

Learning the Wiki Way: A Study of Web-based Information Resources and their Uncomfortable Relationship with Education

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In recent years, the Internet has triggered the creation of a new culture and new value system that developed in response to a community that emerged in a wholly new space: cyberspace. Through the effects of web based applications such Wikipedia that are designed to facilitate interaction between visitors to the site and allow users to easily create their own content, an important shift has occurred in terms of how people interact with information and how knowledge is produced. As one might expect, this shift has had a dramatic and very sudden impact on the learning habits of our nation's young people and has come into a great deal of conflict with traditional learning models.

Wikipedia

Wikipedia, co-founded in 2001 by Jimmy Wales and Larry Sanger, describes itself as “the free encyclopedia.” It is the most famous “wiki,” a type of online collaborative project based on software that was originally designed by Ward Cunningham to allow for maximum user interaction by allowing visitors to make adjustments to the content of the site in real time. In the case of Wikipedia, this software is applied in an effort to create a comprehensive information resource that is both free and easy to use for everyone. With several million articles written in

over 250 languages, Wikipedia has demonstrated significant progress toward its goals since the project's launch.

Such success has made Wikipedia a model for other wikis and is attributable in large part to the enormous, and enormously diverse community that Mr. Sanger's efforts helped to create during his time with the project. Wikipedia users have established a unique community within the confines of their shared space that not only maintains itself through the recruitment of new members, but has also established its own culture and value system as well as social sanctions that enforce that value system. Noble aspirations and popularity notwithstanding, the project has enjoyed a very uncomfortable relationship with educators and its potential for educational uses has remained largely untapped.

The conflict

The culture that has developed within the Wikipedia community places it at odds with the academic community: to many, it seems to be simply incompatible with the culture of learning that exists within our schools. Above all, it takes an explicitly anti-authority and anti-expert attitude toward the creation of Wikipedia content (Sanger 2006b). No privileges are afforded to individuals who have more experience in a particular subject area – anyone may make changes to any page at any time. Alone, this regulation is not necessarily anti-expert, but it enforced with such rigor that specialists are often made to feel unwelcome due to accusations of elitism.

The project is thus committed to amateurism (Sanger 2007), resulting in lower levels of reliability and accountability than many educators are comfortable with when recommending resources to their students. What is more, those teachers and experts who are most qualified to address this problem are often made uncomfortable when they enter the Wikipedia community.

Some are even chased out with accusations of flaunting their credentials or attempting to commandeer the articles to which they have contributed.

Wikipedia's format also raises concerns among some educators. This is because articles remain in a state of constant flux. Since anyone may edit any article at any time, a good article might dramatically decline in quality over night as a result of misled or malicious editors. The result is a constant danger to incautious learners who use the site in the course of their studies.

Teachers have made numerous efforts to overcome the challenges of using Wikipedia in the classroom, but this has generally entailed little more than laying the wiki model on top of the pre-existing curriculum. The enormous potential of the world's free encyclopedia has remained largely unexplored. Some have tried to ignore Wikipedia in the hope that it will go away and students will return to the reference section of their library. Some suggest that the solution lies in adopting the complete wiki model into the academy and retrofitting the system to place academics and experts in charge of content creation. Others take the opposite approach, arguing for the migration of education onto the Internet. All three extremist views have the same flaw – they fail to realize that there is space for both the non-expert contributions of lay-people that produces large amounts of content and the professional approach of the academy that instills a higher level of accuracy and reliability into a project. We must simply look for common ground.

Setting the stage for a resolution

The first step toward reconciliation of the attitudes and cultures of educators and the online Wikipedia community is the integration of educators and experts into that community. This requires concessions to be made by both parties and may seem drastic at first glance, but those concessions are not as radical as they may first appear.

