of imitation and replication are featured in anthropologist Michael Wesch's Library of Congress presentation in which he discusses human connectedness and community (*An anthropological introduction to YouTube*, 2008) and evolutionary biologist Richard Dawkins defines the word *meme* as a "new replicator, a noun that conveys the idea of a unit of cultural transmission, or a unit of *imitation*" (Dawkins, 1976, p. 192; *Just for Hits - Richard Dawkins*, 2013).

When Dawkins originally referred to this new "unit of imitation" in 1976, it was approximately 25 years in advance of the internet becoming openly accessible to the public and beginning to dramatically change the world. Today, after more than two decades of public access and continuing growth, current internet technologies—including Web 2.0, new media, digital remix, the internet meme, and wireless mobility—are having a powerful, frequently unfathomable impact on all aspects of our lives. Everything we do—from keeping in touch with friends, to applying for a job, to finding a future spouse, to bringing about social or political change, to graduating from school—is being impacted by the new technologies. Because my particular field is education, which is an integral aspect of society's infrastructure and culture, this paper will focus on how culture, sociology, and

politics inform and shape modern pedagogy in the age of Web 2.0, new media, digital remix, internet memes, and mobile communications.

Definitions and Histories of Memes and Internet Memes

Memes

When Richard Dawkins coins the term *meme* in the last chapter of his 1976 best-seller, he provides the rationale for his new word by saying:

> I think that a new kind of replicator has recently emerged on this very planet. It is staring us in the face. It is still in its infancy, still drifting clumsily about in its primeval soup, but already it is achieving evolutionary change at a rate that leaves the old gene panting far behind. (1976, p. 192)

In the next paragraph, he explains that the primeval soup that he's referring to is the soup of *human culture* and that the unit of cultural transmission (or imitation) should be called a *meme*. Dawkins then provides further clarification by naming some specifics:

> Examples of memes are tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches. Just as genes propagate themselves in the gene pool by leaping from body to body via sperms or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called *imitation*. (1976, p. 192)

Since Dawkins wrote this approximately two decades before the internet "went public," one might assume that memes must have existed long before YouTube—and s/he would be correct. One of the earliest known memes, Sator Square, dates back nearly 2000 years (Jeuring, n.d.)

Figure 1: Sator Square in Oppede, Luberon, France

and countless other memes have emerged over the centuries, including the expression *abracadabra* in the 2nd century A.D. (Wikipedia, 2014a), and *The Three Hares* during The Sui dynasty from 581–618 A.D, which is considered to symbolize the trinity when used in Christian churches. (Wikipedia, 2014c)

Figure 2: Window of Three Hares in Paderborn Cathedral

More recent pre-internet memes include *Kilroy was Here*, which probably originated somewhere between 1937 and 1939 (Wikipedia, 2014b) and *Frodo Lives*, which was originally scrawled on a New York subway train in 1965 to pay homage to a recurring fictional character (Frodo Baggins) who appears in some J. R. R. Tolkien's novels. Those two simple words of subway graffiti went viral decades before *The Lord of the Rings* movies became blockbuster hits (Cook, n.d.; Quercia, n.d.)

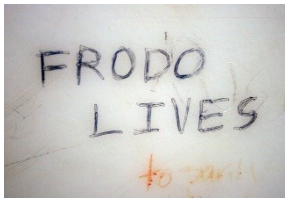

Figure 3: "Frodo Lives!" graffiti in a public bathroom

Internet Memes

In the early 80s, the internet was still in its early stages of development with mainly just defense agencies and universities being the primary users. The World Wide Web wasn't to be invented until 1991 and GUI's (graphical user interfaces) were available only on individual non-networked computers ("History of the graphical user interface," 2014, "History of the Internet," 2014, "History of the Internet | History of Things," n.d.). On September 19, 1982, in an effort to overcome the angry "flame wars" that were often sparked by text-only communications, Scott E. Fahlman of Carnegie Mellon University posted a message (on the Computer Science community online bulletin board) that has since been recognized as the first ever internet meme: it was the sideways "smiley face" (otherwise known as the *emoticon*) (Davison, 2012, p. 124; Fahlman, n.d.).

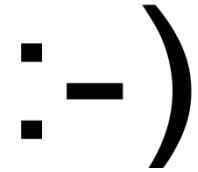

Figure 4: Fahlman's "emoticon"

After the emoticon, other internet memes eventually followed and, as internet protocols became more sophisticated, so did internet memes—especially with the development of the World Wide Web (WWW) in 1991, which allowed users to network in graphical environments. By 1998, personal computers were affordable and the WWW had exploded with more than 150,000,000 users ("Internet Growth Statistics - the Global Village Online," n.d., "Total number of Websites - Internet Live Stats," n.d.) experimenting with ways to communicate and connect with one another through online communities such as GeoCities, where everyday folks were able to build their very own websites. In August, Deidre LaCarte, a Canadian art student, built a GeoCities site called "Hamster Dance" and, although it didn't gather much attention for the rest of the year, it suddenly got noticed in 1999 and began logging as many as 15,000 views per day (Davison, 2012, p. 125). As a result of this phenomenal and surprising success, many consider it to be the first truly viral internet meme on the World Wide Web.

