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If you can't beat 'em join 'em:

Using computers in the classroom

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Abstract

Student laptop use in classroom seems to be a perennial problem for many faculty. Students who use them often are not doing class work, they distract others with their use, they are not following the discussion, and they use computers only for social networking and entertainment. Several articles that address this issue suggest banning laptops, and this is the approach most commonly taken. The problem with that solution is that more and more information is on the web and available for educational and research purposes. As teachers, we should want to train our students to learn how to use the internet for research and education and to differentiate the reliable from the not-so-reliable. What else can we do? We can allow them, but in a structured way through the use of wikis and blogs. This paper suggests that the controlled use of computers and the internet in the classroom allows students to learn to use them for educational purposes, not just networking, and because of the collaborative nature of these platforms, their use helps students acclimate to the reality that after graduation, most life situations call for collaboration.

On SLU's wireless campus, students, faculty, staff, publisher's reps, or visitors to campus can log onto their laptops anywhere, anytime, and access the Internet. Students love it. Faculty members generally take a dimmer view. Many believe that when students bring laptops and smart phones (BlackBerries, iPhones, G1 phones, etc.) into the classroom, they do so not to take notes or use them constructively for classroom-specific purposes, but rather so that they may spend in-class time engaged in social networking via Facebook, email, or chat platforms. Moreover, the use of laptops for such activities is regarded as distracting to others around these students, thereby magnifying the effects and extending them beyond individual users. Students who are using a laptop for chatting or web surfing are thought to be not paying attention to the class lecture or discussion, or paying only sporadic attention which is divided between the class and the computer.

A number of researchers have examined the phenomenon of laptop use in classrooms to measure the extent to which students who bring them are actually using them productively in the classroom (Fried, 2008; Wurst, Smarkola, and Gaffney, 2008; Lindroth and Bergquist, 2010; Yamamoto, 2008). Although one study showed that student grades improve when laptops are not used (Fried, 2008), and another reported decreased student satisfaction when laptops were used in the classroom (Wurst, Smarkola, and Gaffney, 2008), another showed that students very much want access to their technology in the classroom, and will likely bring it regardless (Yamamoto, 2008). Most conclude that when students in higher education settings bring laptops to class, they spend much, if not most, of their time engaged in non-academic computer use, or, as students like to say, "multitasking." One study even provides evidence that such multitasking is cognitively impossible, and the author, therefore, supports a full ban on

laptop use in the classroom (Yamamoto, 2008). Many faculty members with whom I have spoken lament the wireless environment, specifically the loss of control over what students may do or not do with the laptops they bring to class to "take notes." Some have banned laptops in the classroom. Others monitor (or ask other students to monitor) laptop use, and penalize students who use them for non-classroom activities (the aforementioned).

One of the significant problems inherent in an outright ban on laptops and Internet access in the classroom is the ubiquity of the technology. Virtually all students own a laptop and many also own a smart phone. An even more compelling problem is that more and more information is on the web and available for educational and research purposes, and it is growing all the time. As educators, we should want to train our students to be able to access it. Many of us use the Internet for research, and we should want our students to learn how to use the Internet for research and education themselves. We also need to teach them how to differentiate reliable web-based sources from those which are not.

Apart from banning the use of laptops in the classroom, what else can we do? We can allow their use, but in a structured way. Encouraging students to explore social media in a way that is directed at their education rather than their entertainment harnesses their seemingly natural attraction to and facility with the technology and attaches it to productive educational outcomes. Moreover, because the nature of social networking is collaborative, or at least communicative, and because in the "real world" people tend to work in more collaborative settings than exist in a traditional classroom, I emphasize the

collective, collaborative aspects of the Internet (specifically Web 2.0[1] applications) when I encourage laptop use in the classroom.

Although I used to discourage their use, for the last 2 years I have been actively encouraging the use of laptops in the classroom, under controlled conditions, using two types of collaborative websites that have great potential in the classroom: wikis and blogs. Wikis function as a kind of collaborative document which can be created and edited by multiple users, whereas blogs function more like a discussion where each participant "holds the floor" in succession.

A wiki is a website set up to allow multiple users to access and, depending on the site, also edit existing documents, post their own documents, embed videos or other files, and publish the results for others to see. Most people have heard of one enormous, global wiki called Wikipedia. Love it or hate it, what Wikipedia does extremely well is to allow users to edit and update almost any entry in real time, thereby allowing for constant updating as events unfold or more information becomes available.

