



Digital Equity Toolkit

{Working Draft}

International Society for Technology in Education

www.iste.org

ISTE Headquarters; Washington, DC

ISTE Operations; Eugene, OR

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About ISTE

The International Society for Technology in Education (ISTE) is the premier membership organization for educators and education leaders engaged in improving teaching and learning by advancing the effective use of technology in PK-12 and teacher education. ISTE is the trusted source in education technology for professional development, knowledge generation, advocacy, and leadership for innovation.

Worldwide, ISTE represents more than 85,000 leaders and potential leaders in educational technology. ISTE is home to the National Educational Technology Standards (NETS), the Center for Applied Research in Educational Technology (CARET), and the National Educational Computing Conference (NECC).



About SIGDE

Digital Equity: SIGDE seeks to improve access to technology tools and provide opportunities for all 21st century learners. Share proven digital equity strategies with educators, researchers, and educational reform leaders worldwide. For more information on SIGDE please visit www.iste.org/sigde.

ISTE's Digital Equity Summit

ISTE's Digital Equity Summit is a long term initiative to bring leaders and policy makers from education, business, philanthropy, human services agencies, and government together to share promising and proven digital equity strategies so that more children will realize the educational, economic, and personal benefits of learning technology. For more information on the summit please visit www.iste.org/digitalequity.



ISTE's Digital Equity Toolkit

The purpose of the ISTE Digital Equity Toolkit is to provide a succinct compendium of practical resources that educators can use to immediately improve access to technology resources for students and educators.

The toolkit is a free publication provided to all education stakeholders working towards digital equity. This toolkit was developed as a resource for ISTE's Digital Equity Summit. The toolkit framework includes five categories consisting of Infrastructure, Leadership & Support, Professional Development, Teaching & Learning, and Family & Community Resources. Toolkit resources include Research (Promising/Proven Strategies), Resources (Hardware, Software, & Digital Content), and Grant Opportunities (Partnerships & Foundation Funding.)

This version of the toolkit is a working draft. If you have any suggestions for the final version of the toolkit, please email us at digitalequity@iste.org.

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Visit ISTE on the Web

ISTE is home of the National Educational Technology Standards (NETS) Project, the National Educational Computing Conference (NECC), and the National Center for Preparing Tomorrow's Teachers to Use Technology (NCPT³). To learn more about ISTE or request a print catalog of our books, visit our Web site at www.iste.org, which provides:

- Current education technology standards for PK-12 students, teachers, and administrators,
- A bookstore with online ordering and membership discount options,
- *Learning & Leading with Technology* magazine and the *Journal of Research on Technology in Education*.
- ISTE Update, online membership newsletter,
- Teacher resources,
- Discussion groups,
- Professional development services, including national conference information,
- Research projects,
- Member services

Acknowledgments

The ISTE Digital Equity Summit Committee would like to thank the following individuals and organizations for their contributions and support towards the development of the toolkit: ISTE's Special Interest Group on Digital Equity (SIGDE), Chicago Public School System (CPS), Mother Lode Union School District, the National Institute for Community Innovations (NICI), and the Digital Generation Education Exchange (DGEE). Special thanks to the following individuals for their time and energy devoted to this project: SIGDE officers Robert McLaughlin, Ph.D., Bonnie Bracey, and Joy Wallace, and toolkit editor James Sweet.

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About the Digital Equity Toolkit

Digital equity is the social-justice goal of ensuring that everyone in our society has equal access to technology tools, computers and the Internet. Even more, it is when all individuals have the knowledge and skills to access and *use* technology tools, computers and the Internet.

According to recent research by the National Center for Educational Statistics, 98% of schools and 77% of instructional rooms have computers and are connected to the Internet. But many classrooms and important educational projects are *not* connected, and these educators are deprived of excellent Internet-based resources.

Most important, even though a school or classroom may be connected, the technology may not be used by students — leaving many young people technology-illiterate, without key skills they need to succeed in today's job market.

This toolkit is intended to help educators locate high quality resources that address digital equity in the classroom and community. This version of the toolkit was compiled for ISTE's 2006 Digital Equity Summit based on a document previously published by the National Institute for Community Innovations.

Infrastructure

In order for all learners and their educators and families to master technology skills, they first must enjoy equitable access to the essential infrastructure resources: hardware, Internet connectivity, educational and productivity software, and digital educational content. While how well these resources are employed for teaching and learning is dependent on leadership and professional development that emphasizes, expects and supports higher order uses of such resources, we must first ensure that an equitable learning technology infrastructure is in place.

What does research say about infrastructure?

In 1995, the National Telecommunications and Information Administration (NTIA) issued the first of a series of *Falling Through the Net* reports based on Census data. These reports helped popularize the term “digital divide” and elevated it to an important focus of federal policy. In 2002, the series was renamed *A Nation Online* and victory over the digital divide was declared. Census data for 2003 show that, in fact, the divide in computer ownership seemed to have stabilized and growth of the divide in Internet access seemed to have slowed. However, none of the divides had significantly decreased from the levels reported in October 2000. The second *Nation Online* report, issued in September 2004, did not mention any of the digital divides.

www.ntia.doc.gov/ntiahome/fallingthru.html

www.ntia.doc.gov/ntiahome/net2/falling.html

www.ntia.doc.gov/ntiahome/fttn99/contents.html

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www.ntia.doc.gov/ntiahome/fttn00/falling.htm

www.ntia.doc.gov/opadhome/digitalnation/index_2002.html

www.ntia.doc.gov/reports/anol/

www.census.gov/prod/2005pubs/p23-208.pdf

The Benton Foundation published a response to the federal report *A Nation Online* concluding that continued federal leadership is essential given the significant technology gaps that remain along economic, racial and geographic lines. Published by Benton and the Leadership Conference for Civil Rights, in conjunction with Leslie Harris & Associates.

www.benton.org/publibrary/nationonline/bringing_a_nation.pdf

Where can I find inexpensive computers?

