

New Epistemologies? Rethinking Ways of Knowing in a Digital Culture

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Since its initiation into the public sphere, education has been precariously balanced between fulfilling a role of historical cultural transmission, that is of educating a society into its past ways, forms and value systems, and forging a path as a precipitator of new ideas, scientific inventions, knowledgeable domains and current social and cultural debates. Epistemology and pedagogy are at the centre of this divide: what is it we want people to know, how can we best convey what it is we want people to know, and how will we know if they know it. In the United States, for example, these questions are crassly answered by mass standardized testing, and a “no child left behind” policy that has done little else. What remains, are still questions about what and how we know, and what values that knowledge is afforded under these new media conditions.

Introduction: “What has become of knowledge...?”

As Jean Francois Lyotard anticipated, changes in the status of knowledge, that is what is of and has value, accompany the social, cultural and economic shifts of a post-industrial world. Knowledge under “conditions of computerization” has “exchange value.” That is, “The relationships of the suppliers and users of knowledge to the knowledge they supply and use is now tending, and will increasingly tend, to assume the form already taken by the relationship of commodity producers and consumers to the commodities they produce and consume – that is, the form of value. Knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorised in a new production: in both cases, the goal is exchange. Knowledge ceases to be an end in itself, it loses its ‘use-value’” (Lyotard, 1984). This shift in the relative value of knowledge, should be seen as a fundamental, foundational change. New questions now need to be asked, not just about what knowledge is “worth” but about what counts as knowledge, what it means to “know” and how someone comes to “know”. The semi-globalized culture of the internet, with its public forms of display, its grassroots production capabilities, and its potential worldwide audience is an ideal site for exploring these kinds of questions, with a view to better understanding these new knowledge conditions.

In the literate past, knowledge was encoded in primarily textual form. David Olson, remarked long ago on the ease with which we mistake linguistic fluency for cognitive competence, noting that “we often see as intellectual accomplishment what is in fact merely mastery of a particular form of language” (Olson, 1987). The authority given to text in both intellectual and school-work, and its potential hazards has been around since Plato’s critique of writing, Wittgenstein’s much later warning about how language had “gone on a holiday,” and about the “bewitchment” of the intellect by language. Today, education still suffers this same bewitchment, despite radically altered media conditions, and post-literate practices. This shift was not unanticipated: Marshall McLuhan, whose own work across media modeled a reflexive appreciation of and responsible engagement with theoretical studies of media forms and functions. McLuhan’s purpose was to wake us up from what he described as “the habits of rigid perspective induced by three centuries of print hypnosis” (McLuhan, 1969, n.p.). Now, many years later, these arguments seem especially salient for education, whose currency is the representation, transmission and development of knowledge and understanding. Today’s diverse forms of

