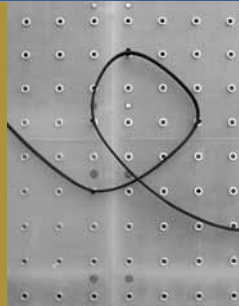




INSTITUTE of
Museum and Library
SERVICES



Charting the Landscape, Mapping New Paths:

Museums, Libraries, and K-12 Learning

August 2004

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ABOUT IMLS AND K-12 LEARNING

The Institute of Museum and Library Services is dedicated to creating and sustaining a Nation of Learners by helping libraries and museums serve their communities. Many IMLS funding programs support the goals of strengthening effective partnerships among museums, libraries, and K-12 teaching and learning.

For more information about these and other IMLS programs and activities, visit www.imls.gov.

IMLS funding programs with particular relevance to museums, libraries, and K-12 include:

Grants to States. Through the Library Services and Technology Act (LSTA), a section of the Museum and Library Services Act of 2003, IMLS provides funds to State Library Administrative Agencies using a population-based formula. State libraries may use the appropriation to support statewide initiatives and services; they may also distribute funds through subgrant competitions or cooperative agreements to public, academic, research, school, and special libraries in their state.

National Leadership Grants encourage leadership in the education of lifelong learners in the 21st century, the innovative use of new technologies, model projects that can be replicated throughout the field, and an extended impact of federal dollars through collaborative projects. Grants are made to museums, libraries, and other organizations in three categories: *Advancing Learning Communities*, *Building Digital Resources*, and *Research and Demonstration*.

Partnership for a Nation of Learners Community Collaboration Grants support museum/library/public broadcasting collaborations that address community civic and educational needs.

Museums for America Grants provide support to museums for their work in sustaining cultural heritage, supporting lifelong learning, and serving as centers of community engagement.

21st Century Museum Professionals Grants support a range of professional development activities for museum professionals.

Librarians for the 21st Century Grants support efforts to recruit and educate the next generation of librarians and the faculty who will prepare them for careers in library science. They also support research, curriculum development, and continuing education.

Native American Museum and Library Services Grants support the development and enhancement of programs and services in libraries and museums that serve Native American and Native Hawaiian communities.

Museum Assessment Program (MAP) provides noncompetitive grants to museums for technical assistance in four areas (1) institutional, (2) collections management, (3) public dimension, and (4) governance. It is administered by the American Association of Museums.

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PREFACE

Robert S. Martin, Director, Institute of Museum and Library Services

The Institute of Museum and Library Services (IMLS) is an independent federal agency that serves as the primary source of federal grants for the nation's libraries and museums. Our grants to museums and libraries build institutional capacity, support core library and museum services, encourage excellence, promote innovation, and foster collaboration between and among museums and libraries. Through our grant programs and convening authority, IMLS provides leadership for the library and museum fields.

Our agency's mission is to create and sustain a Nation of Learners by helping museums and libraries serve their communities. But just what do we mean by that phrase—a Nation of Learners? In the 21st century, the future of our democracy and the strength of our economy depend on each individual's ability to think critically, learn new skills, and adapt to a rapidly changing culture and economy. In short, citizens must have the ability to learn throughout their lifetimes. At IMLS, we believe that this responsibility for lifelong learning, for creating and sustaining a learning society, cuts across social, cultural, political, and institutional boundaries. As a government agency, this principle is at the heart of our public mandate. Our 2003 reauthorization charges the agency to "encourage and support museums [and libraries] in carrying out their educational role as core providers of learning in conjunction with schools, families, and communities." Fulfilling that charge is what we mean by creating a Nation of Learners.

Learning and education have always been central to IMLS. In the 1990s, the Institute of Museum Services (the precursor to IMLS) launched a series of initiatives to strengthen museum partnerships with schools, held a national conference, and published a case study workbook, *True Needs, True Partners*. In 1996, and again in 2002, the agency conducted two national surveys that charted the meteoric rise of museum investments in K-12 learning. Most museums reported that the number of students, teachers, and schools they

served had increased steadily since 1991. Museums offered schools a range of activities, including on-site visits; pre- and post-visit services to students and teachers; resource kits and traveling exhibits; web-based experiences and curricula; and in-service teacher training. According to the 2002 survey, museums of all types and sizes together invested more than \$1 billion, and millions of instructional hours, in K-12 educational programs from 2000-2001.

In June 2002, IMLS worked with Laura Bush and the Office of the First Lady to convene and publish the proceedings from the first-ever White House Conference on School Libraries, a landmark event that brought together leaders from the fields of education, library services, government, and philanthropy to highlight the importance of school libraries in children's education. At this conference, attendees heard from government and foundation leaders, researchers, and librarians about a variety of studies that demonstrated the power of the library (including school, public, and academic libraries) in students' learning. Libraries encourage reading and literacy; they provide venues for studying homework (often with trained volunteers who serve as homework mentors); and they provide computer access to online educational resources. The distinguished speakers agreed that libraries—in classrooms, schools, and communities—are vital for children's achievement and developing informational needs. In many states and in urban and rural settings, study after study has documented how well-supported school libraries improve academic achievement.

IMLS is the primary federal agency for funding and distribution of information about library and museum services. With its mandate to provide leadership and support to the library and museum fields and its focus on the educational missions of museums and libraries, the agency possesses a unique vantage point for bridging the museum and library communities and convening them—with other stakeholders—around common areas of interest.

collaboration

To that end, on August 30-31, 2004, the Institute of Museum and Library Services hosted “Charting the Landscape/Mapping New Paths: Museums, Libraries, and K-12 Education,” a conference examining the intersections of museums, libraries, and K-12 education. More than seventy educators, researchers, policymakers, and museum and library professionals participated in the workshop—leaders representing a diversity of professions who nevertheless share a commitment to learning and innovation. Though many of them have been involved in pioneering efforts within their respective fields, they had not yet had the chance to come together to think and learn from each other. This was their opportunity to initiate a longer, more in-depth conversation about the collaborative role of museums, libraries, and K-12 education in America—and to discuss how those relationships might be strengthened and multiplied.

OUR ULTIMATE GOALS ARE TWOFOLD:

- To **CULTIVATE** a “community of practice” in which representatives from libraries, museums, K-12, and other organizations could continue to define new programs and networks that create more effective in- and out-of-school K-12 learning experiences; share research and evidence across sectors; and support new research and practice in order to foster more effective student learning; and
- To **STRENGTHEN** the presence of libraries and museums at the policy-making “tables” when K-12 educational priorities and policies are considered at the national, state, and local levels.

The purpose of this report is to capture key issues that emerged at the workshop and to provide some common language around a vision for how museum/school/library partnerships can contribute to a learning society. Workshop participants represented the leading edge of this evolving dynamic, and examples of their seminal projects and partnerships accompany this report. The main body of the report synthesizes the substance of the conversations, discussions, and visions that emerged from the two-day workshop. “We have an

opportunity to capitalize on the value of work already being done,” said one participant. With a clear set of models and best practices, education policymakers can focus on using funds more effectively, creating “a structure of learning that includes more real world inquiries and problem-solving.” But more important, the report speaks to the broader desire to inject new life into the debate around the future of education and learning in America. As one participant put it, “We have an opportunity to create synergy and leverage resources to improve learning by re-envisioning education and lifelong learning.”

Using facilitator Lou Wetherbee’s free-flowing, self-directed approach, participants created eight discussion groups around what they dubbed “The Major Themes.” These were the issues they believed stakeholders must address as they strive to articulate common language, frameworks, public policies, and areas for action that would support and advance successful and sustainable museum, library, and K-12 education partnerships. In identifying problem areas and challenges, articulating what the variety of stakeholders required for success, and suggesting next steps, this report should not obscure the simple truth that we are all responsible for creating and sustaining a learning society. We believe that school/museum/library partnerships will become an indispensable feature of that landscape.

SUMMARY OF CRITICAL FINDINGS

The Major Themes

Workshop participants selected the following issues as priorities for mapping new paths in museum/library/K-12 partnerships:

Putting learners' needs first.

Balancing our institutions' missions, core competencies, and responsibilities with the creation of new **collaborative learning programs**.

Leveraging our current knowledge and accomplishments in school, museum, and library collaborations.

Supporting parents and caregivers in advancing children's learning.

Stimulating innovation and pushing the envelope.

Increasing effective use of **digitized resources** in the classroom.

