the Joan Ganz Cooney Center at Sesame Workshop

advancing children's learning in a digital age

The Power of *Pow! Wham!*: Children, Digital Media & Our Nation's Future

Three Challenges for the Coming Decade

Executive Summary

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Preface: The Power of Pow! Wham!

"A word about children's programs," Joan Ganz Cooney wrote in 1966. "Most of those commercially sponsored, seem to be inordinately noisy and mindless affairs." She added, "Beginning at an early age, we can assume, children are conditioned to expect pow! wham! fast action thrillers…and highly visual, slickly and expensively produced material." This observation led her to an important question: Would it be possible to design children's programming that would be attractive and fun and at the same time realize serious educational aims? She concluded: "I believe the answer is an emphatic yes."

Mrs. Cooney reached this conclusion in a landmark paper, *The Potential Uses of Television in Preschool Education,* that was a rationale, initial research base and blueprint for the Children's Television Workshop, now known as Sesame Workshop. For the paper, she had surveyed leaders across several fields, including early childhood education and developmental psychology, about the possibility of using television broadcasts to educate young children. She envisioned children's programming of such broad appeal that it would reach all children, especially those living in disadvantaged neighborhoods. The paper described lively, colorful, research-based content that would be aired both in homes and preschools in order to reach all children.

Forty years later, educational television reaches tens of millions of young children around the world. The impact of *Sesame Street* has reached children in more than 140 countries with an approach to informal learning that has left an indelible imprint on generations of children and families. The creative power and academic effectiveness of the "Sesame Workshop model" has been documented in hundreds of academic studies, business case models and in the iconic popularity of the Muppets.

As Mrs. Cooney foresaw, compelling, participatory content plus high production has been a powerful equation, engaging diverse children in challenging thinking and learning activities. Long-term studies have demonstrated the effectiveness of educational television, but the problem posed by Mrs. Cooney in 1966 remains urgent. "Pow! wham! action thrillers" continue to dominate the market, but increasingly they take the form of electronic interactive games—now a multi-billion dollar business that is shaping many school-aged children's current media experiences, albeit with little explicit or intentional educational content.

The context has changed dramatically, but the challenge Mrs. Cooney posed remains: How can we unleash the power of digital media to support and accelerate the learning and development of all children—including disadvantaged children—both in and out of school?

Addressing that question is the mission of the new Joan Ganz Cooney Center at Sesame Workshop. Following in Mrs. Cooney's footsteps, we have undertaken a survey of leaders in several fields, as well as an initial scan of the research literature, in order to outline an agenda for change. The stakes are as high today as they were forty years ago. The demographic, technological and economic trends of the past decade all demand a transformation in the way we think about the education of young children in a global, interconnected world. And given the

remarkable changes, educational equity and consistently high achievement remain distant, but even more urgent goals. Bold new strategies are needed to engage and inspire children and to help them learn vital new literacy skills and perspectives. Toward these ends, educators have at their disposal concepts and tools that are beyond the wildest dreams of the readers of Mrs. Cooney's 1966 report.

In contrast to *The Potential Uses of Television*, this report focuses primarily on children in the elementary school years. Digital media powerfully affect young people of all ages, but existing research and development efforts have tended to focus on younger and older kids, leaving a gap in knowledge and programming related to children in the age range from 6 to 11, the "middle childhood" period. It is during this stretch of time that children typically take giant steps into the world that lies beyond family and home, grapple with literacy and numeracy and continue to build the store of words and ideas that they will need to profit from reading throughout their lives. These are also the years when children develop long-lasting attitudes toward learning as well as deep convictions about their own potential.

This paper is based on interviews with more than 50 leaders from such fields as educational media, literacy, child development, educational and family policy, digital media production, and global knowledge and skills. Our discussions were wide-ranging, touching on subjects as diverse as reading, game design, school reform and neuroscience. We talked about children in and out of school settings, and focused in particular on children at risk.

The paper poses three broad challenges that must be met if we are to unleash the educational and developmental power of digital media. In today's complex world, no single person, organization or program can meet these challenges. It will take coordinated efforts by researchers, educators, parents' groups, designers, business leaders, policymakers and child advocates. Broad public engagement will be a key to change.

