WHAT IT MEANS TO BAN WIKIPEDIA

AN EXPLORATION OF THE PEDAGOGICAL PRINCIPLES AT STAKE

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Abstract. This essay argues in favor of college instructors, especially in introductory classes, giving students the freedom to use Wikipedia entries in their research projects. It explores the pedagogy created by rigid prohibitions of potential sources, and argues that at stake are two chief dichotomies: one, students learning by engaging in a process vs. students producing a product, and two, students thinking individually and evaluating vs. students following rules. Within the discussion of these dichotomies is a call for instructors to emphasize evaluation of the *content* of research material rather than an author's credentials or other external markers.

Keywords: *pedagogy, information literacy, process-based learning, Wikipedia, user-created content*

Cheryl Miller Maddox (2007), writing in *Library Journal*, reports that the history department at Middlebury College "banned students from citing Wikipedia articles in their papers and exams" (91). Maddox says, "the action against Wikipedia made me cheer." (91). Maddox's glee from a policy that tells students what to do rather than attempting to teach them to think makes me very sad. Institutions, departments, and individual instructors nationwide impose various prohibitions on Wikipedia and other user-created content in academic work. In doing so, they are not just making a practical decision concerning a particular well-known Internet site, but are sending important—and I'll argue, very destructive—messages to students. The issue cuts to the marrow of what it is to teach.

I will argue in favor of college instructors considering Wikipedia (or Citizendium, Google knols, or other user-created content) to be acceptable as a source for research projects. But I am most interested in an exploration of the pedagogical principles *behind* this decision. At stake, I'll argue, are two chief dichotomies: students learning by engaging in a process versus students producing a product, and students thinking individually and evaluating vs. students as following rules.

Learning vs. Producing, Process vs. Product

Some Preliminaries Concerning Wikipedia

My foremost goal is to frame the discussion in terms of what is at stake pedagogically, how our policies toward this revolutionary information source apply some of the most profound pedagogical values we bring into the classroom. At times I will argue for a certain value of Wikipedia as a resource, when this is relevant to the particular concept. But, because I am arguing in favor of particular *pedagogical values*, rather than a particular technological entity, and because it would be beyond the scope of this paper to do so, I will not painstakingly address all the major objections to Wikipedia, particularly the broadest and most severe, that it is riddled with inaccuracies or that edits are made frivolously, with no oversight.

Briefly, then, I will say that some of the most relevant work on the accuracy and editing issues comes from: Giles (2005), who found that Wikipedia entries contained a higher number of errors than those in the online version of *Encyclopedia*

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Brittanica (900). Chesney Table 2 (2006), whose study found Wikipedia articles to rate, on average, a 2.9 on a credibility scale from 1 (highest) to 7, and eighty-seven percent of the articles studied to not contain errors. Baker (2008), who describes the editing and discussion process, as well as the struggle between those who would delete entries as not sufficiently "important" and those who would save them; and Weinberger (2007), whose book describes information in Wikipedia as "social knowledge" and astutely discusses and interprets the collaboration therein.

Conceptions of How Students Use Research

However, I *will* address what I see as a prominent objection to Wikipedia, that it is pedestrian, unrigorous, of some ephemeral "high school" quality. In my view, the research process is, along with far too many facets of academia, often approached with clear-cut rules or maxims, including *Don't use encyclopedias*—user-created or not. I think this defines an encyclopedia so narrowly as to include only the general ones, *World Book, Collier's, Brittanica*, etc. Missing are hundreds of subject-specific titles, ranging in specificity from foci such as "mammals" or "popular culture" to "creation myths" or "the slang of transgression." Entries in these volumes are often quite detailed (the ubiquitous term "general overview" is usually incorrect when applied to them) and academically rigorous. Many of them offer complex discussions of scholarly debate on the concept at hand. Wikipedia's entries, all of which contain some hypertext links to subheadings and inclusive concepts, span a wide range, some truly being "brief overviews," but many being in line, in terms of thoroughness, with entries in subject-specific reference books. Some far exceed this level of thoroughness, particularly if we tally the hyperlinked sub-topics or related topics to which a reader can hop.

