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Educational Gamesmanship

Engaging Students through Video Games

It's become an icon of American youth: the teenager or preteen, riveted by a computer or TV screen, body motionless but for thumbs twitching against a fast-clicking controller. Oblivious to the swirl of everyday life, the player enters the latest video fantasy world, assumes a different persona, and sets out to "beat the game," or to at least make it to the "next level." As many parents will confirm, video gaming draws children in like a powerful magnet, capturing their attention and, if the "gameplay" is good, keeping it for hours.

Can the phenomenal appeal of video gaming be harnessed for educational purposes? Can games become tools to augment classroom learning, and build academic and life skills students need to succeed in adulthood? In "Harnessing the Power of Games in Education," an article in the latest issue of *InSight*, the journal of the

Institute for the Advancement of Emerging Technologies in Education at AEL, two experts in education and technology explore these questions and discuss computer gaming's potential to enhance classroom learning.

Kurt Squire, assistant professor in educational communications and technology at the University of Wisconsin at Madison and the former project manager of the Games-to-Teach project at MIT, and Henry Jenkins, director of the Comparative Media Studies Program at MIT and the principal investigator for the Games-to-Teach project, write that to date, the education computer game market has focused largely on young children; it has explored less how to create educational experiences for adolescents, though they make up the core computer game market. Yet, computer gaming, the

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Free SBR Info

Find *Scientifically Based Research: A Planning Tool for Educators* at

www.ael.org—just enter the title in the "search" box. The six-page tool includes

- steps to conducting research
- steps to contracting for research
- what to look for when developers/companies provide research

For more free tools from AEL, see the catalog insert in the center of this issue.

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Gamesmanship

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Gaming Resources

Soapbox Online Forum

Sponsored by the Institute for the Advancement of Emerging Technologies in Education at AEL

“What Can Education Learn from the Video Game Industry?”

www.iaete.org/soapbox

In this transcript from a recent online forum, education and technology experts share their visions for incorporating video gaming technology into learning environments.

Squeak

www.squeakland.org/whatis/whatishome.html

Squeak is free, downloadable, open source software that you can use to create games and other media. Squeakland provides opportunities for communities of people to work together to invent new media types. Education is a primary focus for many Squeakers who are doing cutting edge research on how computers can be used to enhance and amplify learning.

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authors assert, has much to offer middle and high school students and their teachers.

“Games promise to stimulate the imagination, spark curiosity, encourage discussion and debate, and enable experimentation and investigation,” Squire and Jenkins write.

“Games are not simply problems or puzzles; they are microworlds, and in such environments students develop a much firmer sense of how specific social processes and practices are interwoven, and how different bodies of knowledge relate to each other.”

In the *InSight* article, the full text of which is available online at www.iaete.org/insight, Squire and Jenkins suggest the versatility of games as a learning tool, rather than point to a single best practice or ideal approach. They present a series of vivid gaming scenarios—some already happening in classrooms, some in the testing phases or on the horizon—that illustrate the pedagogical potential of gaming.

Squire and Jenkins believe games can inspire players to read more broadly across a range of other related fields. They say games also encourage collaboration, and thus provide a context for peer-to-peer teaching and for the emergence of learning communities.

Current Use in the Classroom

Some games already being used successfully in classrooms around the country include *Civilization*, *SimCity*, and *Railroad Tycoon*. These games model complex social, scientific, and economic processes, the authors say. And while they were created for entertainment purposes and sometimes convey misinformation or foster misconceptions (*SimCity*, for example, exaggerates the mayor’s power and ignores issues of race), some teachers build classroom activities around these games and address this drawback directly by encouraging critical reflection about their underlying models and their basis in reality.

Squire, who has studied what game

players learn about social studies when they play *Civilization III* in classroom environments, reports that playing the game seems to be a powerful way of introducing students to concepts such as monotheism or monarchy, but perhaps an even better way of helping them tie together the disparate periods of history. In the game, players lead a civilization from 4000 BC to the present, seeking out geographical resources, managing economies, planning the growth of their civilization, and engaging in diplomacy with other nation states. *Civilization III* players “encounter history not as a grand narrative but as the product of several dynamic interrelated forces,” say Squire and Jenkins. “Students might learn about the role of horses or the interplay between economics and foreign policy.”