Purchasing the hardware you need for day-to-day technology needs, including e-mail and Internet connection is an important decision. There are sources of inexpensive or even free computers, but first assess your technology needs, including personal preferences and skill level, as well as how you want to use the technology. Remember that inexpensive and free hardware also comes at a price, so consider carefully what will work best for you, your school or agency.

The National Institute for Community Innovations' nonprofit Digital Equity Service Center offers deeply discounted computers, peripherals and accessories for low-income students and their families and educators, bundled with excellent instructional and professional development resources. The hardware is offered by such highly regarded partners as CDW-G, Dell, Gateway and Promethean, at deep discounts made possible by pooling the buying power of growing numbers of learners, educators and educational organizations nationwide.

www.digitalequity.org

Consistent Computer Bargains Non-Profits is an organization designed to provide non-profit organizations including colleges, faculty, students and K-12 schools with technology information and solutions to problems. They feature special prices on their website for hardware and software.

www.ccbnonprofits.com

TechSoup offers nonprofits one-stop shopping for their technology needs. TechSoup is committed to leveraging its strength as a community-wide portal for the benefit of the entire community. They have compiled resource lists of non-profit discounts offered by hardware and software companies, and by technology assistance agencies.

www.techsoup.org

The Microsoft Authorized Refurbisher (MAR) Program provides Microsoft Windows Operating Systems to PC refurbishers. The MAR Program was created to increase the

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number of usable PCs available to nonprofits, schools, and low-income families across the globe by reducing the cost of software to refurbishers. The MAR Program also benefits the environment by giving new life to a significant number of computers that may otherwise be destined for landfills. The MAR Program is a partnership between Microsoft and TechSoup.

www.techsoup.org/mar/

Computers for Learning is a program that transfers excess government computer equipment to schools and educational non-profit organizations. One must show eligibility and register needs, then Computers for Learning will determine if they can help you.

www.computers.fed.gov/school/user.asp

The National Cristina Foundation (NCF) provides computer technology and solutions to give people with disabilities, students at risk and economically disadvantaged persons the opportunity, through training, to lead more independent and productive lives. NCF works to ensure that used computer technology resources, which no longer meet an enterprise's needs, are given a second productive life as a tool for developing human potential.

www.cristina.org

The Beaumont Foundation of America grants Toshiba equipment to organizations serving underserved populations.

www.bmtfoundation.com

Digital Dividends receives many requests for help identifying sources of funding, free computers and software, Web development assistance, and other resources. According to a recent user survey, finding partners and collaborators was the number one goal people had for visiting this site. The Resource Marketplace highlights some of the most useful resources within and outside of the Clearinghouse that help address these needs.

www.digitaldividend.org/marketplace/marketplace.htm

The Computers for Schools Association is a national non-profit dedicated to providing a low cost alternative for achieving technology in the classroom. Computers for Schools is an association of computer refurbishers from across the country. Donations of retired computer equipment are refurbished for educational use and placed in schools. In some states, non-profit organizations are also eligible for equipment.

www.pcsforschools.org

Dell Corporation's TechKnow Program provides refurbished home computers for selected low-income or at-risk students.

www.dell4k12.com/program_detail.php?pi=4

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How can I get affordable Internet service for my school?

The federally funded Schools and Libraries program, also called "E-Rate," helps to make technology, such as phone service and the Internet, affordable for American schools and libraries. Eligible schools and libraries receive discounts on telephone service, Internet access, and internal connections (network wiring) within school and library buildings. The discounts range from 20% to 90%, depending on the household income level of students in the community, and on whether the school or library is located in an urban or a rural area.

To take advantage of E-Rate, schools and libraries must develop an approved technology plan that demonstrates the relationship between the information technology to be supported and the school's curriculum or library objectives. The school or library then provides notice that it seeks services, and vendors bid for the contract. After the school or library selects a vendor, services may be ordered. The vendor uses federal funds under the program to provide these services at discounted prices.

Some schools find that trying to get the E-Rate and using it are burdensome, so be prepared for red tape.

E-Rate is administered, and technology plans are approved, by the Universal Service Administrative Company (USAC), a private, non-profit corporation that is responsible for providing every U.S. state and territory with access to affordable telecommunication services through the federal Universal Service Fund. A *Service Provider Manual* is available online.

The Federal Communications Commission website describes E-Rate.

www.fcc.gov/learnnet

Where can I get free or inexpensive e-mail?

The addresses below are for commercial services that provide free e-mail accounts. When you go to any of these Internet sites, you will find the words "Free E-mail Account" or something similar. Click on that phrase and follow the directions. Be aware that some free or inexpensive services offer limited support and may go out of business on short notice to users. Most have advertisements.

More options for free e-mail can be found by doing a search on your favorite search engine (see "What if I have more questions that need answers?").

www.netzero.com

mail.yahoo.com

www.mail.com

mail.lycos.com

www.another.com

mail.google.com

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Lists inexpensive e-mail providers.

www.afreeinternet.com

Where can I get free or inexpensive web page hosting?