On the part of the online community, the explicitly anti-expert attitude of Wikipedia must be abandoned. This may seem like it is asking too much, but as Sanger has pointed out, this attitude runs only surface deep even in the current model (Sanger 2007). In fact, Wikipedia already *does* recognize expertise through its policies against original research and its preoccupation with citing sources as a way to establish reliability. This is really no different from deferring to the authors of those sources directly, yet the aversion to doing so remains strong.

There are many who would argue that Wikipedia and other similar sites already have a place for experts: at the side of the other contributors (Sanger 2006b). In other words, there is no reason to create a special role for them because they are already invited to share their knowledge by participating as regular contributors. This argument runs into conflict with real world evidence, however. It is not uncommon for an expert on some subject to avoid Wikipedia or to leave the community after a short stay because he or she is put off by the idea that years of experience mean nothing to other contributors who can “just delete everything I wrote if they want to” (Sanger 2006b).

Experts certainly *are* capable of working side by side with non-experts to create a better resource, but they also possess skills and experience that are inaccessible to the layperson. The role of experts in the wiki environment should that of a guide. As guides, experts should not control the process to the exclusion of the hobbyist or amateur, but instead they should be available to answer questions, to clarify problematic issues and to share their expertise in order to help others learn more about the subject at hand. In essence, they should seek to be the teachers of the wiki community.

This brings us to the second concession that must be made, this time on the part of experts and educators. They must accept the collaborative, bottom-up approach that is so fundamental to Wikipedia. Sometimes experts make mistakes. Sometimes their writing style is inaccessible to potential learners. Often, a large group of amateurs have more knowledge than a single expert. Wikipedia's greatest success has been to prove that the quality of an article is more often improved than worsened by the participation of many different people with slightly different perspectives.

Again, this seems like an almost insurmountable challenge to the success of integration, but this too proves a minor adjustment when considered in context. Long before the Internet came into existence, authors and educators were working together to produce knowledge and transmit it to others. And today, many experts are already invested in Wikipedia-type projects. Their numbers will only grow in the future, as today's high school and college age Internet users become tomorrow's educators and professionals. Still, such people must be actively encouraged to share their knowledge and expertise and to do so in community with others.

We must also reject Wikipedia's proclivity for simplicity. The argument is often made that the success of a Wikipedia-type project relies on simplicity. It may be true that people will shy away from a site that is too complicated to use, but there is an important difference between "complicated" and "complex." In fact, the way that pages are interlinked on the more successful current projects is extraordinarily complex but based on simple concepts about organization and user-friendliness. The same must happen with the content: we need to move away from the dry presentation of fact followed by fact and seek to clearly convey the complex ways that those facts interact and intertwine to create knowledge.

On the other hand, academics must be willing to give up their occasional propensity for language that is inaccessible to the uninitiated. Uncommon jargon and needlessly complicated sentence structures often alienate non-experts, but in many cases, they may be easily avoided without loss of meaning. The collaborative atmosphere is very helpful with addressing this issue because others are available to help authors make their writing clearer, but authors must be receptive in order of this atmosphere to fulfill its purpose.

Wikis at school

With the more mature environment that is afforded by the presence of experts in the role of guides and mentors, the wiki model is open to more rigorous educational uses. Such uses range from in-class exercises to homework assignments and may be implemented within almost any subject area. A good wiki will be comparable to the resources that are available to students in the reference section of their school library, but in order for it to make a real difference, they will need to do more than read it as they would have read an encyclopedia from the library – they must also become involved in its ongoing creation. Such engagement has several very important benefits.

Benefits

First, by participating in the process of creating the wiki-based resource, students will come to better understand the benefits and pitfalls of using such resources for their own research. They will become aware of the challenges that authors face and the many possible sources of error that are present in wiki articles simply because they will have faced the same challenges and

made the same errors. They will also know learn to judge the quality of a resource with more maturity and more success because they will have been a part of the creative process.

Wiki contributions also help students to develop their research and writing skills. The process of researching a contribution will help students to learn how to draw on different types of resources that are available to them as well as to help them synthesize many different or conflicting views of a subject. Thus, they will deepen their own understanding of the subject at hand. They will sharpen their understanding still farther as the work through the process of formulating their research such that it is accessible to others.