The authors further note that games such as *Civilization III* “are not replacements for traditional resources such as maps, texts, or educational films; rather, students are motivated to return to those media to do better in the games. They don’t memorize facts; they mobilize information to solve game-related problems.”

Single- and Multiplayer Games

Squire and Jenkins believe that multiplayer historical role-playing games represent a very promising area for educational design. One such game, which emerged through the Games-to-Teach project and is currently being tested, is *Revolution*. In this game, which is being developed in collaboration with the Colonial Williamsburg Foundation and with advice from award-winning historian Pauline Maier, players assume the roles and responsibilities of townspeople—blacksmiths, scullery maids, bankers—living in a middle-sized town in Colonial America. They live their daily routines and political allegiances as the town works through the events surrounding the American Revolution. While *Civilization III* emphasizes large-scale and long-term

historical change, *Revolution* stresses short-term historical events and individual agency within constrained contexts.

“What if learning about the American Revolution meant becoming a revolutionary,” Squire and Jenkins ask, “sneaking out in the middle of the night to throw tea in the harbor, or burn an effigy of the Royal governor from the liberty tree, or smuggle a message past the British guard post and into the hands of the revolutionaries at the local tavern?”

The authors next describe a single-player game of self-discovery titled *Prospero’s Island*, which is being developed by the MIT Comparative Studies Program in collaboration with the Royal Shakespeare Company.

Players of *Prospero’s Island* choose a role (servant, sailor, courtier) and while shipwrecked on a fantastical island, interact with Shakespearean characters, reshaping the world and reworking the narrative of Shakespeare’s *The Tempest*. In the process, they perform literary analysis, deciphering symbols, manipulating language, and uncovering secrets. The game encourages students to experience Shakespeare’s play not simply as readers or spectators but as players, directors, and authors. “They also learn something about themselves, the choices they make, the identities they play, and the ways they are seen by other people—issues that are central to the experience of adolescence,” write Squire and Jenkins.

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Gaming Resources

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The River City Simulation

<http://muve.gse.hargard.edu/muvees2003>

This site gives details of a research project, funded by the National Science Foundation, to build a multiuser virtual environment experiential simulator (MUVEES) to teach science. The MUVE draws on curiosity and play, as students collaboratively help “River City,” a typical late-nineteenth-century town, solve its environmental and health problems.

2020 Visions: Transforming Education and Training Through Advanced Technologies

www.technology.gov/reports/TechPolicy/2020Visions.pdf

A free, downloadable report, published by the federal Department of Commerce, that features articles written by technology visionaries.

Quest Atlantis

<http://atlantis.crlt.indiana.edu/>

The mission of Quest Atlantis (QA) is to support children in developing their own sense of purpose as individuals, members of their communities, and as knowledgeable citizens of the world. QA is a learning and teaching project that uses a 3-D multiuser environment to immerse children, ages 9-12, in educational tasks. Building on strategies from online role-playing games, QA combines strategies used in the commercial

gaming environment with lessons from educational research on learning and motivation.

GamesParentsTeachers.com

www.gamesparentsteachers.com

Here, kids, parents, and teachers can learn from each other about video and computer gaming. Included are information from kids, discussion questions for parents, ideas and lesson plans for teachers, resources, and opportunities for input.

The Education Arcade

www.educationarcade.org

The Education Arcade represents an international consortium of game designers, publishers, scholars, educators, and policymakers who are exploring the new frontiers of educational media. This site also features **The Teachers’ Arcade**, a group of teachers, researchers, and policymakers who are investigating the potential of using commercial and video games to support learning. The Teachers’ Arcade is a resource for sharing teaching tips, curricular models, lesson plans, and custom game modifications.

EAF 228

www.coe.ilstu.edu/rpriele/ef228

EAF 228 is an undergraduate, teacher education course designed as an online, interactive video game where players (students) take the role of Change Agents who must overthrow Status Quo, a mythical figure that represents educators who fear technology and resist the future.

Research Notes

The U.S. Department of Education's Institute of Education Sciences funds research through regional laboratories, national centers, and field studies.

Research from the nation's 10 regional laboratories can be found on the Internet at www.relnetwork.org.

The work of the 12 national centers is available at <http://research.cse.ucla.edu>.

Programs for Success in Science and Mathematics

From Building Engineering and Science Talent (BEST)

Schools are using a variety of programs in an effort to meet the challenge of bringing underrepresented groups—women, African Americans, Hispanics, Native Americans, and persons with disabilities—to careers in science, technology, engineering, and mathematics. Which, if any, are effective in helping these groups succeed in science and mathematics?