We envision this paper as a catalyst for needed dialogue about the potential and limitations of digital media to promote learning for young children. The research and industry trends highlighted here are an intended "starting point" to better understand how children are knowing and growing today. The Joan Ganz Cooney Center will build on this new interest, ever mindful of the decades of work by leaders and thinkers in many fields who wish to use the most powerful tools available to benefit children. Our greatest hope is that, following in the footsteps of our founder, we will be able to inspire leaders across sectors and disciplines to reach the next generation of children, harnessing the enduring power of "pow! wham!"

Introduction: Getting it right

> We are the Jetsons. Our children are growing up in a world where their toys obey them and their parents converse with the family car.

Forecasts of tomorrow's technologies have usually gotten it wrong. On the threshold of the digital revolution, many experts thought computers would get bigger and more expensive, not smaller and cheaper. In the 1950s, Princeton University scientist Freeman Dyson predicted that the technology would become so complex and costly that only the richest nations or largest institutions would be able to afford it. He estimated that in the future, the number of computers worldwide would reach a grand total of ten.

Of course, instead of getting bigger, computers have shrunk to the point where they are not only portable but wearable. And as for affordability, Mitchell Resnick of MIT believes that "in the years ahead, the declining cost of computation will make digital technologies accessible to nearly everyone in all parts of the world, from inner-city neighborhoods in the United States to rural villages in developing nations."[i]

Scientists aren't the only ones who have gotten it wrong. In the mid-20th century, the popular press miscalculated as well. Journalists imagined Americans in the year 2000 commuting to work harnessed to personal jet propulsion devices; they failed to foresee fax machines or email or the Internet.

Most of us manage without personal jetpacks. But, as digital media researcher Shalom Fisch told us, "We are the Jetsons." Our children are growing up in a world where their toys obey them and their parents converse with the family car. Many of us, children and adults alike, beam ourselves to virtual worlds, instantaneously connect with people on the other side of the planet and locate esoteric information within seconds—without giving these dazzling feats a second thought.

Electronically-enabled experiences fill daily life at home, at work and in our communities. This trend is likely to accelerate, as embedded technologies become pervasive. Mobile computing is already a reality, as multi-use cell phones give users access to Internet content, including videos and games. Existing web applications like Google Maps are being "mashed up" with other data feeds to create previously unimaginable tools. New electronic toys combine the digital with the physical, creating learning platforms that involve movement and emotion as well as cognition.

But humans remain human. And that—history suggests—is why crystal ball gazers have often been mistaken. Futurists have focused on what machines can do rather than on what people want and need. The machines change. What stays the same is the most strongly felt need of the

people who use them: connection with other people. Professionals who spend their days thinking about what's next continue to learn this lesson. Several of the experts interviewed for this inquiry told us that neither they nor their colleagues had anticipated the extent of children's involvement in online social communities.

We are focusing on elementary school children, who have tended to receive less attention from digital learning specialists and high-tech industry leaders than preschoolers and adolescents.

Rather than hazarding guesses about tomorrow's technological frontiers, this report begins with today's children: who they are, how they are spending their time, and what they are likely to need to know and be able to do. We are focusing, in particular, on elementary school children who have received less attention from digital learning specialists and high-tech industry leaders than preschoolers and adolescents.

Like every new generation, today's children are both vulnerable and resilient. They are deeply affected by the experiences they have, both positive and negative, at home, in neighborhoods and in schools. At the same time, given sufficient support and scaffolding from caring adults, they can make the most of opportunities and thrive despite difficulties.

And that is why adults need to get it right—at least as right as we possibly can—when we consider the young people of all ages and demographic descriptions whose lives are increasingly flooded with digital experiences. How can digital media strengthen and accelerate learning? How can we ensure that children's media-saturated lives are safe and healthy? We may not know exactly what technologists have in store for our young people, but we can and must do our best to understand their changing world and the challenges it poses.

This report summarizes the results of an initial inquiry undertaken by the new Joan Ganz Cooney Center. We have focused on interactive digital media[1]. While children's involvement with digital games has drawn the most attention from researchers, journalists and the public at large, we also considered a wide range of other digital applications and tools, such as social networking sites, simulations, programming tools, podcasts, digital books and electronic toys. We looked into applications that incorporate users' contributions, such as video content sites and wikis. We have not focused on television broadcasts in this paper, although we have made occasional references to Sesame Workshop's experiences with educational programming.