Yet, those who acknowledge the value of these sources consider them useful only for gaining a familiarity with a topic and its terminology, for finding concepts or phrases for searching periodicals databases or library catalogs, or for mining citations. A blog comment responding to an article on Wikipedia co-founder Jimmy Wales saying students shouldn't use his creation in academia (a stance he has since reversed), reads:

> Encyclopedias of all types are most useful at the beginning of a research quest, for orientation and bibliography. Readers should consult them early in the writing process and follow their pointers to more definitive sources. It is just as silly to cite Wikipedia in the final paper as it is to jump without doing preliminary reference-book reading into a frantic quest to retrieve journal articles for which one has little context. (Carisse, 2006).

But I think the perceived silliness of citing Wikipedia comes from an incomplete conception of how the research process occurs. (And, this of course, knows as many variations as there are students.) Instructors haven't written these four-to-five page papers in years, and I perceive that they often devise their research requirements without careful consideration of what the students experience as they search. Without doing so, it is easy for an instructor to exhort—and in many cases, require—students to follow a one-size-fits-all process, an example being the restriction to only academic journals. I think that anxieties about "quality" of a wide variety of sources melt away if we adjust our way of envisioning the research process.

I compare a research paper to a film, the student as both director of cinematography and editor. In films we see a variety of shots, edited for effect: a long, establishing shot, a point-of-view shot from a rooftop, a close-up from the opposite angle, a two-shot, and so on. There is no best shot or best angle—*together* they create meaning. Similarly, the student must provide information that gives wide-angled shots and closeups: basic definitions, commentary on the issues at hand, opposing viewpoints, statistics. We as readers see the camera moving in and out, rendering objects in more or less detail. For this to happen almost always requires a variety of sources.

Students regularly complain about the hyper-specificity of journal articles. For example, a student in an upper-level zoology class at the university where I work as a reference librarian was writing on the endangerment of the gray wolf in North America. For the bulk of his research, he needed articles delineating and discussing the issue. But searches in databases indexing only scholarly articles led us to fecal analyses of the animal or inquiries into the presence of deleterious alleles. Similarly irrelevant was an article on "spontaneous howling." Some of these articles presented great close-up details about certain aspects or causes of endangerment and other population issues. But these didn't paint a very complete picture—together they were like a series of extreme close-ups in a film—a yellow blotch, something that looks like a hand—what do these all add up to together? While a student can learn much from figuring out how to mine relevant pieces of these articles, these pieces would probably take the shape of very specific examples deep within a section of the paper, with other substance necessary, and available, not necessarily from electronic sources, but in whatever shape it may take.

It seems to me that professors put too much emphasis on the *source* rather than the *information itself*. A journal article may be "better," overall, than a Wikipedia entry on the same subject, but how does that disqualify a particular piece of information that is mined from the latter? I always hear the sentence "we want them using the best sources." This may be reasonable enough, but it can come only from a conception of the research paper as a product rather than as a learning tool, which in turn conceives of the student as a producer rather than as a learner. However, the student isn't writing for publication; the paper will be seen only by the instructor and, when applicable, a peer review group. Even in Composition classrooms, where the students are explicitly told they will use a process-based approach (the dominate format in introductory writing classes), they are sent conflicting messages. They might go through a valuable *process* of completing several drafts of a paper, but are confronted with many exhortations—like cleaving strictly to peer-reviewed journals, often with little explanation as to *why*—that tell them they are there to produce a product, one with highly-defined specifications that will be scrutinized by the instructor-inspector. The *process* is one in name—it is what they go through to *get* that product—but

I'm not sure how thoroughly they are actually allowed to, in a more meaningful sense, undergo a process in which they explore and figure out puzzling issues involving the use of sources, starting at one place at the beginning of the semester, and forging their own movement to a better place by the end. In short, I don't think what is important is that the student use the best sources. What *is* important is that the student *learn how to determine* the best source.

Holistic Instruction of Information Literacy vs. Rules-Based Pointers

What I am suggesting, then, within an exploration of the dichotomy of student as learner vs. student as producer, is that 1) instruction of information literacy must be done holistically, encompassing a protracted exploration of a large set of concepts throughout a semester, that 2) instructors of *all* introductory courses have a responsibility for taking part in this, and that 3) not only would this be defined as including an open-door policy for a wide range of sources, with students being responsible for finding the best content within them, but that this approach, by removing barriers separating "good" from "bad" sources, is a particularly valuable *tool* for teaching the information literacy skills of evaluation and critical thinking, which are, of course, at the core of higher learning.