A recent report showcases 9 programs with significant evidence of effectiveness and 11 that warrant further research, based on an in-depth evaluation of research evidence by the BEST Blue Ribbon Panel on Pre-K-12 Education and the American Institutes of Research (AIR).

Programs with probable or notable effectiveness include the following:

- **Direct Instruction** (in Mathematics) has research evidence indicating a positive immediate effect on mathematics performance on standardized tests, although long-term persistence is unknown.
- **Project SEED** (Special Elementary Education for the Disadvantaged) research showed immediate gains on standardized tests after one semester, and continued outperformance after several semesters of participation; SEED students also went on to take more higher-level math classes in middle and high school.
- **Advancement Via Individual Determination** (AVID) seeks to help students who are promising but underachieving to succeed in college prep and ultimately enroll in college.
- **The Algebra Project** provides conceptual math understanding to help students complete algebra and enter the college prep math sequence.

- **Foundational Approaches in Science Teaching** (FAST) provides a three-year sequence of inquiry-based courses on physical science, ecology, and the interrelationships among science, technology, and society.
- **Gateway to Higher Education** prepares New York City high school students for studies and careers in science, technology, engineering, medicine, health, and math teaching.
- **Project GRAD** (Graduation Really Achieves Dreams) works to reduce dropout rates and increase college enrollment of minority students.
- **Puente** provides a bridge for Latino students in California to go from high school to college and from community colleges to four-year colleges.
- **Yup'ik Mathematics** seeks to improve math thinking and performance in Alaska elementary students while reinforcing Yup'ik culture.

BEST was created to bring together practitioners, researchers, and policymakers to identify what's working to develop the technical talents of underrepresented groups in preK-12, higher education, and the workplace. The panel, chaired by Dr. Shirley Malcom of the American Association for the Advancement of Science, screened 200 programs and selected 34 for detailed examination. The screening protocol appears in the report as an appendix, with the suggestion that it might be of use to other educators and researchers.

To read *What it Takes: Pre-K-12 Design Principles to Broaden Participation in Science, Technology, Engineering and Mathematics*, go to www.bestworkforce.org/publications.htm. To order a print copy of this 2004 publication, send \$5 to Building Engineering and Science Talent, Attn: Robb Henderson, 5060 Shoreham Place, #200, San Diego, CA 92122.

Teaching and Learning in a Multicultural Society

From the Center for Multicultural Education and the Common Destiny Alliance

What do we know about education and diversity and how do we know it? This two-part question guided the Multicultural Education Consensus Panel. *Diversity Within Unity: Essential Principles for Teaching and Learning in a Multicultural Society* is the product of a four-year project during which the panel reviewed and synthesized research.

Twelve major findings, called essential principles, constitute this publication. It also contains a checklist that can be used by educators to determine the extent to which their institutions and environments are consistent with the essential principles. The principles are categorized as follows:

Teacher Professional Development

Principle 1. Professional development programs should help teachers understand the complex characteristics of ethnic groups and the ways in which race, ethnicity, language, and social class interact to influence student behavior.

Student Learning

Principle 2. Schools should ensure that all students have equitable opportunities to learn and to meet high standards.

Principle 3. The curriculum should help students understand that knowledge is socially constructed and reflects researchers' personal experiences as well as the social, political, and economic contexts in which they live and work.

Principle 4. Schools should provide all students with opportunities to participate in extra- and cocurricular activities that develop knowledge, skills, and attitudes that increase academic achievement and foster positive interracial relationships.

Intergroup Relations

Principle 5. Schools should create or make salient superordinate crosscutting group

memberships in order to improve intergroup relations.

Principle 6. Students should learn about stereotyping and other biases that negatively affect racial and ethnic relations.

Principle 7. Students should learn about the values shared by virtually all cultural groups (e.g., justice, equality, freedom, peace, compassion, and charity).

Principle 8. Teachers should help students acquire the social skills needed to interact effectively with students from other racial, ethnic, cultural, and language groups.

Principle 9. Schools should provide opportunities for students from different racial, ethnic, cultural, and language groups to interact socially under conditions designed to reduce fear and anxiety.

School Governance, Organization, and Equity

Principle 10. School organizational strategies should ensure that decision-making is widely shared and that members of the school community learn collaborative skills and dispositions in order to create a caring environment for students.

