

infotech by annette lamb and larry johnson

Flash: engaging learners through animation, interaction, and multimedia

I downloaded the new Green Day tunes on my iPod last night.

Do you want to watch last night's episode of Lost on my cell phone during lunch?

I saw you online last night. Did you try that new game they were demo-ing?

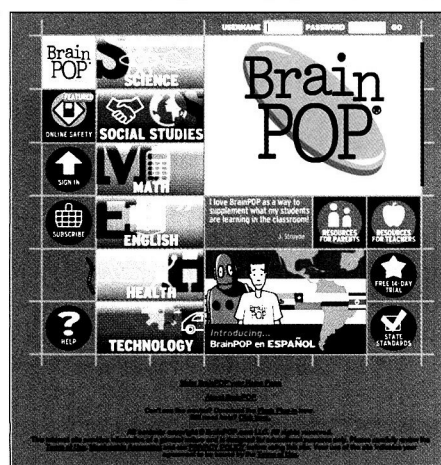
As students walk through your library, you may catch pieces of their conversations and wonder if they live on another planet. It is not a parallel universe, just the digital world of today's children and young adults. They come to school hoping for a learning environment as multisensory and stimulating as the outside world but are often disappointed by old-fashioned textbooks and low-tech approaches. So how do we balance the need for quality content with the importance of providing varied, engaging resources to meet diverse learning needs?

In his article "Getting Into the Game," Henry Jenkins (2005) notes that students are increasingly bored with school. He suggests that educators apply the power and popularity of gaming when designing classroom activities. Jenkins views electronic simulation games not as something to replace the teacher but as a tool to spark learning and provide a context for experiences.

A DASH OF FLASH

Teacher-librarians are increasingly seeking Flash-based web resources to address this need for engaging, technology-rich learning environments. A few years ago, seeing the Macromedia Flash icon on a web page meant the hassle of downloading plug-ins and the possibility of frequent crashes. However, Flash today often represents the best that the Internet has to offer in terms of free or low-cost, high-quality informational and instructional materials. Rather than dreading the Flash icon, we now seek out those Flash-based web projects because they are filled with engaging animation, interaction, and multimedia features.

BrainPOP (<http://brainpop.com>) was one of the first web sites to produce



animated educational movies for K-12 students, using a fast-paced, multimedia format. Today, more than 25% of school districts subscribe to this service.

Over the past several years, Flash-based projects have become much more sophisticated. For example, Windward (www.ciconline.org/windward) from Cable in the Classroom is an elaborate simulation requiring users to "outsmart the weather" with the mission of

sailing around the world in record time. Developed in cooperation with Discovery Education, the Weather Channel, and NASA, learners explore concepts in math, science, geography, and history.

FLASH IN A FLASH

Although Flash contains many great features for producing informational, instructional, and persuasive materials, three key elements stand out: animation, interaction, and multimedia (Lamb & Johnson, 2006).

In A Dancer's Journal (<http://artsedge.kennedy-center.org/marthagraham/index.htm>) from the Kennedy Center, readers explore a student's interactive journals as she learns to perform the dances of Martha Graham. In the form of an electronic scrapbook, this virtual experience includes animation, interaction, and multimedia elements.

ANIMATION

Movement is an effective way to communicate concepts, processes, procedures, and other ideas. The animation features of Flash allow developers to create engaging visual presentations. In some cases, the learner has control over the animation. In other words, the child can choose the sequence or speed of the action. Sometimes the animation runs automatically.

The Labs (www.pbs.org/wgbh/buildingbig/lab/index.html) at the Building Big web site allows students to control animated sequences while experimenting with forces, materials, loads, and shapes to learn about construction.

Flash is often used to develop short instructional movies that entertain but also have a strong message. The Stop Bullying Now web site (<http://stopbullyingnow.hrsa.gov>), sponsored by the U.S. Department of Health and Human



Services, contains 12 short "webisodes" focusing on the message of taking a stand and lending a hand.

As you evaluate Flash-based projects, ask yourself,

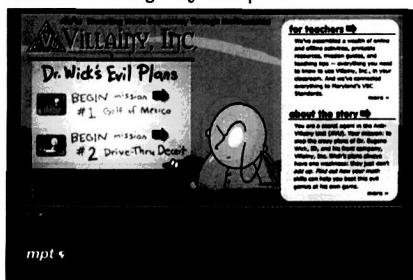
- Does the animation contribute to the effectiveness of the project?
- Does the user have control over the animation sequence or speed?
- Does animation attract rather than distract users?
- Is animation used in meaningful ways?