In a discussion of a pedagogy emphasizing learning over fabrication of a product, Gregory's (1997) ideas on the role of introductory courses are particularly useful. Gregory charges introductory courses—in all disciplines—with the responsibility of attending to the general intellectual growth of students *more than* to the teaching of the rudiments of a particular discipline (para. 8). In short, he argues that introductory courses must cultivate in students an "overall stance" he refers to as "intellectuality." (para. 6). He defines this as being composed of:

> judiciousness, an avoidance of cant, a realization that first impressions are seldom authoritative, a sense that the easy answers may indeed be too easy, a pleasure in the processes of learning for their own sake, a hatred of dogmatism, and a sensitive nose for the smell of rotten evidence.
>
> (para. 6).

The research process clearly affords opportunities for a rich experience in all of these concepts. And I know that some instructors, whether they teach Composition, a Research Methods class, or a 101 course in any discipline, enact a holistic instruction in information literacy. But I've perceived that all too often, true information literacy—how to evaluate and integrate sources, how to not just find them but how to judge them for suitability—is generally an afterthought. It seems to occupy the space of something that is too complicated to really teach, something a student either intuits or doesn't, something someone else "should" have already taught, or, probably most often, something for which no time remains after meeting the other curricular demands. Carol Collier Kulthau has spent decades studying and writing on a process-based approach to "library and information services." Her research has integrated constructivist theory and other constructs, such as the Uncertainty Principle of Whittemore and Yovits, 1973, and Bates 1986, and explores information seeking as an ongoing process. In this process, "[t]he user's state of knowledge is dynamic rather than static, changing as he or she proceeds" (Kulthau, 2002, p. 5). But Kulthau feels that while "[t]he literature of library and information science offers convincing evidence that information seeking is an intellectual process," (p. 5) "the affective process is rarely considered as interacting with the cognitive as part of a whole experience." (p. 93). Instead, she says, "we have attended almost exclusively to actions with source identification and location as the central objective" (p. 93). Kulthau uses "we" to refer to professionals in the library and information field, but I feel we can safely

apply it to classroom instructors just as definitively.

At my university, some instructors of upper-level courses (English 101s are required to visit the library) tell me that while they'd like to incorporate an information literacy session into their curriculum, there simply isn't time. And when instructors do enter the library, they often have a decidedly results-oriented agenda. Many of them want me to devote time for students to work independently at the end of the session. But this is not time for the students to explore databases, trying out their functionality for themselves, letting their curiosity prevail. No: the students are told that their goal is to find sources—usually expressed in a quantity such as two or three—to use in their upcoming paper, and to print those out for use, all in about fifteen minutes. Not having

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time to address, in class, information literacy principles, the instructor hands over much of this to the librarian, who he then expects simply to facilitate a sprint toward harvesting of resources. The message this sends to students is that research is merely an action, not a *process* in which his or her "state of knowledge" is allowed to change "as he or she proceeds." The instructor can tell the students to "evaluate" the sources at home, after quickly harvesting them, but having created an ethos that finding the sources shouldn't eat up precious time, she shouldn't expect students to approach the evaluation process with painstaking rigor. That is, if the process in general is to aid in the flowering of one's "state of knowledge," why must students leave the library clutching most of their sources?

Likewise, when instructors do teach information literacy in the classroom, the

thin wedge of time they have to devote to this often, I've perceived, leads to short-cuts. Instead of working to *cultivate* in students, for example, Gregory's "sensitive nose for the smell of rotten evidence," many instructors merely *tell them* to avoid such evidence. He or she may issue a vague pointer that students avoid "biased" sources or a more detailed exhortation: avoid information published by a special interest group or a company. One way or another, I fear that too often, the instructor tells the students what not to do, rather than explaining *how* not to or *why* not to, and rather than delineating criteria for a suitable alternative. This exhortation-based, rules-based pedagogy portrays the evaluation process as being composed of the sorts of easy answers Gregory decries.