Principle 11. Leaders should develop strategies to ensure that all public schools, regardless of location, are funded equitably.

Assessment

Principle 12. Teachers should use multiple culturally sensitive techniques to assess complex cognitive and social skills.

In addition to summaries of the research supporting these principles, the 2001 report also contains a bibliography of resources. Printed copies of *Diversity Within Unity* by James A. Banks, Peter Cookson, Geneva Gay, and colleagues are available for \$6.50 each. Order from CME Publications by phoning 206-543-3386 or sending e-mail to centerme@u.washington.edu. Free copies may be downloaded at <http://depts.washington.edu/centerme/dwu.htm>.

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Research Notes

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Valuing the Arts

The Arts Education Partnership (AEP) is a national coalition of arts, education, business, philanthropic, and government organizations. It demonstrates and promotes the essential role of the arts in the learning and development of every child. With support from the U.S. Department of Education and the National Endowment for the Arts, AEP maintains a comprehensive Web site of its reports, including:

- *Critical Links: Learning in the Arts and Student Academic and Social Development*, a research compendium that reviews 62 studies of arts learning in dance, drama, music, multiple arts, and visual arts.

- *No Subject Left Behind: A Guide to Arts Education Opportunities in the 2001 NCLB Act*, a guide for state and local arts and education leaders to learn more about the federal No Child Left Behind Act and the multiple opportunities for arts education.

To visit the AEP Web site, go to www.aep-arts.org.

Research Notes

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The Effect of Leadership on Student Achievement

From Mid-continent Research for Education and Learning

This working paper details the outcomes of a meta-analysis of research on the effects of principal leadership practices on student achievement. Analysis of studies from 30 years identified 21 leadership responsibilities that are significantly associated with student achievement. The results were translated into a “balanced leadership framework” that describes the knowledge, skills, strategies, and tools leaders need to positively impact student achievement.

Administrators and policymakers can use this paper as a guide to understanding recent research findings and to helping school leaders more effectively guide school improvement efforts.

Key Ideas

- **Leadership matters.** A significant, positive correlation exists between effective school leadership and student achievement.
- **Effective leadership can be empirically defined.** Contrary to beliefs that leadership is more art than science, 21 leadership responsibilities are correlated with higher student achievement.
- **Effective leaders not only know what to do, but when, how, and why to do it.** The essence of balanced leadership is knowing which school changes are most likely to improve student achievement and also understanding staff and community members’ dispositions to change and tailoring leadership practices accordingly.

Primary Variables

These may determine whether leadership will have a positive or a negative impact on achievement:

1. **Focus of change.** This concerns whether leaders properly identify and focus on improving the classroom practices that are most likely to impact student achievement in their school.

2. **Magnitude or “order” of change.** This concerns how well leaders understand change and adjust their practices accordingly. A practice might be more effective in one situation than another, or with one group of stakeholders over another, so leaders must be able to compare and choose practices to achieve results.

To help users relate leadership responsibilities to practices, this report suggests practices that can be used for different magnitudes of change. For example, under the Focus responsibility, first-order change comes if the leader establishes concrete goals for all curriculum, instruction, and assessment; establishes concrete goals for the general functioning of the school; and continually keeps attention on established goals. To achieve second-order change, the leader establishes high, concrete goals and expectations that all students meet them. To download a free copy of the 2003 working paper *Balanced Leadership: What 30 Years of Research Tells Us About the Effect of Leadership on Student Achievement* by Tim Waters, Robert J. Marzano, and Brian McNulty, visit www.mcrel.org/topics/productDetail.asp?topicsID=7&productID=144.

From High School to College

From Teachers College/Columbia University and Office of Vocational and Adult Education, U.S. Department of Education

This report examines what is known about four programs that aim to increase college access and success: Advanced Placement, International Baccalaureate, Tech Prep, and middle college high schools. The authors divided findings from the available research according to three categories, although studies include programs that could be categorized in more than one group. The goal was to search for a general sense of differences among these approaches.

- *Singleton programs* are stand-alone college-

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level courses (Advanced Placement and dual enrollment, usually high school teachers).

- *Comprehensive programs* subsume most of a student's academic experience (International Baccalaureate and Tech Prep).
- *Enhanced Comprehensive programs* offer college coursework coupled with guidance and support to ensure postsecondary success (middle college high schools).

