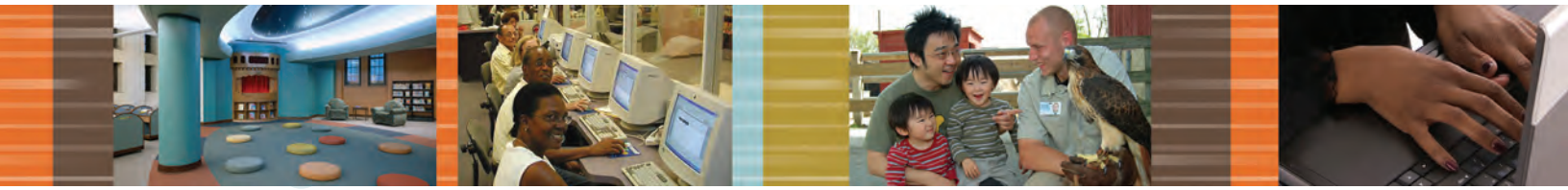
MUSEUMS, LIBRARIES, AND

21st Century Skills



INSTITUTE of Museum and Library SERVICES

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"Success in today's society requires information literacy, a spirit of self-reliance, and a strong ability to collaborate, communicate effectively, and solve problems. Combining strengths in traditional learning with robust investment in modern communication infrastructures, libraries and museums are well-equipped to build the skills Americans need in the 21st century" (IMLS 2008).

About the Project

This project underscores the critical role of our nation's museums and libraries in helping citizens build such 21st century skills as information, communications and technology literacy, critical thinking, problem solving, creativity, civic literacy, and global awareness.

Recognizing that every individual requires these competencies to succeed in 21st century life and work, IMLS offers the *Museums, Libraries, and 21st Century Skills* project to:

- Support museums and public libraries in envisioning and defining their roles as institutions of learning in the 21st century;
- Enhance understanding among policymakers and other stakeholders about the integral roles museums and libraries play in creating an engaged citizenry and competitive workforce.

Specifically, this work aims to help library and museum leaders:

- Envision the library/museum's role in providing lifelong learning experiences, specifically around 21st century skills;
- Inventory the 21st century skills and practices currently in use by the library/museum;
- Identify goals for future operation and program improvements;
- Build awareness among policymakers and the public about the unique value these institutions provide to the nation's learning systems.

***Museums, Libraries, and 21st Century Skills* includes three components:**

The Report: the following pages outline a vision for the role of libraries and museums in the national dialogue around learning and 21st century skills; this report also includes case studies of innovative audience engagement and 21st century skills practices from across the country.

The Self-Assessment Tool: the tool included in this report allows museums and libraries to determine where they fit on the continuum of 21st century skills operations and programming.

The Online Self-Assessment (www.imls21stcenturyskills.org): this brief interactive survey quickly analyzes an institution's 21st century strategies and describes next steps for action.

The Process

The initiative began with the assembly of a Task Force of leading thinkers in the field, who helped identify and define the many new contexts facing libraries and museums, such as the evolution of the global economy and the need for 21st century skills. The Task Force met with the IMLS Project Team throughout the course of a year, from June 2008 to June 2009, to refine the central concepts and review key drafts.

In addition to the Task Force meetings, IMLS conducted a series of vetting sessions with leading museum and library individuals to review and enhance the work.

A full list of Task Force members is included on the back inside cover.

Introduction

Given the accelerating economic, social, and educational changes of the 21st century, today's libraries and museums face dramatic shifts in the populations they serve and the communities in which they operate.

At a time when increasingly advanced skills are required for success in life and work, people of all ages are seeking a diverse range of learning experiences to inspire, guide, and enhance their personal and professional lives.

Libraries and museums can embrace this opportunity to build on past achievements and chart promising new directions. One of these critical new directions involves developing a comprehensive, purposeful approach around 21st century skills. With 17,500 museums and 123,000 libraries across our nation, every community in the United States stands to benefit from the leadership of these institutions.

Over the past seven years, the national dialogue around 21st century skills has reached critical mass in national competitiveness, workforce development, and K-12 education circles. This discussion has developed as the needs and nature of the workforce have undergone dramatic shifts, as shown in the next table.

	20TH CENTURY	21ST CENTURY
Number Jobs / Lifetime	1-2 jobs	10-15 jobs (US Department of Labor 2004)
Job Requirement	Mastery of one field	Simultaneous mastery of many rapidly changing fields
Job competition	Local	Global
Work Model	Routine; hands-on; fact based	Non-routine; technical; creative; interactive
Education Model	Institution centered; formal degree attainment is primary goal	Learner centered; self-directed, lifelong learning is primary goal
Organizational Culture	Top down	Multi-directional (bottom-up, top down, side to side, etc.)

What sorts of skills are needed to support productive participation in this new 21st century workforce? One well-vetted and widely accepted framework that defines "21st century skills" has been offered by the Partnership for 21st Century Skills (P21), a non-profit coalition sponsored by education, business, and community organizations.[1]

The P21 framework has been adopted by 13 states and numerous organizations and associations, notably including the National Education Association (NEA) and the American Association of School Librarians (AASL).[2]

The IMLS Project Team and Task Force used the P21 framework as the basis on which to customize this list of skills that are most relevant for libraries and museums.

21st Century Skills Framework – Adapted for Libraries and Museums

LEARNING AND INNOVATION SKILLS (see page 23)

- Critical Thinking and Problem Solving
- Creativity and Innovation
- Communication and Collaboration
- Visual Literacy
- Scientific and Numerical Literacy
- Cross-Disciplinary Thinking
- Basic Literacy

INFORMATION, MEDIA, AND TECHNOLOGY SKILLS (see page 25)

- Information Literacy
- Media Literacy
- Information, Communications and Technology (ICT) Literacy

LIFE AND CAREER SKILLS (see page 26)

- Flexibility and Adaptability
- Initiative and Self-Direction
- Social and Cross-Cultural Skills
- Productivity and Accountability
- Leadership and Responsibility

21ST CENTURY THEMES (see page 25)

- Global Awareness
- Financial, Economic, Business, and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy
- Environmental Literacy

[1] The Partnership for 21st Century Skills (www.21stcenturyskills.org).

[2] AASL has long been a leader in the conversation around 21st century skills, having produced *Standards for the 21st-Century Learner*, a school-based resource that is widely used by library media specialists and other educators to enhance 21st century student learning.

Critical Momentum

President Barack Obama's push for advanced skills in our education and workforce systems has added critical momentum to the 21st century skills movement. Throughout his campaign and now in his administration, President Obama has repeatedly articulated the need for our nation's students to be better prepared for today's knowledge economy.[3] Not surprisingly, most of President Obama's comments surrounding 21st century skills address the role of formal education in preparing students to be prepared for today's workforce. But the Administration has also recognized the importance of out-of-school learning environments, and it hopes to "increase resources for community colleges and lifelong learning initiatives to ensure our citizens can continue to gain new skills throughout their lifetimes" ("Technology" 2009).

Skills like critical thinking and problem solving are not only relevant for K-12 students and schools. There are millions of adult learners not in formal education programs looking to refine workplace skills. Even school-aged children spend the overwhelming majority of their waking hours in non-school settings, and increasingly they spend this time in organized out-of-school settings such as afterschool, museum, and library programs. In these settings, they develop important skills—such as problem solving, collaboration, global awareness, and self-direction—not only for lifelong learning and everyday activities, but also for use back in K-12 schools and college classrooms.

In fact, all people today—youth and adults—spend the majority of their lives learning outside the walls of formal classrooms: in out-of-school programs, workplaces, internships, and other informal learning experiences such as those offered by libraries and museums.

[3] In a September 9, 2008 speech, Obama noted: "Without a workforce trained in math, science and technology, and the other skills of the 21st century, our companies will innovate less, our economy will grow less, and our nation will be less competitive. If we want to out-compete the world tomorrow, we must out-educate the world today." More recently, in remarks on March 10, 2009, Obama offered these words: "I'm calling on our nation's governors and state education chiefs to develop standards and assessments that don't simply measure whether students can fill in a bubble on a test, but whether they possess 21st century skills like problem-solving and critical thinking and entrepreneurship and creativity."

CASE STUDY:

Good to Grow Initiative

21ST CENTURY SKILLS:

Health Literacy
Environmental Literacy

SELF-ASSESSMENT CATEGORIES:

Institutional Assets (Programs)
Leadership & Management
Partnering
Accountability

Begun in 2006, *Good to Grow!* is the Association of Children's Museums' nationwide health initiative.

THE FOUR TENETS OF *GOOD TO GROW!* ARE:

- Activate children and parents to choose healthy foods
- Increase physical activity
- Reduce screen time
- Nurture a lifelong connection to the outdoors

A key feature of *Good to Grow!* is the "Growing Healthy Museums" project. It benefits more than 300 children's museums that in turn have the potential to engage millions of children and families in making healthy choices. Based on an in-depth self-study tool, the project aims to increase the capacity, knowledge, and skills of museums to promote health and wellness in their communities.

As part of its self-study, the Creative Discovery Museum in Chattanooga identified key community needs; environmental health was a critical concern. According to Executive Director Henry Schulson, "Our goal is to use our resources to benefit children and families. And this community sees the environment as fundamental to its health." Through a partnership with Oak Ridge National Laboratory and the University of Georgia, the museum created an environmental curriculum now used in science classrooms across the state. The curriculum also serves as the foundation for the museum's "Biofuels Family Night," which engages parents and children around the "essential ideas" of alternative energy. Hands-on activity stations around the museum pose thought-provoking questions that encourage critical thinking and intergenerational dialogue around environmental issues. Knowledge and skills are reinforced at the end of the workshop with a wrap-up session that reviews key concepts from each activity.