mediation effect transformations of what knowledge is, what knowledge is of most worth, what are legitimate processes of coming to know, and who can legitimately assume the identity of knower (Lankshear & Knobel, 2003). Once we see what differences can be made to knowledge, knowing, and knowers by the forms on which and the tools through which human understandings are mediated, we confront a new kind of imperative: that of “rhetorical responsibility,” that is to say, responsibility for the ways and means we deploy to achieve our communicative purposes. We hope by looking more closely at new forms of reflexivity which inflect these spaces, to become better aware of the those which inflect our existing places and practices, but to which we have become inured by habit. We do see value for an educationally interested study of these spaces as a way to understand emergent ideas which assist us in revising and rethinking what school knowledge may best become, and to understand more clearly why it makes best sense to refuse and rethink forms of educational evaluation, which persist in the face of and in often-uncomfortable relations to online spaces in which much of comparable cultural significance is arguably learned and exchanged, In this paper, we will focus on three current forms of mass-representation through digital media – MySpace, Second Life and Wikipedia – in an attempt to show what forms of knowledge are encoded there, what counts as “knowledge” and what knowledge is of and has value in those online communities. Because these are representational forms, and because they are very much connected to lay-production, much like the ways in which early print culture massively over-produced in local settings, we will also look at the relationship between production and consumption in these very public settings as well. Our purposes for examining each of these online “communities” is three-fold: in the case of MySpace we will look particularly at the ways in which the “self” is represented in and through the affordances of the “space” (text, images, videos, and the general website “template) and the way users appropriate that space. In Second Life we will also look at representations of the “self” as avatar, and look particularly to how the users construct and maintain a virtual world, a kind of “community”. In this vein, Wikipedia will be examined not only as a community which has a “knowledge-building” mandate, but also what forms and kind of knowledge are represented there. While MySpace and Second Life serve as examples of what knowledge constitutes in relation to self and virtual world, Wikipedia is a unique example of a community of knowledge producers who remain virtually anonymous and whose knowledge is often-times deeply flawed. Despite its inconsistencies and a resident public acknowledgement of its short-comings as an accurate source of factual information, Wikipedia represents what could be considered to be a fully post-modern view of knowledge: it does not rely on modernist notions of what is “true,” instead it is a kind of rhizomatic entity, which does not and need not distinguish among its various parts. Felix Guattari and Gilles Deleuze use the figure of the rhizome to describe a kind of non-hierarchical network: “A rhizome as a subterranean stem is absolutely different from roots and radicles. Bulbs and tubers are rhizomes. Plants with roots or radicles may be rhizomorphic in other respects altogether. Burrows are too, in all their functions of shelter, supply, movement, evasion, and breakout. The rhizome itself assumes very diverse forms, from ramified surface extension in all directions to concretion into bulbs and tubers ... The rhizome includes the best and the worst: potato and couchgrass, or the weed” (Deleuze & Guattari, 1987, p. 6- 7). In each of these spaces, the production of self, ‘second self’ and information encourage a hybridity not only of form, but of connectivity, making each of these sites pulsate with democratizing possibility.

Lost in Space: Vacuity, Cognition and Capacity in MySpace

MySpace, for those out there who do not read print or online media, do not watch television news, or who do not have a host of friends who are already participating, is an online social networking website in which people purportedly come “together”, add friends to their friends list, block others, try to find long lost loved ones and basically construct for themselves an online presence which others (who “know” or do not “know”) can comment on and attempt to build fleeting and/or meaningful relations with. In many circles, the pressure to join is insurmountable, as recently, a graduate student I am working with confessed that he had finally broken down (at his girl friend’s persistent behest) and joined MySpace, the only trouble being, that he did not really want anyone who knew him (beyond his girlfriend) to be able to find him, thus undermining one of the primary goals of the space – social networking – to find others and to be found. MySpace and its hot cousins, Face Book and Friendster have been in the public eye long enough that they have a kind of meta-commentary surrounding them that the global media has taken up: a voyeuristic fascination with what will those crazy “MySpacers” do next. Recently, those juicy participants have delivered: in Toronto, students in a high school were arrested at a public protest after they had been forced to removed slanderous comments on teachers from their MySpace blogs, and outside of London, England, a young woman who held a MySpace party (inviting her 350+ “friends”) was arrested following her party in which over 20,000 pounds worth of damage was done to her parents home (including holes in walls, puke in all corners of the house, and smashing of furniture).

In this space, the “self” is represented within a kind of template driven system of accounting -- likes, dislikes, friends, videos, music, pictures – which is, for those people who actively participate, frequently changing. Those listed as “friends” can expand and contract, new pictures are added, new words to a blog, new missives from “friends” are received and publicly viewed, and so on. The inherently rhizomatic possibilities of the technology mean that someone can post their own pictures of friends, and then “tag” those pictures to other MySpace participants, thereby creating, producing and maintaining their “social network”. Tila Tequila is a particularly good example of MySpace “success”. In December 2006, she was featured by *Time Magazine* as a “big hit” on MySpace where she has more than 1.5 million “friends” listed, and receives up to 5,000 requests a day to be added as friends (Grossman, 2006). Tila Tequila is one of the most “successful” examples of the production, or perhaps more accurately, the viral re-production, of self on MySpace: she moved from Playboy pornographic photography to raunchy recording artist to a “legitimate” online celebrity. A large part of her “success” is simply her self-production: a thin, attractive Asian woman who dances in her underwear, sings and rolls around looking “sexy”. The difference between her “self production” and everyone else’s on the Internet, is that “There’s a million hot naked chicks on the Internet... There’s a difference between those girls and me. Those chicks don’t talk back to you” (Grossman, 2006). Interestingly, she has moved away from the social media possibilities of MySpace in recent months, directing fans and those simply curious to her own website where she is not confined by the MySpace templates, is more able to produce her own “look and feel” and in that way is much more able to re/produce herself and her content as she sees fit. Michael Hirschorn (May 2007) posits that social media sites like MySpace will be left behind in the future as users begin to grapple with questions of ownership: “MySpace may sell the idea of itself as being without boundaries, but in fact the digital mayhem lives within a tightly controlled environment. MySpace does not let users network meaningfully with people outside its walls, and it does not let them import some functionality that promotes or drives revenue to other corporations” (p. 138). This is clearly the case now for Tila, whose own