Singleton Programs

Most studies on these programs came to relatively positive conclusions. For example, in one study, dual-enrollment students graduated from high school at higher rates than students who did not participate in dual enrollment. Analysis of institutional data from one community college found that dual-credit students who enrolled in the college full-time after high school were less likely than other first-time, full-time freshmen to score below 80 percent on a college placement test of reading, had higher first semester grade point averages, and were more likely to persist to the second semester of their freshman year. Other studies have shown that dual-enrollment students did as well or better in upper division and advanced coursework as students who took the prerequisite courses after they started college. However, none of these studies controlled for prior academic performance or other attributes. Moreover, most students in singleton programs are college-bound or higher-achieving students.

Comprehensive Programs

The body of research on Tech Prep is the largest source of quantitative studies of credit-based transition programs. Tech Prep programs are generally not aimed at college-bound high school students.

As part of the national evaluation of Tech Prep, researchers analyzed transcripts of Tech Prep students and matched comparison groups in eight Tech Prep consortia. They found that Tech Prep students were more

likely than the comparison group to attend a two-year college. They were also more likely to choose to work full time instead of attending postsecondary education.

Another study found that Tech Prep students had higher grade point averages in 11th and 12th grades, had better attendance and better scores on the state math assessment, and were more likely to graduate from high school in four years than the comparison students. However, Tech Prep students had lower SAT scores.

Enhanced Comprehensive Programs

The middle college high school (MCHS) comes closest to the definition of an enhanced comprehensive program, and there is a body of research on this model. One study found that students in two California middle college high schools had high scores on state assessment tests. More MCHS students were successful on math and reading tests than district and county averages. However, some of this aggregate advantage appeared to come from high numbers of students scoring at the "basic" level rather than at the "advanced" level.

Overall, the research relevant to the enhanced comprehensive model, primarily research on the middle college high school, was inconclusive. While the results were mixed, none of the studies used comparison groups that would allow conclusions about the effectiveness of the MCHS model.* Although these studies were somewhat less positive than the studies of other models, these programs were also more likely to enroll at-risk or lower-achieving students.

Promoting College Access and Success: A Review of Credit-Based Transition Programs, by Thomas Bailey and Melinda Mechur Karp, is available online at www.ed.gov/about/offices/list/ovae/pi/cclol/crdbase.doc.

* For more about the MCHS model, see *Case Studies of High Schools on College Campuses: An Alternative to the Traditional High School Program* by Linda Cavalluzzo, Will Jordan, and Christopher Corallo, available free at www.ael.org/page.htm?&pv=x&pd=res8721&id=787.

Research Notes

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Who Graduates?

From the Urban Institute

An extensive set of systematic empirical findings on public school graduation rates, this study includes detailed descriptive statistics and analytic results for the nation as a whole, by geographical region and by state. The study also offers a detailed perspective on high school completion by examining graduation rates for the overall student population, for specific racial and ethnic groups, and by gender. In addition, an analysis of graduation rate patterns for particular types of school districts is included.

To read the 2004 report, *Who Graduates? Who Doesn't? A Statistical Portrait of Public High School Graduation, Class of 2001* by Christopher B. Swanson, visit www.urban.org/url.cfm?ID=410934.

Resources of Interest

Help with Using Data

The Center for Research on the Education of Students Placed At Risk (CRESPAR) has a new Web site that provides resources for data-driven decision making, including reviews of software for analyzing student data. This site is in response to No Child Left Behind requirements for accountability as evidenced by student data.

To visit the site, go to www.csos.jhu.edu/systemics/datause.htm.

Choosing Technology for Science

Selecting Computer-Based High School Science Curricula: A Guide for Teachers is a tool for educators confronting the challenge of using technology to enhance the way they teach science. It comes from the Center for Science Education at the Education Development Center, with support from the National Science Foundation.

Accompanying the recent boom in education Web sites has been the production of guides and guidelines, models, and methodologies for planning technology reforms in schools and classrooms. There are online guides for integrating technology into the curriculum and for creating curriculum with technology. This tool enables teachers to evaluate whether material offered via the Internet or CD-ROM uses technology to support a sound curriculum.

The tool provides criteria, in the forms of a questionnaire and a matrix, by which teachers can determine the suitability of a program to serve as a “core curriculum” for high school science. A core curriculum refers here to a curriculum that is the basis of a conventional division of the school calendar (a quarter, semester, or year).