Lisa Mendelman, a Master's candidate at Stanford, took a first-year course as an undergraduate at that university, and found that in execution, the instruction didn't deliver the promise of the course's title, "Writing and Critical Thinking." She asks, "What did 10 weeks of revising rough drafts, visiting the library, and reviewing the university's plagiarism policy have to do with thinking—critically or not?" (Mendelman, 2007, p. 300). Claiming to teach "critical thinking" is not enough.

What I favor instead is a pedagogy in which students are *shown how* to evaluate texts for tone, bias, level of analysis, etc. That is, teaching students to *read* should take precedence, time-consuming as this may be. For one, this allows students the freedom to use a wide range of sources, since they can then choose only outstanding content from each, but it also gives the students the sort of overall skills that obviate the teaching of dogma along the lines of "don't quote from biased authors." It need not be confined to the classroom, but can take place in the form of comments on working and final drafts, and in conferences. It need not add to the time it takes to do these things—one can spend time on *this* rather than on telling students not to use a certain sources or rushing through a terse and rigid guideline for evaluating web sites (or for that matter, admonishing them not to use the word "I" in a paper or not to begin a sentence with a conjunction).

In the course of having students complete assignments that are common in introductory courses: responding to writing argumentative papers, responding to authors' arguments, or discussing readings, there is room for teaching reading skills that will greatly empower students. The time it takes to indulge students in the kind of group discussions we often hear in the classroom—surface-level, emotion-driven, disorganized and largely devoid of insight—could instead be used to parse individual paragraphs and sentences, exploring how meaning is made, and also teaching the skill of detecting, with increased sophistication, sarcasm, irony, allusions, understatement, misleading statements, doctored statistics, etc.

Linda Elder and Richard Paul's system gives us a good example of this pedagogy. It is comprised on five levels of "close reading" that can be applied to a college-level text. To give one example, here are guidelines for explicating the thesis of a paragraph:

1. State the thesis clearly in a sentence.

2. Then elaborate on the paraphrased sentences ("In other words,…")

3. Give examples of the meaning by tying it to concrete situations in the real world ("For example,…")

4. Generate metaphors, analogies, pictures, or diagrams of the basic thesis to connect it to other meanings you already understand.

(Elder, Paul, 2004, p. 36).

These skills aren't meant to represent the sum total of those we'd like the students to develop in their college careers, but are an essential starting point. Only by reading with this level of conscientiousness will students be able to perform important evaluations of text. Some criteria for evaluation are also given by Elder and Paul:

Does the author clearly state his or her meaning, or is the text vague, confused, or muddled in some way?

Is the author sufficiently precise in providing details and specifics when specifics are relevant?

Does the author introduce irrelevant material, thereby wandering from his or her purpose?

Does the author take us into the important complexities inherent in the subject, or is the writing superficial?

Does the author consider other relevant points of view, or is the writing overly narrow in its perspective?

(p. 37).

I think of these criteria as applying, not *only* to an overall evaluation of an article, but to the particular information the student presents. Yes, many students are far from able to read on the level suggested by these guidelines—they will begin the process with varying degrees of awkwardness and unpreparedness. But if given the gift of our patience and the freedom and time to develop, they will increasingly be able to select quotations with nimbleness, understanding which help their arguments (or papers in other genres) and which contain various rhetorical features that may repel a reader. Thus, if deciding, for some reason to include a quotation from a Wikipedia entry, they would be making the choice with increasing measures of discretion and savvy.

And I think we are shortchanging students by not emphasizing quality, on the syllable-level, of sources, as opposed to quality on the level of the reputation of the journal the article appears in, the number of books the author has written, the prestige of her university, or her esteem in her professional community. These are the cardinal indicators listed by librarians as most valuable. Kathy Schrock (2007) describes her problems, as the administrator for Technology at Nauset Public Schools in Orleans, MA, with Wikipedia. She writes, "I have difficulty, as a library media specialist and an educator, coming up with a process to evaluate the information located on a Wikipedia page" (para. 4), adding that when using Wikipedia, "students are gathering the information from a person whom they know nothing about" (para. 9). In other words, Schrock is in agreement with the "Evaluating Information Found on the Internet" page created by the Sheridan Library at Johns Hopkins University (Kirk 1996), which ranks authorship the paramount criteria (para. 1). Schrock longs for an "about the author" page which would allow students to google the author "to find out how he or she is mentioned by others in the field"

and to "see who links to the author's site" (para. 5). Doubtless, this sends some positive messages to students: question information, look for second opinions, locate the author within a world of thinkers.