Figure 5: Screen capture of the original Hamster Dance site.

Although both the Hamster Dance and emoticon memes were very popular in their day, they were popular for very different reasons. Hamster Dance is "one of the earliest single-serving sites, featuring rows of dancing hamster GIFs set to a sped-up sample of the song 'Whistle Stop' by Roger Miller" (Kim, n.d.). Its purpose is singular: to entertain. As Davison puts it, "It gains influence through its surprising centralization!" (2012, p. 125). On the other hand, the emoticon meme's purpose is to convey information and enhance personal communication. Because anyone can easily use text characters to create different kinds of emoticons that convey a wide range of information and emotions, emoticons are opposite to the centralized Hamster Dance meme that requires some coding skill and serves only one purpose. In other words, emoticons can be widely distributed and, in the process of being distributed, any user can alter—or mutate—them slightly in order to serve a particular

purpose; therefore, emoticons serve multiple purposes. The fact that internet memes can be either single- or multi-purposed—plus the fact that they can quickly replicate in different ways—gives them much more power than ordinary (pre-internet) memes.

In 2013, thirty-seven years after coining the word meme, Professor Dawkins demonstrated how his own ideas about such units of cultural measurement had evolved along with the growth and advancement of the internet:

> … the very idea of the meme has itself mutated and evolved in a new direction. An internet meme is a hijacking of the original idea. Instead of mutating by random change and spreading by a form of Darwinian selection, internet memes are altered deliberately by human creativity. In the hijacked version, mutations are designed, not random, with the full knowledge of the person doing the mutating. In some cases this can take the form of genuinely creative art. (*Just for Hits - Richard Dawkins*, 2013)

The notion of creative art coming about "through something like a mutation in the mind" is, to me, almost too deep to fully comprehend. However, Dawkins's point is clear: internet technology has made it possible for a human mind to exercise conscious control over its mutation of a unit of cultural transmission—which is an ability that is much further reaching than natural selection and dominant genes—and, because we are dealing with human culture—and not just physical traits in an offspring—the internet meme is the most powerful evolutionary force on this planet.

Impact on Culture, Society, Politics, and Education

With human minds now being technologically empowered to have such commanding influence on the cultures and societies in which they coexist, what are the implications? As Michael Wesch points out, YouTube and other Web 2.0 technologies have enabled us to simultaneously maintain unconstrained distance from and establish deep connectedness with

other people—what he calls a "cultural inversion" that provides "connection without constraint" (*An anthropological introduction to YouTube*, 2008, 30:23). As a result, since the advent of YouTube, Twitter, Facebook, Instagram, Vine, Tumblr, Reddit, and an exponentially growing number of other Web 2.0 technologies, we have seen unprecedented societal changes resulting from all the memetic cultural transmission that is now possible.

For example, with every retweet on Twitter, another unit of cultural transmission (meme) is replicated and shared with followers and other retweeters. And with the Twitter hashtag now extending beyond Twitter and commonly linking minds through other social networks that have adapted the hashtag, it is becoming impossible to estimate the number of minds that can be connected with any given hashtag and message. We do know from recent political history that presidents have been elected by this means ("How Obama's Internet Campaign Changed Politics," n.d.) and that, as in the Arab Spring movement, dictatorial governments have been overthrown (Mazaid, 2011). Furthermore, such positive activist causes as the ALS Ice-bucket challenge have been catalyzed by today's technology ("How Pete Frates Found His Calling And Launched The Ice Bucket Challenge," n.d., "Why Did The ALS Ice Bucket Challenge Become a Movement?," n.d.)

Along with positive cultural and societal changes that have emerged in this age of Web 2.0, new media, digital remix, and internet memes, we have also seen how technology has enabled some very negative influences: cyber-bullying, sexting, and self-radicalization (Kruglanski et al., 2014; Lievens, 2014). Although school systems do their best to filter out such negative influences, the fact remains that young people still have access—and are susceptible—to them.

Currently, the well intentioned efforts to counter these negative influences are yielding, in my opinion, only mediocre results. Educators and parents have been aware of

these problems for years and yet young people continue to suffer the tragic results of being ensnared by them. This is largely because not enough emphasis is being placed on digital literacy in our school systems. By keeping such vital knowledge as a cross-curricular strand that technologically reluctant teachers often choose to neglect, learners are being deprived of opportunities to develop critical thinking skills and ability to make sound judgments on what kind of internet activity they can safely participate in. As a result, our students continue to be victimized by depraved predators and affluent organizations who are experts at using digital technology to propagate their deceiving and ultimately destructive digital poison. To transcend this continuing trend, digital literacy should be an integral aspect of all schools' core curriculum and our pedagogy must change to reflect this new emphasis.