To find out more and download a free copy of the tool, visit www.cse.edc.org/products/selectingcomputerbased.

Assessing Technology Literacy

A new tool to assess the technological literacy of middle school students, developed as a collaboration between the International Society for Technology in Education (ISTE) and Microsoft, is a component of Microsoft’s U.S. Partners in Learning. The free online tool contains 12 assessments as well as teacher support materials. The assessments are aligned with ISTE’s National Educational Technology Standards for Students

(NETS•S). Each assessment meets at least two NETS•S standards and includes a mapping tool to specify the standards met.

The performance-based assessments use authentic, real-world scenarios to test middle schoolers’ technology literacy skills and were piloted by students in eight U.S. middle schools. Because they’re performance-based, the assessment experiences can measure some of the more complex and challenging performance indicators in NETS•S. Teachers may assess students by class or one at a time. An immediate reporting feature helps teachers make quick instructional decisions and adjustments. To use the tool, visit www.iste.org/asmst/msiste.

Studying the Universe through Radio

The National Radio Astronomy Observatory operates powerful radio telescopes that span the western hemisphere. Scientists around the world use these instruments to probe fundamental questions in astronomy and physics. Facilities in Green Bank, WV, and Socorro, NM, offer public tours and educational programs. Teachers and youth group leaders can plan field trips to the facilities and get online materials that support educational activities.

Teachers in West Virginia and surrounding states can apply for Project RARE CATS, a program for K-12 teachers that integrates research experiences and technology into classroom teaching. The project helps teachers gain first-hand experience in conducting science research, enhances content knowledge in astronomy, and updates computer technology skills.

The Green Bank facility also offers training in Hands-On Universe (HOU), a national program that allows students to analyze astronomy data just like astronomers do. The teacher training provides access to telescopes and curriculum that integrates science, mathematics, and technology in the

context of astronomical explorations.

For more information about Green Bank programs, visit www.gb.nrao.edu, phone 304-456-2150, or send e-mail to gbt-tours@nrao.edu.

Coping with Images from Iraq

The images of prisoner abuse and violence coming out of Iraq pose a challenge for parents and teachers. When is it appropriate to share these images with children, and when is it better to shield them? When children do see these pictures, how can we help them deal with their feelings and foster a healthy understanding of what they mean?

Research on the impact of the media on children's physical and mental health can provide some guidance. An article for the National PTA provides tips for adults to help children deal with issues such as this in age-appropriate ways. First and foremost, the author writes, caution is strongly recommended. Many children are sensitive to disturbing media images, and the consequences may include repeated nightmares and sleep disturbances, generalized anxieties, and lingering feelings of discomfort.

These effects can be hard to undo. As with many things, age is an important determinant of the effects and the best ways of dealing with them. To read the article, visit www.pta.org/parentinvolvement/parenttalk/iraqphotos.asp.

Using Multimedia

A new publication from Pacific Resources for Education and Learning (PREL) and the University of Hawaii at Manoa provides information for teachers about using multimedia technology in classrooms with diverse learners. *Pacific Voices: Integrating Multimedia Technology and Culture into Education, A Curriculum Resource* summarizes the experiences of educators who participated in a project designed to give voice to students and

teachers through the use of such technology as digital video cameras and desktop editing tools. The results are applicable to classrooms everywhere.

The book describes how to use software and hardware in the classroom (including assistive technologies) and contains sample instructional units that can help teachers integrate technology into literacy, language arts, cultural studies, and environmental science. The activities also illustrate the use of technology to strengthen local culture and traditions by filming or recording storytellers, songs, or chants, for example, or by interviewing elders.

Pacific Voices is available for \$15. To order, visit PREL's product database at <http://ppo.prel.org>. For more information, contact Kavita Rao at raok@prel.org.

Starting a School Foundation

With mounting pressure to improve school performance and student achievement amid a framework of decreasing tax revenues and budget cuts, many school districts may benefit from the support of a public education foundation, or local education fund. These nonprofit, charitable organizations work to improve student achievement by encouraging educational innovation and providing new and enhanced equipment, money, and services. Foundations fund scholarships, curriculum enrichment programs, teacher training, teacher resources, and staff positions, as well as reinvigorate parent and community activism.