The websites below point to places that host web pages for a minimal cost.

www.web-page-hosting-review.com/

www.freewebspace.net

www.free-webhosts.com

www.bravenet.com

www.absolutely-free-hosting.com

Weblogs, or blogs for short, make it quick and easy for individuals to publish information about themselves or topics of interest to them. The following websites provide free blogs, and many provide additional features on a subscription basis.

wordpress.com

www.blogger.com

www.xanga.com

360.yahoo.com

spaces.msn.com

Wikis enable groups of people to collaboratively publish information of mutual interest or usefulness to the group or others. The following sites provide free wikis, and many provide additional features on a subscription basis.

pbwiki.com

www.editthis.info

www.jot.com

atwiki.com

www.bluwiki.org

www.seedwiki.com

stikipad.com

wikinote.com

www.wikispaces.com

www.xwiki.com

Leadership and Support

Leadership and support are essential to creating and maintaining an equitable, effective, state-of-the-art learning environment for students, teachers, and administrators of the 21st century. Key issues include building high quality ongoing professional development programs, building and maintaining stakeholder support for transforming learning and schooling with technology, maintaining effective technical support systems, with appropriate safety features, and keeping the policy structure of the school district up to date so it does not interfere with but takes advantage of the application of new technologies and delivery mechanisms for learning.

What does research say about leadership and support?

National Education Technology Plan: Toward A New Golden Age In American Education provides schools with a guide for technology-driven educational transformation. It analyzes the needs of students and reflects on progress that has been made through increased Federal, state, local, and private investments in providing Internet connectivity, computer access, and teacher technology training.

www.ed.gov/about/offices/list/os/technology/plan/2004/site/edlite-default.html

NCREL conducted case studies of 20 schools to discover characteristics of high-performing, high-technology schools that may contribute to the academic achievement of low-income, African-American, and Latino students. The final report identifies six characteristics shared by these schools: challenging and cohesive learning environment, coherent instructional program, professional community of teachers, effective school leadership, emphasis on improvement, and parent and community involvement.

www.ncrel.org/tech/hpht/

Clark County School District (Nevada), Florida Virtual School, Illinois Virtual High School, Learning Point Associates, and Virtual High School joined together to create this report that identifies the growth of online education programs and discusses how online education practices are being developed in the absence of clear state-level guidance.

www.ncrel.org/tech/pace2/

What resources are available to build digital equity?

There are some excellent resources (organizations and agencies) that focus attention on “digital equity.” Resources include other tool kits, listserves and links to information.

NICI’s nonprofit Total Assistance Center is a growing nationwide co-op providing unlimited phone and e-mail based tech support at a very low cost for educators in participating school districts, helping them to identify and successfully employ technology applications that research has found proven or promising to improve those student learning results of greatest concern to the individual educator, school or district.

www.digitalequity.org

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The Benton Foundation works to realize the social benefits made possible by the public use of communications. Bridging the worlds of philanthropy, public policy and community action, Benton Foundation seeks to shape the emerging communications environment and to demonstrate the value of communications for solving social problems. The foundation's comprehensive website provides information and news about the digital divide and highlights resources, including listserves (online forums) that discuss the issue.

www.benton.org

Educational CyberPlayGround provides lists and links to resources, articles, people and projects that can help increase digital equity.

www.edu-cyberpg.com/Teachers/digitaldivide.html

Powered by CompuMentor, one of the nation's oldest and largest non-profit technology assistance agencies, TechSoup.org offers non-profit organizations one-stop shopping to meet their technology needs.

www.techsoup.org

The Tech Policy Bank, a project of The Children's Partnership, offers ideas and information to help decision-makers address the technology gap.

www.techpolicybank.org/2002review.html

The CoSN K-12 Open Technologies Leadership Initiative helps educators and technologists with the planning, evaluation, decision-making, and implementation processes associated with adopting open technologies in K-12 education. Open technologies is an umbrella term that includes open source software, open standards, and open hardware.

www.k12opentech.org

In the free Intel® Teach - Leadership Forum, school and district leaders explore taking action to promote effective use of technology in their schools. They develop a personalized action plan to lead change.

www.intel.com/education/teach/forums

Engaging People In Cyberinfrastructure (EPIC) is designed to build human capacity by creating awareness of the opportunities afforded through cyberinfrastructure (CI) and by educating and training a diverse group of people in all stages of life from K-12 to professional practice to fully participate in the CI community as developers, users, and leaders.

www.eotepic.org

21st Century Schools offer educators the knowledge, the understanding, and the tools to actually take their schools and classrooms into the 21st century. The website includes

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Curriculum, Professional Development, Resources and support materials.
www.21stcenturyschools.com

Edutopia provides resources for learning about the key elements of successful schools and how specific schools have put theory into practice. There is a wealth of resources (Video gallery; Instructional Modules; Interactive Case Studies) to assist in efforts to transform schools.

www.edutopia.org

The Center for the Advanced Study of Technology Leadership in Education (CASTLE) was created to help address the critical nationwide shortage of administrators who can effectively facilitate the implementation of technology in schools and school districts. CASTLE provides resources for school administrators and the university programs that prepare them. CASTLE's School Technology Leadership graduate certificate program comprehensively covers ISTE's National Educational Technology Standards for Administrators (NETS-A) and has a positive, statistically significant impact on participants' school technology leadership knowledge, skills, and abilities.

www.schooltechleadership.org

NASA Learning Technologies Project provides a list of foundations that support technology integration funding.

learn.arc.nasa.gov/grants/

The Technology Support Index (TSI) is a framework that outlines effective technology support strategies. Appraise the quality of technology support programs and learn about possible improvements to employ.

tsi.iste.org/

The CEO Forum's interactive School Technology and Readiness (STaR) Chart is a self-assessment tool designed to provide schools with the information they need to better integrate technology into their educational process.

www.iste.org/starchart/

NetDayCompass.org is a comprehensive education-technology site, designed for technology decision-makers in K-12 schools.

www.netdaycompass.org

What about digital equity for persons with disabilities?