Certainly, if a student unfamiliar with, say, Ann Coulter or Louis Farrakhan were to follow this approach, the results would be enlightening. However, as discussed, I would expect the words of these (and far less sensational) authors to speak for themselves much more loudly than comments from others. One could also note that in most cases, students won't find any clear warning flags nor unbiased, airtight endorsements of the work of the author in question.

When I taught Composition, I told my students that *they* were responsible for the insight, logic, and overall effectiveness of the cited material in their papers, because *they* chose it. Gone were the days of high school when the opinion of an "expert" was a fact. It *is* important, as we help develop students toward their lives as community leaders, business leaders, policy makers, scholars, and voters, for them to be able to present arguments from sources that their audience will deem credible, but I'm arguing that it is much more important for them to present, not only *credible* information, but *persuasive* information. Information isn't persuasive if it isn't relevant, if it can't be linked to the argument at hand without the aid of fallacious thinking. (In cases of non-argumentative essays, it shouldn't be hard to see how relevance of information is applicable the same way it is in arguments.) The larger rhetorical issues of using facts to support arguments are much more crucial to students in their present and future lives as thinkers—they have much wider applicability and demand so much more attention--than mechanical issues of double-checking facts, scanning author's biographies, seeking external clues of "bias" etc. The most verifiable fact loses all effectiveness the instant it is used to prove more than it can prove or used in a way that makes an audience feel manipulated or deceived.

This applies not just to students using facts in their papers, but to their evaluation of how facts are used by the authors they cite, even when material comes from peer-reviewed journals. I'm not alone in having read peer-reviewed studies that used what I found to be questionable measures to establish certain traits: self-report questionnaires to judge the quality of parenting by lesbian couples, violent fantasies as indicators of increased aggression in children who have watched a lot of violent films. In many cases, the sample size is fatally small. Whatever the standards for admissible data that have been developed by various disciplines' national boards, these processes aren't perfect, and not all readers will be persuaded by all the data and how it is used.

An Evaluation of Information on Wikipedia

I'd like to apply the approach of letting the voice on the page speak to the reader instead of credentials, the reputation of the source, or other external markers, to a short excerpt from a Wikipedia entry. Say a student is writing a paper taking a stance on the Big Bang theory for an English 101 class (as opposed to a paper on Doppler's work with cepheids for an Astronomy 431 class). She quotes from this excerpt:

> When the temperature fell to a few thousand Kelvin, electrons and nuclei began to combine to form atoms, a process known as recombination. Since photons scatter infrequently from neutral atoms, radiation decoupled from matter when nearly all the electrons had recombined, at the *epoch of last scattering*, 379,000 years after the Big Bang. These photons make up the CMB that is observed today, and the observed pattern of fluctuations in the CMB is a direct picture of the universe at this early epoch.

("Big Bang," from "Cosmic Microwave Background" section para 32.)

What struck me about this entry was that it is *equal in quality* to several books on the subject I've read. (A journal article probably wouldn't provide a timeline of a basic process like this, instead skipping to the particular astronomical phenomena having been observed by the authors.) In level of detail, formality of diction, amount of jargon and its level of difficulty, this is on par with what I've seen from the physicists and astronomers who have published books on the Big Bang:

easy-enough to understand, somewhat conversational in tone, not brisk but not digging deeply into rich detail.

But what about the *quality* of the voice on the page? How would a student use close-reading skills to evaluate this passage? Elder and Paul's concept of paraphrasing can be of aid. I don't see a "thesis" to paraphrase, but we can say the "point" of the paragraph is that photons scattered from atoms near the end of a large period of recombination, and that these form cosmic background radiation. To judge this passage for suitability in an academic paper, we may apply Elder and Paul's key criterion "is the author sufficiently precise in providing details and specifics when specifics are needed?" The student would ascertain this by compiling an inventory of what we learn. Well, we learn that atoms were formed. We learn the temperature at which this happened (a few thousand Kelvin) and we learn *how* it happened—electrons and nuclei combined (recombination). And what does this recombination have to do with anything? It was near the end of this process at which radiation (which is used synonymously with "photons") decoupled. We are told that because photons scatter infrequently from neutral atoms, this "infrequent" occurrence happened at the epoch of last scattering, 379,000 years after the Big Bang. This is important because these photons make up the CMB (cosmic background radiation, which need not be spelled out because it is the name of the subheading under which this information appears) we see today. So? Well, "the observed pattern of fluctuations in the CMB is a direct picture of the universe at this early epoch." We can say that the clarity and completeness of this information meets the standards "Does the author take us into the important complexities inherent in the subject…" While encyclopedia entries are reputed for handling a large range of information at a distance, never zooming in on a particular point in great detail, this entry navigates point by point, supplying a piece of information with a very careful eye on what a reader needs to understand why cosmic background radiation is important. Further, the author links concepts causally, and diligently supplies adequate chronology tags and transitional phrases. A student