In order to identify key challenges for the coming decade, we interviewed some fifty experts from diverse disciplines. We asked them to share with us not only their experiences with digital learning and their advice about key trends, but also their hopes and concerns for the coming decade. We also consulted recent scholarship. We did not attempt an exhaustive

[1] Defined as "Technology products that are created for a mass audience, that allow the user to have some level of input and/or control over the action or content, and that respond to the user's input with either verbal or nonverbal information." (Children Now report, 2007)

literature review; rather, we sought to shed light on selected issues raised by interviewees or to suggest possible directions for future work.

Our inquiry pointed to progress now taking place in homes, communities and institutions. Across the nation, millions of families are working out new relationships with digital media. Educators are developing exciting new approaches to integrating digital learning into the lives of schools. In the realm of industry, innovators are refining today's best offerings and inventing tomorrow's applications. And at universities, research institutions and foundations across the nation, researchers focusing on children's development and learning are contributing to what we know about the benefits and impact of digital media.

Despite this activity, public discourse reflects confusion and ambivalence about children's immersion in digital media.[ii] Polls suggest that many adults welcome the benefits of computer-based learning. They see young people searching the Internet to research a tremendous range of subjects; grappling with online reading material that might not hold their attention in print formats; and spending hours on simulations or games that breathe virtual life into important issues—including many that have not typically captivated young learners. Adults nevertheless worry about the amounts and types of media children consume. Researchers say that young Americans are reading fewer books—and reading them less well. They point to competition from other media as one key factor.[iii] Equity is another ongoing concern. Most interviewees agreed that more needs to be done to bring the benefits of today's powerful new learning tools to all children and families.

We found wide consensus about the need to transform promising but dispersed actions into a more coherent endeavor—one that can support researchers' efforts to develop more powerful understandings and methods; industry's capacity to captivate and benefit children; schools' and communities' attempts to harness the power of digital media to prepare children for the global, innovation-based world they will inherit; and families' efforts to guide and safeguard their children.

Toward this end, we have identified three interrelated challenges, which are described briefly in the following pages[2]. All of them must be addressed if our nation is to realize the full potential of digital learning. For each challenge, this report issues a series of calls to action, highlighting important lines of work that need to be advanced and coordinated.

[2] In January, we will release the full report. Please contact the Center (cooney.center@sesameworkshop.org) for an advance copy.

Challenge #1: Build a coherent R&D effort

From their early elementary years, children spend many hours each day engaged with digital media: kids ages 8-10 now spend nearly as much time immersed in media as they do in school. Rarely has a phenomenon affecting children been so pervasive and so powerful, yet so poorly understood. To be sure, significant efforts are now underway to study how immersion in electronic activities may be affecting children and how digital media can be harnessed to strengthen and accelerate learning. These initiatives are shedding light on the usage, impact and potential of digital media, but the most promising efforts remain in the early stages. At the same time, the walls that separate sectors are steep and are seldom scaled. Research and development efforts suffer as a result. Overall, the field would benefit from strategic priority setting, more sustained funding and greater methodological clarity. Our nation urgently needs a coordinated research and development plan for digital media that focuses squarely on children's wellbeing, development and learning.

We probed experts as to the opportunities and risks involved in the use of digital media. Many educational researchers hypothesize that digital learning has the potential to strengthen the old and new literacies that are needed for success in the 21st century, but readily acknowledge that most of the important questions about the impact of interactive digital media on children's development have yet to be addressed. How do experiences with digital media shape children's ways of knowing about the world? What are the benefits and risks of digital media experiences for subgroups of children (such as girls, special learners, and English Language Learners)? How is children's development influenced by such digital age phenomena as media multitasking, social networking, or YouTube-style opportunities for creative expression? Can we better understand digital gaming and other media use as cultural practice?

