

When Play Is Learning

PAGE 3

Are New Media
Benefiting Children?

PAGE 4

Preschool matters



Taking a Hard Look at Quality

Much has been written about the progress made in early childhood education in recent years. Since we began charting that growth with our *State of Preschool* yearbooks, we have shared an abiding concern that far too few young children have access to the quality of education it takes to produce the positive lifetime outcomes that classic long-term studies like the Perry Preschool Project show are possible.

These concerns were reinforced by the RAND Corporation's recent study of the nature and quality of early education for preschool-age children in California. Among other things, RAND measured the

quality of a random sample of center-based programs using the ECERS-R and CLASS. They also reported on the percentage of children

The dismal picture found in California is even worse for the nation as a whole.

from various ethnic backgrounds who attended programs considered "good" on the ECERS-R or that delivered an education on a par with state pre-K in Tulsa, Oklahoma as measured by the CLASS. As many of you

know, the Tulsa program has produced fairly impressive gains in children's learning in a series of recent studies.

Regardless of the rating system used, the overall conclusion was the same. Few children have access to a quality education. Moreover, Hispanic and African-American children were the least likely to attend quality programs. By itself, this is a serious concern given how many children live in California. However, as California is a large and diverse state with a substantial public investment in early care and education, it is not too much of a stretch to take the quality data for centers in California and extrapolate to the nation as a whole. If anything, the national average for quality might be slightly worse.

To derive national estimates, I combined the estimates of the percentage of programs that are high quality with national data on attendance in center-based programs by age from the National Household Education Survey. The dismal picture on program quality found in California is even worse for the nation as a whole.

Regardless of the children's age or ethnicity or the rating system used to measure quality, eight or nine out of every

10 children in the nation who attend center-based programs do not attend those considered good or better. And, in a depressingly familiar pattern, young children from Hispanic and African-American backgrounds are least likely to attend a quality program at ages 3 or 4. For African-American children nationally, only 5 percent attended a program as good as those in Tulsa's pre-K at age 3 or 4.

When critics of the pre-K movement ask why we don't see more improvement in test scores and other measures of later educational progress due to preschool education, we ought to respond that it is precisely because public investments in quality education are still pitifully small. I wish it were otherwise, but until this nation decides that it should ensure that all children receive a quality preschool education it seems highly unlikely that most low-income and minority children will have access to such programs. ■

W. Steven Barnett
Director, NIEER

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Looking at Play the Healthy Way

Child's play—particularly the kind kids do when they pretend, play roles and negotiate among each other—is something experts say is vital to healthy development. It's also increasingly threatened in a world dominated by media, electronic toys, a push for academic learning at younger ages, and lifestyles where children have less freedom or inclination to play with the neighborhood kids.

In his book *The Power of Play*, David Elkind, professor of child development at Tufts University, writes that over the past two decades, children have lost 12 hours of free time a week and that eight hours of that is unstructured play and outdoor activities. While those figures don't necessarily apply to preschool children, they illustrate a trend that does. In a report on the importance of play in child development, published by the American Academy of Pediatrics, Kenneth Ginsburg concludes children who live in poverty as well as children with abundant resources may not be receiving the full benefits of play.

Ginsburg documents several trends that have resulted in less time for free play, including a decline in kindergarten classroom recess periods over the past two decades, passive entertainment such as television and computers that keep kids from engaging in free play, and a tendency for some parents to over-schedule structured activities.

He points out that when play is allowed to be child driven, children practice decision-making skills, move

at their own pace and discover their own areas of interest. Such free play enables them to, in Ginsburg's words, "create a world they can master, conquering their fears while practicing adult roles." In the process, they develop new competencies that help them do such things as work in groups, share, negotiate, and resolve conflicts.

Imaginative Play

A closely related type of play, involving some adult participation is imaginative play. Research shows that when imaginative play is facilitated by a skilled teacher, it helps build executive function (EF), a critical cognitive skill that helps children learn to self-regulate. In turn, self-regulation helps children learn how to self-discipline and control impulses.