INTERACTION

The interactive features of Flash allow developers to integrate dynamic functionality through questioning, feedback, branching, and user tools. Seek out Flash projects that immerse students in microworlds where they freely explore ideas, manipulate variables, and experience the consequences of their decisions, rather than merely read, watch, or listen.

Simulations. Inquiry-based approaches help students explore questions, conduct investigations, and solve problems. By providing an environment to analyze information, manipulate variables, examine relationships, and make decisions, users are asked to transfer their skills to new situations.

In Villainy, Inc. (<http://villainyinc.thinkport.org>) students become secret agents and must solve math problems to foil Dr. Wick's goofy evil plan.



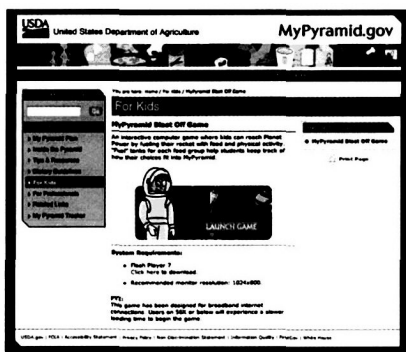
In Make a Tide Pool at the Monterey Bay Aquarium (www.mbayaq.org/lc/kids_place/tidepool/tidepool.asp) students select the plants and animals that go into a tide pool.

In Making Vaccines (www.pbs.org/wgbh/nova/meningitis/vaccines.html) students create six vaccines in a virtual laboratory, applying different techniques for each experiment.

Gaming. Games are based on rules and contain specific goals. Students are intrinsi-

cally motivated by the immediate feedback and challenge of solving problems and facing adversity. From conducting experiments on tuberculosis to engaging in international trade, the series of simulations at the Nobel Prize web site (<http://nobelprize.org/search/games-simulations.html>) involve students in the topic related to the award.

The U.S. Department of Agriculture MyPyramid game (www.mypyramid.gov/kids/kids_game.html) helps students to



explore the food groups and to keep track of their choices as they plan healthy meals.

Tutorials. Tutorials guide students through new information and provide an opportunity to practice. The Edheads web site (www.edheads.org/) provides a number of tutorials, including Virtual Knee Surgery, Weather, and Simple Machines.

As you evaluate Flash-based projects, ask yourself,

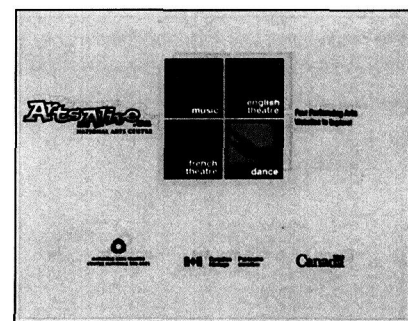
- Does the interaction contribute to the effectiveness of the project?
- Does the interaction provide levels of access or control to address individual needs?
- Do interactive elements function effectively?
- Do interactive elements contribute to understanding rather than confusion?
- Is the result of interaction clear and effective?

MULTIMEDIA

Enriching a Flash project with sounds, speech, music, graphics, scanned images, photographs, and video allows developers to reach varied interests and learning styles.

A More Perfect Union: Japanese Americans and the U.S. Constitution (<http://americanhistory.si.edu/perfectunion/experience/index.html>), from the Smithsonian Institution, offers the option to read or listen.

Many music organizations have interactive Flash web sites that include audio or video elements, including Arts Alive Canada (www.artsalive.ca/), Arizona Opera



(www.azopera.com/learn.php), Dallas Symphony (www.dsokids.com/), and San Francisco Symphony (www.sfskids.org/).

As you evaluate Flash-based projects, ask yourself,

- Does the multimedia contribute to the effectiveness of the project?
- Are media attributes used effectively without being distracting?
- Do the media elements address alternative learning styles?
- Were media elements clear and easy to understand and interpret?

PUTTING IT ALL TOGETHER

Elements most often incorporated in Flash projects include animation, interaction, and multimedia. These elements can be applied in different ways to create interesting, informative projects. Text, illustrations, maps, slide shows, timelines, and tools are features incorporated into Flash projects.

