By Justin Hardman
and David Carpenter

Breathing Fire into Web 2.0
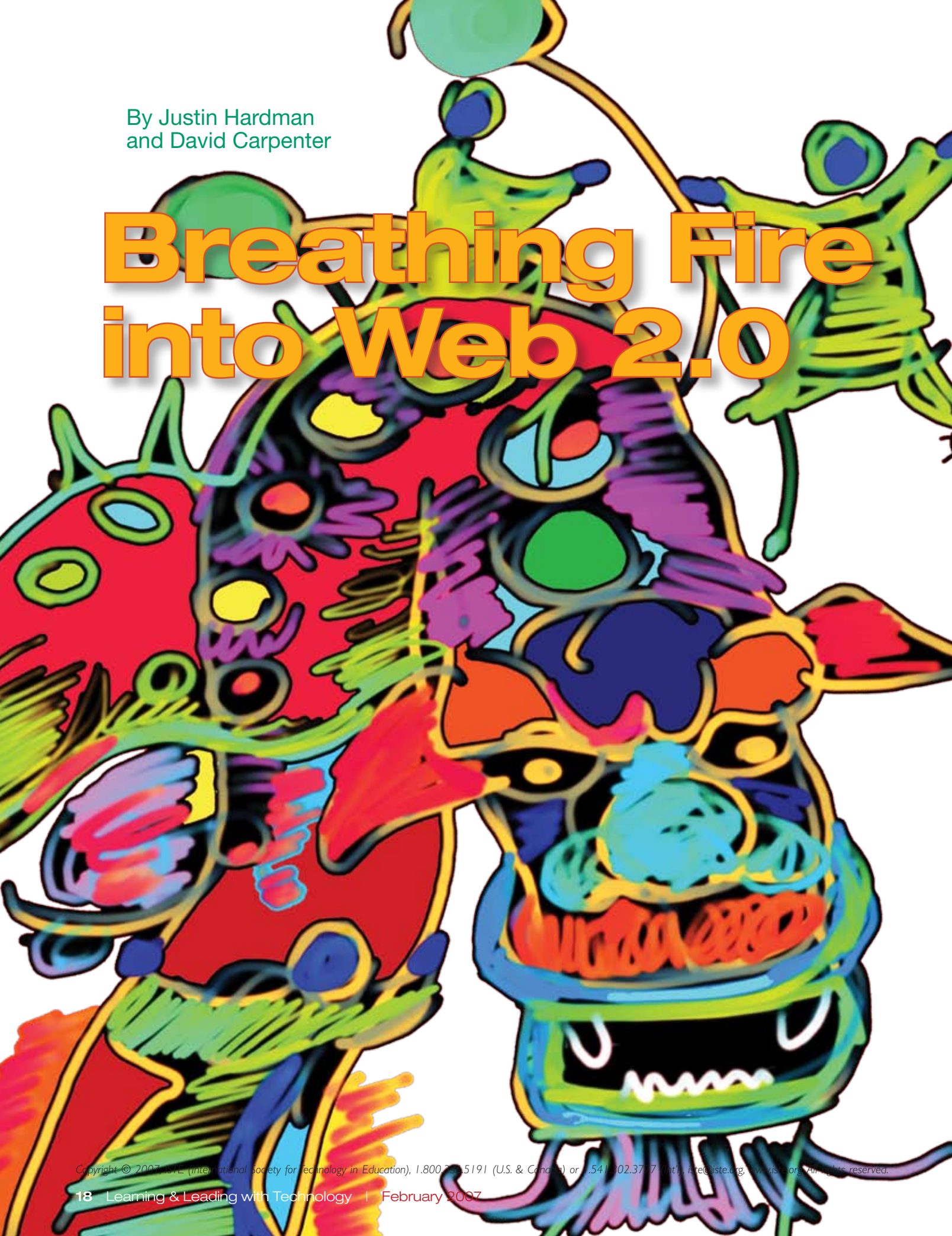
The social networking features of today's Internet can be strong tools for making a school Web presence relevant and useful to staff, students, and parents

Time warp? For many of today's tech-savvy students, stepping into a typical school is like taking a time machine back to the days of manual typewriters and wall-mounted dial telephones. Many schools are out of sync with the way their students and adults communicate outside of school today. It's as if we're preparing kids for the past instead of the future. It doesn't have to be that way.

Today's methods of social networking and the technologies that support them offer powerful examples of how educators can connect to the "real" world of our client population.

