Higher education is one of the most fertile grounds for encouraging the adoption of new technologies. Students are interested in exploring new ideas and innovations, and faculty are always on the lookout for new ways to engage their students—especially in a time when there are so many distractions. During the past year, one of these new technologies—rich Internet applications (RIAs)—has started to take off in the Web 2.0 space, gaining traction in a number of different areas, including education.

What exactly makes up an RIA? Basically, “rich Internet application” refers to a development metaphor that allows a much higher level of expressiveness, so that the overall user experience is improved. Most RIAs incorporate audio or visual elements to make the experience all the more engaging. RIAs usually run on the user’s computer rather than over the network, making the load on the server much lower. This also helps the interfaces to be much more responsive, further improving the user experience. In some situations, using RIAs in conjunction with server technologies can add real-time communication, enabling real-time data transfer or even real-time audio and video.

One of the main benefits of RIAs is the focus on deploying applications on multiple platforms. Some RIAs run inside of an Internet browser for easy access anywhere. Opening up an application is as easy as browsing to a website. These applications can be based on HTML and JavaScript, called Ajax. For an application that needs to leverage the richness described above, plug-ins—such as Adobe Flash Player and Microsoft Silverlight—enhance what the browser can do.

Although in-browser RIAs are probably the most common, a number of new technologies allow a user to create RIAs on the desktop. Desktop RIAs aim to bring some of the in-browser innovation back to the desktop by lowering the barrier to create desktop applications, since most RIA desktop platforms use web technologies with which developers are familiar. Desktop RIAs also provide a bit more functionality. Applications can be used regardless of an Internet connection, and an application can be tied more closely with the operating system. In a distance learning situation this can be ideal because students will have access to the information and lessons wherever they are. Mobile RIAs are another exciting platform. Creating applications for mobile phones means that users can be reached on something that is very personal to them, something that they have incorporated into their daily lives. With mobile RIAs, they can quickly get information and stay engaged in the classroom beyond campus.

There are a number of ways to incorporate RIAs into the curriculum of higher education. RIAs can capture students’ imagination with some of the same technologies from applications they’re already using for fun: Facebook, YouTube, and MySpace. Another key benefit of RIAs is providing flexibility to students and enhancing their workflow both inside and outside the classroom. The biggest benefit of RIAs inside the classroom is the ability to augment current teaching techniques. At the Wharton School of the University of Pennsylvania, for example, professors use RIAs to provide students with business simulations that help make abstract concepts more real. For simulations to be successful, they need to be easy to use and engaging. With RIA technologies, teachers not only can provide a rich, intuitive interface but also can give students full control over data. RIA technologies like Adobe Flex come with very complex charting functionality, so students can manipulate and visualize data as they work through a simulation. This reinforces concepts and also gives students a level of ownership over what they’re doing. They’re able to control exactly how data appears—in novel and illustrative combinations.

Because RIAs can provide real-time audio and video capability, the chance to enhance collaboration and classroom participation is significant. In distance learning, this approach can go a long way toward helping students connect with each other and the teacher. In addition, collaboration between students in the same classroom can be enhanced. Most students in higher education have a good grasp of the Internet and use it as their primary means of communication. One of the key benefits of RIAs is being able to incorporate that communication directly into the classroom, within an application over which the user has complete control. Teachers can deliver assets in real time or can provide them to students in an online library that incorporates a recorded lesson or one of the aforementioned simulations. Nothing will ever replace the feeling of being in the classroom, but RIAs allow the creation of something that closely resembles the...
a fantastic fit for educators who want to push the envelope in how they present content to their students. RIAs come in many forms. IT staff can create customized solutions, and companies like Microsoft, Google, and Adobe all offer out-of-the-box solutions to incorporate collaboration and better workflow for students. For the first time, we can capture the imagination and creativity of students right inside the tools that they use every day. RIA technologies like Adobe Flash and Microsoft Silverlight provide a tremendous amount of functionality to bring teaching ideas to life. Most of us are used to adjusting our habits and expectations to work around technology, but now the expressiveness of rich Internet applications lets us adjust the technology to meet our expectations.

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