Such an outward focus on audiences is a hallmark of *Good to Grow!* museums. Participating institutions assess their current resources, develop an action plan that prioritizes the local community's needs, engage key local partners, and empower the museum's staff to evaluate their progress toward achieving their objectives. Progress is measured against metrics that include the museum's connection to the local community, knowledge of health and wellness issues, and knowledge of audience groups.

Good to Grow! embraces a vision of museums as resources that catalyze community-wide health and environmental literacy.

Libraries, Museums, and 21st Century Skills

The need to enhance 21st century skills is a compelling national imperative. Built on a foundation of deep content mastery, these skills are the new workforce requirements for maintaining U.S. global competitiveness and ensuring each person's personal and professional success.

Competencies like critical thinking, global awareness, and media literacy are no longer simply desirable—they are necessary. If 21st century skills are the new design specifications for national and individual success, our nation's libraries and museums are well-positioned to respond to this need.

Museums and libraries offer rich and authentic content, dedicated and knowledgeable staff with deep expertise, and safe, trusted settings for individuals and families, all of which invite and support effective learning. The collections in libraries and museums—books, artwork, scientific specimens, and other cultural artifacts—connect people to the full spectrum of human experience: culture, science, history, and art. By preserving and conserving our material and digital artifacts, libraries and museums link us with humankind's history. These institutions operate as places of social inclusion that promote curiosity, learning by doing, and discovery. In them, we learn about ourselves and others, and enhance the skills that contribute to empathy, tolerance, and understanding.

It is also worth noting that our nation's earliest libraries and museums helped Americans acquire skills that are today defined as "21st century skills"—such as critical thinking, problem solving, information literacy, and civic literacy, to name a few. But as the need for 21st century skills in our communities, workplaces and schools grows, all libraries and museums have a stake in re-imagining their future roles as learning institutions.

While it is true that libraries and museums are—and always have been—well-equipped to provide critical learning experiences to their audiences, this potential must be further developed, defined, and made more accessible. All libraries and museums—and the people they serve—stand to benefit from becoming more intentional and purposeful about accommodating the lifelong learning needs of people in the 21st century, and doing this work collaboratively in alignment with community needs.

Therefore, it is critical that we envision, define, and implement library and museum approaches that integrate 21st century skills in more tangible, visible ways. And as our society shapes its educational, technological, and economic policies, it needs to more intentionally call upon the trusted, welcoming, and content-rich settings of libraries and museums—institutions found in every community across America, to support the nation's development of 21st century skills.

The 21st Century Museum/Library Shift

How should libraries and museums evolve as institutions of learning in the 21st century? In light of 21st century demands, libraries and museums should build on current strengths and embrace new approaches such as the ones described in the chart below:

20TH CENTURY MUSEUM/LIBRARY	21ST CENTURY MUSEUM/LIBRARY
Primarily content-driven	Combination of audience- and content-driven
Mostly tangible objects (art, books)	Combination of tangible and digital objects
One-way information (institution presents information to audiences)	Multi-directional (co-created experiences involving institution, audiences, and others)
Focus on presentation and display	Focus on audience engagement and experiences
Emphasis on enhancing knowledge	Emphasis on enhancing knowledge and 21st century skills
Acts independently	Acts in highly collaborative partnerships
Located in community (operates independently)	Embedded in community (aligned with and acts as a leader on community needs/issues)
Learning outcomes assumed, implied (content knowledge and skills like critical thinking tend to be byproducts of programming)	Learning outcomes purposeful (content knowledge and 21st century skills like critical thinking are visible, intentional outcomes of audience experiences)
Institution leads content development (content tightly edited and controlled)	Content co-created among diverse partners and audiences; accessible in multiple ways

All libraries and museums—and the people they serve—stand to benefit from becoming more intentional and purposeful about accommodating the lifelong learning needs of people in the 21st century, and doing this work collaboratively in alignment with community needs.

CASE STUDY:

Miami-Dade Public Library

21ST CENTURY SKILLS:

Information Literacy
ICT Literacy
Basic Literacy
Communication and Collaboration
Civic Literacy

SELF-ASSESSMENT CATEGORIES:

Leadership & Management
Partnering
Accountability

The Miami-Dade County Public Library System embodies the ethic of service to community. It is viewed first and foremost as a community resource – a place where people can get what they need in a trusted setting with experienced, hands-on assistance.

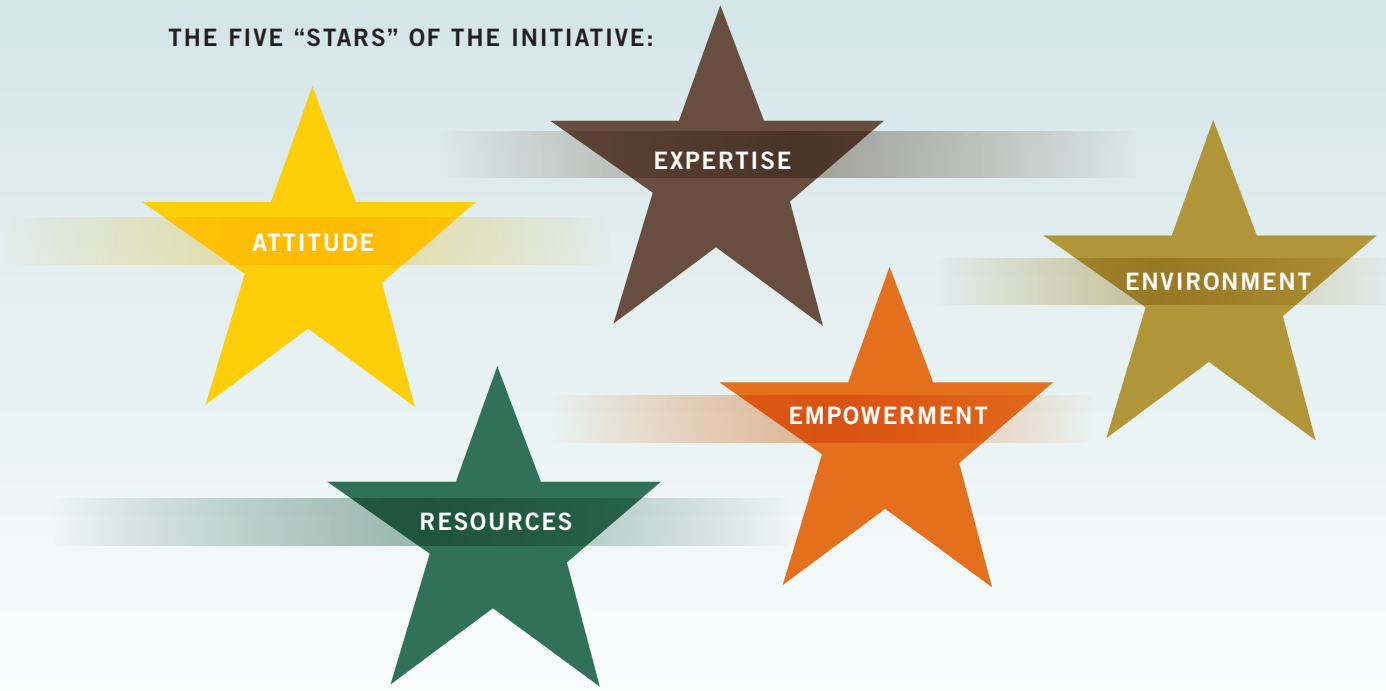
"When we hire, we ask the candidate: *Why do you want to work in the library?* If they say: *Because I really love books* – that's the wrong answer. This job is about people!"

— Raymond Santiago, Director, Miami-Dade County Public Library System

Miami-Dade County has a diverse population in more than 30 separate towns with almost indistinguishable boundaries between them, resulting in an absence of natural city centers. The public library system has addressed this challenge by becoming a leader in the community through its transformative vision of the library as a place where people can congregate.

The public library system's leadership vision has been put into practice by its 5-Star Customer Service Initiative. The initiative's vision: "The library will be a compelling community destination by providing a Five-Star Customer Experience."

THE FIVE "STARS" OF THE INITIATIVE:



Community Involvement

The work of each library is framed around the customer experience; each institution plays an active role in the town by aggregating community information, partnering with local community organizations, and providing 24/7 access to resources whenever possible.

For example, the state of Florida has an extensive e-government portal with numerous social and public services available online. However, a large percentage of the population in Miami-Dade County lacks basic computer skills. The Miami-Dade Public Library System responded to this community need by creating and developing technology literacy programs for adults, many of whom are seniors. A vibrant technology literacy program now teaches over 200 adults every month. It is common for library staff and volunteers to witness a grandparent connecting with a distant grandchild through e-mail or Facebook for the very first time. Senior citizens also learn communication and civic awareness skills in the *Seniors Telling Stories* program, which connects them to college professors who are trained to teach them how to craft and share their personal stories. The seniors then debut their stories as part of the *Art of Storytelling* festival at their local libraries and community centers.

The Miami-Dade Public Library celebrates the spirit of Colombia with traditional dances during the Art of Storytelling Festival.

Miami-Dade Public Library is equally committed to addressing issues relating to equal access. The *Service for the Homebound* program provides books-by-mail to individuals of all ages who are unable to visit the library in person due to chronic illness, physical disability, and/or frailties of age. This group of people is able to access basic reading services to advance and learn basic literacy, and continue to stay connected to their community through the libraries' services.

Miami-Dade Public Library leaders hold themselves accountable to the 5-Star Initiative through customer surveys. Survey results are reported quarterly to ensure each library is focusing on delivering the best possible service, in the best possible environment, to each customer.

The vision of customer service in the 5-Star Initiative and the partnerships with community organizations reflect a commitment toward servicing the needs of the local Miami-Dade County community, over and above collecting and checking out books. The 5-Star Initiative is truly transformational in that the library system acts as the community "center" the area really needs.