The Lewis and Clark as Naturalists online exhibit (www.mnh.si.edu/lewisandclark/), from the Smithsonian Institution, contains interactive maps, timelines, and illustrations.

Text. Although most often associated with glitzy visuals, Flash is also useful for text-rich projects.

At NOVA's Ancient Refuge in the Holy Land (www.pbs.org/wgbh/nova/scrolls/babatha.html), students explore Babatha's Scroll through an interactive translation.

Illustrations. Animated interactive charts and graphics, concept maps, line drawings, scanned documents, and photographs can demonstrate analogies, processes, relationships, cycles, and perspectives.

At the American Museum of Natural

History, Ology (<http://ology.amnh.org/>) explores many areas of science and history through Flash animations.

Maps. Animated interactive maps allow users to identify locations, explore changes and make predictions, and examine movement.

The Theban Mapping Project (www.thebanmappingproject.com/) allows users to explore archaeological zones of Egypt.



Timelines. Timelines are used across content areas to help users visualize the history of a topic. They can be short term, divided by century or era, or arranged by topic.

The Hip Hop Timeline (www.emplive.org/explore/hiphop/index.asp) traces the development of the hip hop musical form from the early 1970s to today.

Tools. Flash can be used to create a variety of utilities, calculators, simulators, and other tools.

At the Artist's Toolkit (www.artssconnected.org/toolkit/explore.cfm) users can watch demonstrations, find examples, and create a composition.

INTEGRATING FLASH-BASED ACTIVITIES

It is easy for students to get caught up in the fun of Flash activities. This engagement is important for learning, but it can also distract students from the instructional goal. It is therefore essential that the teacher-librarian and classroom teacher partner to identify specific learning goals matched to curriculum standards, select the best materials to meet these needs, and develop effective minilessons to use these resources efficiently. These learning guides may require students to work with vocabulary lists, concepts maps, or essential questions as they move through the Flash project.

According to Harada and Yoshina (2004), effective partnerships access a range of resources, support varied technologies, and provide opportunities for creative synergy and collegial problem solving.

You probably cannot take students to the National Zoo in Washington, DC, but you can build an exciting learning environment that includes books, videos, manipulatives, and other resources. Through Flash animation, your students can design a panda habitat, go on a habitat adventure, and conduct field research in a virtual forest. Conservation Central (<http://nationalzoo.si.edu/Education/ConservationCentral/>), from the National Zoological Park, is an award-winning web site that promotes habitat education. It is also an excellent example of a resource that meets diverse needs. Students who have difficulty reading the words can listen to scientists discussing field research. Students who need concrete experiences can learn new concepts as they build a panda habitat. If they make poor choices, the system provides suggestions and encouragement.

Not all web sites use Flash to achieve their interactive elements. For example, Scholastic's Interactive Skill Builders (<http://teacher.scholastic.com/activities/>) contains a mixture of activities that incorporate Flash as well as other interactive tools.

In the article "Listen to the Natives," Marc Prensky (2005–2006) refers to young people as digital natives. He stresses that technology can have its greatest impact by helping educators adapt to the changing needs of children. Many computer-based environments can adjust to meet the capabilities and skills of individual learners.

However, keep in mind that the multimedia aspects of Flash can cause problems for users who have special needs. For example, Flash is not compatible with all assistive-technology devices and Web browsers. As a result, it is important to provide alternative text, descriptive captions, or other devices to ensure accessibility of Flash projects.

FLASH AND THE SCHOOL LIBRARY

Enrich your library pathfinders with links to quality Flash-based learning materials. Using your favorite search engine, add terms such as *Flash*, *interactive*, *.swf*, and

animation to your subject area search, such as *tornado interactive* or *Civil War Flash*.

You will have even better success if you search for projects using popular web sites, such as National Geographic, PBS, Discovery, Scholastic, and NASA. For example, conduct a Google search for *site:nationalgeographic* and add the word *interactive* or *Flash*.

The player software required to use Flash-based projects is free and simple to download and install. Go to the Macromedia Flash Player Support Center (<http://macromedia.com/support/flashplayer/>) for information about the technical aspects of Flash and download requirements.

For many more examples of Flash-based projects across subject areas and grade levels, go to <http://eduscapes.com/flash/explore.htm>.