The National School Boards Association has developed a primer that includes case studies and key steps to starting a local education fund. *Starting a School Foundation* also features an article by Public Education Network President Wendy D. Puriefoy on the growing partnership between local education funds and school board leaders. The primer can be downloaded free from www.nsba.org/site/docs/32800/32703.pdf.

Resources of Interest

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Improving Programs for Vulnerable Youth

The National Youth Employment Coalition (NYEC) has released a new tool for continuous improvement for education programs and schools serving vulnerable youth. NYEC EDNet consists of detailed criteria identified as common to effective education programs and schools by a national working group of educators, practitioners, policymakers, and researchers. The free tool also includes a comprehensive self-assessment that can help education programs and schools improve their services and inform policymakers, funders, and the public about what works for youth.

NYEC EDNet can be downloaded at www.nyec.org/EdStrategies.html.

Grant Opportunities

For more information on grant programs, funding sources, and technology funding, visit the AEL Web site at www.ael.org or the School Grants Web site at www.schoolgrants.org.

Consider also watching the Federal Register, published every weekday, at www.access.gpo.gov/su_docs/fedreglfrcont04.html.

U.S. Department of Education: Jacob K. Javits Fellowship Program

Purpose: To encourage eligible students of superior ability—selected on the basis of demonstrated achievement, financial need, and exceptional promise—to undertake graduate study in selected fields in the arts, humanities, and social sciences leading to a doctoral degree or to a master's degree in those fields in which the master's degree is the highest degree awarded.

Selected fields in the arts include music performance and composition, studio arts, film, playwriting, and dance. Humanities fields include art history, classics, archeology, folklore, foreign languages and literature, history, linguistics, philosophy, and speech. Fields in the social sciences include anthropology, communications, economics, political science, public administration, and sociology. The department estimates that 71 awards will be made averaging \$41,500.

Deadline: October 8

Application and information available online at www.ed.gov/legislation/FedRegister/announcements/2004-2/062904b.html.

U.S. Department of Education: Magnet Schools Assistance Program

Purpose: To help eligible local educational agencies to establish and operate magnet schools under a court-ordered or federally approved voluntary desegregation plan.

The statute defines a magnet school as a public elementary or secondary school, or public elementary or secondary education center, that offers a curriculum capable of attracting substantial numbers of students of different racial backgrounds. Magnet programs aim to eliminate, reduce, or prevent minority group isolation in schools while strengthening students' knowledge of academic subjects and their grasp of marketable vocational skills.

Eligible applicants include local education agencies that are implementing court-ordered or federally approved voluntary desegregation plans that include magnet schools. Private schools do not participate in this program. The department estimates that 50 new awards will be made.

Deadline: March 15, 2005

Application information available at www.ed.gov/programs/magnet/index.html.

NASA: Urban and Rural Community Enrichment Program (URCEP)

Purpose: To capture, channel, and enhance the interest of educators and students in science, mathematics, engineering, technology, and geography.

This program is coordinated and implemented in schools by the URCEP team, with technical and logistical assistance supplied by NASA. Using simple demonstrations and scale models of aeronautical and space hardware, URCEP specialists explain how basic scientific principles are applied in the exploration of aeronautics and space. Major activities include lectures, demonstrations, and hands-on classroom activities that supplement the ongoing curriculum.

URCEP specialists train core educators to conduct interdisciplinary aerospace activities in their districts. Core teachers, selected from district schools, work with the program for six weeks and lead interdisciplinary teams of teachers in interactions with the principal and faculty.

Deadline: Ongoing

Application and information available online at <http://aesp.nasa.okstate.edu/urcep/index.html> or by writing to NASA Headquarters, Education Division, attn: URCEP Program Manager, Code N, Washington, DC 20549.

Starbucks Foundation: Diversity and Literacy Programs

Purpose: To support locally based programs for low-income, at-risk youth between the ages of 6 and 18.

Grants from \$5,000 to \$20,000 are given in localities where Starbucks has stores. Programs must involve Starbucks employees in a meaningful way and be nondiscriminatory with regard to physical abilities, gender, race, age, sexual orientation, ethnic origin, and/or creed. Priority will be given to organizations that (a) reach underserved communities and communities of color, and/or (b) represent models in nontraditional learning environments engaged in service delivery. Grants are given in two areas:

1. **Power of Literacy** programs stimulate personal development and a commitment to social equity, justice, and environmental awareness through writing, literacy, and expression in public forums

2. **Leaders in Diversity** programs teach the value of societal diversity and develop youth leadership skills to foster understanding

Deadline: October 1 and April 1

Application information available online at www.starbucks.com/aboutus/grantinfo.asp?cookie%5Ftest=1 or through the manager of your local Starbucks store.