Assistive technology is defined by Federal legislation as any item, piece of equipment, or product system—whether acquired commercially, modified, or customized—that is used to increase, maintain, or improve functional capabilities of an individual with a disability. The Individuals with Disabilities Education Act (IDEA) mandates that specialized software and assistive technology be considered for students with disabilities. According

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to the IDEA Amendments of 1997, student evaluation teams are now required to consider whether students need assistive technology.

Universal design in education (UDE) means that physical, social, and learning environments are designed so that individuals with a wide range of abilities can have meaningful access to and participation in general education. UDE is built-in and involves flexibility of materials, strategies, approaches and technology. Universal design guides developers, educators, users and others in developing and implementing environments that support diverse users, regardless of their abilities.

Access to the World Wide Web can present significant barriers to learning for persons with disabilities. For example, students who are blind are unable to view graphics, and students who are deaf are unable to hear audio content. Students with learning disabilities may be unable to read text, comprehend the organization of a website or may be distracted by changing images.

The Americans with Disabilities Act Technical Assistance Program is a comprehensive resource for information on the ADA. Funding for this site comes from the National Institute on Disability and Rehabilitation Research within the Office of Special Education and Rehabilitation Services.

www.adata.org

The concept of *universal design* says that products and services should be usable by as many people as possible, regardless of disability, language barriers or other challenges. A good place to start learning about this is at the Trace Center.

www.trace.wisc.edu/world

CAST is a not-for-profit organization that uses technology to expand opportunities for all people, including those with disabilities. It provides resources such as professional development, articles about research, curriculum, information about tools and examples of current practice.

www.cast.org

World Wide Web Consortium: Web Accessibility Initiative (WAI), in coordination with organizations around the world, pursues accessibility of the web through five primary areas of work: technology, guidelines, tools, education and outreach, and research and development.

www.w3.org/WAI

Equal Access to Software and Information (EASI) is a nationally recognized provider of online training on accessible information technologies, including web accessibility, for persons with disabilities.

www.rit.edu/~easi

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The National Center for Accessible Media (NCAM) is a research and development facility dedicated to the issues of media and information technology for people with disabilities in their homes, schools, workplaces, and communities.

ncam.wgbh.org

The World Wide Web Consortium is engaged in a project to help people understand the importance of accessibility in Web pages, and to develop standards on how to make sure the pages that are written are accessible.

www.w3.org/WAI

CenterAWARE stands for Accessible Web Authoring Resources and Education. Its mission is to serve as a central resource for Web authors who wish to learn about Web accessibility.

aware.hwg.org

Professional Development

Implementing effective professional development models can empower educators and other stakeholder groups to bridge the digital and learning divide that still exists in underserved schools and communities. The challenge continues to be the implementation of targeted high-quality programs that are equitable, sustainable, scalable and accessible from homes, schools, and communities. As the technological landscape continues to evolve, minority and economically disadvantaged students continue to be underserved, enlarging an already significant learning divide. New models of sustained professional development are needed that effectively address the ICT needs and skill development of stakeholders that serve diverse groups. Finding and presenting multicultural technology content that is meaningful and relevant to students and teachers is critical.

What does research say about professional development?

The Center for Applied Research in Educational Technology (CARET) bridges education technology research to practice by offering research-based answers to critical questions. CARET provides summaries of research relating to professional development issues and teacher use and integration of technology.

caret.iste.org/index.cfm?fuseaction=questions&topicID=6

A national survey of teaching, learning, and computers examined relationships between professional engagement and teaching practice, including instruction involving computer use. The study found that the more extensively involved teachers were in professional activities, the more likely they were to (1) have teaching philosophies compatible with constructivist learning theory, (2) teach in ways consistent with a constructivist philosophy, and (3) use computers more and in exemplary ways. The study found that professionally engaged teachers were somewhat more experienced than others and had made more investments in their own education but that they taught a representative group

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of students—they were not less likely present in schools serving disadvantaged students nor were they more likely to be assigned to classes of higher ability students.

www.crito.uci.edu/tlc/findings/report_7/startpage.html

How can teachers get help learning to use technology in the classroom?

"When effectively integrated into curriculum, technology tools can extend learning in powerful ways," says Bonnie Bracey of the Lucas Foundation and National Institute for Community Innovations. The Internet and multimedia, she notes, can provide students and teachers with:

- Access to current primary source materials.
- Ways of collaborating with students, teachers and experts around the world.
- Opportunities to express understanding through images, sound and text.

In addition, using computers and the Internet in school enables students to develop important skills that many, if not most, will need in their future careers.

