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Beyond PowerPoint: Visual Presentation Tools for Online Learning

by Bruce Howerton

In the mid-1990s, the University Of North Carolina (UNC) [School of Dentistry](#) entered the digital era by publishing curricula, syllabi, and modules on the Web. The School took this step in part to give students greater access to materials that supplement the lecture-based courses in the program, and in part to help students prepare for examinations more thoroughly than they would have been able to otherwise. By the late 1990s, the primary medium for visual delivery in the classroom shifted from traditional carousel slideshow presentations to Microsoft [PowerPoint](#) presentations. One of the primary advantages of the latter was that they could be reproduced and easily posted within online course modules, such that students could review the presentations outside of class at any point during the semester. Soon afterward, the dental school began to explore other forms of multimedia content delivery for their potential value as instructional tools and as further enhancements to the online component of various dental courses.

In this article, I describe the visual presentation tools that School of Dentistry faculty members have used and comment on the relative advantages of each tool. The following discussion should be helpful to instructors who are currently considering new directions for the use of such resources in their teaching; it may be particularly helpful to instructors seeking methods of presentation other than Microsoft PowerPoint.

Using PowerPoint Presentations to Enhance Classroom Instruction

School of Dentistry personnel first used PowerPoint in the mid-1990s, when a contract with Microsoft allowed UNC students and faculty members to use the Office package for a nominal fee. Because of the software's availability and affordability, most instructors began to use PowerPoint as their main medium of content delivery. In fact, by 2000, the School was permanently placing desktop computers and projectors in classrooms to support the delivery of PowerPoint presentations. Overall, faculty members needed little help to develop basic operating skills for this software, but the Center for Educational Development and Informatics within the School of Dentistry offered support (and continues to do so).

The use of editable, Web-published, user-controlled slideshows with succinct text and crisp images seemed to enhance classroom instruction and to improve students' access to course materials. In theory, the combination of visual media and oral presentation also moved the School closer to meeting students' diverse needs: By providing content that could be read, visualized, heard, and discussed, educators could more readily accommodate different learning styles and thereby increase the efficacy of student learning.

Faculty members quickly endorsed PowerPoint as their primary tool for content delivery, but over time, this option began to lose its luster. Instructors soon began to ask, "How do we get beyond PowerPoint?" They could use the software, but many had an insufficient understanding of how to design visually appealing, user-friendly, content-rich, Web-accessible slideshows. The following design flaws were common: artless color schemes (e.g., red fonts on blue backgrounds, which is impossible for those with limited color vision to read); large, slow-to-download image files; and too many animated transitions and bulleted lists. Some problems associated with PowerPoint delivery, however, are endemic to the software. The slides themselves and the note sections accommodate very little text, which is a detriment in a content-heavy presentation; this means that supplemental teaching aids (such as handouts) are necessary, which tends to complicate content delivery. In general, PowerPoint seemed to hinder rather than facilitate the educational process.

From PowerPoint to Flash

On a more limited basis and with a much higher learning curve, faculty members in the School of Dentistry received access to authoring software by Macromedia. Like PowerPoint, Macromedia's [Director](#) and [Flash](#) can be employed to create user-controlled presentations, but these programs offer much more sophisticated authoring tools that are well-suited for content delivery on CD media or on the World Wide Web. In addition, they differ in their programming languages and in the way images are produced (see [Exhibit 1](#)).

In light of the relative advantages of Flash over Director as a visual presentation tool, we gave greater attention to Flash in faculty development sessions. During the summer of 2003, members of the faculty and staff were invited to "lunch and learn" meetings to become acquainted with Flash. As the session leader, I emphasized the use of simple animations as a first step toward gaining greater proficiency in use of the software. Approximately 20 faculty and staff members attended regularly. Meetings with academic departments also were scheduled to introduce the possibility of using Flash animations for content delivery. Though all agreed that Flash would be a powerful aid in their work, many continued to use PowerPoint as their sole multimedia delivery tool; the more extensive support needed for Flash required a time investment that was not easy to meet given the busy schedules of faculty and staff members. It seems that while the software has considerable virtues in its functionality and includes its own tutorials, there is a tradeoff when it comes to relative ease of faculty use.

For illustrations of Flash's capabilities and its potential uses in the classroom, see [Exhibit 2](#), which contains Flash animations used in the UNC School of Dentistry.

From Flash to Breeze

Flash undoubtedly offers unique benefits, yet PowerPoint remains easier for many faculty members to use. Macromedia [Breeze](#) combines the simplicity of PowerPoint with the versatility of Flash. Breeze is a server-side software, which means that users must either purchase a licensed copy for installation on a server or negotiate for access to a Macromedia Breeze server. The following descriptions assume the use of a Macromedia Breeze server.