FIRST (For Inspiration and Recognition of Science and Technology): Robotics and LEGO League Competitions

FIRST Robotics is a multinational competition that teams professionals and high school students to solve an engineering design problem. Teams come from Canada, Brazil, Great Britain, and almost every U.S. state. The competitions are high-tech spectator sporting events, based on lots of focused brainstorming, real-world teamwork, dedicated mentoring, project timelines, and deadlines. For information on creating a team, visit www.usfirst.org/robotics/gtstart.htm.

The FIRST LEGO League (FLL), or junior robotics competition, is for boys and girls ages 9 to 14, and is flexible enough in structure that a team can form within the school or home-school environment, as an after-school program, or as part of any

youth-based organization. A team consists of a maximum of 10 children and at least one adult coach. Teams register at the FLL Web site through September. FLL reveals the Challenge—the annual game—in mid-September. Teams must determine their strategy and program their robots to accomplish various missions and accumulate points. The Challenge theme and related project cause teams to research and investigate world issues. Team registration closes September 30, or sooner if spaces are filled. For information on creating a team, visit www.usfirst.org/jrobotcs/flg_gi.htm.

National Education Association (NEA) and Youth Service America (YSA): Youth Leaders for Literacy

Purpose: To encourage and celebrate the literacy service of young people, and to provide them with resources to conduct reading-related activities that benefit others.

The NEA will award 20 grants of \$500 each to student-led initiatives. Grant applications should propose a project that begins on Read Across America Day in March 2005 and culminates on National Youth Service Day in April 2005.

Applicants, ages 21 or younger, can be either individuals or groups. To be eligible for funds (up to \$500), applicants must include a scheduled activity (read-aloud session, trip to the library, book making, etc.) each week of the project period as part of the proposed project. Judges will be looking for youth leadership in developing and implementing the project, youth involvement in preparing and submitting the grant application, capacity of the individual or group to administer the grant, and impact of the project on those providing service and those being served.

Deadline: October 22

Information and application available online at www.nea.org/readacross/volunteer/youthleaders.html.

Barnes & Noble Local and Regional Contributions

Barnes & Noble considers requests for support from nonprofit organizations in the communities it serves. Because funding is limited, the company supports only organizations that focus on literacy, the arts, or education (K-12). In addition,

- the organization must be in the community or communities where Barnes & Noble stores are located and serve the greater good of the local community or region
- a plan for promoting the program with Barnes & Noble should be included in the proposal
- the organization must be willing to work with the local store or stores on in-store programming.

Submit proposals to the community relations manager or store manager at a local Barnes & Noble store. Stores can be located using the store finder at www.bn.com.

Gamesmanship

(continued from page 3)

Anytime, Anywhere Gaming

Another gaming scenario the authors find exciting involves the use of handheld computers. Ubiquitous gaming, they say, can occur anytime, anywhere, and often across multiple media. It's a gaming technique feasible for individual schools, thanks to the sophistication of recent handheld technologies. As an example, the authors cite *Environmental Detectives*, a game still in the testing phases, in which players are environmental scientists who represent different factions researching a chemical spill on a college campus. Playing in real locations in real time, players walk about the campus using PDAs to take virtual readings of the contaminant in the soil, interview virtual informants, and access intranets of information. Gameplay requires making decisions about what kinds of data to collect and how best to organize the investigation within a limited time frame. With ubiquitous gaming, students master

skills and test theories, and apply both to authentic problem-solving activities. They can rapidly play out imaginary scenarios in game space that would unfold over longer periods of time in the real world, say the authors. Squire and Jenkins say a priority is to build a tool set so that educators can localize augmented reality games to their own facilities.

As the rapidly evolving medium of video gaming enters the education venue, Squire and Jenkins have one concern: that the kind of immersive, experiential learning games encourage runs counter to contemporary trends in education toward achievement on standardized tests. Rather than high performance on such tests or knowledge of facts being the end goal, they say, "students' ability to participate in complex social practices, learn new knowledge, and perform well in novel, changing situations needs to be considered valuable learning."

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