Prioritizing research and evaluation.

Understanding and influencing educators, policymakers, and the **education policy development** process.

Participants from the "Charting the Landscape/Mapping New Paths" conference identified the following practical actionable steps that practitioners, policymakers, museum and library professionals, and educators should take to support the development of a learning society, with museum, library, and school partnerships as a central element of that society.

Use the bully pulpit to spread the idea of learning communities and the role of museums and libraries

- Publish a "call to action" that lays out the idea of the learning society.
- Reach out to the national formal education community.
- Involve boards of directors in engaging other community leaders.

Build a community of practice

- Create a clearinghouse for literature, best practices, and research.
- Develop opportunities and tools for convening stakeholders and building the network.
- Fund innovative partnerships and disseminate case studies of what worked and what did not.

SUMMARY OF CRITICAL FINDINGS

Build better relationships with education policymakers and other education stakeholders

- Create formal partnerships at the federal, state, and local levels with federal and state education policymakers.
- Work with education associations, parent organizations, and communities towards a common education policy agenda.

Support increased research and evaluation efforts

- Examine the impact of museum and library experiences and programs on K-12 learning.
- Link research on informal learning to other evidence-based research in formal education.
- Study how new interactive technologies can positively affect learning.
- Investigate ways to improve access to, and effective use of, digitized educational resources.
- Evaluate programs across time and venue to obtain more longitudinal and systemic data.

Encourage training and professional development

- Create a “curriculum for convergence” for practitioners in museums, libraries, and schools that focuses on the skills and approaches required for successful collaboration.
- Emphasize the new landscape of learning communities in leadership development.
- Train practitioners to leverage the educational benefits of new technologies.

Speak out, share practices, build relationships in the educational community, support increased research and evaluation, and encourage training and development.



A Center for Informal Learning and Schools practitioner investigates science exhibits at the Exploratorium. (Exploratorium)

SURVEYING THE LANDSCAPE: TOWARDS A LEARNING SOCIETY

The “Charting the Landscape/Mapping New Paths” workshop comprised leaders from museums, libraries, formal education, research and evaluation, related government agencies, foundations, and other organizations, who came together to discuss the role of K-12 education as a foundation for lifelong learning and full participation in family, community, work, and society. These thought leaders were creators, stewards, and managers of cutting-edge partnerships between schools, libraries, and museums. They represented myriad enterprises related to learning, each with a small piece of the big picture puzzle: how school/ museum/library partnerships could support and enrich a learning society. They were eager to

discover how the pieces fit together and to see what the final picture would look like. Would they find that they were continuing historical practices and approaches or embarking on a significantly new way of operating? Could they form, among themselves, a new learning community, a different kind of national coalition with possibilities for growth and expansion? As one attendee later remarked, “I’m not sure if I’m a lone star or part of a constellation.”

IMLS Director for Strategic Partnerships Marsha Semmel introduced IMLS Director Robert S. Martin, whose opening address outlined the social, political, and economic forces shaping museum, school, and library partnerships. “We often hear it said today that we are living in an information age,” he began. “But in a world that is drowning in information, we are hungry for knowledge.” Economic globalization and the emergence of an information economy have made it more important than ever that Americans have the skills and the opportunities to learn and develop throughout their lifetimes. It is therefore not enough to be an information society. “We must become a learning society, and that is why at the Institute of Museum and Library Services we are dedicated to the purpose of creating and sustaining a nation

of learners. In a learning society, museums and libraries are fundamental components of the educational infrastructure. As such, as our authorizing legislation states, they have a mandate and responsibility to provide resources and services that stimulate and support learning throughout the lifetime, including the K-12 years.”

The needs of a learning society and the challenges of sustaining a Nation of Learners compel museums and libraries to re-imagine their roles in society. “Changes in the environment in which our institutions operate—in the technological infrastructure through which we deliver services, in the galleries and programmatic spaces we create, in the economic substrate that finances operations, and in the social landscape that defines the communities we serve—dictate corresponding changes in the way libraries and museums structure and deliver services. Our emerging understanding of the nature of learning and the way learning interacts with other aspects of our environment is likely to result in an even more rapid change in the coming decade.”

Just as librarians and museum professionals have been seeking new ways to cope with these changes, K-12 teachers and administrators have been working to

Economic globalization and the emergence of an information economy have made it more important than ever that Americans have the skills and the opportunities to learn and develop throughout their lifetimes.

discovery

accommodate equally profound changes in education. “The structures we have in place today for providing public education evolved in the nineteenth century in response to specific environmental conditions and social needs,” Martin said. “Today, we are witnessing conspicuous challenges to the basic assumptions of schooling. The dramatic rise of home schooling in the past decade is but one example.” Martin pointed to a heightened examination of traditional and new roles for family, home, workplace, and community—in addition to schools—in learning. “We are here today and tomorrow to examine how, in this new learning ecosystem, museums, libraries and K-12 can be more effective partners.”

Martin dared the participants to think deeply about the unique challenges schools currently face. Citing *The Road to 21st Century Learning*, published by the Partnership for 21st Century Skills, a public/private collaboration of leading businesses, education, and government groups, he noted a growing sense of urgency about the future of America that is based on the recognition that the nation needs a well-educated, engaged populace to achieve national security and economic prosperity. There is a “broad consensus that there must be significant improvement

in the schools.” In addition to core subjects of English, reading, math, science, foreign languages, civics, government, economics, art, history, and geography, the Partnership has identified new core skills: information and communication skills, thinking and problem solving skills, interpersonal and self-directional skills. According to the report, twenty-first century tools include information and communication technologies, and twenty-first century context refers to the power of learning academic content through real world examples, applications and experiences, both inside and outside of schools. These are areas where museums and libraries have important expertise to offer. “In the twenty-first century environment of rapid change, the schools alone are not enough to foster the ability to learn throughout the lifetime,” he said. “We need to embrace a bold new vision of learning. We need to think beyond our institutional boxes. Libraries, museums, and schools are all important elements in this web of learning.”

Martin urged workshop participants to think more broadly about the impact of evolving technologies on our understanding of learning and community. The Internet has transformed the way people acquire

CORE SUBJECTS	NEW CORE SKILLS
English, reading or language arts	Information and Communication Skills
Mathematics	
Science	Thinking and Problem Solving Skills
Civics	
Government	
Economics	Interpersonal and Self-directional Skills
Arts	
History	
Geography	

In the twenty-first century environment of rapid change, the schools alone are not enough to foster the ability to learn throughout the lifetime.

information, products, and services. Members of the public aren't concerned about how museums and libraries define themselves as institutions, he said. They just want access to the content inside. "There is now a new premium on customer satisfaction and self-sufficiency that will transform the structure and delivery of library and museum services."

Arguably more important, however, is the way in which technology is blurring the institutional and professional boundaries that once separated museums, schools, and libraries. Learning, work, and leisure time are fusing into a seamless world. "We must build a fabric of social agencies that facilitates continuous lifelong learning among learners of all ages and circumstances. This fabric should weave together all institutions with stewardship for the production and dissemination of knowledge—including schools, libraries, and museums—into a 'seamless learning infrastructure.'" This infrastructure can be virtual, thanks to new technologically based ways of capturing and accessing educational content and enabling interactive learning processes. But it is also physical and actual, as the assets of libraries and museums as venues for learning during and after school—including architecture, space allocation, and hours of operation—are re-imagined and re-thought in many new ways.

As Martin spoke, the mood in the room began to shift. Workshop organizers had anticipated that participants would want to discuss the resources and assets that museums and libraries bring to the table in K-12 partnerships, but participants were galvanized by the larger issue of learning what Martin was outlining. The responsibility for learning is not and should not be the exclusive preserve of formal educational institutions. It is a community-wide responsibility. Lifelong learning should be a continuum, with formal and non-formal learning opportunities complementing one another. Learning does not start at the school room door, and neither should it stop there.

"This conference provides an opportunity for us to consider ways in which we can further a seamless infrastructure for K-12 teaching and learning. The time to do this is now."

In the 21st century, a competitive successful society requires people who never stop learning. Therefore, K-12 education must move beyond the traditional curriculum to embrace technology, communication, problem solving and interpersonal skills and much more. By building the foundation in K-12, we can set the groundwork for lifetime acquisition of knowledge.