The National Institute for Community Innovations hosts 15 Internet Portals designed to assist educators to infuse technology into the classroom. Each Portal focuses on a particular topic, such as Equity, Professional Development and Preservice Infusing Technology.

www.edreform.net

The George Lucas Education Foundation provides links to schools, teachers, communities and projects that are effectively integrating technology into the classroom.

www.glef.org

"4Teachers" provides online discussion and sharing space for teachers integrating technology into education. The site also describes models of successful programs, and provides information on resource people, curriculum, professional development opportunities, policy and planning tools, and the "site of the week." Hosted by High Plains Regional Technology in the Education Consortium at the University of Kansas.

4teachers.org

This free monthly in-service magazine program shows teachers the tools and equipment they need to be "Net-wise." Features the latest educational Web tools and sites, as well as 27 "Net Classrooms" where teachers seamlessly integrate the Internet into their curricula.

www.netfiles.org

"E-mail for the Classroom Teacher" helps answer the question "why would a teacher want to use e-mail?" This website looks at the answer to that question in two parts: from a personal, professional perspective, and from the perspective of what students can do with e-mail.

www.cln.org/int_email.html

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The Virtual Volunteering Project refers to volunteers with particular skills or expertise to assist staff or other volunteers as technical assistance volunteers. This website provides guidance to recruiting and utilizing online volunteers.

www.interconnection.org/volunteer/index.php

Internet Keypal Exchange is designed to aid teachers who are looking for Internet keypal (like a pen-pal only via e-mail) exchanges for their classes. The site identifies keypal resources for matching classes of students together.

www.cln.org/int_keypals.html

The Quick Guide to Checking Information Quality is a clever tool for helping students and teachers assess the quality of information found on the Internet.

www.quick.org.uk

Annenberg Media Learner provides programming for K-12 teachers free through satellite channel and Video On Demand. Workshops are designed to strengthen the professional credentials of educators at all levels. Workshops and courses are appropriate for preservice and inservice teachers, and are targeted to specific curricular areas and grade levels — middle school math teachers, for example; content areas and educational theory and practice, as well as supplemental video programs called teaching practices libraries that give a "fly-on-the-wall" view of real teachers in real classrooms. Additional workshops are designed for administrators, reformers, and policymakers.

www.learner.org/index.html

Multicultural Pavilion provides educational resources to enhance educational equity and multicultural education.

www.edchange.org/multicultural

The free, 40-hour, hands-on Intel® Teach - Essentials Course shows teachers how, when, and where to incorporate technology tools and resources into their current curriculum with the goal of developing students' 21st century skills.

www.intel.com/education/teach/us

The free, 24 to 40-hour Intel® Teach – Thinking with Technology Workshop prepares teachers to engage students in higher-order thinking and 21st century skills using a set of free online thinking tools.

www.intel.com/education/teach/workshop

The Verizon Foundation's MarcoPolo Program maintains a state-of-the-art online Trainer Resource Center which provides MarcoPolo trainers with online training materials, strategy documents and presentations, as well as an interactive Agenda Creator. A train-the-trainer professional development model allows MarcoPolo Rollout Partners to

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provide free or discounted training throughout their states. The program also produces a free quarterly e-newsletter for trainers providing training updates, strategies and tips.

marcopolo-education.org/pd/

The i-LEARN Online program was created by i-SAFE in partnership with Microsoft to provide an 'On Demand' system for Internet safety education. The program provides training modules to teach and/or train educators on the i-SAFE curriculum. Internet safety concepts and instruction on implementing the i-SAFE Internet Safety Program are included. You must register as an educator to use these modules.

ilearn.isafe.org

What about help with virtual collaboration?

As technology becomes more integrated into people's work-lives, more and more people are learning to communicate and work together using these technologies. Co-workers communicate with one another via e-mail; work teams achieve their goals as a virtual staff, rather than living and working face-to-face; and conferences take place in cyberspace.

Join leading experts on collaboration technologies and processes in interactive discussions on virtual communities, online learning and knowledge management.

www.icohere.com

Information about conferencing on the web and virtual communities.

www.thinkofit.com/webconf/index.htm

EzBoard claims to be the world's largest online community network. Users can join a community or create a new one.

www.ezboard.com

MentorNet is a nonprofit e-mentoring network that addresses the retention and success of those in engineering, science and mathematics, particularly but not exclusively women and other underrepresented groups. MentorNet provides college and university students with positive, one-on-one, email-based mentoring relationships with mentors from industry and academia. The MentorNet Community provides opportunities to connect with others who are interested in diversifying engineering and science.

www.mentornet.net

Discovery Educator Network (DEN) is a global learning community for educators using media in the classroom. DEN has thousands of members and the website inspires collaboration and sharing of best practices among innovative educators. Anyone can register for the website for the universal information, and subscribers have access to additional materials and resources.

www.discoveryeducatornetwork.com

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Teaching and Learning

Teaching and learning are at the center of closing achievement gaps and bridging the digital divide between rich and poor, rural and urban, females and males, and between cultural groups. The Internet provides a large and growing number of effective and appropriate instructional resources and strategies that help teachers use and integrate technology in ways that are sensitive to equity issues.

What does research say about teaching and learning?