website “Tila’s Hot Spot” is the location of new content and up-to-date information on her activities and public appearances (see <http://www.tilashotspot.com/>).

On a more serious side, the MySpace population responded nearly immediately to the shootings at Virginia Tech. One prominent blog on the day after the shootings (first click accessible off blog portion of site, and ranked number 3, behind “why I have the best f*ing blog on MySpace) details a young woman’s day as she learned of the shootings; there is some attempt at sense-making in her account: “I’m not sure why such great things, such as the Twin Towers and Virginia Tech have to be tarnished by pointless violence. I also lived in New York City on September 11, 2001. What I felt then is similar to what I feel now. I feel grief; I feel personally insulted; I feel shocked; I feel confused and detached.” What is interesting is there is little uptake, beyond prayers and one longer commentary on how schools should be “safe places” of the woman’s trying to come to terms with a near-violence experience: it is as if what is compelling is just the distance, and little else – no outrage, no demands place on anyone, including the government to better regulate guns, and no culpability placed on any shoulders – these things simply “happen”. (This is *not* to single out this young woman: the press did little else, and her account is simply evocative of the kinds of discourse the slayings received: very little about guns or violence, and much made of the “South Korean” who was very much a United States *citizen*.)

So what does count as “knowing” on a social networking site like MySpace? Knowing seems to amount to a kind of obsessive account keeping: of friends, of favorites, of likes and dislikes, and of most clicked on kookiest, strangest, prettiest, ugliest, and so on people. Knowing in this context includes close friend and acquaintances, people who have signed up to be your friend, knowing about other people’s friends and acquaintances, lurking, seeking out others, and lists of things. It also seems to include a kind of endless reaching out into other people’s business, a kind of publicity for its own sake, while ones own self is also put out there, for consumption. MySpace straddles and problematizes (somewhat) the traditional line between production and consumption – on MySpace you are both producing and consuming – and it thrives on the blurring of the distinction. For example, a user produces their own material – images, text, video, music – and uploads it to their MySpace, template driven ‘space’ which he/she produces within that organizational space. It is here marital and sexual status are indicated, likes and dislikes and a kind of “web ring” of friends is created. The MySpace user produces his/her own relations, inventories and classification systems, and meantime that is consumed by friends/relations and other MySpace users, lurkers and general ‘surfers’, not the least MySpace producers themselves. Knowing here is knowing ‘about’, a kind of short form simulacrum.

The important point here, though is that the “self” as it is represented and what is “known” is always in flux, meaning on any given day, either a user makes changes to their MySpace self OR what is represented there is out-of-date. That MySpace is a particular kind of social networking, that is a kind where people might represent their “real self” in partial form, and while it is, in effect, “public” it is not the “self” that people would want to willingly choose to show their employer. In 2006, the *New York Times*, for example, reported that more and more companies were checking Facebook and MySpace profiles of potential employees. This caused a rippled outrage among users of such sites, and generated much discussion about privacy, social media sites and users of those sites. For our purposes, what is significant is the blurring of