Museums and Libraries in the 21st Century: New Contexts

Without question, the 21st century has led to profound changes in our society's economic, cultural, and educational institutions, including museums and libraries. Three significant shifts are having dramatic impacts on museums and libraries today: the economy, societal needs, and audience expectations.

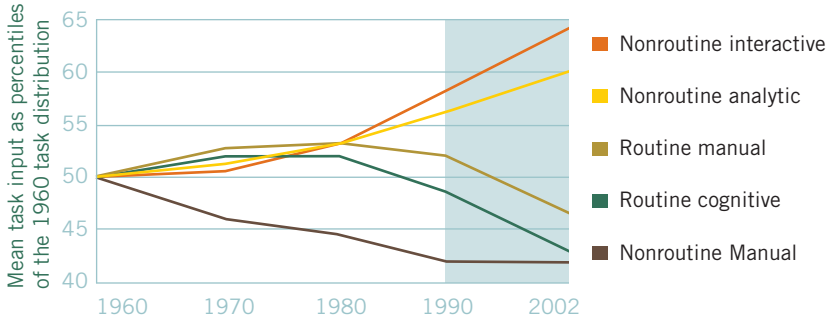
Economy

The new global economy presents both opportunities and obstacles for library and museum leaders.

Changes in the economy, jobs, and businesses have fundamentally altered the nature of work today. The shift in the last two decades to a globally interconnected information economy has radically expanded the types of skills necessary for individuals to succeed in work and life. For example, in 1967, the production of material goods accounted for nearly 54 percent of the country's economic output. But by 1997, the production of information products (e.g., computers, software, books) swelled, accounting for 63 percent of the country's output (Partnership for 21st Century Skills 2008). Today's economy requires the ability to perform non-routine, creative tasks, which has dramatically heightened the need for individuals to master 21st century skills like self-direction, creativity, critical thinking, and innovation (see chart). The dynamics of this new economy and its implications for individuals of all ages and situations have been well-documented by numerous organizations and leading thinkers.[4] And this trend is accelerating, as is shown in the chart below. The demand for skills that are nonroutine--e.g., critical thinking, creativity, innovation--is increasing dramatically in the 21st century.

HOW THE DEMAND FOR SKILLS HAS CHANGED

Economy-wide measures of routine and non-routine task input (US)



(Autor, Levy, and Murnane 2003, 1279-1334)

[4] See Partnership for 21st Century Skills "21st Century Skills, Education & Competitiveness", "Transition Paper," as well as Richard Florida's *The Rise of the Creative Class: And How it's Transforming Work, Leisure, Community and Everyday Life*, and Daniel Pink's *A Whole New Mind*.

Society and Learning

The 21st century has changed how, when, and where we all learn. The lines between "formal" and "informal" learning are becoming less clear, as institutions from MIT to the University of California put their lectures and class materials online for all at no cost, and iTunes U has accelerated access to truly mobile learning. Substantive conference proceedings are documented, shared, and debated in real time via online social networks, creating meaningful dialogues and interactions among experts and interested individuals on an extraordinary scale. At no other time in history have more educational offerings been made available more widely or for so many.

Even with these changes in digital access to information and educational experiences, perhaps the most significant change is the growing interest in self-directed learning. Dr. John Falk and Dr. Lynn Dierking's pioneering work in this area has been instructive for museums and libraries in its emphasis on the importance of widely available, diverse learning environments that are accessible to everyone in a community. In *Lessons Without Limit: How Free-Choice Learning is Transforming Education*, the authors underscore the importance not only of accessibility, but experiences that are "designed in ways that support multiple motivations, interests, skills, and knowledge levels" (Falk & Dierking 2002). Scholars in the emerging field of the learning sciences stress that learning develops across multiple timeframes and settings, and they emphasize the importance of "supporting deep links between formal schooling and the many other learning institutions available to students – libraries, science centers and history museums, after-school clubs, online activities that can be accessed from home, and even collaborations between students and working professionals" (Sawyer 2005). Indeed, a growing body of evidence points to informal learning environments as significant sources of knowledge and skill development. Dr. Dennie Palmer Wolf, Director of Opportunity and Accountability for the Annenberg Institute and a leading researcher in the area of children's out-of-school learning, notes that "goal-directed free-time activity in safe, supportive environments with responsive adults and peers make sizable contributions to learning, social skills, and mental health" (Wolf 2008).

Therefore, it is critically important to align and leverage all participants in the learning system—schools, institutions, organizations, programs, individuals, families, and neighborhoods. When such alignment happens, everyone has the potential to be a learner, educator, and collaborator, which benefits not only the individuals but entire communities as well.

An important recent contribution to the dialogue around informal learning is the National Academy of Sciences' report *Learning Science in Informal Environments: People, Places, and Pursuits*. The work offers a compelling research-based analysis of how science museums can "enrich the scientific knowledge, interest and capacity of students and the broader public" (Bell, Lewenstein, Shouse, & Feder 2009). The report emphasizes the need to view learning from an "ecological perspective" that involves "life-long," "life-wide," and "life-deep" experiences. The authors acknowledge the great degree of science learning that can occur in informal environments, building on learners' motivations and interests. They provide evidence for the types of learning that occur "across the lifespan" and describe the synergies between formal and informal learning. This richly detailed report, like much of the literature around out-of-school learning, discusses the proven benefits of designed experiences that appeal to the individual needs of learners and account for their diverse social, economic, and demographic backgrounds.

CASE STUDY:

Maine Memory Network

21ST CENTURY SKILLS:

Communication and Collaboration
ICT Literacy
Civic Literacy

SELF-ASSESSMENT CATEGORIES:

Institutional Assets
Leadership & Management
Partnering
Accountability

The Maine Memory Network's infrastructure allows students to create and share their own online exhibits.

Maine Memory Network (MMN) is a statewide digital museum created out of a partnership between the Maine Historical Society and the Maine State Library to increase public access and engagement with the holdings of historical societies across the state. MMN now has 170 active contributing partners and more than 12,000 primary documents. The site has expanded access to historical collections that previously were inaccessible due to geographic distance and/or limited institutional hours. This online learning resource has transformed museum, library, and school relationships across the state.

One exciting offshoot is the Maine Community Heritage Project (MCHP), which emphasizes dynamic audience and community engagement. MCHP recruits and facilitates local, community-based teams that work together to collect, digitize, and create online exhibits of a community's historical resources. MCHP nourishes community-wide learning partnerships, and, in addition to fostering best practice in historiography, enhances each participant's 21st century skills.

Project teams consisting of librarians, historical society staff, teachers, students, and community members work together to research, learn, and create new online resources on the community's history. All team members develop and refine skills such as technology literacy, critical thinking, written and oral communication, and collaboration skills. The project's focus on intergenerational learning is noteworthy—students are recruited through active K-12 school partnerships, and these students establish highly collaborative working relationships with historical society staff and community volunteers. Students learn local history with other team members in applied, highly relevant settings, while historical society staff and volunteers benefit from digitization and technology skills shared by students. Civic literacy is also a key component of MCHP: upon conclusion of the project, each team celebrates their new historical knowledge with a community-wide event.

Additionally, Maine Memory Network has made a strategic commitment to continuous improvement by hiring the Institute for Learning Innovation (ILI) to evaluate and refine MCHP through two key phases: formative evaluation, designed to provide iterative feedback on the development and implementation of key project components; and summative evaluation, designed to assess the impact of the project on participating individuals, organizations, and communities.

Audience Expectations

In the 21st Century, the public has grown accustomed to personalized, customized, and on-demand experiences that are easy to access and simple to share and build upon. In physical settings and online, audiences expect higher levels of interactivity and programs tailored to individual needs. From online stores that record customer preferences for books, clothing sizes, and brands, to music collections that automatically add personalized recommendations, there are seemingly no limits to an individual's ability to access, store, re-experience, re-create, and re-imagine any number of highly personal preferences and experiences—commercial and non-commercial. In books such as Jeff Howe's *Crowdsourcing* and Clay Shirky's *Here Comes Everybody*, the expectations—and the impacts—of today's networked decision-makers are made clear. There is an undeniable trend toward collaborative, crowd-sourced decision making (e.g., online consumer reviews) and free, open source products (e.g., Google Docs). As a result, there has been a sea-change in consumer expectations: if you have something interesting to offer, you should be prepared to 1) offer it however and whenever the customer wants; 2) allow the customer to create, participate in, share, refine, save and re-use it instantly and easily; 3) make it accessible and affordable.

A recurring theme is the importance of Web 2.0-enabled ways of experiencing library and museum offerings: "Web 2.0 is democratic. Content is developed, organized, and accessed via bottom-up rather than top-down design. Instead of being a content provider, Web 2.0 is a platform provider" (Simon 2007). The "democratization" of content and the social ways in which audiences interact with content online has profoundly shifted the roles of directors, librarians, curators, and other professionals who craft designed experiences in these institutions.

The Museums, Libraries, and 21st Century Skills Task Force and IMLS Project Team observed that, increasingly, audiences expect museums and libraries to:

- Leverage their collections and content expertise to engage more effectively with increasingly diverse audiences, as well as the needs of communities in the 21st century;
- Act as catalysts along with other partners to enhance (in mission-appropriate ways) the learning systems across a community;
- Provide flexible, co-created, immersive experiences that connect individuals with their families and other like-minded (and sometimes not) people;
- Offer audiences multiple ways to engage in meaningful social and civic interactions;
- Focus on audience engagement and audience experience as central components of the institution's mission;
- Implement a thoughtful "architecture of participation" (O'Reilly 2005) that enables broad-based collaborative engagement among all institution audiences and stakeholders.

These three factors—the shift to the global economy, the rising importance of self-directed lifelong learning, and the expectation of customized, on demand audience experiences—provide a compelling backdrop for museums and libraries as they position themselves as institutions of learning in the 21st century.