The Center for Applied Research in Educational Technology (CARET) bridges education technology research to practice by offering research-based answers to critical questions. CARET can be utilized to develop technology plans, recommend technology expenditures, and evaluate approaches to curriculum integration.

caret.iste.org

NetDay.org – annual “Speak Up Survey” is an annual online survey conducted by NetDay/Project Tomorrow. For the past three years, NetDay.org has collected the viewpoints of over 562,000 K-12 students from all 50 states, as well as 26,000 teachers. The Speak Up data represents the largest collection of authentic, unfiltered student views on technology and education ever assembled. The results provide educators with insight into how students would like to use technology in their learning process as well as how teachers view and integrate technology into their curricula.

www.netday.org/

Working with nearly 200 schools in 25 districts located throughout Massachusetts, this study examines the relationships among district and school-level supports for instructional technologies, classroom uses, and impacts on students and learning. This three-year study is supported by a generous grant from the Office of Educational Research and Improvement’s Field Initiated Studies Program.

www.bc.edu/research/intasc/studies/USEIT/description.shtml

NCREL funded eight research studies on K–12 online learning that were completed by July 2005. This research report provides an overview of online learning and presents brief summaries of each of the eight studies, with an analysis of common themes, challenges, and issues. Finally, the report offers specific implications for researchers, policymakers, and practitioners based on the eight studies.

www.ncrel.org/tech/synthesis/

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Where can I find inexpensive or free educational and productivity software?

The first step to getting the software that will work for you is to identify the purpose for it, and then search for the place that will provide the software plus the documentation you need to use it.

Freshmeat maintains the Web's largest index of Unix and cross-platform software and Palm OS software. Thousands of applications, which are released under an open source license, are meticulously cataloged in the freshmeat database, and links to new applications are added daily. Each entry provides a description of the software, links to download it and to obtain more information, and a history of the project's releases, so readers can keep up-to-date on the latest developments.

freshmeat.net

The Free Software Directory is a project of the Free Software Foundation (FSF) and United Nations Education, Scientific and Cultural Organization (UNESCO). They catalog useful free software that runs under free operating systems — particularly the GNU operating system and its GNU/Linux variants. There are 4,386 packages indexed. Directory topics include Audio, Business and Productivity, Database, Education, Email, Games, Graphics, Graphics, Hobbies, Interface, Live Communications, Mathematics, Network Application, Printing, Science, Security, Video and Web Authoring. Licenses are verified for each and every program listed in this directory. The Directory now has a web interface for entering or updating packages. If you have a favorite free software package that you'd like to see included in the Directory, please consider writing up an entry.

directory.fsf.org

Open Source Directory.com features stable, open sources applications and has 856 downloads in 214 categories such as databases, Java, Linux and XML. One must register and become a member, but membership is free. The website includes reviews and news about Open Source software, a list of categories, a place to contribute information about software, and a link to a newsletter.

osdir.com

OpenOffice is a multiplatform and multilingual office suite and an open-source project. The product is compatible with other major office suites and free to download, use, and distribute. It includes the key desktop applications, such as a word processor, spreadsheet, presentation manager, and drawing program, with a user interface and feature set similar to other office suites.

www.openoffice.org

StarOffice is a software suite from Sun Microsystems that includes integrated word processing, spreadsheet, presentation, drawing, and database capabilities. Academic and

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Research institutions, including Primary and Secondary (K-12) Schools, 2-and 4-year Colleges, and Universities, are eligible for a no-cost site license of StarOffice 8.

www.sun.com/software/star/staroffice/

Nvu (pronounced N-view) is a free open source multiplatform Web Authoring System that enables anyone to create web pages and manage a website with no technical expertise or knowledge of HTML.

www.nvu.com

What about sources of Internet-based curricula?

Many excellent Web sites are designed to help educators integrate the Internet into classroom experiences. Below are resources for accessing lessons, content and theme units, classroom activities, and models for developing lessons.

The Digital Equity Portal is designed to assist educators to effectively use the Internet in teaching and learning. Five dimensions (content creation; cultural relevance; effective use; quality content; and technology resources) organize the resources.

digitalequity.edreform.net/home

Educator's Reference Desk (formerly ERIC) offers links to Internet sites, educational organizations, and over 3,000 resources on a variety of educational issues.

www.eduref.org

"Gateway to Educational Materials" (GEM) is a consortium effort to provide access to the substantial, but uncataloged, collections of Internet-based educational materials that are available on various federal, state, university, non-profit and commercial Internet sites.

www.thegateway.org

This site is an online directory of free teacher-generated lesson plans for K-12 teachers. Many subjects are covered, including math, science, social studies, technology and more. Select a category and choose from a variety of featured lessons.

www.forlessonplans.com

Global SchoolNet partners with schools, communities and businesses to provide collaborative learning activities that prepare students for the workforce and help them become responsible citizens. For two decades, the Global SchoolNet Foundation (GSN) has been demonstrating and promoting international online collaborative learning.

www.globalschoolnet.org

Microsoft offers a series of themed lessons designed to help students communicate and collaborate by using new Microsoft technologies and the Internet. Each lesson is grade-

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and subject-specific, and includes a teaching guide and student activities that will make using computers more effective and more fun.

www.microsoft.com/education/?ID=ClassProductivity

The nonprofit NICI Virtual Library Co-op provides unlimited access at a very low cost to a vast array of full-text academic resources (almanacs, encyclopedias, dictionaries, over a half-million journal and magazine articles, etc.) across the K-12 curriculum for instruction and professional development.

www.vlibrary.org

This site provides a guide to volunteer programs that use e-mail contacts to help students master challenging math, science and technology. It also lists numerous examples of online mentor programs that are available to educators.