This skill is as important a predictor of a young child's future success as academic learning. Imaginative play is more effective at teaching a child self-regulation skills than video games or even education-based toys.

Props used in imaginative play are generally not targeted for a specific scenario, such as role-playing as a nurse or teacher. Rather, children play with symbolic props that could fit into many different scenarios, depending on what the kids choose to imagine it could be. For instance, a stick could be sword for a swashbuckling pirate, or it could also be a walking cane for an elderly grandmother.

This sort of play was the norm until the second half of

Success with a Play-Based Curriculum

The Tools of the Mind curriculum, developed by educational psychologists Elena Bodrova and Deborah Leong, is based on the idea that children learn best through play. Preschool classrooms using Tools of the Mind curriculum are filled with activities designed to build executive function skills. Key elements include games and other child-directed play activities that promote self-regulation and require children to plan ahead and control impulses. These critical skills help children follow the directions of others, as well as self-direct, as they grow older and thereby increase their ability to learn in a traditional classroom setting as they move into elementary school and beyond.

A 2007 study led by University of British Columbia researcher Adele Diamond found that the children in the Tools of the Mind program performed significantly better on executive function skills. Diamond concludes, "Though preschool teachers are under pressure to limit play and spend more time on instruction, mature social pretend play in preschool may be more critical for academic success than preschool academic instruction."

the 20th century, says Howard Chudacoff, a Brown University professor specializing in the history of childhood play. He says play radically changed with the increase of toys designed for specific types of play with predetermined scripts, particularly toys based on movies or television shows. Many required less effort and imagination on the part of children.

The importance of play and research on its role in child development is getting a boost from the New York-based Strong National Museum of Play. The museum plans to launch the first interdisciplinary journal on the subject, the *American Journal of Play*, this year.

Meanwhile, free play continues to encounter obstacles on its journey

back to its roots. Parental concerns about the safety of their children drive kids inside where passive activities often await them, or to sporting teams or other organized play.

Chudacoff notes that in the second half of the 20th century, parents have come to view structured environments as better for their children—something that's bound to limit free play. And in school settings, including some preschools, young children continue to lose free play as teachers prepare them for the tests they will inevitably face. Chudacoff and others hope the new awareness of the developmental importance of free play will help restore it to its proper place in children's lives. ■

Are New Media a Boon to Young Children's Education?

Patrick was still in pre-K when he asked if he could visit a place called Club Penguin—that is, a place on the computer he'd seen at a friend's house. His mom said okay, just for a visit. Mom recognized Club Penguin as one of those virtual worlds she had heard about where kids develop their own online identities, interact with each other and play games.

She wasn't sure Club Penguin was appropriate for a preschooler who, after all, couldn't read. By the time Patrick was in kindergarten, however, he visited Club Penguin regularly—with mom's assistance on the reading part. Before long, he was impressing his parents with his ability to navigate the penguin world on his own and even read some of the penguin dialogue.

Educators know when children are engaged, they learn more. Interactive digital media are engaging more children at younger ages.

How much they are learning from this exposure remains an open question since many products are developed without benefit of the principles of child development and little research into their educational effects exists.

Children often encounter interactive media first in the form of digitally enabled toys and story books. By the time they're in preschool, the majority can use a computer

mouse and can even load CDs and DVDs in the family computer. And since most television shows children watch now have web sites, they are gravitating to the Internet at younger ages.

In his recent study of computer use in families with young children, Warren Buckleitner, editor of *Children's Technology Review*, found that while the digital world offers a wealth of

opportunity for young children to play and learn, the quality of children's media varied widely. Some web sites children visited appeared to have little educational value, existing solely to extend a brand name. They often frustrated children with commercial messages the kids were ill-prepared to understand. Two of the 15 children he observed accessing the web were under the age of 3.