I have been using wikis in my courses for three semesters.[2] For each of the classes I teach, I have set up a separate wiki which serves as the class's "home base," much like WebCT or Blackboard does for many faculty members. Like Blackboard or WebCT, students may access course materials online, including the syllabus, class assignments, reading materials, and so on. Unlike those 2 course management tools, wikis allow the

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[1] Web 2.0 refers to the current structure and iteration of the Internet, and is characterized by interactivity and collaboration among users, such as is found on social networking sites like Facebook. It is distinguished from Web 1.0, which is the previous, more static iteration of the Internet (think web pages and discussion threads). And Web 3.0, which is an imagined future iteration of the web characterized by computer-generated, as opposed to human-generated, semantic links, connections, and information.
[2] I use Wetpaint as my wiki platform, but there are others out there, many of which are free.

user to edit documents right in the website, and publish the results as a web page as opposed to an attached document. So my primary reason for using wikis is to allow students to take notes in real time and with multiple users, which results in a collective account of the day's lecture or discussion. I post lecture outlines on the wiki, and students "fill in the blanks" during class. I tell them the more eyes, ears, and minds involved, the more complete the account of that day's class will be. I also count contributions to the wiki as class participation, so less vocal students have an outlet to contribute to class. Once a week I go back over the students' notes to check the accuracy, and to my delight, in some cases other students have already found the errors and corrected them – like wikipedia! A latent function of this practice is that I can make a rule in the class that if a student is working on a laptop during class, I expect to see notes from that student on the wiki. No notes, no laptop. It makes it easy to enforce my stated intention (that they use laptops for educational purposes only).

Another way I use wikis is to send students to websites for further information while class is going on. Students can post image files or links to interesting websites that relate to the topic. They can embed videos or audio clips (preferably outside of class). They can add keyword tags to different pages to make them easier to index and find later. This second use of wikis is anathema to most faculty – the last thing we want is for our students to go off surfing the Internet during class! What I'm trying to teach them by encouraging this behavior is that the Internet is a powerful research tool, if used appropriately. Most students use the Internet for socializing and entertainment; I want to encourage them to use it to get information and for research.

The final use of wikis in the classroom is course management. I can send messages to all the students. We can keep online records and updates to the class (syllabus changes, lists of class presentations, etc.). I can send them reminders about upcoming deadlines, and they can pose questions of me or other students all on the same website.

Blogs are a slightly different type of website. Like wikis, they are communal in that they are open to others to read and comment on. But unlike wikis, each entry has its own author and is not designed to be edited and/or written by multiple users. Readers may comment on blog posts, and comments may themselves receive replies, so the net effect is more like a discussion among individuals than a group collaboration. I have actively used blogs during only two semester, and passively during one more, but I plan to use them actively again in coming semesters. My initial experiment with blogs was to assign students a certain number of posts which they were required to write, and a certain number of comments they were to make about other students' posts. During the course of the semester, students requested specific prompts, which I began to provide. Having a question or excerpt to respond to helped students get in the habit of writing about their ideas; doing so on a blog allows others to read and respond to those ideas and thereby help move the arguments along by introducing new ideas, challenging lines of reasoning, and providing new insights.

Because I have not actively used blogs to the extent I have wikis, I have not developed as much of the course infrastructure around their use; however, I have noticed a qualitative difference in their function and utility that may have implications in the

classroom, and therefore, may help instructors choose which of these applications is better suited to the course structure. Wikis function as a single repository of information, albeit one that is collectively assembled. My lecture outlines serve as the framework upon which students collectively build the information provided in lectures and readings. They are encouraged to supplement these outlines with information gathered outside the classroom, presumably from the Internet. The final product is like a Wikipedia entry – a more or less complete entry about content that is covered in the class (marriage practices among the Gebusi, for example). As such, though, they are best suited for courses that are situated at the lower end of Bloom's Taxonomy of Learning and are based on accumulating information. Students who access the wiki in class to "fill out" the lecture notes that are posted on the site generally tend to transcribe the lecture onto the notes. The transcriptions are often written in the transcriber's own words, but very little additional information or insights are offered. Wikis, in these contexts, become robust course management systems and content warehouses which have multiple student contributors and co-authors. Where wikis seem to be less effective is in the analysis and synthesis of information. Students are too busy getting all the information onto the wiki to actively synthesize what they are recording and say something new and interesting about it. Nevertheless, it has been my experience that students go back to the wiki outside of class to add content, make corrections, and even reformat the page to make it easier to read. The last point suggests to me that students who use the wiki have a vested interest in making it an accessible and readable document that they will use as the go-to site for course content-based information.