public/private: these sites are inherently public, to be pursued by anyone, with greater access granted to those with an account, which anyone can obtain. The “violation” of people’s perceived boundaries seems to be that employers are not to have access to the self that occupies a community of users whose intent and purposes are both inside and outside an office or place of business. While there are many stories to enumerate of people being fired for their MySpace practices --- a young journalist fired for post what he claimed to be a tongue-in-cheek “kill list,” 27 American Automobile Association workers fired for harassing comments, or the young Montana deputy fired for explicit sexual chatting while “on duty. One firing is particularly telling: Jerry Singleton, a television meteorologist was fired, not for heroine addiction or when faced with a Federal drug case, but when someone posted a nude photo of him on their MySpace account, attributing the photo to Singleton by “tagging” it to his MySpace account. Singleton learned relatively quickly of the photo, and MySpace removed it within an hour of the complaint, but meantime, it was mailed to co-workers who commented: “It’s kind of a shocking picture of -- you don’t want to see Jamey Singleton getting out of the shower, you want to see him doing the weather” (Nair, 2006). Singleton was fired following the incident, although his employer claimed that it was not because the photo had been posted. What is at stake here then is not simply self-representation, but also the representation of self through these rhizomatic networks, through the literal social constructive work of the users enabled by the technology. This is active “constructivist” work in educational terms, which is neither trivial nor should it be simply dismissed. It is, moreover, ironic that a medium driven by an entrepreneurial orientation to self-expression and social communication should now be the site for a re-invocation of individual/ “privacy rights” and new domains of “the personal”.

Second Life: Producing ‘other’ in an online virtual world

Second Life (SL) is a “free”, online virtual world (multi-player, 3-D) where “adults” (you must claim to be over 18 years of age to join, otherwise you are directed to Teen Second Life) ostensibly go to “hang out” with others in this online space. When you first enter the world, you create an avatar (male or female) that you name and which looks much like the enduring plastic of a Barbie and Ken doll. The player then navigates the world of SL with the avatar, purchasing clothes and adding accessories, hanging out in bars and clubs, gambles, goes to malls, experiments in avatar sex, and so on. SL is the graphics and networked enhanced chat room old where people used to go and “hang out” to “chat” with one another, with one important caveat: Second Life is economically driven. So while it might be seen to be a Web 2.0 version of a chat room, it very much relies on virtual and world exchange. In order to have cool clothes, and interesting (and anatomical) attachments as well as land, or other objects your character must purchase them using the currency of SL, “Linden dollars” which you can either earn through trading goods, or the “old-fashioned” way through sexual trade, by buying and selling in world real estate or by converting “real world” dollars to Linden cash. According the *The Guardian*, daily Second Life economic trade is as much as \$265,000 U.S. dollars, making it one of the more active, “virtual” economies online (Sweeny, 2007). In addition, large companies are actively advertising and “selling” in SL – IBM, Toyota, Starwood Hotels and Resorts, General Motors, Sony among many others.

What “drives” this economy? Its users, of course, entrepreneurial people like Anshe Chung (SL name) who is a virtual property tycoon in the world, and recently claimed to be its first

millionaire (Irvine, 2007). Goods and services, in fact, trade a whole lot in SL: in February 3 virtual malls sold for over \$150,000 U.S.

Sex also sells in SL: currently the largest growing economic area, according to one commentator is in genital design that you must equip your avatar with and purchase in order to have sex (Hyde, 2007). For some, it seems there is excitement to be had in watching two avatars engage in sexual exchange. As one reviewer commented: “the creatively minded don’t seem to be running the show these days. With all the media attention that Second Life has been getting, its population has skyrocketed (as I write, there are more than 36,000 players online). Hardly anybody you meet has been in the game for more than a couple of months. And the new player who wanders around talking to dolls, asking about the world’s most popular places, will find the same things over and over again: clothes for sale, and the opportunity to witness awkward doll sex with a girl named Larry” (Tossel, 2007).

Beyond the chance to build the Great Wall of China or own a car for as little as one U.S. dollar or watch two avatars whom you don’t know engage in cartoon sex, what is so compelling about this virtual world? What is drawing users to it and, for a number much smaller than the 5 million plus registered on the site, what keeps them in that world? Unlike MySpace and Facebook, SL offers a chance for self-representation that is not quite so literal¹, or at least not as dependent on representing oneself: choosing, outfitting and equipping an avatar means that, at least for some, they are released from the burden of a self that might not be able to afford an expensive suit or wear size zero clothing or have funky pink hair or simply be ‘able’. But how liberating is it to be able to represent oneself as an avatar that looks like it belongs in a nightclub? And how compelling is it to receive “free pizza” handed out by a campaign lackey (Hyde, 2007)? For some, it seems, what matters is there is access: access to celebrities who are simply “just around the corner,” whose avatar you can interact with in ways you could never do in the world that you occupy offline, access to goods and services, land and development that are not possible for most of us. For others, perhaps it is simply the remediation of a “chat room” – a more interesting, and certainly larger “room” to explore within, with global use we only dreamed about in the late 1990’s. Despite its global “success,” and its burgeoning economy, the backbone of SL is still text-driven chat: will it enjoy the same popularity when its technology enables voice? Will people want to imbue their avatars with the timbre and tone of their own voice or will it simply “die out” as users shy away from the anonymity afforded by simply typing?