So how do we adapt schools to fully engage with the Web 2.0 world? We are seeing educators work to include aspects of Web 2.0 into their teaching through the use of wikis, forums, and blogs. Administrators are integrating classroom management software and curriculum mapping systems at their schools. These parts are coming together to build virtual learning communities. The next logical step would seem to be the creation of an all-in-one, online communication and collaboration system for schools that leverages the best of what Web 2.0 offers. The Hong Kong International School (HKIS) has taken this leap to create its own all-in-one Web-based system called myDragonNet (http://dragonet.hkis.edu.hk).

Building Support
The school previously piloted a tool built in-house that stored documents and provided for a limited calendar creation ability. The need grew for a classroom management program as well as a curriculum mapping system. Like most schools, HKIS already had an Internet presence (called Dragon-Net) that many teachers used to post resources, contacts, and information about their classes such as a calendar for scheduling assignments. Many used e-mail regularly. But as other needs and opportunities presented themselves, a bigger vision developed. Teachers needed a three-component system to:

- enhance communication and collaboration for themselves and their students to support classroom and co-curricular activities (classroom and group management)
- provide curriculum mapping, resource repository, and archive resources (curriculum development)
- serve as an online portfolio management system to support student and teacher reflection with a longitudinal review of their learning (electronic portfolios)

Rather than purchase separate commercial software packages or adapt open source options, HKIS administrators supported the vision of high school technology coordinator David Elliott and associate principal Karen Moffat to develop a single, Web-based tool to meet all three of these needs. Justin Hardman, an alumnus of HKIS (and co-author of this article), was hired to enhance and fully develop this tool. It was named myDragonNet to reflect the intention to make it a personalized educational online workspace within our larger community and academic Web site.

Hardman began working with students, teachers, and administrators researching their needs and ideas for how myDragonNet should work for them. The development was grounded in the idea that all functions should be integrated. Hardman used the metaphor of a three-legged stool as he educated the community about myDrag-onNet and its purpose. He also shared the value of myDragonNet's structure and interface as it reflects the school's strategic mission and provides a mechanism to support the realization of its long-term strategic goals. At the same time, it is a practical tool designed to reflect the ways that teachers and students actually work.

Exploiting Online Interaction
As Hardman developed myDragon-Net, he saw how it was taking on the characteristics of a Web 2.0 service. The integrated and collaborative, yet personalized, nature of myDragon-Net, combined with its facility to easily search, index, and share resources are characteristic of Web 2.0 environments. Additionally, many elements of its interface resembled other Web 2.0 resources. Because students and faculty enter school already having the mental framework for online collaboration and communication from their participation in the expanding array of social networking services, the move to support Web 2.0 capabilities became a new focus for myDragonNet.

The design reflects the belief that schools should seek to work within and exploit this power of interacting online. Looking at it the other way, the commitment to promoting myDrag-onNet implies the understanding that social networking represents a significant part of how students, teachers, and parents live and work outside of school. By providing an educational environment that mirrors that of the real world, myDragonNet supports the school's goal of preparing students for the varying literacies that they need in our networked world.

Creating Connections
After two years of development and continually rolling out updated versions, the classroom and group management portion of myDragonNet is now in solid shape. Teachers manage their individualized myDragonNet

Managing a variety of resources and media types is easy with myDragonNet.

The calendar in myDragonNet is completely personalized, bringing together class, co-curricular, and personal entries.

home pages that provide links to information about their classes, sports teams, and clubs. The power of the class management system is in the connections that are created between the curriculum, the faculty, and students. The entire system is live, with all information entered by teachers available to students either immediately or whenever the teacher decides. This information includes calendar entries, access to documents and multimedia resources, forum posts, and e-mail messages. The power of visuals is supported by a photo gallery component that allows for searchable images and videos. Students or colleagues working collaboratively can also add electronic "sticky notes" to any resource entry. As the resource system grows, the entire class management and curriculum system becomes an institutional knowledge management tool. It is as if all the teachers' file drawers are open for easy searchable browsing by other teachers.

A student's overall educational experience at school comes from activities both inside and outside the classroom. Thus, space in myDragonNet is provided to after-school activities, sports teams, clubs, and even activities outside school. These collaborative spaces enable our clubs, sports teams, faculty committees, and other community groups to work together more efficiently and effectively.

