



Photo courtesy of Seth Zenz

Wikipedia needs more physicists

Wikipedia, the popular online encyclopedia, has often been criticized as having misin-

formation and inadequate references. By allowing any user to edit, it runs the risk of having "truth" defined by majority vote or a persistent vocal minority; it has the potential to deliver the public's perception of science into the hands of fringe groups with an ax to grind.

However, as a physics graduate student and Wikipedia editor and administrator, I argue that Wikipedia's rules for reliable sourcing of articles are stronger than is often believed, and that academics can play a very positive role in improving and expanding Wikipedia.

Using Google is enough to see why we are stuck with Wikipedia as a major source of popular knowledge and we ought to make the best of it: Wikipedia articles turn up among the first hits for most physics topics. For most people of my generation, a Google search is now the first stop in almost any search for information. This means that if an undergraduate is trying to get a quick refresher on a topic for her physics exam, or a worried member of the public is trying to get an independent assessment of whether the Large Hadron Collider will really make black holes that eat the Earth, they will end up reading Wikipedia. The quality of those articles will ultimately determine whether thousands of searchers come away informed, confused, or misled.

One of the main sources of the misinformation is the author who has no formal training in physics but an enthusiasm for the subject, and who promulgates their own theories with no credibility in the scientific community. On Wikipedia, such people have the same ability to contribute as anyone else, and they do. They try to reinterpret the Wikipedia policies to have their edits accepted, but those policies are actually quite strict about using verifiable and reliable sources. These individuals are persistent and editors spend a significant fraction of their time holding the line against them, often simply by watching articles and reverting unsupported edits. This makes article improvement on Wikipedia more like a random walk than a steady progression, but at least Wikipedia policy makes sure that the random walk goes in the right direction.

These individuals can also fight dirty. I once blocked from editing someone who was

persistently adding unsourced nonsense to Wikipedia and harassing other users; he responded by sending a letter to one of the high-level administrators on my real-life experiment to complain that I was suppressing The Truth about how Relativity is false. I ultimately had to explain the situation to my PhD advisor, and of course the decision was made to ignore the letter, but it was certainly jarring to have personal volunteer work interfere with my real job in that manner.

One frustration for many academics is that no Wikipedia user has special authority because of personal experience and knowledge. Editors have to back up what we know—even sometimes the most seemingly obvious facts—by including citations for our statements. Although this may seem irritating and time-consuming, these policies ultimately help experts because our knowledge can be supported by reliable sources. There are examples of scientists having tremendous influence over Wikipedia articles in their areas of expertise and creating excellent, well-sourced articles.

One can ask if it is possible to create a better version of Wikipedia by giving experts special authority, as does Wikipedia co-founder Larry Sanger's new project, Citizendium. But ultimately the question is moot, because replacing Wikipedia simply isn't practical. Wikipedia's willingness to accept any warm body gives it vast armies of contributors, while Citizendium's requirement that the most trusted editors be faculty members or equivalent means that that project has very few. Wikipedia's strategy of appealing to non-experts' desires to make a difference, chaotic though it is, has so far proven far more empirically successful; it has about a thousand times as many articles as Citizendium, and Citizendium's sixty-eight officially approved articles so far do not appear to me to be much better sourced or better written than the equivalent topics on Wikipedia.

For a scientist, then, editing Wikipedia may prove to be a difficult experience, but ultimately a successful one. As things stand now, though, the physics articles are rather understaffed, resulting in longer delays in removing rubbish and very little time to improve content. A relatively modest number of expert contributors could make a big difference in the quality and scope of Wikipedia's physics articles. As measured in the number of people reached, such an effort may be a more important form of outreach and education than almost any other.

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