Education is a different matter. There has been quite a lot of press on SL as a potential “educational” site: courses have been held in the virtual world by New York University, Harvard, and most recently INSEAD (a leading business school in Singapore and France) has created a virtual campus to bring together students from all of the world who will pay real money to enroll in virtual courses there (Walker, 2007). But what kind of “courses” are these? SL’s affordances, beyond building, buying and organizing parties and sexual encounters are primarily

¹ This is not to say the MySpace and Facebook users all rely on literal self-representation, there is a lot of playfulness in many peoples’ self-accounting, and there are endless reports of people constructing false identities and falsely representing themselves. But the premise of those social networking spaces *is* to construct a network and community of people who might not “know” you, but who at least can make some claims about their connection to you, however trivial.

textual. Here is a virtual world which enables, indeed structurally supports a text-only educational encounter, making it much less like a “new” kind of literacy, or even taking advantage of the production capabilities of MySpace and YouTube, what SL affords is akin to the correspondence course of old, only this time we get to stand around and look at other avatars. Writing on the potentialities and limitations of online learning, Peter Taylor argued some time ago that a shift in the educational environment, in his case to what is now widely accepted as online education, amounts to far more than a changed content delivery system, and should result both in a overhaul of pedagogy as well as curriculum. In SL, the curriculum will likely always already be located ‘outside’ the world (unless the world itself is incorporated in some meaningful relation) and the kind of pedagogy that is afforded by the space is one that has been extremely difficult to “get right” (refs here on online learning) as users are required to type in order to interact. Not to mention the inherent inequities present and produced by such an online space: bandwidth, prior familiarity with 3-D and 3-D game environments, typing ability, linguistic competence and participatory comfort.

All of that aside, perhaps the most compelling educational possibility for SL is its hardwired “virtual world” that could be seen to support a community of practitioners who are co-producing their environment (through the constructive possibilities in SL – building homes, islands, shopping malls, etc.) and their interactions as well as co-authoring and co-constructing what is considered to be legitimate participation or not. For example, in March of 2007 it was reported that Italians gathered in SL to protest an Italian minister’s setting up an office because it would “change the rules” and “It doesn't seem right to make this a photocopy of real life, we get enough politics there already” (Kington, 2007). And in April 2007, in support of Earth Day, the SL worlds of Ibiza, Japan and the Netherlands were “flooded” in an effort to draw attention to the potential effects of global warming and to incite discourse on the topic within the SL community. Interestingly, the intent of this move, at least according to the UK director of interactive communications, Giles Rhys Jones, was to try to get people to act not only within SL but also in their own lives. He states: “Not only that, [Second Life] is created, owned and maintained by its citizens. They have the power to change things for the better. We are hoping that this sense of empowerment will be reflected when Second Life citizens move from the virtual to the real world” (Sweney, 2007). Might SL be a community where people really do feel like they have the power to change things? And if so, is it at all remotely possible that this will “transfer” as Jones hopes to the “real world”? Of course, this remains to be seen, but if history helps at all in the prediction, the likelihood is that agency of this kind will not simply “transfer”. What is intriguing, however, is the notion that the communities within SL might well view themselves as having the means to incite change through protest, through “simulations” and through general and ongoing participation, and that is very different than a world that has been actively idle in the face of intense environmental change.

Whether many of the educational uses to which second life has been put have yet exploited its affordances and whether there is a critical dimension to be explored beyond its oft-cited economic infrastructure remain to be seen, however. Many of the criticisms raised to its environments have in effect condemned the application as a whole for the limitations of the templates it provides. Those who visit second life as a consumer of its affordances will inhabit a very different and surely less engaged and engaging life than as a producer in this domain. Apart

from its economic disincentives (an island is prohibitively expensive for most²), there is the educationally as interesting requirement that one become an active producer of code to ensure that the so-called simulated great wall of China doesn't allow students to put their hands through it, your avatar needn't look like Barbie in butt-less chaps, and the Imperial meeting hall doesn't look remarkably like a contemporary shopping mall.