The curriculum development portion is designed to facilitate the development, storage, standards mapping, and archiving of curriculum. It is centered in a unit planning template based on Jay McTighe and Grant Wiggins's Understanding by Design model. Standards and benchmarks are stored in a central database along with curriculum resources. Units are organized into curriculum libraries, which are flexible groupings that could be high or middle school courses or an elementary grade level's work.

There are several built-in features that enable more integrated and aligned curriculum to be written and analyzed at each step in the process. For instance, whenever standards appear for selection, their contextual equivalent appears alongside to prevent repetition of content and to ensure coverage. Standards and benchmarks can be searched to identify where else in the curriculum they are taught.

Standards and benchmarks can be referenced at many different levels of hierarchy in the curriculum. They can be assigned to particular units in a curriculum library, as well as to individual learning objects and resources to allow very specific breakdowns of course coverage. Resources such as podcasts, videos, presentations, PDFs, and so on are stored in the unit re-

source area and can be linked to multiple learning activities or assessments across the curriculum.

The classroom management system and the curriculum are totally integrated as unit plans and resources can be added, transferred, and shared. This increases the efficiency of planning and organizing within and between teams, especially with the difficulty of finding common meeting times. Core components, including the messaging system, resource library, calendar, and user profile, enhance communication and accessibility to resources. The messaging system automatically provides e-mail links to key stakeholders in a student's education. The teacher is only a click away from communicating to the child's parents, administrator, and student services point person.

Storing and Showcasing
The electronic portfolio portion of myDragonNet provides our students and teachers with a digital storage and display tool to save, share, and showcase their work. The goal is to capture a diverse set of work from students and teachers to show development over time while building in a mechanism for reflection. This process, and the product it produces, are individual and creative. The myDragonNet e-portfolio reflects the working styles

Personal work spaces can be as simple or advanced as users would like. Students and staff are encouraged to customize their pages.

The class home page provides an overview to units currently being taught, e-mail links, student drop boxes, and current calendar entries.

and passions of the individual it represents. For teachers, it also facilitates the gathering of exemplary work. Teachers assigning a project can, the following year, present examples of past students' work and engage the students in a discussion of how well that work met expectations.

Although the e-portfolio is a space for teachers and students to record their individual achievements, it does so primarily through collection of artifacts that are generated by their social interactions with groups, classes, and communities within the school. The portfolio has the capacity to be an assessment tool for classes, as well as an instrument for documentation of achievement across all six HKIS student learning results (the school-wide learning standards/goals).

The portfolio system allows the user to generate any number of portfolios for different time periods, types of material, or audiences. Artifacts can be shared between these portfolios or they might be unique to just one of them. The users have the ability to work privately on their portfolios with full control over who is granted viewing access. The password protected system enables our students as young as elementary age to safely post their work and ideas with options for viewer comments. Their portfolios are featured on an overview page, a sec-

tion of myDragonNet that is the user's "face" within the system. This section can be modified by the user to reflect his or her own design preferences to best reflect his or her personality to the rest of the school community.

All three of the major system components are linked together horizontally (between the legs of the "stool") so resources and content can be transferred in ways that fit naturally with educational processes. Students can submit work to their classes and include that work in their portfolio at the same time. Teachers can also transfer that work into the curriculum as a student exemplar to guide future students and new teachers as well as parents. Content from multiple classes can be merged into the common curriculum space to promote common practice. The system is also linked together vertically throough the "Personal Digital Workspace"—the individual home page on myDragonNet that provides each user with personalized access to notes, classes, and curriculum.

Conclusion

What began as an online file storage and calendar system for one international school has grown into a multi-faceted virtual community experience that works to leverage aspects of Web 2.0 to meet the users' educational,

collaboration, and communication needs. The technical and educational architecture of myDragonNet is such that it is designed for future adaptation and expansion. One belief behind development of the system is that we should never fool ourselves into thinking we perfectly address all of our requirements or that the system is future proof. We also should not fool ourselves into thinking that myDragonNet could supplant our students' desire for the latest social networked presence. We can only hope that they will see that within the community of myDragonNet that their identities and accomplishments are much more authentically represented than they would be in Facebook or MySpace.

Justin Hardman works for the Education Technology Services Department at Hong Kong International School and has been working since he was in high school to help create Web-based programs to enhance teaching and learning.

David Carpenter is the instructional technologist for the Upper Primary of the Hong Kong International School. He enjoys collaborating with teachers and administrators to design instruction and curriculum.

visit us online at www.iste.org/LL