CASE STUDY:

The Pueblo of Pojoaque Public Library: Raising Readers Program

21ST CENTURY SKILLS:

Basic Literacy
Communication and Collaboration

SELF-ASSESSMENT CATEGORIES:

Leadership & Management
Accountability

The "Raising Readers through Programs and Outreach" initiative illustrates the Pueblo of Pojoaque Public Library's commitment to a critical community need: basic literacy.

The program came about as a result of the library's facilitation of meetings, surveys, and interviews, all of which pointed to the need for pre-literacy and reading incentive programs that involve parents and caregivers in the early childhood learning process. The project develops and presents library and outreach programs emphasizing pre-literacy for pre-school children and their families, develops and implements reading incentive programs for school age children, and expands the library collection with materials that address pre-reading skills and promote pre-literacy.

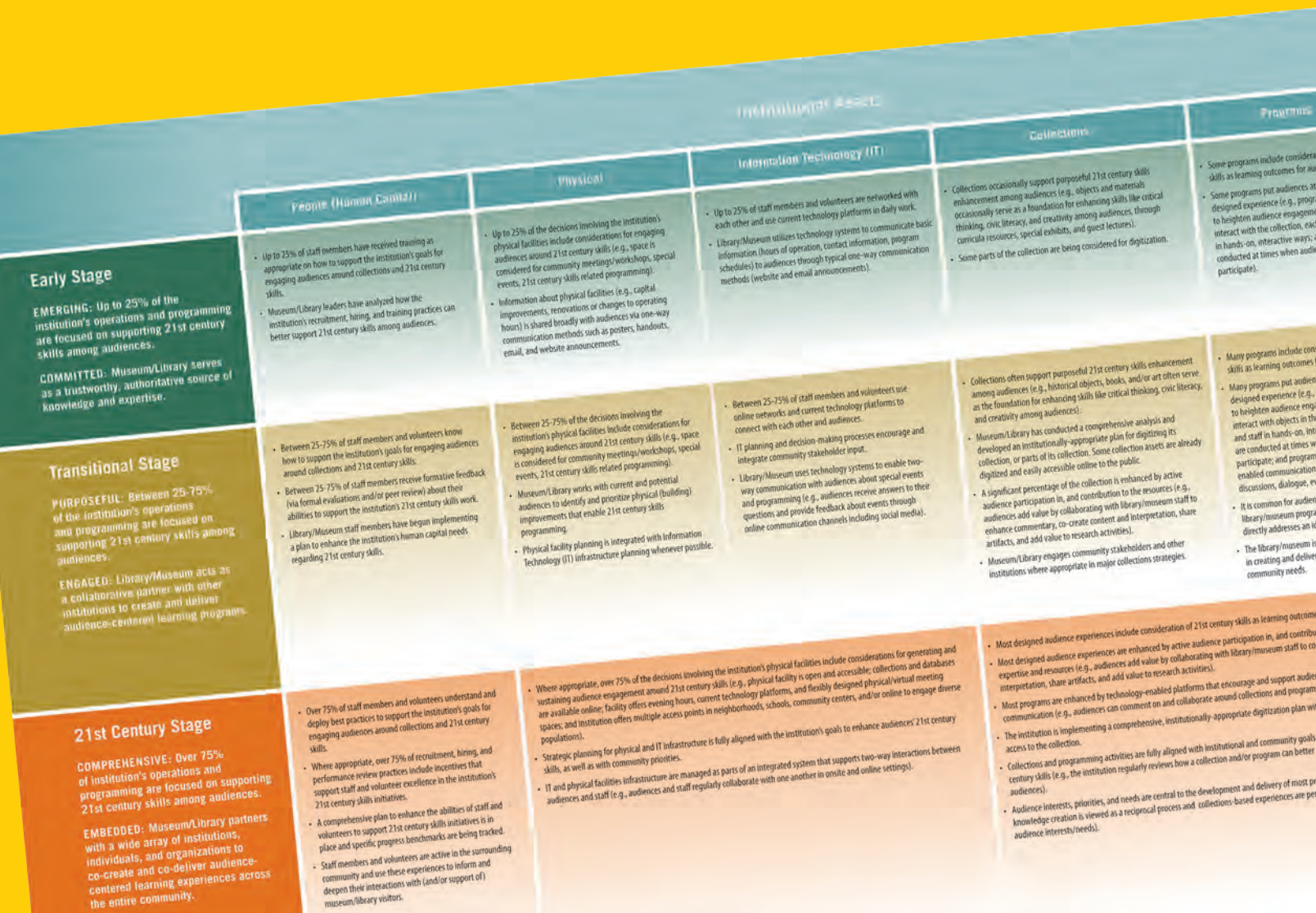
Through this program, the Pueblo of Pojoaque Public Library has established itself as a leader in strengthening relationships within the native cultural community by bringing entire families—children, parents, and caregivers—together for storytelling and reading activities with staff. Although initial attendance was quite low, the addition of a Youth Services Librarian (made possible by a grant from IMLS) has dramatically increased attendance and interest in reading and storytelling workshops. In just seven months, the Youth Services Librarian conducted 103 storytelling sessions with 1,132 attendees. The librarian expanded the storytelling activities beyond the library through visits to schools and early childhood centers. Now, when he arrives at a preschool, the children enthusiastically declare "The LIBRARY is here!" and quickly take their places on the reading rug.

At each session, the librarian provides a list of recommended titles for parents to read outside of the library with their families, along with take-home handouts that emphasize the pre-reading skills covered by that day's session. The books, songs and activities in the program are all based on recommended titles from the "Every Child Ready to Read" (ECRR) program, which also integrates participant evaluations, the results of which help staff measure the impact of the lessons and provide recommendations for future workshops.

The impact of the program on the local community has been dramatic, as circulation rates of the library's books, particularly children's books, have increased significantly. Such evidence that Pueblos are reading more books outside of the library is particularly energizing to library staff and the overall community as well.

Self-Assessment Tool

FOR MUSEUMS, LIBRARIES, AND 21ST CENTURY SKILLS



Why Use the Self-Assessment Tool?

As this report notes, every library and museum leader has a vested interest in defining his/her institution's role in supporting 21st century skills. Becoming more strategic and deliberate around a vision for improving or assisting in the development and expansion of 21st century skills among audiences is a vital first step. This tool helps libraries and museums scan the organization and focus planning efforts around core areas of library/museum operations.

Discovery

The Self-Assessment Tool was created to help museum and library leaders determine where their institutions fit on the continuum of 21st century skills operations and programming. Because the tool is not intended to prescribe specific activities, but to offer promising practices, each museum and library can use the tool to better determine the mission-appropriate ways in which it wishes to develop its audiences' 21st century skills. Due to the increased expectation for accountability in libraries and museums, metrics are offered to help establish specific goals that can be tracked over time.

Leading Questions

The tool is designed to help answer critical questions about how a library or museum can implement a vision for promoting 21st century skills, such as:

- What is the institution's vision for enhancing the 21st century skills of our audiences?
- What are effective human resource and leadership strategies for addressing 21st century skills?
- How can our organizational infrastructure more effectively support 21st century skills?
- How can we partner with other organizations and individuals to ensure our efforts are aligned with the entire community's learning systems?
- How might we monitor our progress toward our stated goals around 21st century skills?

A streamlined version of this self-assessment tool is also available online at www.imls21stcenturyskills.org

Overview and Definitions

The Rows

The Self-Assessment Tool is segmented into three rows, labeled "Early Stage," "Transitional Stage," and "21st Century Stage." The tool itself (see foldout) contains the specific indicators that help a library or museum complete its self-assessment.

The Columns

This tool includes four core areas for museums and libraries to consider in a 21st century skills initiative: Institutional Assets, Leadership & Management, Partnering, and Accountability. Each of these areas, depicted as columns in the self-assessment tool, should be analyzed to determine the level of purposeful attention given to 21st century skills integration.

INSTITUTIONAL ASSETS:

How might human resources, collections, programs, physical facilities, and information technologies be directed to enhance the institution's support of 21st century skills in its audiences?

LEADERSHIP & MANAGEMENT:

What 21st century skills best align with the institution's strategic plans? How does the museum/library address issues of access, resources, and sustainability regarding 21st century skills? Are leadership and management decisions open and transparent?

PARTNERING:

How can partnerships with community organizations, businesses, schools, and other cultural institutions help achieve a broad, community-wide vision around 21st century skills? How can these partnerships scale and be sustained over time?

ACCOUNTABILITY:

How can the institution track progress and enable continuous improvement?