Students will learn the value of cooperation and teamwork through collaborative and group work. They will learn to provide constructive criticism to others and will learn to accept the criticism of others in a productive manner. They will also quickly learn to value the benefit that comes from investigating a topic from multiple points of view and the great advantage of cooperating with others. They will learn to ask questions and solicit advice when they are unsure and they will learn that it is okay to do so.

Finally, students will leave school able to point to the work that they have done over the course of the year with the knowledge that it will help others. This is a very powerful motivational force. It will keep students more on track because they will feel that their work is more important and it will encourage them to produce their best work so that they can show it off all the more. As a side effect, this will also allow parents to see their children's schoolwork and will hopefully encourage them to become more directly involved in their children's education.

Implementation

For specific projects, educators may use wikis in a number of ways, depending on the subject and the scope of the project. In-class assignments might include reviewing articles about specific subjects that were discussed in class in order to add insight into the classroom texts, to correct any mistakes that are found in the wiki article, and to add wherever the wiki article falls short. The class might also start a new article about a prominent figure in local history or an important issue in biology.

As homework, a teacher could ask students to review a set of articles on closely related topics and then to follow up on a subject of interest from those articles and prepare a short report to the class. Alternatively, a long-term project might be to develop an article on the wiki that is incomplete. Or a student might be asked to use the wiki to teach a parent or sibling about a subject from class.

The logistics of these types of assignment has traditionally been very hard for educators because it is hard to find time for students to gather together and it is hard to give individual grades for a group exercise, but wiki software offers solutions to both problems. Grading collaborative work is made easier because the software keeps a record of who has made changes to a page and what changes each person has made. The time problem is addressed by the fact that students do not need to be in the same room or even work on a project at the same time – anyone may edit from anywhere at any time.

Wiki software is distributed under a license that allows for it to be copied and reused with very few restrictions, so the opportunity is available for schools or school districts to start their own projects but a larger, more established wiki is preferable in many cases because the groundwork will already have been laid by others and a community of support will have been

established prior to students' arrival in the wiki community. Experts provide guidance for students who wish to pursue areas of interest in which the classroom teacher is not well versed, while the teacher is able to work with students who need help with other projects. Students might also develop new ideas based on the work that others have already done, or decide to collaborate in an ongoing project.

The Citizendium – a step in the right direction

In the spring of 2007, Larry Sanger announced the public launch of the Citizendium (Citizens' Compendium) project. Citizendium has much the same goal as Wikipedia had when Sanger helped to launch that project and it is based on the same software, but it has made a number of small yet significant changes. First, it is designed to have a special place for experts who provide "gentle oversight" to other authors and "approve" articles once they are confident that those articles are accurate and reasonably complete. Once an article is approved by an expert (or experts), it is frozen and all further changes must be made on a draft page that can later be approved by experts as a replacement for the older version of the article. Citizendium also has a strict policy that requires people to use their real names when registering on the site and to provide a minimal biography on their personalized user pages.

The role of experts in the Citizendium community addresses several of the changes that are necessitated by the Wikipedia model. Their experience and specialized knowledge are acknowledged through their positions as "editors" on the site. They continue to work side by side with non-experts under the bottom-up model for content creation but they also bring a higher level of professionalism to the community. As editors, it is the responsibility of experts to help the community develop a corpus of articles that meet the high standards of accuracy,

reliability and readability that are encoded in the attitudes that the community fosters toward its work.

Citizendium policy also requires users to register with the site before editing articles, though any visitor is free to view all pages without making changes. Once registered, contributors are required to use their real names while editing. In conjunction, these policies have meant that the malicious editing that plagues Wikipedia has been a virtual non-issue at Citizendium. Names can still be faked, of course, but the extra effort required to do this has proven an effective deterrent to malicious activity and the real names policy has created a civil, vibrant community of cooperation.