In addition, we also need to know more about how children choose media experiences; about the impact of adult participation or scaffolding of media experiences on key learning outcomes; and about interventions that might buffer negative effects or reinforce positive ones. Given the rise of social networks and gaming communities, we need qualitative studies not only of individual youngsters but also of networks and communities of children. And finally, what are the unintended consequences associated with the use of digital media in and out of school? Are gains in one area of cognitive, social or emotional development accompanied by losses in others? In the educational realm, which kinds of knowledge or activities will get less attention? Which abilities may atrophy? As children learn to create, mash up and remix digital media, will they lose a sense of what is authentic and credible? Those responsible for children's learning, in and out of school, stand to benefit from these insights.

Before these questions can be addressed fully, important research problems must be addressed. There is little consensus about how to measure the effects of media, what to measure, and how studies should be designed—all further complicated by the fact that digital content is literally a "moving target" (altered continuously through user participation); that digital media experiences take place in many kinds of settings; and that children tend to use several kinds of media at the same time.

CALL TO ACTION

- **ESTABLISH THE STATE OF THE ART:** Map major research and development efforts that are currently being supported by federal agencies, states, foundations, universities, independent research institutions and industry groups. Consider gaps and how to fill them (e.g., Children and Media Research Advancement Act).

- **BRING TOGETHER THE NATION'S LEADING EXPERTS:** Convene experts representing diverse sectors and disciplines, with a view toward reaching consensus on key research questions and strategies for advancing knowledge development.

- **CREATE A COORDINATED SYSTEM OF NATIONALLY SIGNIFICANT R&D PRIORITIES:** Foster and coordinate basic and applied research on key issues raised in this report.

- **ENGAGE THE PUBLIC:** Millions of adults across the nation are struck by children's immersion in digital media and wonder about their impact and potential. Now is the time to begin transforming these personal musings or concerns into political engagement and action.

- **INFORM THE PUBLIC:** As knowledge is developed, inform policymakers, parents, teachers and the public about the effects and potential of digital media and what they can do to safeguard children and support learning.

Challenge #2: Rethink literacy & learning for the 21st century

The second Cooney Challenge is located in the overlap between the span of digital experiences that saturate children's lives and the wide range of competencies they will need as engaged citizens of the interconnected 21st century world.

Young learners today must master many new skills and approaches to learning. We begin with reading because in the global, interconnected world children inhabit, it remains vitally important to become literate in the traditional sense of being "lettered"—able to decipher and make meaning from written texts. The experts we consulted agreed that there is an urgent need for improvement in the nation's reading report card as progress has been limited in the past two decades: half of children from low-income families and underserved communities are still unable to master basic literacy skills in elementary school, which places them on a trajectory towards academic failure. The recent focus on teaching children to read and the additional resources available through No Child Left Behind are a welcome development, but progress must accelerate. In particular, we must more consistently deploy proven strategies, especially knowledgeable, well prepared teachers and a scientifically-based approach to instruction to motivate children. It is now timely to determine how digital media can help us do a better job.

In an interconnected world, children must also become fluent in the use of many other symbolic systems and communication tools. They must come to terms with a much wider range of ideas and understandings, including knowledge of other countries and cultures. The demands of 21st century workplaces have been discussed in depth by many experts and institutions across the nation. Our scan of the field suggests that in addition to the three R's, today's ten-year-old needs to be able to do the following:

1. Use digital tools effectively and safely. This includes, but goes well beyond, the basic computer skills needed to navigate the Internet and make good use of search engines. As technologies increasingly saturate daily experience, children need to be able to express themselves fluently using multiple media (such as text, video, graphic design and sound) and to use those media as they navigate across multiple platforms (such as desktop computers, handheld devices and cell phones). Words will not vanish from the literacy domain—but literacy will increasingly be "words-with-other-things."

2. Think critically. In a world flooded with information, children need to be able to determine the source of data, assess its validity, put it into context and separate opinion from fact. Critical thinking means framing important questions and solving problems; it means understanding intentions (one's own and those of others) and working through ethical considerations. Many of the game designers and technology researchers we talked to emphasized the power of digital simulations and games to engage kids in decision-making and help them understand the consequences of their actions.