	People (Human Capital)	Physical
Early Stage **EMERGING: Up to 25% of the institution's operations and programming are focused on supporting 21st century skills among audiences.** **COMMITTED: Museum/Library serves as a trustworthy, authoritative source of knowledge and expertise.**	• Up to 25% of staff members have received training as appropriate on how to support the institution's goals for engaging audiences around collections and 21st century skills. • Museum/Library leaders have analyzed how the institution's recruitment, hiring, and training practices can better support 21st century skills among audiences.	• Up to 25% of the decisions involving the institution's physical facilities include considerations for engaging audiences around 21st century skills (e.g., space is considered for community meetings/workshops, special events, 21st century skills related programming). • Information about physical facilities (e.g., capital improvements, renovations or changes to operating hours) is shared broadly with audiences via one-way communication methods such as posters, handouts, email, and website announcements.
Transitional Stage **PURPOSEFUL: Between 25-75% of the institution's operations and programming are focused on supporting 21st century skills among audiences.** **ENGAGED: Library/Museum acts as a collaborative partner with other institutions to create and deliver audience-centered learning programs.**	• Between 25-75% of staff members and volunteers know how to support the institution's goals for engaging audiences around collections and 21st century skills. • Between 25-75% of staff members receive formative feedback (via formal evaluations and/or peer review) about their abilities to support the institution's 21st century skills work. • Library/Museum staff members have begun implementing a plan to enhance the institution's human capital needs regarding 21st century skills.	• Between 25-75% of the decisions involving the institution's physical facilities include considerations for engaging audiences around 21st century skills (e.g., space is considered for community meetings/workshops, special events, 21st century skills related programming). • Museum/Library works with current and potential audiences to identify and prioritize physical (building) improvements that enable 21st century skills programming. • Physical facility planning is integrated with Information Technology (IT) infrastructure planning whenever possible.
21st Century Stage **COMPREHENSIVE: Over 75% of institution's operations and programming are focused on supporting 21st century skills among audiences.** **EMBEDDED: Museum/Library partners with a wide array of institutions, individuals, and organizations to co-create and co-deliver audience-centered learning experiences across the entire community.**	• Over 75% of staff members and volunteers understand and deploy best practices to support the institution's goals for engaging audiences around collections and 21st century skills. • Where appropriate, over 75% of recruitment, hiring, and performance review practices include incentives that support staff and volunteer excellence in the institution's 21st century skills initiatives. • A comprehensive plan to enhance the abilities of staff and volunteers to support 21st century skills initiatives is in place and specific progress benchmarks are being tracked. • Staff members and volunteers are active in the surrounding community and use these experiences to inform and deepen their interactions with (and/or support of) museum/library visitors.	• Where appropriate, over 75% of the decisions involving the inst sustaining audience engagement around 21st century skills (e.g are available online; facility offers evening hours, current techno spaces; and institution offers multiple access points in neighbor populations). • Strategic planning for physical and IT infrastructure is fully align skills, as well as with community priorities. • IT and physical facilities infrastructure are managed as parts of a audiences and staff (e.g., audiences and staff regularly collabora

Institutional Assets

Information Technology (IT)	Collections	Programs
• Up to 25% of staff members and volunteers are networked with each other and use current technology platforms in daily work. • Library/Museum utilizes technology systems to communicate basic information (hours of operation, contact information, program schedules) to audiences through typical one-way communication methods (website and email announcements).	• Collections occasionally support purposeful 21st century skills enhancement among audiences (e.g., objects and materials occasionally serve as a foundation for enhancing skills like critical thinking, civic literacy, and creativity among audiences, through curricula resources, special exhibits, and guest lectures). • Some parts of the collection are being considered for digitization.	• Some programs include consideration of 21st century skills as learning outcomes for audiences. • Some programs put audiences at the center of the designed experience (e.g., programs are customized to heighten audience engagement; visitors can interact with the collection, each other and staff in hands-on, interactive ways; and programs are conducted at times when audiences can easily participate).
• Between 25-75% of staff members and volunteers use online networks and current technology platforms to connect with each other and audiences. • IT planning and decision-making processes encourage and integrate community stakeholder input. • Library/Museum uses technology systems to enable two-way communication with audiences about special events and programming (e.g., audiences receive answers to their questions and provide feedback about events through online communication channels including social media).	• Collections often support purposeful 21st century skills enhancement among audiences (e.g., historical objects, books, and/or art often serve as the foundation for enhancing skills like critical thinking, civic literacy, and creativity among audiences). • Museum/Library has conducted a comprehensive analysis and developed an institutionally-appropriate plan for digitizing its collection, or parts of its collection. Some collection assets are already digitized and easily accessible online to the public. • A significant percentage of the collection is enhanced by active audience participation in, and contribution to the resources (e.g., audiences add value by collaborating with library/museum staff to enhance commentary, co-create content and interpretation, share artifacts, and add value to research activities). • Museum/Library engages community stakeholders and other institutions where appropriate in major collections strategies.	• Many programs include consideration of 21st century skills as learning outcomes for audiences. • Many programs put audiences at the center of the designed experience (e.g., programs are customized to heighten audience engagement; audiences can interact with objects in the collection, each other and staff in hands-on, interactive ways; programs are conducted at times when audiences can easily participate; and programs are enhanced by technology-enabled communication and interactions such as online discussions, dialogue, events). • It is common for audiences to help develop and refine library/museum programming, particularly if a program directly addresses an identified community need. • The library/museum is recognized as an active partner in creating and delivering programs that align with community needs.
itution's physical facilities include considerations for generating and g., physical facility is open and accessible; collections and databases ology platforms, and flexibly designed physical/virtual meeting hoods, schools, community centers, and/or online to engage diverse ed with the institution's goals to enhance audiences' 21st century an integrated system that supports two-way interactions between ate with one another in onsite and online settings).	• Most designed audience experiences include consideration of 21st century skills as learning outcomes for audiences. • Most designed audience experiences are enhanced by active audience participation in, and contribution to, the institution's expertise and resources (e.g., audiences add value by collaborating with library/museum staff to co-create programs, content, and interpretation, share artifacts, and add value to research activities). • Most programs are enhanced by technology-enabled platforms that encourage and support audience-institution collaboration and communication (e.g., audiences can comment on and collaborate around collections and programs in online settings). • The institution is implementing a comprehensive, institutionally-appropriate digitization plan with the goal of enhancing online access to the collection. • Collections and programming activities are fully aligned with institutional and community goals regarding learning and 21st century skills (e.g., the institution regularly reviews how a collection and/or program can better enhance 21st century skills among audiences). • Audience interests, priorities, and needs are central to the development and delivery of most programs and collections (e.g., knowledge creation is viewed as a reciprocal process and collections-based experiences are personalized and customized for audience interests/needs).	

Leadership & Management

Vision & Planning	Access	Resource Allocation & Sustainability
• Museum/Library leaders value 21st century skills and are actively exploring how to integrate these skills into the institution's strategic planning processes. • Where appropriate, museum/library leaders selectively include perspectives from key stakeholders and audience representatives in strategic planning efforts.	• Access (affordability; universal design principles; physical access to the building, facilities, objects and collections; and technological access to information assets while protecting individual privacy) is considered as a key dimension in strategic planning. • Library/Museum has identified high priority audiences in need of specific 21st century skills outreach; this information is shared with internal program staff. • Library/Museum occasionally surveys community members and target audiences to identify and prioritize access-related issues.	• Up to 25% of resource development and allocation decisions include consideration of issues relating to audience engagement and 21st century skills.
• Strategic planning for the museum/library includes a comprehensive approach to integrating 21st century skills into key leadership documents (vision, mission, strategic plan). • Museum/Library leaders have identified community learning needs and priorities as part of the strategic planning process. • Key community and audience representatives contribute meaningfully to the institution's strategic planning process.	• Library/Museum has conducted a comprehensive analysis and developed a plan to enhance access (e.g., affordability; universal design principles; physical access to the building, facilities, objects, and collections; and technological access to information assets while protecting individual privacy). • Library/Museum selectively participates and/or leads programs that enhance 21st century skills in high priority / high need populations. • Library/Museum often initiates meetings with target audience representatives to advise the museum on access related issues and to remove actual or perceived barriers to access	• Between 25-75% of resource development and allocation decisions include consideration of issues relating to audience engagement and 21st century skills. • Funding opportunities related to 21st century skills have been identified and are selectively being pursued.
• The institution has analyzed its vision, mission, and strategic plan and has incorporated 21st century skills in ways that reflect the needs and priorities of the institution and the community. • Museum/Library has developed and is implementing a prioritized action plan to enhance the institution's approach to 21st century skills (e.g., library/museum has conducted a comprehensive inventory and has produced a list of its key assets and resources focused on 21st century skills; there is a high level of awareness of these resources across the community and among key stakeholders/target audiences). • Audiences, partner institutions, and community groups are actively engaged in the development and refinement of museum/library strategic planning documents.	• Library/Museum is implementing and tracking progress against its plan to enhance access (e.g., affordability; universal design principles; physical access to the building, facilities, objects and collections; and technological access to information assets while protecting individual privacy). • Library/Museum regularly works with community groups to promote dialogue around issues of equity and access (e.g., the institution co-sponsors community town halls, book clubs, special exhibits, lecture series, and online programs relating to issues like global awareness and appreciation of diversity). • Library/Museum is recognized as a community leader and partner in developing and delivering equitable and accessible 21st century skills programs.	• Over 75% of resource development and allocation decisions include consideration of issues relating to audience engagement and 21st century skills. • Fundraising for 21st century skills operations and programming is vigorous and successful. • Partner organizations, community groups, and audiences are actively engaged in collaborative resource development and allocation support to strengthen the effectiveness and sustainability of the community's 21st century skills learning efforts.

Partnering

Business Partners, Community Partners, Education Partners

- Up to 25% of museum/library's 21st century skills initiatives are delivered through partnerships with other institutions, stakeholders, and audiences (such as schools, civic and social service organizations, business, community colleges, universities).

- Between 25-75% of museum/library's 21st century skills initiatives are delivered in collaboration with partners (e.g., the institution partners with local schools to deliver literacy workshops).

- Over 75% of museum/library's 21st century skills initiatives are co-created and co-delivered in sustainable, collaborative partnerships with other institutions and community/audience groups. For example, the museum/library works with:
  - Business groups to co-create and co-deliver programs and services (such as workshops or shared web portals) focused on workforce skills like innovation, communication, and technology skills.
  - Community groups to co-create and co-deliver programs and services on such topical issues as environmental literacy, financial literacy, health literacy, or civic literacy.
  - Education groups (e.g., pre-K, schools and institutions of higher learning) to co-create and co-deliver curricula, programs, resources, and services that enhance such skills as critical thinking, problem solving, creativity, and innovation.
  - Museum/Library regularly leads and/or works in partnership with other entities to identify and address significant gaps in the community's learning system around 21st century skills (e.g., by identifying high priority skills needed by the population that are not being addressed, and working with partners to address such needs).