It is too soon to predict the Citizendium's ultimate success, but it has already gone far in showing that many of the issues that have driven a wedge between educators and collaborative online information resources can be easily overcome without the need to sacrifice quality or volume. Such projects provide the key to placing the vast potential of wiki-type projects in the hands of educators everywhere.

Conclusion

Though the realms of collaborative online information resources and traditional education have been at odds with one another for some years, it is clear that this antagonism and dislike is not necessary. There is space for both to exist separately but there is also a significant overlap between the two arenas of sharing. With only minor concessions by each community, the two are quite compatible, as has been shown by the Citizendium project's early success.

What is more, such changes open the door for classroom teachers to use such resources to the benefit of their students. The range of subjects that are open to students to learn and the

range of skills that are available to be mastered increase dramatically with the presence of experts. At the same time, students may be confident that their most easily accessible resource is also reliable and complete.

Bibliography

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2006 “Web 2.0: A New Wave of Innovation for Teaching and Learning?” *Educause Review* 41(2). Electronic version available at <http://www.educause.edu/ir/library/pdf/erm0621.pdf>, accessed May 29, 2007.

Alexander discusses the rise of the Web 2.0 movement and the applications that this new way of organizing people has in terms of education. He offers ideas about the nature of the culture that has arisen in conjunction with Web 2.0 and speculates on the most appropriate ways to incorporate the potential of “social writing platforms” into education.

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2005 “Web 2.0: Building the New Library” *Ariadne* 45. Electronic version available at <http://www.ariadne.ac.uk/issue45/miller/>, accessed May 29, 2007.

O’Reilly, Tim.

2005 “What is Web 2.0: Design Patterns and Business Models for the Next Generation of Software.” Electronic document, <http://www.oreillynet.com/lpt/a/6228>, accessed April 27, 2007.

An In-depth comparison of “Web 2.0” sites such as Wikipedia to other, older internet sites from the “Web 1.0” generation. O’Reilly discusses the emergence of Web 2.0 and details the important differences that distinguish Web 2.0 sites from other models.

Poe, Marshall.

2006 “The Hive.” *The Atlantic Monthly*. Electronic version available at <http://www.theatlantic.com/doc/200609/wikipedia>, accessed May 14, 2007.

A frequent writer about Wikipedia, Poe describes the nature of the project. He outlines the social construction of the community that makes up the project and touches on the rules that govern the community. Reflecting on the first years of the project, Poe offers insight into the creation of this enormously successful and far-reaching social experiment.

Sanger, Larry.

2006a “The Future of Free Information” *Digital Universe Journal* 2006(1). Electronic version available at http://www.dufoundation.org/downloads/Article_2006_01.pdf, accessed May 29, 2007.

Sanger critiques the Wikipedia model in light of his ideas on what the “ideal information resource” would look like and how it would function. He identifies five areas in which an ideal information resource would excel: accuracy, completeness, availability, ease of use, and interactivity. The Wikipedia model is evaluated on each point and compared to other Web 2.0 initiatives.

2006b “Why Make Room for Experts in Web 2.0?” Electronic document, <http://www.citizendium.org/roomforexperts.htm>, accessed May 10, 2007.

A speech originally delivered by Sanger during the early months of pre-launch development on the Citizendium project. Sanger briefly describes his thoughts on Web 2.0 and then argues that wiki projects would benefit greatly from creating a special for experts. Sanger responds to a number of common arguments against his stance and concludes that the alienation of experts is primarily cultural.

2007 “Who Says We Know: On the New Politics of Knowledge.” Electronic document, http://www.edge.org/3rd_culture/sanger07/sanger07_index.html, accessed April 26, 2007.

Sanger considers the paradigm shift related to the large-scale collaborative communities that make up Web 2.0 and the new culture of knowledge that they have created. He discusses the implications of the “democratization of knowledge” and the anti-expert attitude that has arisen in this new context.