REFERENCES

- Harada, V. H., & Yoshina, J. M. (2004). *Inquiry learning through librarian-teacher partnerships*. Worthington, OH: Linworth.
- Jenkins, H. (2005, April). Getting into the game. *Educational Leadership*, 62(7), 48–51.
- Lamb, A., & Johnson, L. (2006). *AIM your Flash project: Vision to action*. Available at <http://eduscapes.com/flash>
- Prensky, M. (2005, December–2006, January). Listen to the natives. *Educational Leadership*, 63(4), 8–13.



Annette Lamb and Larry Johnson both teach in Indianapolis's School of Library and Information Science at Indiana University as part of the Teacher of

School Library Media Leadership Online Blue Ribbon Certification program, available to educators around the world (<http://eduscapes.com/blueribbon/>). Visit <http://annettelamb.com/> for more exciting teaching ideas.



our columnists

Rachelle Lasky Bilz: Head librarian, Lake Ridge Academy, North Ridgeville, OH; author of *Life Is Tough: Guys, Growing Up, and Young Adult Literature*. bilzr@lakeridgeacademy.org

Barbara Braxton: Teacher-librarian, Palmerston District Primary School, Palmerston, Australian Capital Territory. barbara@iimetro.com.au

Sharon Coatney: Acquisitions editor for School Library Media and Libraries Unlimited and a past president of the American Association of School Librarians. sharonc4@starband.net

GraceAnne DeCandido: Writer, consultant, and lecturer, School of Communication, Information, and Library Studies, Rutgers University, New Brunswick, NJ. ladyhawk@well.com

Reid Goldsborough: Author of *Straight Talk About the Information Superhighway*. reidgold@netaxs.com, <http://members.home.net/reidgold>

Michele Gorman: Teen services manager of Charlotte and Mecklenberg County's ImaginOn, Charlotte, NC, and author of *Getting Graphic! Using Graphic Novels to Promote Literacy With Preteens and Teens*. comixlibrarian@aol.com, www.imaginion.org

Holly Gunn: Teacher-librarian, Halifax Regional School Board, Dartmouth, NS. hgunn@accesscable.net

Ken Haycock: Director, School of Library and Information Science, San Jose State University, San Jose, CA, and president of the Association for Library and Information Science Educators. ken@kenhaycock.com

Sara Catherine Howard: Adjunct instructor, Department of Library Science, Sam Houston State University, Huntsville, TX. lis_sch@shsu.edu

Larry Johnson: Professor, School of Library and Information Science, Indiana University-Purdue University, Indianapolis, IN. ljohnson@mail.escapees.com

Annette Lamb: Professor, School of Library and Information Science, Indiana University-Purdue University, Indianapolis, IN. alamb@eduscapes.com

Teri S. Lesesne: Assistant professor, Department of Library Science, Sam Houston State University, Huntsville, TX. lis_tsl@shsu.edu

David Loertscher: Professor, School of Library and Information Science, San Jose State University, San Jose, CA; president of Hi Willow Research and Publishing; and past president of the American Association of School Librarians. dloertscher@teacherlibrarian.com

Keith McPherson: Lecturer and coordinator, Language and Literacy Education Research Centre, University of British Columbia, Vancouver. keith.mcpherson@ubc.ca

Kate Houston Mitchoff: School Corps librarian, Multnomah County Library, Portland, OR. kateho@yahoo.com

Kathleen Odean: Librarian, speaker, and author of *Great Books for Girls* (revised 2002) and other guides. Rhode Island. kathleenodean@hotmail.com, www.kathleenodean.com

Esther Rosenfeld: Educational and school library consultant; former coordinator of libraries for Toronto District School Board; and past president of the Ontario School Library Association, 2002 and 2003. erosenfeld@teacherlibrarian.com

Joanne Troutner: Director of media/technology, Tippecanoe School Corp, and owner of Creative Computer Enterprises, Lafayette, IN. troutner@mindspring.com, www.jtroutner.com

Robert D. Wilson: Director and head teacher, Moccasin Community Day School, Groveland, CA. coltrane@lodelink.com, www.simplyhaiku.com

Betty Winslow: Media center director, Bowling Green Christian Academy, Bowling Green, OH. freelancer@wcnet.org

**COMING
IN JUNE
2006**

Catch Preservice Teachers While You Can!

**A Collaborative Event:
Severe Weather Preparation Unit**

**Teacher-Librarians, Teachers, and Children as
Cobuilders of School Library Collections**