Breeze works by adding a plug-in to PowerPoint; the plug-in allows users to add multimedia (like video) and database-driven content (surveys or quizzes) to a slideshow and publish that presentation on a server. The online Breeze presentation is composed of many small Flash files, so even presentations with a lot of multimedia can be viewed on narrow bandwidth modems (i.e., dial-up modems). The Breeze presentation can also be downloaded from the Breeze server and published in CD media or copied to another server as a stand-alone presentation (without database-driven content or server-side action).

What may initially seem cumbersome is actually quite simple in practice. From the instructor's perspective, very little changes: Once the Breeze plug-in is downloaded into PowerPoint, Breeze becomes a permanent option in the main menu of PowerPoint. The instructor adds text and images to slides, inserting notes as usual. At any time, the user can choose the main menu item "Breeze" to add compressed audio files, Flash files, quizzes, and surveys to the slideshow. (As is always good practice, the PowerPoint presentation should be saved to the hard drive and saved often.) Once the additional components are added and the PowerPoint presentation is complete, the instructor selects "publish" from the Breeze menu, sending a copy of the file to the Breeze server, where it is automatically converted into an online document. The Breeze server then generates an e-mail to the instructor that includes the Web link for the online Breeze presentation, which the instructor posts for students to use. As students view the presentation and complete any included quizzes or surveys, their answers and scores are relayed to the instructor via Breeze's Learning Management System (LMS). This system allows the instructor to determine whether students understand educational concepts. If many students score poorly on a short quiz, for example, the results may indicate that the instructor communicated poorly or that students need further review to understand a particular topic. For a more detailed description of the Breeze interface, see [Exhibit 3](#).

Breeze became available for faculty use in fall 2004. Nicholas Moss tested its utility the semester before,

however, by developing Breeze files for review sessions in a dental physiology course. In a companion article in this issue, Moss (2004-05) compares Breeze presentations to PowerPoint slide shows, PDF files, and other common delivery tools. His findings indicate that Breeze provides an effective means of enhancing course material as well as assessing student comprehension of such material. Moreover, student responses to this new technology at the School of Dentistry confirm its value as a vital learning resource.

For illustrations of Breeze's capabilities and its potential uses in the classroom, see [Exhibit 4](#), which contains a Breeze presentation on oral and maxillofacial radiology.

Leveraging PowerPoint with the use of Macromedia Breeze is not suitable solely for World Wide Web delivery. Presentations can also be downloaded from the Breeze server and delivered on recording media such as CD-ROM; this capability holds significant potential for further development and distribution of customized course materials. Moreover, because of Breeze's relative ease of use, undergraduate and graduate students also can deliver multimedia content with the software.

It should be noted that for some smaller institutions, [purchasing](#) Breeze could be expensive. The cost of the software for up to 100 faculty member "users," including the Breeze LMS and first-year technical support from Macromedia, is approximately \$20,000 for colleges and universities. In addition, a server must be purchased to run the software, which is not the case with PowerPoint or Flash. At UNC, the School of Dentistry, the School of Pharmacy, and the School of Public Health jointly purchased the server and software in order to dilute these initial costs. The Center of Educational Development and Informatics within the School of Dentistry offers support to faculty members who use Breeze, which should minimize the need for any additional support services from Macromedia after the first year. In addition, the Center supports the faculty use of Flash and the creation of Flash animations for use within Breeze presentations. While Breeze represents a significant advance over PowerPoint in terms of its features, institutions may need to find similar strategies for defraying the cost of implementing and supporting this software.

Conclusion

Although Microsoft PowerPoint allows instructional content delivery to include multimedia capability beyond slide carousel presentations, instructors can use other forms of multimedia delivery to increase learning effectiveness. Macromedia Flash, with its vector-based animations, can enhance the understanding of difficult concepts. In turn, the widespread use of PowerPoint can be combined with Macromedia Breeze to add Flash animations, audio, notes, and quizzes or surveys for delivery over less-than-broadband connections, such as 56 K modems.

In addition to these software options, other multimedia programs such as [Kinoma Producer](#) and [Articulate Presenter](#) should certainly be explored as PowerPoint-enhancing alternatives. The emphasis on Macromedia products in this article is primarily due to my experience with them at UNC and to the company's historical role as an industry standard in multimedia forms of content delivery. As with the early adoption of any software, patience, persistence, and support are required to use these tools successfully. However, instructors who are willing and eager should find both the experience and the benefits for students professionally rewarding.

Reference

Moss, N. 2004-05. Incorporating a rich media presentation format into a lecture-based course structure. *Innovate* 1 (2). <http://innovateonline.info/index.php?view=article&id=10> (accessed December 1, 2004).

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