Five Market Trends Shaping Children's Offerings

In her report *D is for Digital*, Carly Shuler identified five market trends shaping children's offerings:

Virtual Worlds – Simulated environments (such as Club Penguin and Webkinz) that children inhabit and interact with one another through digital representations of themselves known as avatars.

Casual Games – Makers of gaming platforms such as Nintendo's popular Wii are shifting some of their focus to casual gaming.

Video on the Web – Spurred by the success of video web sites such as YouTube, media companies have developed youth-oriented video destinations such as Kid Videos.

Youth-Generated Content – User-generated content such as blogs, wikis and podcasts, which originated with adults, are finding applications in children's media.

Media Convergence – Television shows, radio broadcasts and movies are no longer confined to the television set, radio or theater. People can receive them on computers and portable media, enabling a multi-platform delivery of educational programs.

While perhaps not typical, this doesn't come as a surprise to Carly Shuler, who studies digital media at the Joan Ganz Cooney Center at Sesame Workshop. She says the trend toward younger kids using digital media is moving quickly. The age at which children are using digital media for gaming dropped from 8.1 years old in 2005 to 6.7 years old in 2007.

All this technology competing for a bigger share of children's minds raises hopes and worries. The hope, of course, is that, properly designed and developed, new media can be an even more powerful educational tool than traditional one-way media such as educational television. The thinking goes that, in the hands of skilled developers grounded in child development, new media can go a long way toward replicating the dynamic of a motivated, engaged pupil interacting with a skilled, even entertaining teacher.

Educational Potential

"We think the potential is great and largely untapped," says Michael Levine, executive director of the Joan Ganz Cooney Center. He says most new media products for young children come to market with little or no input from child development experts and therefore there's little understanding of the educational science (if any) underlying them. (See Newsmaker, page 9.)

That sounds familiar to author and former *New York Times* reporter Lisa Guernsey. As a young mother, she took it upon herself to find out if the videos she was using to calm her colicky infant daughter were helping or harming her child. She had come to rely on the calming

effects of the *Baby Mozart* video when she needed short breaks from care giving. It wasn't long before she learned about the sweeping recommendation published by the American Academy of Pediatrics (AAP) that children under age 2 be exposed to no "screen time."

Guernsey was struck by the dilemma she and other mothers faced. On the one hand, companies were bombarding them with claims about the educational value of their videos for children as young as two months of age. On the other, the pediatricians were recommending no exposure.

"I found myself on a quest to learn everything I could about screen media and children..." she writes in her book *Into the Minds of Babes*. What she found was that the AAP based its recommendation less on any science directly pertaining to the effects of screen time on young children and more on a "do no harm" approach to exposing kids who are too young to speak for themselves.

Guernsey discovered that with rare exception, the companies selling baby videos were relying on anecdotal testimony from parents for their marketing claims and not research. Not only that but the way the videos presented subject matter often paid little heed to basic principles of teaching young children such as repetition and reinforcement.

In 2005, a Henry J. Kaiser Family Foundation report concluded there was "a paucity of published research documenting the impact of educational media on very young children." Guernsey concluded that while there is no research to support the notion that even

"Three C's" Approach to Kid's Media

Content – What is the basic premise of show? How is it designed? Does it have repetition? Are new words defined by pointing or labeling?

Context – Who is interacting with the child? How do parents talk about what's on the screen? Is the child learning through a game, then applying that in another activity? Is the child telling stories about what he or she has experienced?

Child – How much stimulation can this child take? What scares her? What types of media trigger the most curious questions, playful reenactments, engagement and joy?

limited amounts of screen time harm children under age 2, the claims of cognitive stimulation made by those selling baby videos should be taken with a grain of salt.

Buckleitner says that's not the case for preschool-aged children. In 2007, he surveyed what research existed for a report he wrote for Children Now titled *The Effects of Interactive Media on Preschoolers' Learning*. The research findings varied, with some showing positive effects of interactive media on cognition and others showing no effects or no harm. Whether an interactive product supported children's learning depended less on the medium itself and more on the content.