www.ed.gov/pubs/emath/

The heart of the AOL@SCHOOL system is a series of six online learning portals designed for grades K-2, 3-5, middle school, high school teachers, students, parents, and administrators. The student portals provide an easy-to-navigate environment in which students can access Web sites that have been chosen by educators as the best educational content for that grade level. Additionally, the student portals provide a suite of functional online tools such as encyclopedias, dictionaries, a calculator, and many other research and collaboration tools. The specially designed portals for teachers and administrators provide professional development and administrative help and resources, as well as the ability to search for subject and age-specific lesson plans.

school.aol.com

PBS TeacherSource has over 3,000 lesson plans using public television programs. The site provides lessons related to arts and literature, health and fitness, math, science, social studies, pre-K-2, and library media.

www.pbs.org/teachersource

The Futures Channel has an extensive library of video resources that connect students to the real world of math and science. There is a movie of the week that features someone who uses science/math in a career, such as designing roller coasters or sunglasses.

www.thefutureschannel.com

Smithsonian Education provides teachers with downloadable lesson plans related to Art and Design, Science and Technology, History and Culture, and Language Arts. The website also includes information about professional development, education services, a resource library and guidelines for a field trip to the Smithsonian.

www.smithsonianeducation.org/educators/

Concord Consortium believes that emerging technologies offer a key to improved learning for all students. They develop well-designed, interactive learning materials.

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www.concord.org

FREE Intel® Education Thinking Tools increase student learning with interactive tools designed to promote higher-order thinking in any subject. Each tool features an online workspace where students create and save visual representations of their thinking.

www.intel.com/education/tools

Learn strategies to help students understand content more deeply, think at higher levels, and become self-directed learners. Use Assessing Projects, free from Intel® Education, to create assessments that promote lifelong learning.

www.intel.com/education/assessingprojects

In Designing Effective Projects, a free online resource from Intel® Education, you'll find models of meaningful classroom projects that integrate instruction in thinking skills and tools and strategies for developing your own exemplary technology-supported learning.

www.intel.com/education/designprojects

Teaching Tolerance features resources to help develop communities that value diversity. Includes sections for teachers, parents and students.

www.tolerance.org

Center for Development and Learning strives to improve the life chances of all children, especially those at high risk, by increasing school success. It's goal is to help all children learn to higher levels and apply their knowledge toward good ends. Their website includes information about professional development for educators.

www.cdl.org/for_educators

National Geographic's education and children's programs prepare the next generation of global citizens by helping kids understand the world and their place in it through Geography Competitions, Education Outreach, and a Foundation.

www.nationalgeographic.com/education

Cable in the Classroom (CIC) fosters the use of cable content and technology to expand and enhance learning for children and youth nationwide. CIC provides more than 500 hours of copyright cleared, commercial free educational programming, three broadband projects (Shakespeare, eLectons, and Windward), and rich media literacy education materials and resources for teachers.

www.ciconline.org

The Verizon Foundation's MarcoPolo Program provides free K-12 educational resources including standards-based lesson plans and engaging interactive student materials. All educational resources are developed by the nation's leading education organizations that, with the Verizon Foundation, make up the MarcoPolo Consortium: The Kennedy Center, IRA, NCTE, NEH, AAAS, NCEE, NGS and NCTM. The MarcoPolo Program has been

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the focus of three research projects studying the effectiveness of MarcoPolo resources in helping students learn. Additional research projects are planned in the areas of Reading and Language Arts.

www.marcopolo-education.org

Apple Learning Interchange provides instructional resources to help teachers plan technology-rich lessons. Video case studies allow educators to see and hear all facets of exemplary teaching practices. ALI provides lesson plans, standards, assessments, student work, reflections, and downloadable resources.

ali.apple.com

Discovery Education provides curricular ideas, online tools, and online resources for technology integration. Discover School provides lesson plans, teaching tools, and Kathy Schrock's Guide for Educators.

school.discovery.com

The National Science Digital Library provides exemplary resources for science, technology, engineering, and mathematics (STEM) education, from preschool through adult, with materials ranging from journal articles and lesson plans to interactive animations, and from real-time data sets and technology-based tools to ask-an-expert services.

nsdl.org

The Gender & Science Digital Library provides high-quality digital resources to help educators promote interest and engagement with science, technology, engineering and mathematics education by learners of all ages, particularly females.

eecgsdl.edc.org/index.php

FunWorks offers career development resources that appeal to diverse middle and early high school students, especially populations that are underrepresented in STEM education and careers – females, minorities, students of poverty, and students with disabilities – using an array of experiential learning strategies that encourage and challenge students. Close to 300 middle school students were closely involved in its design, development, and deployment.

thefunworks.edc.org/index.php

ISTE has collaborated with Microsoft in the development of the NETS Online Technology Assessment to help teachers measure student skills in using software applications and help measure student progress toward meeting the National Educational Technology Standards for Students (NETS•S).

www.iste.org/resources/asmt/msiste/

ISTE's "Connecting Curriculum and Technology" is a superb compilation of instructional activities that integrate technology, searchable by subject and grade level.

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cnets.iste.org/students/s_book.html

CurriculumWiki is an open content online curriculum created by educators. Digital Generation Education Exchange (DGEE) created CurriculumWiki to provide a collaborative workspace for educators to develop and publish original curriculum resources. CurriculumWiki activities written by educators for their own students can be used, edited, or adapted by other educators for their students.

www.curriculumwiki.org

Family and Community

Although schools help equalize access to and use of technology for many students, the home and community continue to be important points of access and use. Any effective approach to digital equity cannot afford to exclude family and community.