DEFINING THE VISION: PLACING LEARNERS AT THE CENTER

Learning Communities

Creating a vision of museum/school/library partnerships in a learning society begins with imagining what is possible. What do we mean by a learning community? Who are the community's members? How do we define a successful learning community? Workshop discussion built on Martin's remarks, with participants contributing their own views, contending that a learning community is one that believes that learning happens anywhere and everywhere, that it is personal and individualized, and that it draws on all the community's resources. At a minimum, a learning society develops, values, and supports citizens as learners, and recognizes that all learning institutions—families, schools, libraries, museums, public service media, arts and cultural organizations, community organizations, civic and faith-based groups—contribute to its strength.

Community as Campus

As participants considered the role of museum/school/library partnerships in a learning society, they envisioned a model that placed individual learners at the center (Figure 1.)

In this vision, museums, libraries, and schools are core hubs of the learning society.

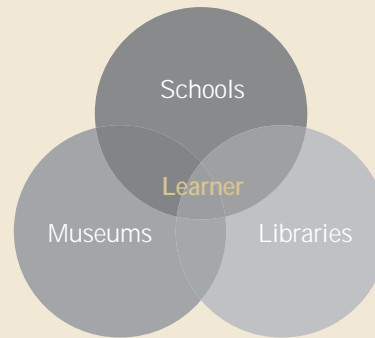


Figure 1: A New Model for Learning.

Throughout the conference, there was example after example of innovation and possibility: the Transitions Academy, a pilot program run by Port Discovery, the Baltimore Children's Museum, for underachieving ninth graders in the Baltimore school system; the Austin Independent School District's efforts to disseminate museum curricula guides to school libraries; the Chicago Public Schools/University of Chicago Internet Project, a partnership between the university and educators in twenty-six public schools to improve everyday teaching and learning via information technologies. Museums and libraries have strong, complementary, and rich resources for learning—collections, opportunities for authentic experiences, scholarship, expertise, safe and trusted settings, multiple learning pathways, and a variety of subject-based and skills-based learning

opportunities. And while the success stories are out there, there are significant challenges, too. Libraries, museums, and schools have different organizational cultures, understandings of core competencies, and business models, and achieving the needed scale will require institutions and policymakers to not only build on existing successes, but rethink some basic assumptions about mission, audience, resource allocation, and community. "The museums I represent

CASE STUDY

In the Birmingham Learning Initiative, an emerging community development partnership in Alabama, the Birmingham Cultural Alliance, an association of the city's cultural institutions, has partnered with the public schools to create a cross-generational "Downtown Learning Zone." Otis Dismuke, director of community education for the Birmingham City Public Schools, hailed the Learning Zone as one of the "premier after-school programs" in the Birmingham City Public Schools. "The whole city is a learning center for the students, and that's a wonderful experience," he said. There is great power in increased collaboration between and among museums, libraries, and K-12 educational institutions; and as the work of conference participants illustrated, this is a space rich with innovation.

are struggling with redefining their operational model in these changing times," said Bonnie VanDorn, executive director of the Association of Science-Technology Centers, an international not-for-profit organization representing more than 540 science centers and museums in forty countries. "New insights about how to address our educational mission are needed to serve the learning needs of our communities."

Delivering Value to the Public

In an era where there are multiple legitimate and justifiable demands on resources, policymakers and the public are raising the bar on non-profits and public institutions, requiring that they adhere to high levels of fiscal and ethical accountability, operate effectively and efficiently, and fulfill missions that are relevant to people's lives. In this context, collaboration may enable schools, museums, and libraries to strengthen their public standing, improve their services and programs, and better meet the needs of larger and more diverse cross-sections of learners, especially underserved learners in urban and rural areas. Consider the Henry Ford Academy and the Kentucky Department for Libraries and Archives' School and Public Library Partnership Programs, two examples of partnerships that have significantly broadened and

deepened the roles museums and libraries play in relation to public education. "I believe strongly in the notion of collaboration, and in the importance of buttressing the besieged public education system," argued Sonnet Takahisa, a consultant for Arts and Cultural Partnerships at New Visions for Public Schools, an education reform organization dedicated to improving the quality of education children receive in New York City's public schools. Before joining New Visions, Takahisa founded the New York City Museum School. "I saw the power of museums for schools and schools for museums." Likewise, as Director of Education for the Birmingham Civil Rights Institute, Ahmad Ward has seen the value that public programming, teacher workshops and training sessions have brought to both his institution and the public it serves. In addition to the Institute's role in the Learning Zone, it has ongoing relationships with teachers and students through its regular education and outreach programs. "Collaborating with schools and libraries has opened our doors to a brand new audience and helped to broaden our horizons as well," he said.

DEFINING THE VISION: PLACING LEARNERS AT THE CENTER

Museums, libraries and schools play concentric roles in modern education, with the learner at the point of intersection between the three institutions. In a time of limited financial resources, however, institutions' public value will be judged not only by programmatic effectiveness, but by the ability to meet stringent standards of fiscal and ethical accountability.

FACING THREE CHALLENGES

Re-defining Education and Learning Over a Lifetime

Practitioners within the museum, library, and K-12 worlds are adopting a vision of education that encompasses learning beyond school walls. Although public discourse on education tends to focus on the “three R’s,” it is imperative that this conversation includes not only the core content disciplines but also that it embraces a broader view of education and learning. “If we don’t,” said Wendy Blackwell, Port Discovery’s director of education, “we will miss the opportunity to cross-pollinate education and inject new life into communities of learners.” Increasingly, scholars, researchers, teachers, members of the business community, and policymakers are recognizing the significance of learning in so-called “informal” sectors, like libraries and museums, as well as the effectiveness of learning and teaching strategies that are participatory, interactive, and practical. The Business Higher Education Forum has identified such skills and attributes as “leadership, teamwork, problem solving, self-management, analytical thinking, adaptability, time management, basic communications, and global consciousness” as necessary for a Nation of Learners. Through exhibits, hands-on activities, simulations, self-directed learning opportunities, and

apprenticeship and mentoring programs, libraries and museums have demonstrated expertise in these increasingly relevant teaching and learning strategies, which can serve teachers and students alike. These techniques also have currency before and beyond the school years, supporting people’s lifelong learning and information gathering needs as citizens, family members, and workers.

Re-positioning Professional Roles

It is one thing to talk in the abstract about the convergence of learning institutions; it is quite another to realize that vision. As museums and libraries realign their purviews and re-imagine their work to support the needs of the learning society, the roles of people within those institutions will inevitably change, as will the organizations’ cultures and workflows. And for many people change is difficult, particularly when it comes to professional identity. Toward the close of the workshop, despite the emphasis on collaboration and convergence, participants had yet to tackle the impact of these changes on professional roles, identity, and training. “I am a librarian. You are a museum professional. You are a high school administrator,” Robert Martin commented, noting the inherent difficulty of forging new professional roles. “Your identity is as an elementary school librarian or as

a university professor. These are potential impediments, I think, for us to find ways to realize this rather impressive agenda of things we need to do to move forward to make this new vision of learning work.” Institutions need connectors and networks to help drive the conceptual and operational changes needed for successful convergence. A participant observed, “It’s really a pipeline issue, [a question of] how we can prepare the kinds of community educators we need.”

As museums and libraries realign their purviews and re-imagine their work to support the needs of the learning society, the roles of people within those institutions will inevitably change.

Increasing Research and Evaluation Activities

Research conducted over the past decade within the museum and library fields has strengthened our understanding of the roles museums and libraries play in supporting learning. School libraries, studies have found, are a critical factor in student academic achievement. Likewise, museums play an instrumental role in reinforcing the multi-dimensional, iterative, and experiential dimensions of learning. Little research, however, addresses museum and library learning over time or across environments, including the complex learning interactions created by partnerships among museums, libraries, and schools. Anecdotal evidence from students, teachers, and museum/library professionals suggests that collaborations are positive, but the lack of formal

evidence needs to be addressed. Priority research and evaluation questions focus on the ways in which learning environments (“formal” and “informal”) support effective learning. This scope of inquiry requires continued research into the complexities of learning itself, as well as an understanding of learning in different settings and within and among different social groups. What best prepares students, ages five to eighteen, to participate fully in society and in the workforce? How do they become effective lifelong learners? How can museums and libraries best support and complement schooling to achieve these goals? If we can agree on the essential capacities K-12 education should build, what evidence can credibly demonstrate age- and stage-appropriate progress? How can we engage and organize our full educational infrastructure—including and beyond museums, libraries, and schools—to produce those outcomes? Once we understand more about what works, how can we communicate successes so that education policy provides the resources to extend and expand our successes? Finally, how can research results move effectively into practice?