3. Understand systems. In an interconnected world, it is important to understand how the things that people think, decide, do and create are connected and how they affect each other, across geographic boundaries, across socio-economic boundaries and across disciplinary boundaries. Digital games often confront players with complex processes and systems. Young gamers come to learn how rules structure experience. They learn about how a dynamic set of parts interrelate to make meaning; and they learn about how people use and transform systems.

4. Know about other countries and cultures. Today's economy presents challenges to an educational system that has historically downplayed international education. Our inquiry underscored the potential of digital media to accelerate progress in this sphere. Educators have identified effective practices for teaching reading and math, and now need to ensure that they are used better and more consistently. That is not true in the realm of global literacy. In this sphere, the intrinsic strengths of digital media—universality, connectivity, powerful visual imagery—can really pay off.

5. Participate effectively in learning communities. Children need to know *how* and they need to know *what*. Today, they also need to be able to know *with*. Participatory knowledge development is at the heart of the online world known as Web 2.0, where user-generated websites and content dominate. In this setting, children need to master not only the tools that allow collaborative exploration or invention, but also the social and communication skills needed to respond to and improve on others' ideas, designs or creations. Many educators say that digital collaboration prepares tomorrow's adults to take part in communities of practice.

6. **Invent, create, and design—alone and with others**. As children take part in collaborative processes, they can try out many different roles: peers, novices, leaders, writers, editors, scientists and critical friends. Many of the experts we interviewed say that the most important identities they can experience using digital tools are those of designers, creators and inventors. Our nation's future hinges on competencies that are neither "offshorable" nor the realm of the machine: inventing and creating. Some experts believe that in our efforts to define learning standards and assure accountability, we are neglecting children's imaginative lives. They argue that children are doing inventive things with technology and media all the time, but in school, they may be told that such activities are for other places.

7. Find wholeness in a "remix" world. Today's children are using multiple applications and platforms, often at the same time. They are becoming adept at cutting and pasting not only texts, but also ideas, images, musical compositions, literary works, video clips and other content. In the new century, children must be able to follow a line of reasoning or a storyline across multiple media or platforms. But the challenges extend well beyond making sense of remixed content. Electronic networking has also led to the unbundling of institutions, bodies of knowledge and even the concept of self. Online, children may be prompted to try out multiple identities, sometimes anonymously. It can be challenging, in this context, for children to experience authenticity and coherence in their learning experiences. For parents and teachers, helping children recognize and meet this challenge may be the most difficult task of all.

CALL TO ACTION

- **RETOOL THE NATION'S READING ENTERPRISE:** Ensure that today's most effective reading strategies are optimally supported by digital media experiences. Identify digital media strategies that hold promise for helping all children (including English Language Learners and children in special education) learn to read.

- **ADDRESS THE FOURTH-GRADE SLUMP:** Seek solutions for this problem, focusing sharply on strategies for narrowing the knowledge gap that opens up between "learning to read" and "reading to learn."

- **ENGAGE LEADERS ACROSS SECTORS IN EFFORTS TO RECONCEPTUALIZE LITERACY:** Collaborate across sectors and disciplines to identify the competencies children need, rethinking literacy for a new era and providing guidance to parents, educators, out-of-school program planners, industry leaders, policymakers, and the public at large.

- **SUPPORT & SPREAD PROMISING IDEAS:** Identify and replicate promising program models, including in-school and out-of-school initiatives.

- **UPDATE LEARNING STANDARDS AND ASSESSMENTS:** Policymakers need to ensure that learning standards and assessments align with this new vision of literacy as well as with the realities of children's lives in and out of school.

Challenge #3: Advance digital equity, reaching all children with today's most powerful learning tools

Children learn wherever they are. These days, they are also likely to experience digital media wherever they are. Educators and parents need to know more about how children learn in different settings, and they need effective strategies for bridging the learning that takes place in classrooms, after school programs, libraries and homes. The third Cooney Challenge aims at a 360-degree approach to digital learning—one that reaches all children.

As we interviewed leaders across several fields, we encountered two different approaches to digital learning. One focuses on the informal learning that occurs in homes and communities, and sees change as coming from outside of schools. These leaders are excited by the possibilities presented by technologies embedded in the many settings where children live and learn. They tend to see today's school-based computer labs and technology resources as limited and transient, and call for new ways of thinking about learning and teaching. The other approach focuses on the formal learning that takes place inside schools. These leaders urgently seek strategies for building schools' capacities to support all children, including struggling learners. Out of concern for equity, they believe that schools should be the locus of efforts to accelerate learning with digital media.