Perhaps this helps to explain why people would want to actually stay in this environment more than have the countless journalists and reviewers who have declared it tedious and uninhabitable: that while in the 'real world', you actually cannot force people to contend with what a tsunami is like in the hopes they will somehow change their environmental practices, a coder in SL can actually harness that which has gone, for mere mortals, incredibly and dizzyingly out of our own control--as humans that is. As 'posthumans', we get a 'second life', but it is one which acquiescently schooled consumers are less likely to enjoy than restive and creative producers.

Something wikied this way comes

If schools and universities are pivotal, centrally located brokers in and of the contemporary knowledge economy, in a time of remediation of cultural knowledge, it should be instructive to examine everyday practices of knowledge-focused communications: what now constitutes *education's* media of exchange? Wikipedia, for one thing, "The biggest multilingual free-content encyclopedia on the Internet. Over two million articles and still growing" (<http://www.wikipedia.org>). Wikipedia, "the free encyclopedia that anyone can edit, with 1,753,374 articles in English" is the crux of the problem here: wikipedia's representation of knowledge challenges and threatens to destabilize conceptions and practices of knowledge long privileged by the academy. Many people have already noted that as google has become for all practical purposes operationally synonymous with research, so wikipedia has become operationally synonymous with knowledge. It has also come to signify for some critics, a worrying educational foe, what Plato might have called an epistemic 'rule of the ignorant', a Gallup poll epistemology against which right thinking professional and public intellectuals alike need to be vigilant, responsible, and suspicious.

Notwithstanding any and all of this, its use is, arguably, nowadays pervasive across both public school and university, and if you don't explicitly prohibit its evidential or citational use, what one student presentation after another will include, is more or less of what they learned from wikipedia, whether that be about bran flakes or brain surgery.

So what is wrong with this?

In a recent posting to the Habermas list at Yahoogroups, "Re: Habermas at Wikipedia: Definitely under constructed", group moderator Gary Davis suggests that:

Discussing how to best improve that article
[\[http://en.wikipedia.org/wiki/Jürgen_Habermas\]](http://en.wikipedia.org/wiki/Jürgen_Habermas)

² A price quotation for an island on the Second Life website read: "Islands are priced at US\$1,675 for 65,536 square meters (about 16 acres). Monthly land fees for maintenance are US\$295.

We offer a discount to verified real world educators and academic institutions (e.g., universities/schools) or 501(c)3 non-profit organizations that will be using the regions to support their organization's official work. For these organizations, small islands are priced at US\$980 for 65,536 square meters (about 16 acres), and monthly land fees for maintenance are US\$150" (<http://secondlife.com/community/land-islands.php>. Last accessed April 26, 2007).

would be an excellent topic for this forum.

And he goes on to specify a number of areas which list members could consider contributing to (including the entry of his own), and asks:

WHAT OTHER ARTICLES AT WIKIPEDIA form the "spirit" of public understanding of Habermas? What is the Habermasian round at Wikipedia? Let's get a comprehensive list and make improvement of the Habermasian legacy at Wikipedia a project.

The posting which follows is from a self described “beginner” in Habermasian studies who has “taken a peek” at the Wikipedia entry on Habermas and he identifies a number of foundational areas in which it is incorrect or misleading, for example noting a confusing (mis)representation of strategic action as an attempt to achieve understanding which has failed, as if strategic action were parasitic upon, and not a distinct kind of enterprise from, communicative action oriented to reaching an understanding.

Whether or not this particular Habermas list actually contributes to this revision of wikipedia on Habermas (although the list moderator has already done so), the point is that an online community of readers of Habermas are being encouraged to create content and are able to do so.

This is a dramatic shift in the post-literate mediascape and it calls for a corresponding shift in post-literate pedagogy which understands and respects production as a necessary and enduring condition of knowledge-transmission, formation and transformation. Wikipedia’s radically democratized, digitally re-mediated epistemic conceptions and practices make continuous revision and reviseability simply an inherent and ongoing condition of “knowledge”. Given those necessarily ‘under construction’ conditions, why would (and how could) anyone intelligibly encourage knowledge-telling and fact-stating as paradigmatic classroom performances? It’s not Wikipedia’s fallibility which is the problem here, but an engrained disposition to represent knowledge as explicit and testable statements of fact.