FACING THREE CHALLENGES

Three key challenges are: **successfully redefining education as a lifetime endeavor; understanding the changing nature of professional roles; and moving beyond anecdotal evidence to show what works.**

What best prepares students, ages five to eighteen, to participate fully in society and in the workforce? How do they become effective lifelong learners?

FILLING THE GAPS: TOOLS AND STRATEGIES

Leveraging Current Knowledge and Creating the Community of Practice

Workshop participants shared many examples of their own collaborative learning and teaching projects and practices. These projects reflect the blurring of institutional boundaries, new approaches to professional development, partnerships to meet state and national educational standards, and applications of digital technologies. (The examples throughout this report describe some of these efforts.) “Unless we leverage our current knowledge, we will miss out on an opportunity to recognize the value of work already being done, to use funds more effectively rather than reinventing the wheel,” said Sylvia Norton, coordinator for school library programs for the Maine Department of Education and the Maine State Library. “We have the opportunity to nudge a structure of learning to create more real world inquiries and problem-solving.” This is fundamentally an issue of knowledge-building. Potential leaders and innovators need to be identified and supported. Successful collaborations and their results need to be documented and disseminated through best practice case studies. Workshop attendees emphasized that the case studies should describe and dissect partnerships, successful and failed, examining their programmatic, financial, and human costs and benefits. Case studies should also examine key indicators

for success and potential for replicability. In addition, on a national and local level, organizations must find or create opportunities to come together physically and virtually to identify community learning needs and to explore how their respective resources can effectively address those needs at a broad systemic level or in specific locales. Without a “third place” that helps to foster and sustain a network through which to share ideas and spur innovation, noted Adrian K. Haugabrook, Executive Director of Citizen Schools University in Boston, Massachusetts, “I suspect there would continue to be duplication of innovation, few opportunities to demonstrate and evaluate potential exemplary models, and fewer opportunities to capitalize on the assets of learning communities.” Professional networking opportunities would support the cross-fertilization necessary for widespread collaboration. “We need to establish networks across professional organizations and associations at both the national and grassroots levels,” urged one participant.

Practicing Partnership

Workshop participants believed that identifying and mastering the salient characteristics of successful collaborations would play an essential role in enabling museums, libraries and schools to make a positive and sustained difference in K-12 education. Strong collaborations are



characterized by committed institutions with results-focused leaders and clear definitions of roles, both within and among partner organizations. Leaders of successful collaborations also take the time to get to know their partner organizations’ strengths, weaknesses, limitations, and core competencies. “You must get to know the strengths and operating standards and day-to-day procedures of each organization,” said Benjamin Lorch, Managing Director of The Chicago Public Schools/University of Chicago Internet Project. “From there, you can develop your goals—understanding, for example, that each organization has different deadlines and fiscal timelines and priorities throughout the year, that certain times are going to be better than others for doing work. This all rolls up into learning each other’s culture.” Strong collaborations also share risks and rewards while striving towards common goals.

innovation

Creating a Climate of Innovation

Innovation takes many forms—organizational, operational, strategic, technological—each of which is equally important to the vision of a learning society. In many cases, different types of innovation overlap with and support one another. Hybrid institutions like museum schools, for example, embrace new operational and organizational models, while library-based teacher resource centers put a new spin on the strategic role school librarians play. Digital technologies,

too, are an important tool for spurring innovation and collaboration. In the coming years, the convergence of wireless technologies, Internet, telephony, television and film, and text will create new possibilities for collaborating across institutional boundaries and for creating new generations of inter-linked, accessible, and robust digital resources for teaching and learning. As more classrooms are wired for the Internet, teachers (often with the assistance of the school library media specialist) are becoming more proficient in integrating web-based materials in their instruction. Internet-based teaching materials and digital collections are already a reality. A National Science Digital Library is in the making, and workshop participants offered suggestions for a National Cultural Heritage Digital Library. They noted that as institutions develop shared standards and protocols for digitized materials, it will be easier to share resources and work together. The challenge, said R. David Lankes, Executive Director of the Information Institute of Syracuse, is to create digital objects in the fields of cultural heritage, history, and the arts that are important to the public. “We need to be building and integrating this constant cultural heritage into a digital form that is accessible to the library, museum, and K-12 learning community. It needs to be very concrete.”

Involving All Stakeholders

“Public education, now seen as the chief responsibility of schools, will continue to falter and will lose students and community support unless we take a more active role in redefining education,” said Mary Ellen Munley, experienced museum educator and principal of a Chicago-based firm dedicated to enhancing the role of museums in the lives of people and communities. “Relevance and success of public education requires the convergence of community resources.” Schools, museums, and libraries need to partner with other community institutions (social service agencies, daycare providers, parks and recreation boards, community-based organizations) to better leverage the full range of community learning networks. How can institutions work collectively to pay special attention to underserved children? How can they use their collaborative resources to close the K-12 achievement gap that exists in many communities? How can they collaboratively address the needs of rural as well as urban populations? Participants saw a priority in bringing parents and caregivers on board, too, by making them more aware of the ways that these community resources can work together more effectively for the well-being of the young people. Given the enormous pressures facing families today, school/ museum/library collaborations need



to provide multiple paths for parent/caregiver involvement. They need to explore how to reach families effectively. Museums and libraries serve as important venues for family learning experiences that occur after school, on weekends, and during the summer. Workshop participants noted that museums and libraries can provide separate but concurrent adult learning programs—in such areas as basic literacy, English language instruction, civics education, or career advancement—that meet different family members' learning needs.

Shaping Public Policy

Arguably the greatest obstacle facing museums and libraries is the fact that policymakers and the public generally do not understand the many ways in which museums and libraries see learning and education as a principal role and institutional responsibility. A top priority, therefore, is reframing the public conversation about learning to include institutions beyond schools. Expanding our understanding of learning in the “informal” education sector is essential. “We need to really look at some research that shows how libraries and museums contribute to the type of learning that is not easily quantified—and compare how that fits with the national education standards,” said Leslie Burger, director of the Princeton

(New Jersey) Public Library. Two steps must be taken initially to successfully influence public policy:

- Highlight strategies that successfully align programs with widely recognized measures such as state/national standards, end-of-course exams, college enrollment, and workforce development needs. Learning programs must also demonstrate how they help people to master the full range of skills and content needed to be productive citizens in today's world.
- Support additional research into the nature of informal learning and its relationship to, and influence on, learning in the classroom. A combination of qualitative and quantitative data from a more robust research effort can shed valuable light on the ways in which libraries and museums make a difference.

In order to influence the ongoing public policy debate about education reform, advocates of school/museum/library collaboration need to find champions in the public sphere capable of bringing museums and libraries to the education policy-making table.

FILLING THE GAPS: TOOLS AND STRATEGIES

Five steps to making the vision a reality: foster and sustain a network to share best practices; learn what makes partnerships work; encourage innovation; get everyone involved, including parents and caregivers; and educate and work with policymakers.

EMBRACING INNOVATION: EXAMPLES OF PARTNERSHIP, COLLABORATION, AND LEARNING

In the closing session of the workshop, participants were asked to consider one last set of questions: What is at stake? What happens if the goal of strengthening museum, library, and school collaboration is never realized? What opportunities would be lost?

One thing came through loud and clear: change is already underway and partnerships are evolving at the local level. Policymakers, educators, and museum and library professionals must develop the policy infrastructure and funding mechanisms needed to bring these efforts to scale. “The blurring of the lines has begun to occur in many communities,”

one participant observed. “If we do not work on the national and state levels to promote organized change, we are in danger of creating, once again, have and have not communities, progressive and underdeveloped systems that do not address the learning needs of global societies.”

On the other hand, as one participant noted, there is “an opportunity to cross-pollinate education and inject new life into communities of learners if we can refine, highlight, document, and share examples.” Many of the new models, best practices, and emerging partnerships still exist in relative isolation, with too little dissemination, analysis, and cross-fertilization. Conference participants made great strides in sketching out pioneering relationships between these institutions and K-12 schools, teachers, and administrators—and in imagining new possibilities.