Conclusion

Of course, they key to such an approach will be in converting those technologically reluctant teachers into technologically competent educators who are fully committed to using a new pedagogy to provide learners with access to all the constructive digital literacy knowledge that they can build. To begin such a monumental task, it may be necessary to re-educate educators so that they are aware of the powerful forces with which we are now dealing. To begin, all educators need to fully grasp that "what makes us different [from animals] is our ability to imitate" (Blackmore, 1999) and that this innate need to imitate one another—so we can learn language, fit into a culture, be part of a community and experience connectedness—is actually the same force that drives our students to such negative activities as sexting, cyber-bullying, and self-radicalization. As educators who are charged with the task of ensuring that our learners channel this innate need positively rather than negatively, it is crucial that we understand the true, powerful nature of this need. It is not just some passing fad that will just go away in time. It is enabled and technologically fuelled by that unit of cultural transmission that Dawkins called a meme. And, like the human gene, it is a

replicator whose sole purpose is to get itself copied—to self-procreate. This, to anyone who understands the process of evolution, means that it is unstoppable. Therefore, for a parent or teacher to instruct a young person to "just say no" to new and interesting online enticements is futile. How can one say "no" to an innate need that is unstoppable?

A much more effective approach will be, from an early age, to proactively educate children on all the wonders and power of digital literacy, including social media, new media, remix, and mobility. Perhaps most important of all will be the crucial task of helping those very eager young minds to grasp what it is they are doing when they are imitating others and sharing their replications online or through their smartphones. Children need to know that it is much more than just a fun way to entertain themselves (as in the hamster dance). They need to know that, by creating or recreating a meme, they are also transmitting information (as in emoticons) that could be understood, misunderstood, remixed, repurposed, and perpetuated far beyond their wildest expectations—and that those expectations could devolve into devastating nightmares involving blackmail and bullying ("Suicide of Amanda Todd," 2014).

With recent developments where such well-funded extremist organizations as ISIS are using new media and 2.0 technology to radicalize so many young people, it is also vital that an early proactive digital literacy program be implemented to make young people fully aware that these groups are exploiting the very natural psychological "quest for personal significance [that] constitutes a major motivational force that may push individuals toward violent extremism" (Kruglanski et al., 2014).

On the other hand, one incredibly positive aspect of a more prioritized, proactive, and social approach to digital literacy involves what is known as *distributed cognitio*n (Hutchins, 2000). By being taught to build and share their knowledge using all the tools of digital

literacy, students will benefit from more rapidly developing personal cognition and enhanced human connectedness (without constraints, as Dr. Wesch would say).

In conclusion, because this age of Web 2.0, new media, digital remix, memes, and mobility, has democratized creativity (Lessig, 2008) and provided mankind with the internet meme to advance cultural evolution on this planet(Blackmore, 1999), it is vital that modern pedagogy reflect this reality. In addition to having a positive impact on that cultural evolution, the modern pedagogy will also allow our students to take advantage of new opportunities for growth with *distributed cognition*, which is a wonderful learning process that enhances human connectedness and positively affect individual student cognition (Hutchins, 2000).

For further reflection on this profound topic, consider viewing Susan Blackmore's take on the "third replicator" (*Memes and "temes,"* n.d.).

References

An anthropological introduction to YouTube. (2008). Retrieved from http://www.youtube.com/watch?v=TPAO-lZ4_hU&feature=youtube_gdata_player

Blackmore, S. J. (1999). *The meme machine*. Oxford [England] ; New York: Oxford University Press.

Chomsky, N., & Skinner, B. F. (1959). Verbal behavior. *Language*, *35*(1), 26. doi:10.2307/411334

Cook, S. J. (n.d.). Frodo Lives. Retrieved December 5, 2014, from http://www.tolkienlibrary.com/press/1157-frodo-lives.php

Davison, P. (2012). The Language of Internet Memes. In M. Mandiberg (Ed.), *The Social Media Reader* (pp. 120–134). NYU Press. Retrieved from http://books.google.com/books?hl=en&lr=&id=AiqMDIk6ENsC&oi=fnd&pg=PP2&dq=%22Sissu+Tarka,+Astra+Taylor,+Alan+Toner,%22+%22extent+possible+in+publishing+our%22+%22Hackers,+and+Trolls+and+the+Politics+of%22+%22in+the+Always-On+Lifestyle%E2%80%9D+by+danah%22+%22Nicely:+On+Shareable+Goods+and+the%22+&ots=GFbEzUyrL8&sig=B9DbYPzU7vCDrgEOG2FyWseZu4A

Dawkins, R. (1976). *The selfish gene*. New York: Oxford University Press.