In education, objections to students’ increasing uses of Wikipedia as the contemporary voice of epistemic authority is a source of great concern to their teachers and instructors. It is important to pay attention to the grounds of these objections, however, to see the specific forms which this awkward transitioning into contemporary media takes across particular cases. In the case of Wikipedia, we see a kind of legitimation crisis. The epistemic basis of its claims to knowledge is seen as unstable, unreliable, possibly completely invalid, and this is of course because Wikipedia is radically ‘open’: anyone can contribute content, and there are few safeguards, tests, or other processes for warranting the truth of the claims made there. Interestingly, this appears to be a problem primarily for education; we hear little concern from the many using Wikipedia outside the contexts and purposes of educational institutions, perhaps because, they don’t contend with the same high stakes legitimation game. For ordinary users, there are no tests which require warrantable validity claims to be made: people use Wikipedia to get a initial idea about something, and seem content enough to treat such information as a starting point, and a possibly quite fallible one at that.

Historical documentation of cultural transitions in the validity basis of knowledge claims demonstrates how changes in communicational media, in the forms that knowledge claims took, in effect, drove changes in what knowledge could be *trusted*, how, and why. In societies organized around mythological and religious authorities, that is societies in which cultural knowledge was not yet differentiated into separate epistemic spheres, and systematized within these separate spheres, gods and other deities grounded appeals to truth and were guarantors of truthfulness. One swore an oath in the name of one's god, who, being almighty, could mightily smite down she who uttered a falsehood, broke a promise, deceived another. In the ancient world, the challenges to traditional religion and the repudiation of traditional gods brought with it a major cultural crisis: what could be believed if there were no gods to secure promises and punish those who broke them, or who stole from others, or uttered falsehoods or misled other people?

How does a secular preliterate culture deal with this same set of issues? By investing authority not with an almighty god, but with the speaker: "My word is my bond", "A man is as good as his word". As we know, when a man swore an oath, he might draw his own blood or make a bodily mark as warrant for the truth of his word, or he might raise one palm to 'testify' to the truth: an oath-taking practice of placing one's other hand on one's genitals while speaking, to guarantee and authorize the claim in a highly personal *manner*. Epistemic validity was as good, but only as good, as its expositor. In the oral past, a statement was only as reliable as the person who uttered it and its credibility a function of its speaker's own, contradicting in practical terms the old philosophical dictum that "its what is said, not who said it that matters". Because in practice, it has always been very much who speaks that matters.

Literacy, Ivan Illich reminds us, 'separated a man from his word', and early legitimation practices were designed to re-forge that embodied connection by material means, by media, in the words of Marshall McLuhan, as "extensions of man".

As literacy both supplemented and supplanted oral transmission, it gave birth to a new attentional economy involving physical immobility, fixity of gaze, and meanings stabilized in a text "authored" by the actual person who 'penned' it.

We know that it took a great deal of time before people would 'respect' and 'trust' communications conveyed in writing, as these came to be done less through personal representation/delegation and increasingly more by means of documents authorized by sealing in wax. Initially, early documents written in ink on vellum were reportedly dismissed as marks on a sheepskin having neither power nor legitimacy. For a long time, seals of authenticity were used to testify to the authority of a text, tying it to its origins and standing, itself, as testimony to the truth of what it enunciated. Branding does this, or some of this, today.

With the spread of print literacy, it would be the publisher upon whose reputation rested the responsibility of ensuring that the text printed was the 'authorized' version, that is the version declared to be the complete and correct one by its author him or herself.

With its increasing institutional and official uses, the value of a personal 'warrant of legitimacy', an author's own authorization of print-based knowledge was superseded by the importance of its

institutional authorization. When, for example, public schools began to use purpose-built textbooks to represent the “authoritative version” of the official prescribed curriculum, institutional authorization carried greater legitimacy than any declaration of accuracy by authors.