What will it take to create a vision of digital learning that encompasses both in-school and out-of-school settings? A logical starting place may be bringing together policymakers and researchers from diverse fields who are deeply interested in children and share the hope that digital media can accelerate learning, but approach this goal from markedly different standpoints. Dialogue might well begin with this question: Who are the children we are trying to reach? To be sure, there are more and less tech-savvy children; there are kids with stronger and weaker reading skills and academic records. But the reality is that all of these children are immersed in digital media. **While the old digital divide remains, a new digital divide is gradually coming into focus.**

We also heard familiar and not so familiar warnings about the old digital divide. From the moment computers were introduced into schools in the 1980s, many individuals and groups worried that unequal access to computers and equipment would create a digital divide between the technology haves and have-nots. Generally speaking, their concerns have proven to be warranted. Schools have certainly made progress in acquiring and linking educational technologies, but the likelihood that children will benefit from digital media continues to depend a great deal on their zip code. However, the digital divide didn't pan out quite as many experts expected. Access proved to be just one barrier—and not necessarily the steepest. Another is school systems' competing priorities. In low-performing schools where the pressure to improve scores is most intense, decision-makers and teachers are less likely to invest in technology. And children in low-income communities remain less likely than their better off peers to have computers and Internet access at home.

For all of these reasons, more needs to be done to overcome the old digital divide. But at the same time, educational decision-makers need to focus on a new digital divide that comes from disparities in the kinds of scaffolding children receive from adults to support basic literacy and the use new digital tools. Circuitry and software are only part of a larger learning system enabled by new technologies. That system includes the people who support digital learning as well as the machines that make it possible. Researchers say that adult scaffolding is an indispensable element in assuring positive outcomes for children. Many adults, impressed by kids' quick grasp of new tools, think they need to just get out of the way. Experts believe they are wrong. Kids can browse and click and find comic book sites on their own, but to fully benefit from the power of new digital tools, they need support from adults. Most parents are eager to support their children, but some have more of the resources (such as educational or work experience, disposable time, good health and physical stamina and confidence) needed to do so. Researchers say that middle- and upper-income parents are much more likely than lower-income parents to build a mentoring scaffold around new technologies. This scaffolding gap is widening the divide between groups of children in low-income communities and their peers in more affluent neighborhoods. Decision-makers need to take parents' educational roles into account as they plan family support programs and shape employment policies. At the same time, they need to ensure that the professionals who staff schools and out-of-school programs are prepared to offer the supports children need to benefit from digital media.

CALL TO ACTION

- **CONVEY HIGH EXPECTATIONS, LINKED TO THE FULL SPAN OF 21ST CENTURY COMPETENCIES, TO ALL CHILDREN.** Ensure that the new vision of literacy called for in Challenge #2 applies equally to all children, including those in traditionally underserved schools and communities.

- **SUSTAIN ATTENTION TO THE "OLD" DIGITAL DIVIDE, ASSURING THAT ALL CHILDREN HAVE ACCESS TO DIGITAL RESOURCES:** Ensure equity in children's access to technology, focusing not only on whether computers and Internet connections are available, but also on whether and how they are used.

- **ADDRESS THE "NEW" DIGITAL DIVIDE, FOCUSING ON INTERGENERATIONAL SUPPORTS:** Ensure that adults in traditionally underserved communities are prepared to provide the scaffolding children need to benefit fully from digital learning experiences**.**

- **ARTICULATE A VISION OF 360-DEGREE LEARNING.** Articulate a vision of 360-degree learning, aligning the expectations that underlie in-school and out-of-school learning and providing the resources and support needed to support digital learning in schools, homes and community-based settings.

- **CREATE DIGITAL LEARNING RESOURCE CENTERS IN EVERY COMMUNITY.** The aim is to ensure that parents, educators, librarians, after-school program staff and other adults have the supports they need to effectively scaffold children's digital learning.