Accountability

Goal Setting / Metric Development / Continuous Improvement

- Up to 25% of the institution's learning initiatives include measurable outcomes related to 21st century skills; these metrics are being tracked over time.
- Audience satisfaction surveys are conducted annually and shared internally to inform continuous improvement efforts.

- Between 25-75% of the institution's learning initiatives include measurable outcomes related to 21st century skills; these metrics are being tracked over time.
- Audiences are regularly asked to contribute feedback for use in the development of 21st century skills goals, metrics, and continuous improvement plans.

- Over 75% of the institution's learning initiatives include measurable outcomes related to 21st century skills; these metrics are being tracked over time.
- The institution's vision around 21st century skills is aligned with major operations across the institution and is an integral component of the continuous improvement process (e.g., assets, leadership & management, partnering, and accountability processes each have 21st century skills-related metrics that are monitored for continued improvement over time).
- Library/Museum has aligned its 21st century skills initiatives with community needs and interests (e.g., library/museum skills metrics are aligned with community-wide improvement initiatives, such as indices that track quality of life, learning, and/or competitiveness issues).
- Library/Museum engages audiences, partner organizations, and the wider community in its continuous improvement processes (e.g., audience and community groups provide real-time feedback and appropriate levels of hands-on support to assist the institution in tracking and improving its approaches to 21st century skills learning).

How to Use the Self-Assessment Tool

The Self-Assessment Tool helps museums and libraries categorize themselves on a continuum of 21st century skills strategies, from "early stage" to "transitional stage" to "21st century stage." Each institution may fall within several different stages (e.g., a library/museum may have a "21st century stage" approach to programs but have an "early stage" approach to accountability). This tool allows any library or museum—regardless of its focus, size, or budget—to better envision and implement a 21st century skills action plan. **It is important to note that this self-assessment is best utilized as a broad, high-level planning tool, rather than as a specific, tactical manual.**

Before You Start:

Build your 21st century planning team thoughtfully. Consider including individuals from throughout the institution and community. It is important to note that the institution will place itself in various places within the continuum of 21st century skills alignment. Some aspects of the museum/library's work may be "transitional," whereas other areas of work may be "21st century" or "early." This is a natural and expected result of the self-assessment process.

Step 1:

Organize the institution's analysis around each of the categories across the top of the tool: Institutional Assets, Leadership & Management, Partnering, and Accountability. Note the subsections within each of these major categories.

Step 2:

Under each subsection, find the level (e.g. "early stage," "transitional stage," "21st century stage") that best describes your library/museum. It is possible that your institution falls between two levels—if that's the case, follow a consistent approach (choose a higher or lower level, but be consistent in this approach as you move through the tool).

Step 3:

After identifying where your museum/library fits within each category, compare your institution's position to the "21st century stage," which represents an overall vision for 21st century skills and audience engagement. If the institution is at the "21st century stage," consider ways to improve the work that is already being conducted.

Step 4:

Use these self-assessment outcomes to initiate a dialogue with the museum/library board, colleagues, and other stakeholders, with the goal of further defining the institution's priorities around 21st century skills.

Step 5:

Commit to revisiting this process over time to determine progress and consider improvements.

Skills Definitions

The IMLS Project Team and Task Force considered the list of skills commonly referred to as "21st Century Skills" and modified it slightly to better align with library and museum priorities.[5]

The resulting list includes the following additions: Basic Literacy, Scientific & Numerical Literacy, Visual Literacy, Cross-Disciplinary Skills, and Environmental Literacy.

Not every skill on this list will be aligned with every institution's vision and mission. Further, not every community will prioritize the same skills. Library and museum leaders should consider this list as a starting point beyond which it should be customized to fit the unique character, requirements, and priorities of the institution and its audiences.

Learning and Innovation Skills

CRITICAL THINKING AND PROBLEM SOLVING

Reason Effectively

- Use various types of reasoning (e.g., inductive, deductive, etc.) as appropriate to the situation

Use Systems Thinking

- Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems

Make Judgments and Decisions

- Effectively analyze and evaluate evidence, arguments, claims and beliefs
- Analyze and evaluate major alternative points of view
- Synthesize and make connections between information and arguments
- Interpret information and draw conclusions based on the best analysis
- Reflect critically on learning experiences and processes

Solve Problems

- Solve different kinds of non-familiar problems in both conventional and innovative ways
- Identify and ask significant questions that clarify various points of view and lead to better solutions

CREATIVITY AND INNOVATION

Think Creatively

- Use a wide range of idea creation techniques (such as brainstorming)
- Create new and worthwhile ideas (both incremental and radical concepts)
- Elaborate, refine, analyze, and evaluate ideas in order to improve and maximize creative efforts
- Demonstrate imagination and curiosity

Work Creatively with Others

- Develop, implement, and communicate new ideas to others effectively
- Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work
- Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas
- View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes

[5] Except as otherwise noted, the skills definitions are derived from the Partnership for 21st Century Skills Framework (www.21stcenturyskills.org).

Learning and Innovation Skills (continued)

Implement Innovations

- Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur

COMMUNICATION AND COLLABORATION

Communicate Clearly

- Articulate thoughts and ideas effectively using oral, written, and nonverbal communication skills in a variety of forms and contexts
- Listen effectively to decipher meaning, including knowledge, values, attitudes, and intentions
- Use communication for a range of purposes (e.g., to inform, instruct, motivate, and persuade) and in diverse environments (including multi-lingual)
- Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact

Collaborate with Others

- Demonstrate ability to work effectively and respectfully with diverse teams
- Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal
- Assume shared responsibility for collaborative work, and value the individual contributions made by each team member

VISUAL LITERACY

- Demonstrate the ability to interpret, recognize, appreciate, and understand information presented through visible actions, objects and symbols, natural or man-made[6]

SCIENTIFIC AND NUMERICAL LITERACY

- Demonstrate the ability to evaluate the quality of scientific and numerical information on the basis of its sources and the methods used to generate it
- Demonstrate the capacity to pose and evaluate scientific arguments based on evidence and to apply conclusions from such arguments appropriately
- Demonstrate ability to reason with numbers and other mathematical concepts

CROSS-DISCIPLINARY THINKING

- Apply knowledge, attitudes, behaviors, and skills across disciplines in appropriate and effective ways

BASIC LITERACY

- Demonstrate the ability to use language to read, write, listen, and speak

[6] Derived from definition attributed to John Debes, per the International Visual Literacy Association (www.ivla.org/org_what_vis_lit.htm).

Information, Media and Technology Skills

INFORMATION LITERACY

Access and Evaluate Information

- Access information efficiently (time) and effectively (sources)
- Evaluate information critically and competently

Use and Manage Information

- Use information accurately and creatively for the issue or problem at hand
- Manage the flow of information from a wide variety of sources
- Apply a fundamental understanding of the ethical/ legal issues surrounding the access and use of information

MEDIA LITERACY

Analyze Media

- Understand both how and why media messages are constructed and for what purposes
- Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors
- Apply a fundamental understanding of the ethical/ legal issues surrounding the access and use of media

Create Media Products

- Understand and utilize the most appropriate media creation tools, characteristics, and conventions
- Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments

ICT (INFORMATION, COMMUNICATIONS AND TECHNOLOGY) LITERACY

Apply Technology Effectively

- Use technology as a tool to research, organize, evaluate, and communicate information
- Use digital technologies (e.g., computers, PDAs, media players, GPS, etc.), communication/ networking tools, and social networks appropriately to access, manage, integrate, evaluate, and create information to successfully function in a knowledge economy
- Apply a fundamental understanding of the ethical/ legal issues surrounding the access and use of information technologies

21st Century Themes

GLOBAL AWARENESS

- Use 21st century skills to understand and address global issues
- Learn from and work collaboratively with individuals representing diverse cultures, religions, and lifestyles in a spirit of mutual respect and open dialogue in personal, work, and community contexts
- Understand other nations and cultures, including the use of non-English languages

FINANCIAL, ECONOMIC, BUSINESS, AND ENTREPRENEURIAL LITERACY

- Demonstrate the ability to make appropriate personal economic choices
- Understand the role of the economy in society
- Apply entrepreneurial skills to enhance workplace productivity and career options

CIVIC LITERACY

- Participate effectively in civic life through knowing how to stay informed and understanding governmental processes
- Exercise the rights and obligations of citizenship at local, state, national, and global levels
- Understand the local and global implications of civic decisions

HEALTH LITERACY

- Obtain, interpret, and understand basic health information and services and use such information and services in ways that enhance health
- Understand preventive physical and mental health measures, including proper diet, nutrition, exercise, risk avoidance, and stress reduction
- Use available information to make appropriate health-related decisions
- Establish and monitor personal and family health goals
- Understand national and international public health and safety issues

ENVIRONMENTAL LITERACY

- Demonstrate ecological knowledge and understanding of how natural systems work, as well as knowledge and understanding of how natural systems interface with social systems
- Demonstrate understanding of the relationship between beliefs, political systems, and environmental values of various cultures
- Demonstrate understanding of environmental issues caused as the result of human interaction with the environment, and knowledge related to alternative solutions to issues
- Demonstrate active and considered participation aimed at solving problems and resolving issues[7]

[7] Adapted from the Environmental Literacy Council Framework

Life and Career Skills

FLEXIBILITY AND ADAPTABILITY

Adapt to Change

- Adapt to varied roles, job responsibilities, schedules, and contexts
- Work effectively in a climate of ambiguity and changing priorities

Be Flexible

- Incorporate feedback effectively
- Deal positively with praise, setbacks, and criticism
- Understand, negotiate, and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments

INITIATIVE AND SELF-DIRECTION

Manage Goals and Time

- Set goals with tangible and intangible success criteria
- Balance tactical (short-term) and strategic (long-term) goals
- Utilize time and manage workload efficiently