As a course content depot, the instructor has the responsibility to check the accuracy of the contributions made by students. This can be a daunting task, without a doubt. It can be broken down into manageable tasks, however, by a feature found on most wikis that allows the site administrator (the instructor) to see each version of a page and track the changes that were made (like a track changes feature in MS Word, in a way). Looking at each version of the page, starting with the initial outline posted by the instructor, allows the instructor to see what was added by each user in turn. I believe breaking down the contributions into smaller pieces makes it easier to keep track of them and also allows the instructor to see who may have contributed incorrect information in case intervention is warranted. Another tool that makes the task a bit less laborious is a "recent changes" view that allows the instructor to zero in on what was changed on the page since the last time it was checked. That said, it does require regular monitoring; I recommend looking at the wiki at least once a week.

Wikis are useful as course content management tools, as outlined above, but they can also productively be used for group assignments because they are single-site drop points for every group member's contributions. The feature I like best about wikis is that they foster collaboration among students and faculty by putting the responsibility to enhance them on everyone and no one, that is, all students (and the instructor) are responsible for contributing, but no one gets singled out in the process. (Of course the instructor can and should track who contributes, and individual contributions are attributed to individual users, but that information is buried and removed from the actual pages that users of the wiki see.)

Blogs seem more suited to courses that are situated higher up on Bloom's Taxonomy, where students are expected to analyze and evaluate course content, as opposed to simply amassing it. Blogs provide a public forum for students to write and muse about a topic, and for others to write responses to each other's posts. In this sense, the blog becomes an online discussion that happens outside of the classroom and in the students' own time. Because blogs can function interactively, students may post links to other sites, and they may embed videos and audio files or other features. The formal structure of the classroom usually does not allow students to follow tangents and explore ideas the way they are able to do in a blog. Likewise, students are given freedom to respond to others' ideas that they may hesitate to do in the classroom. Whereas wikis are meant to emphasize the collective knowledge of all the participants without regard to the individual, blogs most definitely single out the individual, and as such, may impose a natural discipline on the writer whose blog post is linked to his or her screen name. This past semester (spring 2010) my Race and Ethnicity course used a dedicated blog, and the proliferation of entries, their depth of understanding and inquiry, and the earnestness with which students responded to each other's posts was truly heartwarming. In some cases I brought up a blog post in class for further discussion, but what delighted me about the use of the blog was that students really did engage each other in a dialog about the topic, they posed questions, and often referred to others' posts in class. That blog became a virtual space for them to continue the class discussion outside of class, and it worked!

In both cases, wikis and blogs, the use of these websites helps diminish the linear dyadic relationship between student and instructor and replaces it with a more group-focused approach to learning and sharing information. Interestingly, the number-one

reason cited by students for not wanting to use the wiki was concern about not getting

appropriate credit for one's individual contribution. Students who feel this way tend to

take notes in a word processing program and then attach them to the wiki as a static and

un-editable document.

What purpose is served by allowing students to use computers in the classroom?

For one, students are going to use technology no matter what we tell them to do, and

using computers in the classroom in a controlled way helps teach students to use them for

educational purposes, not just social networking and entertainment. Equally importantly,

using these websites encourages collective contributions, and as such, also helps send the

message that after graduation, most life situations call for collaboration – the dreaded

group work! As we look to a future mediascape that includes Web 3.0 and other

emerging technologies, we would do well to accept the ubiquity of technology in our

students' lives, and rather than reject it out of hand, imagine ways that we can effectively

harness its power for our own purposes.

For those interested in developing a wiki or blog for class, here are a couple of

YouTube videos that cover the how-to's of constructing and using these tools:

Wikis: http://www.youtube.com/watch?v=F7BAU2XX5Ws

Blogs: http://www.youtube.com/watch?v=NN2I1pWXjXI

These are part of a series of general "how to" videos produced by Common Craft:

http://commoncraft.com/

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