Conclusion: Getting started

Our inquiry has surfaced three broad challenges that, taken together, constitute an agenda for change in the realm of children and digital media.

Challenge #1: Build a coherent R&D effort.

Support collaborative inquiry & dissemination: The Cooney Center will initially fund research that supports innovative applications of media technologies for elementary-aged children's learning in both informal and formal settings, while stimulating investment in research by others. We will issue white papers, trend reports and industry briefings, and will work toward building online communities. In conjunction with higher education institutions and industry leaders, we will develop a Cooney Fellows Program dedicated to growing research capacity in the field.

Foster ongoing dialogue across disciplines and sectors: The Center will launch an annual symposium bringing together leaders in research, education, industry, public policy and philanthropy. Our first symposium is planned for April 2008. We will look for other opportunities to encourage conversation and collaboration across disciplines and sectors.

Advance policy analysis & innovation: The Center will inform and help shape policies related to children and digital media by issuing papers on selected issues; briefing decision-makers; and convening meetings on key topics. We will focus on such subjects as: using digital media effectively for English Language Learners; the role of digital media in addressing the fourth-grade reading slump; and market opportunities/barriers for the development of educational games.

Challenge #2: Rethink literacy & learning for the 21st century.

Foster literacy-oriented model development and product innovation: The Center will launch an Innovation Lab, with the aim of encouraging creative developers to invent or modify products that can scaffold literacy learning for elementary-aged children who are struggling readers and heavy media users. We will commission media companies (commercial and nonprofit) and independent producers to build model programs and proofs-of-concept based on academic research and field-based best practices. To encourage creativity and recognize excellence, the Center plans to sponsor competitions and prizes.

Foster collaboration between industry and education: The Center plans to convene industry forums on the use of digital media to meet and advance 21st century educational priorities. These forums will encompass both the for-profit and nonprofit sectors.

Document new approaches to strengthening literacy & digital learning: The Center will identify and document educational strategies, such as innovative professional development models or new assessments that hold promise for strengthening literacy and digital learning.

Challenge #3: Advance digital equity, reaching all children with today's most powerful learning tools.

Draw attention and resources to the new digital divide by addressing the "scaffolding gap": The Cooney Center will convene researchers and practitioners to consider strategies that hold promise for strengthening adults' capacities to scaffold children's digital learning. We will support the design of intergenerational games for the informal learning market, taking advantage of platforms that encourage group play. We will seek ways to build on Sesame Workshop's success at encouraging co-viewing by parents and children.

Seek strategies to bridge informal and formal learning: Digital equity means, in part, ensuring that the most compelling digital learning tools are available in schools as well as in home or community settings. The Cooney Center will partner with other organizations to design model schools for a global age that combine the benefits of informal and formal learning. With partners in the publishing/media industries, we will create new avenues for marketing and disseminating rich literacy materials (in print and digital formats) to underserved communities.

Convene groups dedicated to digital equity: The Center will convene representatives of regulatory bodies, industry groups and child/parent organizations to shape a new agenda for reaching all children with today's most powerful learning tools. A high priority will be to ensure that the marketing of educational media rely on research-based evidentiary standards

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Forty years ago, Joan Ganz Cooney recognized the power of "pow! wham!" and the promise of interactive media. Convinced that the most seminal medium of that era could be brought to bear on its most urgent educational tasks, she inspired others and forever changed the public's assumptions about how, where and when learning takes place. The new Center named in her honor affirms that conviction.

In coming months and years we will be pursuing the aims summarized in this report. But we know that the landscape will change. and no single organization can meet these challenges alone. We urge every individual and organization that has an interest and stake in child development and digital learning to consider the action steps or to contribute in other ways. As we move forward, we will be making recommendations that those in pivotal sectors (such as industry, government or education) may take. We are just getting started, and this is a work in progress. Please stay tuned.

NOTES

[i] M. Resnick, *Rethinking learning in the digital world*, 1.
[ii] For example, according to a Cable in the Classroom poll conducted in 2007, 81% of parents recognize that the Internet helps their children learn skills and information needed to succeed in school.
[iii] S. Iyengar & D. Ball, *To read or not to read*. National Endowment for the Arts. Washington, DC: 2007, p. 3.