Work Independently

- Monitor, define, prioritize, and complete tasks without direct oversight

Be Self-directed Learners

- Go beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise
- Demonstrate initiative to advance skill levels towards a professional level
- Demonstrate commitment to learning as a lifelong process
- Reflect critically on past experiences in order to inform future progress

SOCIAL AND CROSS-CULTURAL SKILLS

Interact Effectively with Others

- Know when it is appropriate to listen and when to speak
- Conduct oneself in a respectable, professional manner

Work Effectively in Diverse Teams

- Respect cultural differences and work effectively with people from a range of social and cultural backgrounds
- Respond open-mindedly to different ideas and values
- Leverage social and cultural differences to create new ideas and increase both innovation and quality of work

PRODUCTIVITY AND ACCOUNTABILITY

Manage Projects

- Set and meet goals, even in the face of obstacles and competing pressures
- Prioritize, plan, and manage work to achieve the intended result

Produce Results

- Demonstrate additional attributes associated with producing high quality products including the abilities to:
  - Work positively and ethically
  - Manage time and projects effectively
  - Multi-task
  - Participate actively, as well as be reliable and punctual
  - Present oneself professionally and with proper etiquette
  - Collaborate and cooperate effectively with teams
  - Respect and appreciate team diversity
  - Be accountable for results

LEADERSHIP AND RESPONSIBILITY

Guide and Lead Others

- Use interpersonal and problem-solving skills to influence and guide others toward a goal
- Leverage strengths of others to accomplish a common goal
- Inspire others to reach their very best via example and selflessness
- Demonstrate integrity and ethical behavior in using influence and power

Be Responsible to Others

- Act responsibly with the interests of the larger community in mind

CASE STUDY:

Philadelphia Museum of Art

21ST CENTURY SKILLS:

Visual Literacy
Cross-Disciplinary Thinking
Communication and Collaboration
Critical Thinking and Problem Solving

SELF-ASSESSMENT CATEGORIES:

Partnering
Institutional Assets

Bedroom Painting No. 7, 1967–69, by Tom Wesselmann (Philadelphia Museum of Art: Purchased with the Adele Haas Turner and Beatrice Pastorius Turner Memorial Fund, 1972-156-1). Art © Estate of Tom Wesselmann/Licensed by VAGA, New York, NY.

"The children in Philadelphia's public schools are the future stewards of our great cultural resources, and they deserve access now and always to the best of what this city has to offer."

— Marla Shoemaker, Senior Curator of Education, Philadelphia Museum of Art

The Philadelphia Museum of Art, in partnership with The Barnes Foundation, The Fabric Workshop and Museum, the Institute of Contemporary Art at the University of Pennsylvania, and the Pennsylvania Academy of the Fine Arts has developed a new initiative called *Art Speaks!* This partnership engages the Philadelphia School District's 14,000 fourth graders around art appreciation, visual literacy, information literacy, and communication skills, through onsite museum experiences.

Museum educators from the five participating institutions worked closely with school district officials to create the *Art Speaks!* curriculum, which introduces fourth graders to art museums and art concepts while reinforcing reading, writing, and creative thinking strategies that are embedded in the school district's literacy and visual arts curricula. Fourth-grade teachers receive supplemental teaching materials to assist in planning a free class trip to one of the five participating institutions. Teachers are given a manual, activity sheets, and other resources for writing and discussion activities, an orientation DVD to play for students, and five teaching posters and a CD-ROM that will introduce one work of art from each institution. These works are: the ceremonial teahouse *Sunkaraku*, designed by Ōgi Rodō (Philadelphia Museum of Art); Henri Matisse's painting *Seated Riffian* (The Barnes Foundation); Faith Ringgold's story quilt *Tar Beach 2* (The Fabric Workshop and Museum); Alexander Calder's sculpture *Jerusalem Stabile* (on the campus of the University of Pennsylvania); and Winslow Homer's painting *Fox Hunt* (Pennsylvania Academy of the Fine Arts).

Works of art naturally foster conversation, creative thinking, discussion, and even friendly debate—all hallmarks of the literacy concepts fourth graders are learning in school. As students gear up to visit a visual arts institution (a first for many participants), *Art Speaks!* enhances their knowledge of art and artists and reveals how the literacy skills they are practicing in school come into play in real life situations. The initiative focuses on the ability to "describe, compare, discuss, interpret, and express" by having students write about their knowledge using various forms (e.g., postcards, journal entries) before and after the visit. Students complete an evaluation matrix after the visit, and these evaluations have shown a significant improvement in student writing after the onsite museum experience.

"*Art Speaks!* is a milestone collaboration," said Marla Shoemaker, senior curator of education at the Philadelphia Museum of Art. "Never before have five art institutions in the region worked together on a project like this. The children in Philadelphia's public schools are the future stewards of our great cultural resources, and they deserve access now and always to the best of what this city has to offer. By linking with public school curricula in art and literacy, museum trips become a serious part of each student's education, both as a fourth grade learner mastering reading, writing, and creative thinking, and also as a participant in the cultural life of our great city."

The program serves as a vibrant model of how multiple museums can work with schools—as well as each other—to enhance art knowledge and critical skills among broad, previously unreached audiences.

21st Century Skills Action Agenda: Six Steps to Build Momentum

Given the impacts of the new economy, new trends in learning, and new audience expectations, how can museums and libraries take proactive steps to position themselves more strategically for the future?

In this new environment, each community is looking for ways to strengthen the health of its economy, workforce, and culture. As important community institutions, libraries and museums can envision, define and implement approaches that support 21st century skills in more purposeful, visible ways. They can leverage their tremendous learning assets (e.g., their deep content and expertise) to help individuals and communities improve workforce preparation, civic engagement, and cross-cultural understanding by emphasizing skills like critical thinking, problem solving, global awareness, innovation, communication, and collaboration. These are the skills that audiences and employers need to thrive in the 21st century.

Integrating 21st century skills into library/museum audience engagement strategies calls for a holistic approach that expands the vision of what it means to be a vibrant, relevant institution. This project encourages museums and libraries to evolve from an intuitive approach toward learning to a more targeted and deliberate one; a disciplined self-assessment of the entire institution is required.

Implementing a comprehensive 21st century skills action agenda takes dedicated planning, strategic consensus-building, and, often, robust partnerships to be effective. The following sections provide practical guidance for beginning this process.

Integrating 21st century skills into library/museum audience engagement strategies calls for a holistic approach that expands the vision of what it means to be a vibrant, relevant institution.

Six Steps to Build Momentum

1 **Engage with Community.** Complete the community learning scan (page 32) to better understand the library/museum's position in the community's learning system, prioritize the 21st century skills, and identify potential partnerships. Then, continue to work with community organizations to align the institution's efforts with community needs. Developing *and sustaining* an ongoing awareness of what the community needs, how these needs are changing and what partnerships are most strategic will help focus, prioritize, and leverage the museum/library's approach to 21st century skills.

2 **Establish the Vision.** Develop a 21st century vision for the institution's role in the learning systems of the community. Museum and library leaders can articulate the value of the institution's participation in the dialogue around 21st century skills to staff, board members, volunteers, and the public. The institution's vision, mission, and values are crucial to setting a comprehensive frame for 21st century learning work. Only when the museum/library articulates its vision for 21st century skills in ways that are aligned with the community's needs can effective partnerships and audience engagement strategies be fully leveraged.

3 **Assess Current Status.** Use the self-assessment tool (page 15) to create a current 21st century skills analysis of your institution. It is critical to understand what the museum/library is already doing vis-à-vis 21st century skills and audiences so that a future path can be charted for the museum/library.

4 **Implement a Prioritized Plan.** After the institution has scanned the community, established the vision and analyzed its current status, an action plan should be developed and implemented to include the following: the skills the museum/library will prioritize in its operations; the partners that should be engaged to better align and leverage the museum/library's activities; target audiences; new and existing resources needed to implement the plan; a timeline; and methods to track progress and improve the initiative over time.

5 **Focus on Comprehensive Alignment.** Library and museum leaders should align the institution's vision and goals for 21st century skills with key organizational areas such as: leadership and resources (e.g., the institution's strategic planning/resource allocation processes), institutional assets (e.g., facilities, information technology, programs, collections, human capital), partnering strategies, and accountability systems.

6 **Track and Communicate Progress.** Use the principles outlined in this report and the self-assessment tool to monitor progress around 21st century skills goals and communicate this progress to audiences, partners, community leaders, and policymakers. The ability to implement the vision and document results that strengthen the community's overall approach to learning in the 21st century is a powerful leadership opportunity for museums and libraries.

CASE STUDY:

Skokie Public Library

21ST CENTURY SKILLS:

Financial, Economic, Business, and Entrepreneurial Literacy

Communication and Collaboration

Global Awareness

SELF-ASSESSMENT CATEGORIES:

Leadership & Management

Partnering

Institutional Assets

Skokie, a northern suburb of Chicago, has a current population of 68,000 that has become increasingly diverse over the past 25 years. Forty-two percent of its population is now foreign born and 90 different languages are spoken throughout the community. In response, Skokie Public Library has formed a broad array of partnerships and focused its operations and programs to serve the entire community. This leadership vision and community-centric approach helped the Skokie Public Library earn the National Medal for Museum and Library Service in 2008.

At the White House ceremony celebrating this achievement, Carolyn Anthony, Director of the Skokie Public Library said, "The library is integrated into the fabric of the community, constantly working in collaboration with other organizations to address the ever-changing needs of and challenges facing Skokie. Because we serve such a diverse population, we focus on building community and supporting lifelong learning and the exchange of ideas among groups and individuals" ("Skokie Public Library" 2008).