Although collaborations among museums, schools, and libraries are broad and diverse, the various projects represented by workshop participants generally reflected four broad brush approaches:

- Hybrid institutions
- Capacity-building partnerships
- Discipline-based partnerships, and
- Community and technology partnerships

These conceptual categories do not reflect the full breadth and depth of current practice, but they provide some structure for considering different collaborative possibilities. Within these four categories, the specific examples illustrate a few of the many ways in which museums and libraries are using their considerable resources and assets—collections, programs, staff expertise, experience with new technologies, relationships with family groups—to develop and sustain different kinds of collaborations and to effectively address students’ learning needs.

Hybrid Institutions: The Museum School

Around the country, some school systems are joining forces with museums to experiment with a new structural model: charter schools located within museum “campuses” that build on the competencies and resources of museums in order to achieve quality educational results. These partnerships blur institutional barriers and leverage the physical space, collections, exhibitions, and content knowledge of museums to broaden and deepen students’ educational experiences.

1 Henry Ford Academy (Dearborn, MI)

Launched in 1997, the Henry Ford Academy is a public charter school created by the Ford Motor Company,

If we do not work on the national and state levels to promote organized change, we are in danger of creating, once again, have and have not communities, progressive and underdeveloped systems that do not address the learning needs of global societies.

the Wayne County (Michigan) Public Schools, and the Henry Ford Museum and Greenfield Village, where the academy is also housed. The academy's mission is three-fold: to create and share new models for education reform; demonstrate the power of community partnership in education; and develop innovative curriculum to prepare students for success. "There is a lot of blurring of lines," says Steven K. Hamp, the museum's president. "This was really a natural outgrowth of our commitment to our educational mission as a museum." The curriculum, which was developed in close consultation with the school district and the Ford Motor Company, helps students develop the skills and knowledge necessary for success in today's global, high-tech marketplace. In addition to core academic content, the academy focuses on technology, communication, thinking and learning, and personal management. Students have nametags just like the museum staff, and they are an integral part of the museum's daily life.

The academy has received numerous state and national awards, including the 2002 Governor's Excellence in Practice Award and the 2001 Michigan Association of Public Schools Summit Award for its strong links between the classroom and the real world. A high

school mentoring program that piloted some of the strategies used at the academy received IMLS's National Award for Museum Service in 1998. More importantly, students, many of whom come from underserved schools in Wayne County and the City of Detroit, are scoring well above the county average on state standardized tests. Eighty-five percent make it to their senior year, and ninety percent of graduates go on to college. "When we started out, people told us we were crazy for working with this population," Hamp says. "But I think museums have failed adolescents. Inserting a bunch of urban kids on our campus has made us more visitor-focused, more kid-focused."

2 California Science Center School (Los Angeles, CA)

A partnership between the California Science Center and the Los Angeles Unified School District, the California Science Center School opened its doors on September 9, 2004, welcoming 690 students in kindergarten through fifth grade. The neighborhood-based school offers an enriched curriculum emphasizing math, science, and technology. With its integration of science content, museum-style learning, and traditional school curriculum, the Science Center School will serve as a model for improving science learning in interactive and imaginative ways.

HYBRID INSTITUTIONS: THE MUSEUM SCHOOL

- Integrating students into the life of a museum via a charter school has produced students who excel. Ninety per cent of Henry Ford Academy graduates go on to college.
- Opening for the 2004 academic year, the California Science Center School now has 690 students from K-5. The school blends science content and museum style learning with a traditional curriculum.

But the school is just one part of Amgen Center for Science Learning, a 56,000 square-foot facility designed to promote science teaching and learning throughout the entire community. “One of the goals of the Amgen Center for Science Learning is to foster a unique synergy, promoting science and science learning by forming partnerships with universities, school districts, government agencies, community groups and informal science institutions,” explains Jeff Rudolph, California Science Center president and CEO. Educators are able to attend professional development workshops, and they can conduct student and science education seminars at the center’s facilities. Teachers can also preview the latest in science instruction materials at the facility’s professional development library.

Capacity-building Partnerships

Public and school libraries have long been integral parts of the education landscape in America, but their roles are changing. New technologies are transforming the roles of public librarians and school library media specialists, and new educational structures—charter schools, small schools, home schooling—are likewise changing the traditional school library. In this context, academic institutions, foundations, and public funding agencies have formed an array of capacity-building partnerships aimed at helping libraries and librarians meet the demands of this changing field. In two cases below, academic institutions have played a research-and-development role for innovative experiments in education, learning, and library services. In the third example, a state library administrative agency is using small grants to help foster community-based collaborations among schools and libraries.

1 University of Washington Library and Information Services in Small High Schools (Seattle, WA)

In recent years, school districts across the country, including New York City, Boston, Chicago, and Seattle, have begun experimenting with restructuring large high schools into multiplexes of smaller schools under the same roof. According to early research, small schools have lower dropout rates, greater academic achievement, and higher levels of satisfaction among students, teachers, and parents. But how do small schools’ needs for library and information services differ from their larger counterparts? And how should existing resources for library and information services be realigned to meet the needs of small schools? These are the kinds of questions that will be addressed over the course of a three-year collaborative between the



Students visit the bus on which Rosa Parks refused to give up her seat, inciting the Montgomery Bus Boycott of 1955-56. (Henry Ford Academy)



Students race sailboats in Waterworks at the Big Lab. (California Science Center School)



Teacher Tom Shreve lectures at a 2004 summer workshop for collaborating teachers and school library media specialists. (Institute for Library and Information Literacy Education)

EMBRACING INNOVATION: EXAMPLES OF PARTNERSHIP, COLLABORATION, AND LEARNING

CAPACITY-BUILDING PARTNERSHIPS

University of Washington's Information School and five high schools in the Seattle Public School District, funded in part by the Institute of Museum and Library Services. "Small schools have a lot of potential benefits," says Michael Eisenberg, dean and professor of the Information School at the University of Washington, "but we still need to think through how we deal with centralized services like libraries and information technology." It's not just a question of rethinking the relationship of school libraries to schools, Eisenberg adds, but rather rethinking the relationship of school libraries to society in general. "The modern role of the school library is not just seven or eight hours per day," he says. "It's twenty-four seven. It's reaching into the home. It's an integrated role. It's having school library programs take their role alongside other learning institutions in society."

2 Institute for Library and Information Literacy Education (Kent, OH)

When Greg Byerly and Carolyn S. Brodie looked at the field of library and information science at the turn of the twenty-first century, the professors from Kent State University's School of Library and Information Services saw the perfect storm. The generation of school librarians and media professionals that had entered the field in the 1960s and 1970s were

retiring just as digital technologies and the Internet were transforming the ways in which students relate to media. The upshot of this convergence was a nationwide dearth of qualified school library media specialists and young adult librarians—at the very moment in which the roles those professionals played were changing quickly. First Lady Laura Bush, herself a former school librarian, recognized this problem as well and helped create the "Recruiting and Educating Librarians for the 21st Century Program" at IMLS. Brodie viewed the program's genesis as "an opportune time to expand the Kent State School of Library and Information Science's efforts to increase the number of school library media specialists in Ohio." Through a pair of IMLS grants, the school has been able to offer full scholarships to thirty-four students to become either a school library media specialist or young adult librarian. At the same time, the school received funding from both IMLS and the U.S. Department of Education to launch the Institute for Library and Information Literacy Education (ILILE), in conjunction with the College and Graduate School of Education and University Libraries. ILILE is a collaboration of K-12 teachers and library and media specialists who are concerned with advancing library and information literacy in the school curriculum.

- To finely calibrate the information needs of smaller high schools and their students, the University of Washington's Information School has embarked on a three-year collaboration with 5 public high schools in Seattle.
- Retirement by "baby boom" generation librarians signals the possibility of an acute shortage of professional staff. Kent State University in Ohio is meeting this challenge with its Institute for Library and Information Literacy Education, a collaboration of K-12 teachers and library and media specialists. Since 2003, more than 800 professionals have received training.
- All learning is "local"—it happens one child at a time. So the Kentucky Department of Libraries and Archives built partnerships between public libraries and K-12 schools. "World of Readers" supports summer reading partnerships and "Prime Time Family Reading Time[®]" supports families reading together. Key to making it work: a consultant who helps local libraries (many in remote, rural areas) develop and monitor quality programs.

pioneers

Since 2003, more than eight hundred Ohio teachers and school library media specialists have attended training or continuing education programs through ILILE. The institute has partnered with a variety of Ohio organizations including the Ohio Educational Library Media Association, INFOhio (a statewide school library network), and the State Library of Ohio. Among the many ILILE projects, the institute is developing a replicable model for curriculum development and delivery through which PK-12 teachers, school library media specialists, administrators, and students promote academic success through information literacy skills. Byerly notes, "We want to show that as students learn to use library resources more effectively, they develop competence in new forms of electronic communication and information access technologies."