wishing to answer the question "does the author clearly state his or her meaning, or is the text vague, confused, or muddled in some way?" has several reasons to decide in the affirmative. The only misstep I find is the trading of "atoms" for "matter" and "photons" for "radiation" in the second sentence, but criticisms of this sort could be made of a wide variety of texts.

I'd imagine that he will be called out (on the entry's "discussion" page, which I'll address in a minute) at some point for this. He does use footnotes throughout the entry, leading to fifty-seven sources, all of which would probably pass muster if cited in an astronomy class. (Wikipedia entries, unlike newspaper articles, and frankly, more often than a lot of books, are either

level of skepticism leveled at the most innocuous-seeming points is stunning.

The above entry has been poked and prodded from all angles, with many of the contributors stating they are astronomers, some specializing in cosmology. Some of the citations have come as a result of someone noting their need, and tracking down a source for a particular number. One user called upon others to find verification for a point the author had taken as common knowledge, lamenting that it may have to be deleted otherwise. He or she was rallying the troops to improve the article in a way I found very touching. Curmudgeonly instructors can only see collaborative edits as tearing down good information, rather than building it into good. People afraid to budge from the old paradigm, and who might like to assume that if this isn't a peer reviewed journal, the edits must be quite slipshod, can simply read them for themselves, as the students should be required to do, perhaps with the requirement of providing evidence for having done so.

WHILE ENCYCLOPEDIA ENTRIES ARE REPUTED FOR HANDLING A LARGE RANGE OF INFORMATION AT A DISTANCE, NEVER ZOOMING IN ON A PARTICULAR POINT IN GREAT DETAIL, THIS ENTRY NAVIGATES POINT BY POINT, SUPPLYING A PIECE OF INFORMATION WITH A VERY CAREFUL EYE ON WHAT A READER NEEDS TO UNDERSTAND WHY COSMIC BACKGROUND RADIATION IS IMPORTANT.

Other sources the student finds very well *may* go into greater detail about these "fluctuations," devoting a short section to them. But what we really need, among the various pieces of evidence on the Big Bang, is a mention of the presence of cosmic background radiation, and a brief idea of what it *is*. A quick paraphrase of the major concepts in the top two-thirds of the entry would suffice. In other words, I feel this entry can be used the same way a book would be, to identify factual information valuable to support an argument, along with enough explanation for the student to understand what he's including in his paper, and enough to assure that jargon won't dangle undefined.

As to whether it's "correct" or not, I see no reason to question it. Not only would it be excessive for me to say, "well, how do I know the epoch of last scattering wasn't three hundred and seventy-two thousand years after the Big Bang?" there are no context clues to make me suspicious. The author isn't writing with any slant, or bending over backwards to convince me of any particular dogma—situations in which one might cut corners, selectively choose facts, etc. The only red flag concerning this number is that the author hasn't cited a source for it, and

very good about citing sources for facts or are flagged for not having done so.) In any event, if the student decides not to use the figure due to lack of citation, I'd applaud this, even if it may be excessively cautious, and I hope he finds a suitable replacement.