Being embedded in the community is intentional and strategic. Every three years as part of the strategic planning process, the library scans the community for emerging needs, and determines how and whether the library can help address them. This process revealed several years ago that the economic base had shifted—seemingly overnight—from large corporations as the major employers, to smaller, more nimble businesses. Local entrepreneurs were relying more heavily on the resources provided by the Skokie Public Library, where specialized business and workforce development information could be accessed along with guidance from expert library staff. Sensing the need to better understand this audience, Anthony became involved with the Chamber of Commerce. In that capacity she helped create a non-profit education organization, the North Suburban Business Development Foundation, to help provide continuing education to members of the business community and educate the broader community about the work local businesses are doing.

Families enjoy stories and songs in the Skokie Public Library courtyard, followed by a marshmallow roast.

The new business initiative is a fitting example of the service culture embodied by the Skokie Public Library—the institution's leaders know that all community needs cannot be met by a library alone. Library leadership in addressing these needs—to listen, to research, to connect the dots, and to bring partners to the table—is a fundamental value that infuses the entire Skokie library system.

Skokie Public Library initiatives enhance global awareness, communication, and life and career skills throughout the community. Its Festival of Cultures, a cooperative project started 19 years ago by the library, Village of Skokie and Skokie Park District that takes place in Skokie every May, originally started with just six cultures; in 2009, representatives of 42 cultures engaged the community around the central theme of sustainability, with interactive games and an obstacle course all crafted out of recycled materials. A range of activities also encouraged global awareness: participants "earned" colored beads by engaging in educational activities at each cultural booth and turned the beads into global necklaces representing the diversity of the community.

Community Learning Scan

A helpful step in the process of implementing a 21st century skills action plan is to align your institution's efforts internally as well as externally. Consider completing this matrix as a way of scanning the community's learning system, distinguishing between community needs and target audience needs, and locating the role of the library/museum within this perspective.

21st Century Skills	Our community needs this skill	Our target audience(s) need this skill	This skill is relevant to our current mission	This skill is relevant to our future vision/mission	Organizations and others who are focused on this skill
Critical Thinking and Problem Solving	☐	☐	☐	☐	
Creativity and Innovation	☐	☐	☐	☐	
Communication and Collaboration	☐	☐	☐	☐	
Visual Literacy	☐	☐	☐	☐	
Scientific and Numerical Literacy	☐	☐	☐	☐	
Cross-Disciplinary Thinking	☐	☐	☐	☐	
Basic Literacy	☐	☐	☐	☐	
Information, Media, and Technology Skills	☐	☐	☐	☐	
Life and Career Skills	☐	☐	☐	☐	
Global Awareness	☐	☐	☐	☐	
Financial, Economic, Business, and Entrepreneurial Literacy	☐	☐	☐	☐	
Civic Literacy	☐	☐	☐	☐	
Health Literacy	☐	☐	☐	☐	
Environmental Literacy	☐	☐	☐	☐	

Once you have completed the matrix, you should have a helpful snapshot of which skills are relevant to your community and your institution, and a list of potential partners. From here, you can better understand which ones should be incorporated more purposefully and comprehensively into your overall 21st century skills efforts.

CASE STUDY:

New York Hall of Science

21ST CENTURY SKILLS:

Life and Career Skills
Communication and Collaboration
Scientific and Numeric Literacy
Global Awareness

SELF-ASSESSMENT CATEGORIES:

Human Capital
Leadership & Management
Partnering
Accountability

The Science Career Ladder (SCL) at the New York Hall of Science is an innovative education, employment, and mentoring program that hires high school and college students. The program employs 150 students as Explainers who are trained to provide the following skills:

- Exhibition interpretation
- Science demonstrations
- Orientation
- Workshop support
- Visitor interaction (over 400,000 annually)

The ladder is a progression of knowledge and responsibility, with the ultimate goal of producing employed, trained, and mentored Explainer floor staff. The success of this approach is well-known to Preeti Gupta, the Hall's current vice president of education; she began her career in 1989 as an Explainer, ultimately climbing the ladder to the top rung. The program's impact is impressive. A 2002 study conducted by the Institute for Learning Innovation found that alumni of the program reported that they developed self confidence, communication and teaching skills during a critical phase in their lives, were more willing than average college graduates to consider careers in teaching, and acquired an appreciation for science and a personal connection to science and learning as part of their everyday lives.

High school students are recruited as Explainer Interns, who help children and adults create science-related arts and crafts and assist with weekend programs and temporary exhibitions. These students move up the ladder through a thoughtfully designed process of mentoring, training and support to become Explainers and together with college-level students become paid staff that work up to 20 hours per week. As Explainers, students are continually provided opportunities to grow their workforce, leadership, science communication and public speaking skills; these are assessed at regular intervals to help the students develop and refine their competencies over time. It is in this visible role where Explainers ensure an enjoyable and meaningful experience for visitors. And it hasn't gone unnoticed. In studies conducted at the Hall, visitors have consistently placed interaction with Explainers at the top of their list of factors that make their experiences enjoyable.

Explainers work directly with audiences, engaging the public through inquiry-based exploration activities. Through their hands-on, science-focused interactions with the public, the Explainers develop the kinds of interpersonal, empathy, and communication skills necessary to bridge generational, cultural, and religious gaps among audiences. These skills, developed and refined in applied settings, enhance the students' prospects for continued academic and workforce success long after they leave the Hall. Since 1986, the program has inspired over 1,700 students to pursue professional careers, many in science and education.

The Science Career Ladder illustrates how the New York Hall of Science works to continually improve its internal and external operations to facilitate scientific knowledge, skills, and aptitudes for its visitors, staff, and future community leaders. "The success of our work requires clarity and coherence in how we engage the public and enhance learning, as well as in the work we do to grow and nurture our own staff. The Science Career Ladder exemplifies these values," notes Margaret Honey, President & CEO of New York Hall of Science.

Implications of this Report

Concerted action is required to meet the educational, economic, civic, and cultural needs of the community. Establishing a compelling vision around 21st century skills is critical. Then it becomes possible for innovative partnerships to be formed among cultural, business, education and policy leaders, all of whom can work together to strengthen the community's approach to 21st century skills.

Community Stakeholders

Every community stands to benefit from an intentional focus on 21st century skills; community, cultural, education, and business organizations each have a stake in strengthening the community's overall learning system. Specific next steps for stakeholders include the following:

- Community institutions can initiate partnerships with museums and libraries and others to strengthen overall basic literacy, civic awareness, environmental literacy, and health literacy throughout the community.
- Cultural institutions including libraries and museums can join together to encourage greater global awareness and visual literacy.
- Formal education institutions (e.g., pre-school programs, schools, universities, colleges) can partner with museums and libraries to enhance 21st century skills across their campuses, with a particular focus on cross-disciplinary thinking.
- Businesses can initiate collaborations with libraries and museums that encourage 21st century skills like creativity, innovation, communication, collaboration, and financial literacy to strengthen the workforce as well as the economic health of the community.

All business, community, cultural, and educational institutions can align their missions with a community-wide vision around 21st century skills.

Policymakers

Policymakers can play a key role in moving communities toward a compelling vision around 21st century skills. Policymakers can:

- Create policies that embrace a 21st century vision.
- Include libraries and museums in all policies addressing learning and education.
- Create incentives for nonprofits, funding entities and others to invest in this vision.
- Conduct oversight of institutions to ensure they are working toward this vision.
- Appropriate funds consistent with the vision.
- Encourage research at the federal level that seeks to define the impact(s) of libraries and museums in developing 21st century skills among individuals in self-directed learning environments.

Conclusion

The relationship between libraries, museums, and their communities is at a critical intersection. There has never been a greater need for libraries and museums to work with other organizations in effectively serving our communities; there has never been a more rapid period of change affecting museums, libraries, and their communities; and there has never been a more challenging period of economic dislocation facing the people in our communities. As a result, there has never been a better opportunity for libraries and museums to act as leaders for positive change and collaboration. Our libraries and museums can and should seize the opportunity to position our institutions in light of these 21st century challenges.

The *Museums, Libraries, and 21st Century Skills* project is designed to help library and museum leaders play a catalytic role in this dialogue, if museums and libraries are prepared to take four critical steps.

EACH LIBRARY AND MUSEUM SHOULD BE WILLING TO:

- Evaluate how its current mission aligns with the goal of helping the institution and community respond to the challenges of the 21st century;
- Assess where the institution sits today on the continuum of supporting the development of its audiences' 21st century skills;
- Become increasingly embedded in the community in order to create lasting partnerships that address 21st century audience needs; and
- Design new programs and strategies to help individuals meet the new and more demanding challenges of 21st century life.

The collective leadership of the museum and library community can play a major role in setting and implementing this new strategic direction. It is our hope that the conversations sparked by this report and tool will invigorate meaningful collaborations among cultural institutions and other stakeholders to help every community embrace its 21st century challenges with enthusiasm and confidence.

There has never been a greater need for libraries and museums to work with other organizations in effectively serving our communities, there has never been a more rapid period of change affecting museums, libraries, and their communities, and there has never been a more challenging period of economic dislocation facing the people in our communities.

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[8] Updated from 1998 to 2003 data by David Autor.

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COVER PHOTOS

Front cover, far left: Courtesy of the Saint Paul Public Library in Saint Paul, Minnesota

Front cover, second from left: A computer class for senior citizens at the Jane Stern Dorado Community Library in Dorado, Puerto Rico.

Front cover, third from left: Courtesy of the Brookfield Zoo, Chicago Zoological Society in Brookfield, Illinois.

Back cover, far left: Photo courtesy of the Levine Museum of the New South in Charlotte, North Carolina.

Back cover, second from left: Courtesy of COSI Toledo in Toledo, Ohio.

Back cover, third from left: Courtesy of the Miami-Dade Public Library System in Miami, Florida.

Back cover, far right: Courtesy of the Exploratorium in San Francisco, California.

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