Undoubtedly public schooling helped in large measure to make acceptance of and use of literate tools and methods, and with it, literate epistemologies separating speakers and their words (and worlds), ubiquitous. Pervasively, whatever is, is written; everything which is thinkable can be written. That there is “nothing beyond the text” has long been operationally true in education, in which textbook knowledge becomes synonymous with that which cannot be questioned, that which is above criticism and, conversely, that whose mastery is the route to success as a learner.

A cultural shift: Knowledge production

Wikipedia has taken the place of the encyclopedia, and, later on, of Encarta in the cultural history of ‘one-stop-shopping’ for knowledge. But whereas these earlier knowledge-repositories were authorized as having been informed and in fact written by accredited ‘experts’ in their respective fields and norms of knowledge, Wikipedia, prided as being the most democratic and truly ‘public’ knowledge bank ever created, is always and inevitably ‘under construction’, and that by a completely UN-authorized multitude of volunteers. In terms of location, if encyclopedias were available at the public school and the public library, and Encarta brought knowledge access as well into the home, Wikipedia makes its knowledge banks available anywhere and everywhere, at all times, in all places, across locations, across languages, and even in a ‘basic English’ version. Wikipedia pages are some of the very few in which the majority appear in a language other than English. What Wikipedia offers, far from seeming an impediment to education, is a re-mediation of its foundational epistemic means: an incredibly useful space to pursue producer-like understandings of culturally significant and locally informed and responsive knowledge, under construction, just as we SAY in education, but have this far failed entirely to carry out, that we see knowledge from a *constructivist standpoint*. A production pedagogy takes it for granted that knowledge is locally and humanly produced, and although it necessarily relinquishes strong claims to universality, it makes a lot more educationally defensible value of Wikipedia’s epistemic affordances than does their prohibition. Rather than forbid students uses of Wikipedia, might we not far more productively engage with its content including perhaps especially its absences, and take seriously whatever flaws or questions may be found in its entries. This would require a much more profound study of the subject matter at issue than we are currently promoting, as well as in insider’s critical inquiry into the possible complications, complexities and contra-factuals of the particular knowledge-representation under discussion. A lot more would have to be learned this way than through the received practices of ‘knowledge-telling’ and testing which currently drive public educational policies and practices. Arguably, the refusal to engage with Wikipedia content on the part of many teachers and professors may signify a more general and worrying refusal to engage with student-produced work (see turnitin). The chief question here might instead more profitably be not how to prevent the use of wikipedia to support teaching and learning, but how do we best and most powerfully engage our students---not as in the past as receptive consumers of textually conveyed ideas--- but as thoughtful producers in a global participatory community of scholars that we might yet produce by working on the human knowledge project openly, actively and freely together.

Conclusion/s

What we see across the preceding three cases, is education's understandably clunky attempts to negotiate the new terms of a digitally re-mediated attentional economy, and its equally understandable attempts to do so by implementing and enforcing received practices of creating and exchanging knowledge often scarcely recognizable as such. What we predict initially at least is an intensification in the levels and kinds of coercion which, until a deeper understanding of the digital reconfiguring of knowledge is arrived at, must and will be exercised by educational, familial and related cultural authorities in **personal** website surveillance and censorship, in regulation and prohibition of kinds of online **social** interaction and participation, and a materialist refiguring of ideas as **property**, resulting in intensified plagiarism charges, copyright enforcement and intellectual ownership legislation and prosecution. This is a time in which economic values and not epistemic ones, regulate knowledge and its public access and use. And yet, remarkably enough, this temporary pathology, symptomatic of media in transition, might yet be treatable to the extent that education is capable of taking seriously, and seriously taking, the measure of these new forms and practices: that knowledge is productive participation in communities of practice, that it can look nothing like what we have grown accustomed to, and that it is always and necessarily under construction and has always been so, even though we have been blinded for too long to that condition by literate culture's textually induced myopia. To steal from Pope, the proper study of education is education: only when we are prepared to learn reflexively about the ways in which the traditional textual preferences of modernist education have constructed knowledge and knowing, teaching and learning, truth and uncertainty, will we be in a position to educate ourselves about what education might yet become were it able to reverse its value basis from an alienated consumption of credentials to an intellectual engagement in the production of knowledge with understanding. Until then, we continue as we have been, absurdly, ostrich-like, championing epistemic illusions that we ourselves have conjured and which offer no suitable means to the advancement of educational ends under postmodern, postliterate conditions.

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