I feel that the above information is valid, and if not soaked in heavy detail, certainly adequate for a freshman composition on the Big Bang. I think this alone obviates the need Schrock identifies for a credentialed author, but I would like to address the anxiety many instructors feel toward Wikipedia for this reason. While we don't have an author's name for a web search, Wikipedia itself gives us, not an archive of *mere mentions of the author* of the work, but a vibrant and dynamic discussion of particular points in the entry. The "discussion" page attached to each entry constitutes a line-by-line reading, along with rich debate about facts, citations, explanations, and syntax. In some cases, people make edits and then report them on the discussion page; sometimes they suggest edits in this way. Some edits that have been made are rebutted, either by the original author of the entry or by a third party. Sometimes even the tiniest syntactical issue is debated for days. The

Those who do so will find laborious discussion of facts and concepts, but rigorous (and admittedly, sometimes painful-to-read) debate over the tone of the writing. For example, in the entry above, a user proposed an edit of the original version of the first sentence, which would remove the phrase "scientifically accepted understanding of the universe" from the definition of the Big Bang. The user agrees that the Big Bang is scientifically accepted, but feels that labeling it such "detracts from what should be a plain simple neutral statement of what this model actually IS" (Duae Quartunciae, 2007). (Wales urges Wikipedia authors to employ a "neutral point of view," and when presented by Weinberger with the idea that true neutrality is impossible, he responds "[a]n article is neutral when people have stopped editing it.") (Weinberger, 2007, p. 136). Another user on the discussion page introduces the old saw of saying that the Big Bang is "only" a theory, and that the entry should state that. A user responds "[t]he first sentence of the article says that the Big Bang is a model, which is another word for theory. I think that addresses your objections." (Vacharon, 2007). The original authors and various editors responded to the concerns over

how to define the Big Bang in terms of certainty, and together forged the following, which is how the entry stands at the time of this writing: "The Big Bang is a cosmological model of the universe that has become well supported by several independent observations." ("Big Bang" para 1).

The point is not how "objective" the entry is, but the experience a student might have reading this discussion page. If an instructor who would teach students to research authors for biographical information would likewise teach students to peruse the "discussion" page of a Wikipedia entry before citing it, several things are likely to occur:

(1) The student would enter a rich and challenging world of textual analysis and critical thought. She would see close reading and debate of a text, with the back-and-forth discussions being particularly fertile. These would show students that "easy answers are indeed too easy" as she struggles to process the varying opinions.

(2) The student would see the process of "knowledge creation" and would understand that statistics or facts are not born on the page, whether it be the page of a peer-reviewed journal or not. This would teach students to question information—any information—much more than would any guide to evaluating sources or any exhortation from an instructor.

(3) She would, further, begin to understand something it will become increasingly important to come to terms with in the upcoming years, Weinberger's concept of "social knowledge." This is knowledge and information with multiple creators, collaborative knowledge created without traditional hierarchies of power, and through dispute and negotiation. (Wikipedia *does* give administrative access to some prolific editors, but their edits can be publicly discussed, and are thus, it seems fair to say, more eligible to be reversed than the decisions of traditional editorial boards. Further, it is zeal and effort that earns those users their special access, not degrees or professional experience. And in any event, these administrative privileges aren't for traditional edits, but are to be used only to erase information meant to sabotage an entry, or "vandalism.") Discussing the result of an edit negotiated by multiple Wikipedians, Weinberger says "[t]he knowing happened not in either person's brain but in their conversation." (p. 143). He describes the implications thus: "Social knowing changes *who* does the knowing and *how*, more than it changes the *what* of knowledge" (p. 144). We are far too deep into a world dominated

by dynamic social knowledge to deem it amateurish or somehow beneath the notice of our students.

(4) Along these lines, students will understand ways in which credentials are or are not beyond reproach. On the one hand, this is important because while users who comment on Wikipedia entries often say they "have a degree in this field," this does not, from what I've seen, grant them the deference of other users. The original author himself may be a professional in the field, and this doesn't stop a deluge of questions and disagreements. Thus the students enter a turbulent environment where every syllable has to be defended by people with no authority over anyone else, where no editor has final say. This shows the student that the content of the work is paramount, not the author's credentials, however imperfect may be the process of shaping that content.

(5) And this also, in a way that will be hard for many students to articulate, explodes the concept of authorship. The author truly can be defined as the voice on the page—and in a certain sense, the author can be considered the process itself. Why worry about who the author is when you are able to see something so much more useful and revelatory: the process the various authors go through to create content?