3 Kentucky Department for Libraries and Archives School and Public Library Partnership Programs (Frankfort, KY)

Using federal Library Services Technology Act (LSTA) funds administered by the IMLS Office of State Programs, the Kentucky Department of Libraries and Archives has developed several programs aimed at building partnerships between public libraries and K-12 schools. The agency's World of Readers program supports summer reading partnerships between libraries and schools throughout the state. In addition to its financial support, the agency has a consultant on hand to help local libraries, many of which are in remote rural areas, develop and monitor quality programs. "One of the things that has made this so successful has been our ability to disperse this to the local level," says James Nelson, state librarian and commissioner. The agency has an online program planning and resource guide, but the program is deliberately decentralized. Similar mechanisms are used for the agency's other programs: Prime Time Family Reading Time[®],

a family reading program, and the School/Library Partnership, a program that supports school and library cooperation. "We really encourage those partnerships at the local level. They are in the best position to assess what their needs really are."

Discipline-based Partnerships

Discipline-based partnerships enable museums and libraries to use their expertise to help strengthen K-12 teaching in specific content areas. Although the examples below focus on science, museums and libraries representing other disciplines, such as history and art, are involved in similar collaborations. In many disciplines, museums and libraries have developed programs that help students meet state and national reading and writing standards. In the arts, for example, research has shown that studying the arts helps to improvement achievement in other subjects, including reading, writing, and mathematics. In places like science



Fulton County Summer Reading Program (Kentucky Department for Libraries and Archives School and Public Library Partnership Programs)



CILS researchers and practitioners investigate science exhibits at the Exploratorium. (Exploratorium)



Exploring science through Primero La Ciencia at the Chicago Botanic Garden (Chicago Botanic Gardens)

EMBRACING INNOVATION: EXAMPLES OF PARTNERSHIP, COLLABORATION, AND LEARNING

centers, teachers and students can gain insight into scientific processes and methodologies. Museums and libraries house disciplinary experts who research, collect, and interpret artifacts, documents, and other aspects of material and written culture. They employ specialists who are well-versed in creating specific, content-focused learning opportunities. These discipline-based partnerships can be a win-win for all parties. By partnering with schools, museums and libraries are able to contribute meaningfully to education, while schools gain access to professional development, new curriculum, and innovative pedagogy.

1 Center for Informal Learning and Schools (San Francisco, CA)

A collaboration of the Exploratorium San Francisco, Kings College London, and the University of California Santa Cruz, the Center for Informal Learning and Schools (CILS) supports research and scholarships aimed at improving K-12 science education through the use of informal science institutions like science museums, science centers, natural history museums and zoos. "Our goal is to develop new leaders, new knowledge, and new tools that can leverage alliances between informal science learning institutions and schools," explains Dr. Rob Semper, CILS principal investigator and Exploratorium executive associate director. "We're focused on making

K-12 science education more compelling and accessible to a diverse student population, and to learning how to make use of the successful features of informal learning in formal schooling and science learning. In particular, the center is focused on bridging the worlds of research and practice and is hoping to develop usable knowledge for the field."

Founded in 2002, and initially funded by the National Science Foundation, NEC Foundation, and the Noyce Foundation, the Center has emerged as one of the leading institutions focused on strengthening the infrastructure for improving science education in the K-12 years. Over 100 museum educators have participated in CILS professional development programs, and the center has enrolled 24 graduate students and appointed eight postdoctoral fellows. According to Exploratorium Director Goery Delacote, the center's success is rooted in the extensive collaborations among academic, school, and science institutions. "It is through the creation of these authentic alliances between the K-12 system and the informal science world that science education can be significantly, and more importantly, sustainably improved." In the coming years, Semper hopes to develop the center's research base and disseminate its results more broadly to both the K-12 and the informal science education communities.

DISCIPLINE-BASED PARTNERSHIPS

- K-12 science education is made more compelling through a cross-institutional and international collaboration among the Exploratorium in San Francisco, the University of California Santa Cruz and Kings College, London. More than 100 museum educators have gone through professional development programs since 2002.



The Big Lab at the **California Science Center School** is a giant space where students can conduct a variety of experiments in physics, ecology and flotation.



The old myth is that urban kids, particularly middle-school kids, aren't interested in science. That's a myth: it just has to be taught right.

2 Chicago Botanic Gardens: Science First/Primero la Ciencia (Chicago, IL)
Community building has been an integral part of the Chicago Botanic Garden's mission since it was established in 1972. The garden has been organizing school gardens in partnerships with the Chicago Public Schools since the 1980s, and in 2002 it launched Science First, a science-immersion program aimed at upper elementary school students in Chicago Public Schools. Through a combination of classroom instruction, hands-on activities, games, and student projects, Science First has boosted student performance in the sciences. "The old myth is that urban kids, particularly middle-school kids, aren't interested in science. That's a myth: it just has to be taught right," says Larry DeBuhr, the garden's vice president of education.

In 2004, the garden launched Primero la Ciencia, a similar program aimed at students from Chicago's burgeoning Latino communities. For these and similar efforts, the Garden was awarded a 2004 National Award for Museum and Library Service, one of six organizations to win the prestigious IMLS award. "This education is vital in preparing the next generation of scientists to care for the earth's plants, which we all need for food, medicine, clothing, and shelter," says Barbara

Whitney Carr, president and CEO. Now the challenge lies in scaling up. With the right support, she adds, the garden can grow fully into its role as "a dynamic programming center providing education and scientific assistance to the citizens of Chicago, the nation, and to our international partners."

3 Museum of Science: Establishing a Gateway to Technology and Engineering Education (Boston, MA)

Although the United States led the world in technology and engineering for most of the twentieth century, global competitors are quickly closing the gap. Acknowledging this trend, thirty states now have technology standards in their state education frameworks. Massachusetts passed its standards in 2001, laying out clear goals and objectives for technology and engineering, but the commonwealth did not stipulate what instructional materials educators should use, nor did they establish a clear pedagogy. This gap is precisely what the Museum of Science in Boston hopes to bridge with its new Gateway to Technology and Engineering Education. Supported in part by an IMLS grant, the Gateway is a portal of online and physical resources that will help Massachusetts educators meet the commonwealth's technology and engineering teaching standards.

"We learned that in order to implement entirely new educational standards, educators need a well-organized, user-friendly, and reliable source of information about the instructional materials available to them," says Cary Sneider, vice president for educator programs and principal investigator of the Gateway project. The Gateway, which will include web-based education resources, a space for online collaboration, a website for planning museum visits, and distance learning courses for teachers, will be working with teams from fifty Massachusetts school districts over the next three years to help them plan course sequences, select appropriate curricula, and initiate professional development programs to meet the new standards. According to Ioannis Miaoulis, president and director of the Museum of Science, the Gateway project is a critical component of the National Center for Technological Literacy, which is housed in the Museum of Science. "It strongly supports our national effort to introduce engineering as the new discipline in schools and significantly enhances our campaign for better understanding of the human-made world."

Community and Technology

Community has always been at the heart of education in America, whether community is defined as being rooted in place (a neighborhood school, for example) or common interest (a professional association). Today, the Internet has redefined the idea of community, liberating it from the boundaries of geography. These examples illustrate some approaches that museums, schools, and libraries are taking to build strong learning communities—place-based and virtual—focusing on the K-12 years. The Birmingham Learning Initiative, for example, is a broad partnership that is building a physical learning community in a central city neighborhood by involving museums and libraries as well as schools to develop and provide resources for teachers and students. The Colorado Digitization Project and the Digital Library Collection at the Birmingham Civil Rights Institute are strengthening the teachers' capabilities within individual states and across the country by offering collaborative relationships that digitize previously inaccessible, culturally significant resources while also providing teachers with an interpretive context, an easy-to-find web portal, and the training they need to integrate the materials in the classroom.