What does research say about family and community?

The Pew Internet Project has conducted a series of studies on Internet use among students in the junior high school and high school grades, as well as their parents. In the most recent study, Pew conducted a survey of 1,100 children aged 12 through 17 and one of their parents in October and November of 2004. The survey found that 87 percent of all teens use the Internet at some location. Among online teens, 87 percent use the Internet at home, 78 percent at school, 74 percent at the home of a friend or relative, 54 percent at a library, and 9 percent somewhere else in the community. Although more children go online at school, the majority of Internet use takes place at home. Of the 87 percent of all teens who are online, about three-fourths (74 percent) use the Internet most frequently at home, which is down from 83 percent in 2000. Only 17 percent of online teens most frequently use the Internet at school, but that is up from 11 percent in 2000.

www.pewinternet.org/report_display.asp?r=162

www.pewtrusts.com/pdf/PIP_Internet_and_schools_05.pdf

A study by the Kaiser Family Foundation surveyed 2,032 students in grades three through 12, ages 8 through 18, in 2004. The study also found that more than four-fifths of these children live in homes with at least one computer (86 percent), video game console (83 percent), and cable or satellite service (82 percent). Nearly three-quarters (74 percent) live in homes with Internet access (74 percent) and more than half receive premium channels (55 percent). Nearly one-half (49 percent) have a video game console (49 percent) in their bedrooms. More than one-third of children aged 8 through 18 have a telephone (40 percent) and cable or satellite service (37 percent) in their bedrooms. Nearly one-third (31 percent) have a computer in their bedrooms, but only one-fifth (20 percent) have personal Internet access. More than one-half of all children aged 8 through 18 have their own portable CD or tape player (61 percent) and handheld video game. More than one-third (39 percent) have their own cell phone. At least one in ten children

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aged 8 through 18 has a personal MP3 player (18 percent), handheld internet device (13 percent), laptop computer (12 percent), and personal digital assistant (11 percent).

www.kff.org/entmedia/entmedia030905pkg.cfm

Where can I find resources for parents and families?

Teaching Tolerance features resources to help develop communities that value diversity. The website includes sections for teachers, parents and students.

www.tolerance.org

Center for Development and Learning strives to improve the life chances of all children, especially those at high risk, by increasing school success. Its goal is to help all children learn at higher levels and apply their knowledge toward good ends. Their website includes information about featured programs, resources, quick help, real stories and e-news.

www.cdl.org/for_families

Cable in the Classroom (CIC) fosters the use of cable content and technology to expand and enhance learning for children and youth nationwide. CIC provides rich media literacy education materials and resources for parents and caregivers.

www.ciconline.org/Resources/ForParents/

The i-LEARN Online program was created by i-SAFE in partnership with Microsoft to provide an 'On Demand' system for Internet safety education. The program provides training modules that equip parents with tools to protect their kids/teens and family online. Those trained can educate other adults to protect their families.

ilearn.isafe.org

The Yahoo Parent Guide provides information parents need to make informed decisions about their family's Web use. The guide provides information about Internet safety, links to blocking and filtering resources, and a Savvy Surfing Quiz for kids.

yahooligans.yahoo.com/parents/

Each section of the Youth Division of the Internet Public Library has a special collection of resources for parents and teachers. The Parent and Teacher Corner brings them together here for easy reference.

www.ipl.org/kidspace/browse/tcn0000

Where can people use computers in their community?

Even if all classrooms magically get Internet access and all teachers integrate technology into their lessons, not all students have access to computers and the Internet at home. However, in almost every community, public libraries are one common source of access

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to computers and the Internet. Below are additional sources of information about community access to computers and the Internet.

Launched in 1995, Neighborhood Networks is a community-based initiative of the U.S. Department of Housing and Urban Development (HUD). Through private/public partnerships, Neighborhood Networks establishes multi-service community technology centers that bring digital opportunity and lifelong learning to residents of insured and assisted housing. More than 800 Neighborhood Networks centers are operating in HUD multifamily housing properties throughout the United States, including Puerto Rico.

www.hud.gov/nnw/nnwaboutnn.html

Boys' and Girls' Clubs of America is providing clubs with the tools to make members and staff effective technology users. Through gifts from Microsoft, each club will receive a comprehensive package of software, hardware and workshops. You can use the website to find a Boys' and Girls' Club near you.

www.bgca.org/clubs

Connect for Kids is the Benton Foundation's online action and information center for adults who want to make their communities better for children. This site offers up-to-date information about what's happening in your state, and how you can make a difference close to home.

www.connectforkids.org

The U.S. Department of Education publishes a toolkit for community leaders, government staff, business leaders and local volunteers. It gives basic tips on how to bridge the digital divide by developing a community technology project.

www.ed.gov/Technology/tool_kit.html

What are Community Technology Centers, and how can they help?

The Community Technology Centers program of the U.S. Dept. of Education promotes the development of model programs that demonstrate the educational effectiveness of technology in urban and rural areas and economically distressed communities. Community technology centers provide children and adults with access to information technology and related learning services. CTCs can be invaluable sources of information and technical assistance for educators, students, and students' families in low-income communities and neighborhoods.

www.ctcnet.org

Produced by the Children's Partnership, this resource helps community organizations to find out what is working at the state level and in local cities around the country. It includes state-by-state examples and case studies of how technology is working to bridge the digital divide.

www.techpolicybank.org