Fahlman, S. (n.d.). Smiley Lore :-). Retrieved December 5, 2014, from http://www.cs.cmu.edu/~sef/sefSmiley.htm

History of the graphical user interface. (2014, December 3). In *Wikipedia, the free encyclopedia*. Retrieved from http://en.wikipedia.org/w/index.php?title=History_of_the_graphical_user_interface&oldid=635643597

History of the Internet. (2014, December 1). In *Wikipedia, the free encyclopedia*. Retrieved from http://en.wikipedia.org/w/index.php?title=History_of_the_Internet&oldid=635796624

History of the Internet | History of Things. (n.d.). Retrieved from http://www.historyofthings.com/history-of-the-internet

How Obama's Internet Campaign Changed Politics. (n.d.). Retrieved December 6, 2014, from http://bits.blogs.nytimes.com/2008/11/07/how-obamas-internet-campaign-changed-politics/

How Pete Frates Found His Calling And Launched The Ice Bucket Challenge. (n.d.). Retrieved December 6, 2014, from http://www.forbes.com/sites/carminegallo/2014/09/05/how-pete-frates-found-his-calling-and-launched-the-ice-bucket-challenge/

Hutchins, E. (2000). Distributed cognition. *Internacional Enciclopedia of the Social and Behavioral Sciences*. Retrieved from http://www.artmap-research.com/wp-content/uploads/2009/11/Hutchins_DistributedCognition.pdf

Internet Growth Statistics - the Global Village Online. (n.d.). Retrieved December 5, 2014, from http://www.internetworldstats.com/emarketing.htm

Jeuring, J. (n.d.). Finding Palindromes: The Sator square. Retrieved from http://finding-palindromes.blogspot.kr/2012/06/sator-square.html

Just for Hits - Richard Dawkins. (2013). Retrieved from http://www.youtube.com/watch?v=GFn-ixX9edg&feature=youtube_gdata_player

Kim, B. (n.d.). Hampster Dance | Know Your Meme. Retrieved December 5, 2014, from http://knowyourmeme.com/memes/hampster-dance

Kruglanski, A. W., Gelfand, M. J., Bélanger, J. J., Sheveland, A., Hetiarachchi, M., & Gunaratna, R. (2014). The Psychology of Radicalization and Deradicalization: How

Significance Quest Impacts Violent Extremism. *Political Psychology*, *35*, 69–93. doi:10.1111/pops.12163

Kuhl, P. K. (2000). A new view of language acquisition. *Proceedings of the National Academy of Sciences*, *97*(22), 11850–11857. doi:10.1073/pnas.97.22.11850

Lessig. (2008). *Remix byLessig*. Penguin Press HC, The.

Lievens, E. (2014). Bullying and sexting in social networks: Protecting minors from criminal acts or empowering minors to cope with risky behaviour? *International Journal of Law, Crime and Justice*, *42*(3), 251–270. doi:10.1016/j.ijlcj.2014.02.001

Mazaid, P. N. H. and A. D. and D. F. and M. H. and W. M. and M. (2011). Opening Closed Regimes: What Was the Role of Social Media During the Arab Spring? Retrieved from http://ictlogy.net/bibliography/reports/projects.php?idp=2170

Memes and "temes." (n.d.). Retrieved from http://www.ted.com/talks/susan_blackmore_on_memes_and_temes?language=en

Quercia, J. della. (n.d.). 7 Memes That Went Viral Before The Internet Existed. Retrieved December 4, 2014, from http://www.cracked.com/article_19119_7-memes-that-went-viral-before-internet-existed.html

Suicide of Amanda Todd. (2014, December 5). In *Wikipedia, the free encyclopedia*. Retrieved from http://en.wikipedia.org/w/index.php?title=Suicide_of_Amanda_Todd&oldid=633577426

Total number of Websites - Internet Live Stats. (n.d.). Retrieved December 5, 2014, from http://www.internetlivestats.com/total-number-of-websites/

Why Did The ALS Ice Bucket Challenge Become a Movement? (n.d.). Retrieved from http://www.sociologyinfocus.com/2014/09/03/als-ice-bucket-challenge/

Wikipedia. (2014a, November 29). Abracadabra. In *Wikipedia, the free encyclopedia*. Retrieved from http://en.wikipedia.org/w/index.php?title=Abracadabra&oldid=635287785

Wikipedia. (2014b, November 30). Kilroy was here. In *Wikipedia, the free encyclopedia*. Retrieved from http://en.wikipedia.org/w/index.php?title=Kilroy_was_here&oldid=634221953

Wikipedia. (2014c, December 3). Three hares. In *Wikipedia, the free encyclopedia*. Retrieved from http://en.wikipedia.org/w/index.php?title=Three_hares&oldid=634943303