DISCIPLINE-BASED PARTNERSHIPS

- **Training the next generation of botanists—and making plant science accessible to Chicago's growing Latino elementary school population—has been the mission of the Chicago Botanic Gardens "Primero la Ciencia" immersion program.**
- **The Museum of Science in Boston is working to secure America's pre-eminence in engineering and technology with its Gateway to Technology and Engineering Education, a portal of online and physical resources to help Massachusetts educators meet required teaching standards. Fifty public school districts are involved.**

1 Birmingham Learning Initiative (Birmingham, AL)

Arguably one of the more ambitious collaborations on the landscape, the Birmingham Learning Initiative is a community development partnership between the Birmingham Board of Education, a coalition of community-based groups, major cultural institutions (including the Birmingham Museum of Art, the YMCA, the Civil Rights Institute, the Jazz Hall of Fame, and the Public Library), the University of Alabama at Birmingham, the Annenberg Institute for School Reform, and local real estate developers. Launched in 2002, the Initiative's goal is to create a mixed-race, mixed-income neighborhood in downtown Birmingham, where the city's cultural institutions and schools form a cross-generational "Learning Zone" offering residents a network of educational opportunities. With funding from HUD's HOPE VI initiative, an \$8 million renovation of historic Philips High School will anchor the zone, which will also include a renovated theater and reading room, an early learning center, an arts-enriched elementary school, and a community school program for children, youth, and adults. The Birmingham Learning Initiative is the outgrowth of an earlier IMLS grant to BCAP (Birmingham Cultural Alliance Partnership). "In Birmingham there is

an emerging civic and cultural partnership based on the realization that learning is the greatest equalizer," says Dennie Palmer Wolf, director of the Opportunity and Accountability Program at the Annenberg Institute.

2 The Civil Rights Movement: 1950 to the Present, A Digital Library Collection

The Digital Library Collection, a three-way partnership between the Birmingham Civil Rights Institute, Washington University in St. Louis, and WGBH, may well redefine the way students and teachers learn about the Civil Rights Movement. Building on WGBH's Teachers' Domain (www.teachersdomain.org), an online digital library of multimedia resources that supports standards-based education from elementary through high school, the Digital Library Collection offers a breathtaking multimedia archive of civil rights history, including interviews from the acclaimed "Eyes on the Prize" documentary (which is a part of the Henry Hampton Collection from the Media and Film Archive at Washington University), WGBH's broadcast collections ("The American Experience," "Frontline," and "Say Brother/Basic Black"), and the Birmingham Civil Rights Institute's peerless collection of oral histories and other primary sources. With support from the Institute

of Museum and Library Services, the collection is catalogued, coded with software tags, and correlated to each state's education standards, curriculum, and grade level, making it a powerful learning tool for teachers across the country. "The collection makes this historical era come alive for students, presenting compelling media in formats that promote active learning about this vital period and its impact," says WGBH Executive Producer Ted Sicker.

3 Colorado Digitization Program (Denver, CO)

Like many other breakthrough ideas, the Colorado Digitization Program (CDP) began by asking, "What if?" What if the state's historical societies, libraries and museums could put their collective holdings online? What would it mean to education if teachers and students anywhere in the country could view the state's heritage holdings online through text, graphics, audio, and video? Since 1998, with substantial support from the Institute of Museum and Library Services, fifty institutions across Colorado—and eighty more in other Western states—have created more than 55,000 digital objects: photographs, maps, diaries, works of art, exhibitions, and three-dimensional artifacts. All of it is posted on the program's web site, www.cdpheritage.org.

EMBRACING INNOVATION: EXAMPLES OF PARTNERSHIP, COLLABORATION, AND LEARNING

Just as important, this treasure trove of primary source material is enhanced by online and off-line lesson plans, workshops, and tools for teachers. Drawing on the Library of Congress's American Memory Fellowship program model, the CDP is working with teachers through face-to-face workshops, distance learning courses, and circuit riding to help build awareness of how museums and libraries can help students and teachers meet state education standards. The program worked with more than 250 teachers in 2003, and it plans to work with even more in 2004 and 2005.

"We have enabled cultural heritage institutions of all sizes to do something wonderful for their users and do a better job of meeting their missions," says Nancy Allen, dean and director of the Penrose Library at the University of Denver, which houses the program. "We are quite sure that many of our partners would never have been able to move forward with standards-based, operative digitization programs without our partnership."

"The future of education in America is at stake," noted John H. Falk, director of the Institute for Learning Innovation in Annapolis, Maryland. "The status and future fate of museums, libraries, and schools will be determined by our ability to clarify a meaningful and authentic learning mission." In a sense, workshop participants and their innovative colleagues are cartographers of an evolving field, mapping the shoreline and marking the landscape for those who will follow. In sharing selected examples of what exists, identifying persistent themes, and suggesting future priorities, these leaders are offering models and approaches that point the way to creating true learning communities. "Wouldn't it be wonderful," one participant asked, "if a baby born today could graduate from high school with a portfolio of learning experiences from museums, businesses, libraries, theatres, civic groups, and performing arts organizations, as well as from their schools?"

COMMUNITY AND TECHNOLOGY

- In Birmingham, Alabama, museums, libraries, the board of education and real estate interests have all come together to build a learning zone in the city's downtown, with public schools at the center of a network of educational opportunities.
- America's greatest civic advance of the 20th century has been digitally transformed into a multimedia archive supporting standards based education from elementary through high school. Future generations will be able to access the Civil Rights movement as it actually happened.
- The history of much of the western U.S. is now at the fingertips of learners. Since 1998, the Colorado Digitization Program (CDP) has brought together the holdings of 50 state institutions—and of 80 other institutions in Western states. More than 55,000 photographs, maps, diaries, 3-dimensional objects and more can now be accessed through a single web site.

APPENDIX — GLOSSARY

Charting the Landscape, Mapping New Paths brought together participants in diverse professional cultures. Our goals included exchanging experience, knowledge, and theory across disciplines and communities—individual, disciplinary, and geographical. We recognize that cultures have specialized vocabularies and definitions whose uses in a different setting can be confusing. To facilitate conversation within the workshop, we developed a working glossary for words that:

- commonly arise in the context of K-12, library, or museum education;
- lack a universal or even a widely shared meaning in this context; and
- differ in meaning among our disciplines.

IMLS has no intention of usurping specialized usage in any of our fields, or altering the meaning these terms or concepts have in their originating disciplines. Our workshop goals did not include consensus about definitions, or even discussion of the terms themselves. Our hope was to provide a starting place for understanding each other's assumptions and models, and to foster interdisciplinary collaboration.

access¹

When used in its broadest sense, this term encapsulates the purpose of librarianship—enabling people to identify, locate, and use the information that will meet their educational, occupational, and personal needs. Librarians espouse principles of free inquiry and intellectual freedom; they oppose barriers to access, such as censorship or restrictions based on age, cost, etc. In library organizational structure, access services encompass functions such as circulation, interlibrary loan, and technical services. In the context of automated information systems, one talks about the way a computer "accesses" records in a file. In cataloging, access points are the names, subject headings, etc., which lead to the bibliographic record. www.sir.arizona.edu/resources/glossary.html

capacity building²

Helping an organization to refine goals, arrive at measurable outcomes, and identify resources needed and available to support growth, increase excellence, and meet community needs.

charter school³

An independent public school that is open to all students, receives public funds for operation, is freed from many rules and regulations that district schools are generally required to follow, and is accountable for results that are specified in a performance contract with the school's public sponsor. Sponsors can be school boards, special chartering boards, or other

authorized public agencies. Charter school laws differ from one state to another, but all states require that schools be accountable for student outcomes. www.aecf.org/initiatives/mc/sf/started/glossary.htm

collaboration⁴

A mutually beneficial and well-defined relationship entered into by two or more organizations to achieve common goals. The relationship includes a commitment to mutual relationships and goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing of resources and rewards.

community of practice²

A group of people who share a paradigm of action based on consensus about which theories, models, and practices are most likely to support desired results.

digital library¹

An organized collection of knowledge, stored in digital/electronic format, and accessible to users via digital/electronic interface technologies. www.digitalib.geo-metaphors.com/west/glossary/

digital resources²

Computer-mediated experiences, programs, or products intended to support learning; most frequently via the medium of the Internet or World-Wide Web. The term may extend to commercial or non-commercial hardware, software, data transfer connections and protocols, systems at any scale, and metadata.

document-based question (DBQ) ⁵

Used most often in social studies classrooms, DBQ-based teaching builds the ability for students to use historical sources in multiple forms. The DBQ requires many of the skills used in research—interpreting primary and secondary sources, evaluating sources, considering multiple points of view, using historic evidence, and developing and supporting these.