The value of students reading Wikipedia discussion pages can be seen when we look at a working classroom example. Dr. Robert Reginio, in an English 112 course at the University of Hartford, had his students choose a key term they had been using in their research (gender, racism, divorce, etc.) and read the main entry for it on Wikipedia. After seeing how this concept is defined, and what seem to be the chief extant ideas within, students were to read the discussion pages for a sense of where disagreements arose. One of Reginio's key goals for this assignment was for students to see the assumptions they'd made concerning the topic of their choice, and to see that many "facts" are really interpretations—in short, the "knowledge creation" process.

One of the effects was that students saw that seemingly not "serious" topics (one student surfed to an entry for Anna Nicole Smith) were subject to very rigorous debate, with ubiquitous calls for citations of facts. Not only did this, in Reginio's view, show students *why* (as opposed to *that*) citations are important in their own work, but it actually dramatically improved the formatting of their citations during the balance of the

semester. (personal communication, April 18, 2008). Reginio concluded that seeing so many people haggle over citations did what countless exhortations from an instructor never could. Incidentally, many students concluded the assignment finding Wikipedia far too vulnerable to inaccuracies or disputes and changes and vowed never to use it again. I'd expect a smaller-scale, individualized reaction in standard research projects—many Wikipedia entries would not suit a student who conscientiously applies quality standards, and she would then select sources from the site only after regarding them with great skepticism, which is an ethos that will serve her greatly for the rest of her life.

In the May, 2008 issue of *Technology & Learning*, Judy Saltpeter lists an array of possible classroom assignments using Wikipedia—largely like Reginio's, above, and largely with the same aims in mind. One example is an instructor probing with students "the site's explanation of what it is not—a dictionary, a blog…a publisher of original work" (Saltpeter, 2008, p. 26). The ethos behind her ideas, as well as Reginio's assignment, is to demystify Wikipedia rather than banning it.

Students as Evaluators and Free-Thinkers vs. Students as Followers of Rules

I'll now move the discussion beyond information literacy skills, per se, and into an exploration of meta-instruction—how the way we teach can be considered, itself, material learned by students. That is, I'm interested in the ethos we create in the classroom, and what our policies toward Wikipedia or other sources say to students about their roles as learners and thinkers. This will inform the nature of the world the students will, in the future, lead and shape. A concept of keen relevance here is Paulo Freire's "Banking Concept of Education," which originated in his 1972 book Pedagogy of the Oppressed. The concept compares the unimaginative and rigid instructor to a banker who conceives of students as accounts, into which he deposits his knowledge. Herein, "[t]he student records, memorizes, and repeats…phrases without perceiving what four times four really means, or realizing the true significance of 'capital' in the affirmation 'the capital of Para is

Belem,' that is, what Belem means for Para and what Para means for Brazil" (p. 57). In this milieu, which I regularly see instructors creating, "the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits" (p. 58). In this case, the deposits are the information of what is and is not "acceptable" in a college setting, which is often presented as being as factual as the capital of Para.

By the time they arrive at the university, students have already developed an ethos that one is rewarded for, and perhaps wise to, internalize the norms of a particular environment. Many seem happy—in a way that is daunting to me—to go along with whatever protocols are presented to them. This may be born of a lack of passion for the material, but it could represent something nearly the opposite, an enthusiasm or respect for the subjects, materials, or level on which one is studying. The student may feel that to understand the protocols of a particular area or subject is to achieve personal growth. But all too often, this is not merely encouraged as being of some utility, but as the final destination. Perhaps the instructors themselves believe that there *is* nothing beyond understanding the accepted practices of a field—while few would admit to feeling this way, I've seen protocols all too often treated as steel-clad facts. Not only does this withhold from students a development of the skills necessary to *challenge*, rather than

to *accept* ideas, but it sends to them the message that this is not desirable.

It's a matter of priorities. If we consider students to be learners rather than performers, and if we value the learning of thinking skills rather than the carrying out of orders, we won't be afraid to allow students to explore and to not always get the "right" answer. If we won't do this, I'm afraid we're not helping students develop into the increasingly-interactive world they'll enter after graduation. They will embark on professional careers not just as readers or finders of information, but as collaborators in information creation. Freire says, "[i]mplicit in the banking concept is the assumption of a dichotomy between man and the world: man is merely *in* the world, not *with* the world or with others; man is spectator, not re-creator" (p. 62). If this pedagogy was harmful twenty-six years ago, it is much more harmful now.

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