Using a Google Jockey To Enhance Classroom Discussion

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Using a Google Jockey To Enhance Classroom Discussion

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Enhancing the student learning experience through the strategic application of emerging computer technologies has long been an interest of both faculty authors *(1, 2)*. The latest project employs a Google jockey, a student who surfs the World Wide Web for material related to a discussion or lecture and displays the results to the class. Hall and Fisher at the University of Southern California report *(3)* that in 2004, Michael Naimark suggested that two students duel by trying to find the best Web links related to his lecture. In his blog *(4)* Naimark says he called these students Google jockeys.

Incorporating a Google Jockey in a Course

The impetus for using a Google jockey came from a first-year seminar course on environmental sustainability. After only one class discussion, it was apparent that the students lacked a rich set of mental images related to this topic. The instructor and the student preceptor, a senior biochemistry major, both agreed that adding images was essential to engage the students and to provide a visual context for the course material. In virtually all subsequent lecture and discussion sessions, the preceptor played the role of Google jockey by using a computer to search for images or information related to the discussion and to project these results on the screen. Although the authors had not previously used this format, the preceptor quickly mastered the technique with a learning curve of approximately ten minutes during the first class. The preceptor was admittedly a very bright and engaged student who was willing to try any new idea, but her technological literacy, typical of her generation, did not include any unusual computer expertise.

The strength of a Google jockey is that she or he can offer relevant images or suggest topics related to the ongoing conversation in real time. Thus, the onscreen images became a part of the classroom dialogue. In our seminar, the preceptor or Google jockey made spontaneous connections with the ongoing discussion and could provide more effective images than those that might have been preselected for PowerPoint. Another advantage was that a student selecting images for other students had a better chance that the selected images would be meaningful to her fellow students. For example, during a discussion of the precautionary principle, the two faculty authors initially framed the discussion in terms of the *Titanic*. Recognizing that the students were not responding to that historical reference, the preceptor instead turned to images of Hurricane Katrina, one of the touchstone events in the lives of current students. By pulling up a series of specific images, the preceptor reminded the students of the details before, during, and after the disaster. Thus, the student-selected images provided far richer context than those chosen by the instructor.

The professor and the student preceptor rapidly developed a dialogue between the professor's voice and the images. Sometimes, the professor would ask the preceptor to look for a certain type of image, but generally the preceptor made the choices herself. Indeed, the instances in which the professor had a very specific image in mind were the most difficult for the preceptor. Because there was now a "correct" answer to be found by the search, the professor effectively controlled the contribution from the preceptor, and the dialogue aspect was shut down. This change eliminated the preceptor's independent voice in the discussion and also often delayed the search. A more effective interplay occurred when the professor had a general topic or general type of image in mind. The preceptor could then search for and display a range of images relevant to the discussion fairly quickly and retain her own ability to select her contributions. In some circumstances, the preceptor even used cartoons to liven up the class when the discussion seemed to lag.

As with any use of technology, classroom design and software choice were extremely important. A high-speed Internet connection and a fast computer were both essential to rapid image search and display. The preceptor's personal Macintosh laptop (MacBook Pro OSX 10.5.8) also had the ability to enlarge the images to fill the screen, making them easier to see. One challenge created by the classroom layout was that the projection screen covered part of the board and was behind the professor, so the professor did not necessarily see all of the images. Eventually the professor learned to pause periodically to look at the screen and use the current image to spark another aspect of the discussion or a new example. Search engine choices were also important to the smooth functioning of the dialogue. Typing a search term into Google provided a list of possible search term extensions to further focus the results. For example, typing in "hurricane" resulted in Google suggestions listing Ida, Katrina, season, and so on. Using "Hurricane Katrina" narrowed the Google suggestions to include options such as "aftermath, facts, pictures, or dates". The preceptor frequently used these options to identify a more exact search than she originally planned. Google was certainly not the only search engine that could have been used, but these attributes were extremely helpful. Attempts

to use the Bing engine for the image search were found to be very awkward because the default setting opened each image in a new window, thus cluttering the browser excessively.

A certain amount of care must be taken in searching for images, in spite of the "safe search" option on Google. Even with the most restrictive setting, some disturbing images were included in the results, so the preceptor needed to be constantly on guard to avoid projecting inappropriate results. On one occasion, the preceptor typed in "instant gratification" but stopped herself just before initiating the image search, realizing that there might be images from the search that would not be relevant to or appropriate for class. On the preceptor's laptop, it was possible to use a split screen to control exactly what was being projected while searching in a separate window that was not visible to the class. This strategy was especially valuable during the discussion of the Chernobyl nuclear accident, where graphic images of the resulting deformities were available.

Assessment

As might be expected, some aspects of the project exceeded expectations, and others did not. Perhaps the most surprising success was how easy it was to implement the idea. The student who played the role of Google jockey required only a minimal explanation and no real training. Despite this apparent lack, her performance immediately contributed to the seminar experience as evaluated by the instructor, the students, and an outside observer. We were also encouraged that a number of students in the class indicated that they would like to try being a Google jockey. Toward the end of the semester, we did experiment with one of the first-semester, first-year students in the class playing the role of the Google jockey, and although this student was also bright and engaged, she discovered that it was not as easy as it looked. From this experience, we realized that the trust, respect, and familiarity established between the professor and the senior student preceptor in the three years of their relationship played a significant role in the apparent ease of implementing the project. One outcome that did not achieve our expectations was that we had hoped that watching the image search on the screen might help the students improve their Internet searching skills, but in the midsemester evaluation the students were about evenly split as to whether or not the project improved their technique in this area.

The Pandia Search Engine News blog *(5)* suggests several potential problems with using a Google jockey. That author writes that some students may be uncomfortable with the multiple inputs that jockeying provides because an image stream is now added to the professor's comments and the general discussion. It is possible that if the Google jockey is not skilled at searching then the procedure might become a distraction. The current authors found little evidence of either of these problems. After approximately four classes with the preceptor acting as Google jockey, 92% of the students in the seminar course found that the preceptor's images contributed to the discussion, and only 42% indicated that the images could be distracting at times. By the end of the semester, 90% of the students agreed that they had improved at coping with the stream of images, and none of the students indicated that it was a distraction. On both evaluations, the students unanimously agreed that using the preceptor as a Google jockey made the class more interesting than it would have been otherwise, and the students repeatedly mentioned the importance of having a visual reference for discussions. Among their comments were, "It also provides more information about topics" and, "It gives the class more things to say in the discussions".

Conclusions

Based on this experience, the fundamental requirement for success is that the instructor be willing to surrender some of the control of the discussion to a third party. This flexibility should not be a problem in a seminar class because the usual goal is to encourage multiple people to contribute. It is also helpful to have a bright and adaptable student who has a strong relationship with the professor, who can be a team player and who can contribute to the discussion rather than attempting to pursue a personal agenda. This process works best as a give-and-take with both the professor and Google jockey working together toward a common goal.

A Google jockey is not a panacea for the many students who lack the mental imagery and background knowledge required for effective participation, but in the correct situation it can make a significant contribution to a class. In general, science classes based on the lecture model of instruction tend to be very structured, and images are best chosen in advance to complement the planned lecture. A Google jockey would probably not add much to this environment. On the other hand, a Google jockey seems particularly well suited to seminar-style classes, chemistry for nonscience majors, or perhaps even lectures involving chemical applications, such as applied technology or environmental problems where images provide useful context.

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