educational program ²

A structured set of experiences which intends to create learning for individuals who participate.

educational standards (standards of education) ²

Formally adopted guidelines and/or a body of indicators intended to show the extent to which classroom education has achieved desired results.

evaluation ¹

A process that attempts to systematically and objectively determine the relevance, effectiveness, and impact of activities in light of their objectives. Evaluation can be related to structure, process, or outcome. www.iime.org/glossary.htm

IMLS (Institute of Museum and Library Services) ²

The primary federal agency for funding and distribution of information about library and museum services.

impact ²

The result of aggregated outcomes for individuals. In some usages, impact incorporates other changes in context, environmental conditions, or other circumstances.

indicator ²

A measurable phenomenon identified to represent the extent to which an intended outcome occurred for an individual.

information literacy ⁶

The ability to recognize a need for information, to identify, locate, evaluate, and apply information to the question or problem at hand.

learning ²

Growth (usually a gain) in any dimension where experience mediates knowledge, skill, attitude, or behavior. For IMLS, learning is not limited to information-based constructs, but includes domains such as the cognitive, affective, social, physiological, kinetic, aesthetic, behavioral, and many others. Learning is an individual phenomenon that happens through the vehicle of formal instruction or informal (but not necessarily unstructured) experience. Education, by distinction, is the process that strives to create learning.

free-choice learning ⁷

Free-choice learning is the type of learning guided by a person's needs and interests—learning people engage in throughout their lives to find out more about what is useful, compelling or just

plain interesting to them...the vast, important and successful learning enterprise that takes place outside of schools and the workplace – learning from museums, libraries, the Internet, television, film, books, newspapers, radio and magazines.... It is self-directed, voluntary, and guided by an individual's needs and interests. www.ilinet.org/freechoicelarning.html. Antonym, compulsory learning; see also formal learning.²

formal learning ²

Learning directed by a curriculum and educational activities designed for a specific school term or subject within a larger framework of educational or discipline-based standards. The most common connotation is learning associated with organized academia between kindergarten and post-graduate degree.

informal learning ²

Learning directed by the individual and adapted to the individual's interest, learning style, and pace. Informal learning may be carefully structured and may include a teacher – the primary characteristic is usually its distinction from learning inside the framework of organized academia (K to post-graduate).

inquiry-based learning ⁸

A model of teaching and learning in which a curriculum and learning-related processes are based on interests,

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questions, and learning approaches defined by students themselves. The model emphasizes communication, peer interaction, and individual pacing and process.

learning community ²

A group of people who contribute formally or informally, actively or peripherally, in person, in print, or virtually, to one another's effective learning. Learning communities are fluid; they expand, contract, and change membership to meet evolving needs of their members over time. Learning community follows the individual in the continuum of learner through Nation of Learners.

learning society ²

A social environment at the national or cultural level in which all individuals are encouraged to reach their full potential to learn. One in which knowledge and its supporting structures at the individual and aggregate levels are respected and fostered by social, family, and professional attitudes, structures, and resources.

lifelong learning (learning over a lifetime) ¹

Learning in which a person engages throughout his or her life. It includes but is not limited to learning that occurs in schools and other formal educational programs. www.mnvvu.org/mnvvu/265.jsp

Nation of Learners ²

In IMLS' vision, a nation (e.g. the US), in which all participants have the knowledge, skills, attitudes, behaviors, and resources they need for successful formal and informal learning at any age. We believe that learning crosses many domains— intellectual, social, affective, kinesthetic, and artistic, among numerous others. This workshop focuses on K-12 as a foundation for lifelong learning and full participation in family, community, work, and society.

object-based learning ⁹

An instructional strategy that is based on the idea that people can learn from an object by exploring the object itself and its context. Students learn to observe closely, question, research, discuss, and analyze the major properties of an object – its physical features, history, design, function, value, and construction. They can then derive new meaning and draw conclusions. Depending on the aim of a study unit, objects can become a central focus, a stimulus for a broad exploration, or a motivator to particular students to look beyond the obvious.

self-directed learning ¹

Is the personalization of learning which takes into account individual student characteristics, talents, interests and academic backgrounds. The learner is able to control and direct their learning at a pace agreed by the student, parents and teacher advisor.

www.thss.ca/thss/index.php

21st-century learner ²

One who has the knowledge, attitudes, and skills sets that enable learning across media, including proficient literacy, numeracy, computer-use, critical thinking, problem-solving, and sensitivity to the existence of diverse perspectives and culture-specific interpretation of information.

LSTA (Library Services and Construction Act) ²

Subtitle B of the Museum and Library Services Act of 1996. It comprises IMLS programs of funding for library service, including Grants to States; National Leadership Grants for libraries, Librarians for the 21st Century, and grants for Native American and Native Hawaiian Library Services. In 2003 Congress reauthorized the Museum and Library Services Act, P.L. 108-81.

magnet schools ²

Schools that specialize in a specific set of disciplines, usually created to attract students with particular talents or interests from a broad geographic area.

Museum Services Act ²

Subtitle C of the Museum and Library Services Act of 1996. Using this authority IMLS makes awards for Museums for America, National Leadership Grants to museums, Conservation Project Support, 21st-Century Museum Professionals, the conservation and museum assessment programs (CAP and MAP), and Native

American Museum Services. In 2003, Congress reauthorized the Museum and Library Services Act, P.L. 108-81.¹

need ²

The gap between conditions individuals want for themselves and those they have, and/or the gap between conditions providers of programs, products, or services want for their audiences and those that exist.

No Child Left Behind (NCLB) ^{2, 10}

On January 8, 2002 President George W. Bush signed the No Child Left Behind Act of 2001 (NCLB). This education legislation reauthorized and significantly expanded the Elementary and Secondary Education Act of 1965. NCLB provides federal funding for a variety of programs in schools, primarily to benefit low-income students, and sets up systems of accountability for improving student achievement.

outcome ²

A gain or change in knowledge, skill, attitude, behavior, status, or life condition of an individual participant, visitor, or user of a product, service, or program. In IMLS's usage, an outcome is a specialized category of result, usually produced by the vehicle of learning. Outcomes can occur at any scale and at any point from immediate through long term. While outcomes can be positive or negative, positive outcomes are the intended concomitant of library, museum, and classroom education.

OBE (outcomes-based evaluation) ²

In IMLS usage, an umbrella term that comprises program, project, or product planning and evaluation based on identified target audience needs, intended learning results, and formal measurement that demonstrates the extent to which outcomes desired by planners are achieved.

partnership ²

In IMLS usage, a relationship between individuals or groups that is characterized by mutual cooperation and responsibility, as for the achievement of a specified goal (see collaboration). In this usage it describes a spectrum of relationships between two or more organizations, ranging from relatively informal cooperation through formal, legal agreement.

result ²

In IMLS usage, a consequence of a project or program, including outcomes, impact, outputs, or other forms of change, either positive or negative.

virtual museum ²

A collection of images, objects, or interactive experiences intentionally brought together and presented through a computer (usually via Internet/Web pathways) for aesthetic or other educational purposes. The collection may physically exist in whole or in part separate from its computer-mediated presentation, but need not do so to constitute a virtual museum.

¹ Result of Google search on "define: term of interest" in the absence of a dictionary-based definition.

² Consensus of IMLS staff in the absence of a widely accepted or dictionary-based definition, August 2004.

³ Annie E. Casey Foundation, see www.aecf.org/initiatives/mc/sf/started/glossary.htm.

⁴ Mattessich, Paul W., Marta Murray-Close, and Barbara R. Monsey (2001). *Collaboration: What Makes It Work* (2nd edition), Wilder Publishing Center: St. Paul, MN. Title page, Appendix A.

⁵ Term coined by Peter Pappas, see www.edteck.com/dbq/testing/dbq.htm

⁶ National Forum for Information Literacy, see www.infolit.org/definitions/index.html.

⁷ Term coined by the Institute for Learning Innovation, see www.ilinet.org/freechoicelarning.html.

⁸ Consensus of IMLS staff, as in note 2. For a comprehensive description of inquiry-based learning, see Thirteen/Ed online, www.thirteen.org/edonline/concept2class/month6.

⁹ Adapted from www.chd.gse.gmu.edu/immersion/knowledgebase/strategies/constructivism/objectbased.htm

¹⁰ See www.ed.gov/policy/elsec/leg/esea02/index.html.

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