Earlier this year, the Joan Ganz Cooney Center issued a report based on interviews with 60 leaders from fields that included education media, digital development, literacy, child development, and education policy. Titled *The Power of Pow! Wham!* and written by Rima Shore of Bank Street College of Education, it makes the case that digital media have the potential to provide powerful learning opportunities for young people.

Shore recommends a national initiative to coordinate research and development efforts to provide a

resource for parents, educators, policymakers, and the public.

A similar sentiment was voiced by experts at a seminar at the Fred Rogers Center for Early Learning and Children's Media. They said guidelines for media literacy should be integrated into early childhood learning standards, teacher preparation program standards, and standards for accreditation/licensing of early childhood settings.

In the meantime, digital media for children remain a grab bag of good, not-so-good, and outright inappropriate offerings. With most top-selling products for young children making claims not substantiated by research, it falls upon educators and parents to use judgment in selecting media. Guernsey recommends using what she calls the "Three C's" approach to evaluating media, first looking at *content*, then looking at *context*, and finally, looking at the needs of the individual *child*. (See box above.)

Buckleitner says parents and educators should respect the power of new media for children. He calls them the "800-pound gorilla"—or in Patrick's case, an 800-pound penguin—that didn't exist in the playroom 10 or 20 years ago. ■

Hawaii Takes Big Step Toward State-Funded Pre-K

Hawaii's Legislature took the first steps toward preschool for all when it passed Keiki First Steps (SB 2878) into law in July, overriding Governor Linda Lingle's veto. The measure sets in statute the process of creating a statewide early learning system. An early learning council consisting of members from the public and private sectors, some appointed by the governor, will be charged with developing the pre-K system. If it is to meet the goals of the state's early learning task force, it must field well-trained teachers and serve 80 percent of the state's 4-year-olds. An estimated \$170 million price tag for full implementation was one reason Lingle vetoed the bill. Hawaii currently has no state-funded preschool education program. ■

Evaluation: Thumbs Down for Reading First

The \$1 billion a year Reading First program, developed to better teach reading comprehension skills to children in kindergarten through grade 3, is ineffective at increasing the percentage of students reading at or above grade in first, second or third grade. That's the verdict of an evaluation carried out by the Institute of Education Sciences (IES) at the Department of Education. In addition to finding no increase in the percentage of children reading at grade level, the evaluation also found that students' reading comprehension did not improve over time as schools became familiar with and gained experience using the Reading First program.

Dr. G. Reid Lyon, formerly of the National Institute of Child Health and Human Development

(NICHD), says the underwhelming results found in this evaluation may be due in part to deficiencies in the study design and concludes it's still too early to completely write the program off. That sentiment is shared by Secretary of Education Margaret Spellings who, along with President Bush, proposed to restore funding for the program. The House of Representatives Subcommittee that oversees education appropriations had other ideas and voted to eliminate Reading First funding altogether.

The IES plans to analyze follow-up data in a final report scheduled for release in early 2009. In the meantime, the *Reading First Impact Study: Interim Report* is available online at <http://ies.ed.gov/>. ■

Louisiana Governor Jindal Signs Pre-K Expansion

Change is on the way for Louisiana kids who don't attend state pre-K. Although he initially opposed it, Louisiana Governor Bobby Jindal signed into law SB 286, which aims to expand the state's LA4 Early Childhood Education Program to all the state's 4-year-olds.

The new law phases in expansion over five years from 2009-2010 to 2013-2014 using rising family income cut-offs to define eligibility until 2013 when all 4-year-olds would be eligible. "With Senate Bill 286, we should begin to close the widening educational gaps that have kept too many of our children from experiencing success in school and in life," wrote Nadra Harrison of Every Child Matters in a letter to *The Times Picayune*. The law contains language making it clear that each year of the expansion is "subject to the appropriation of funds for this purpose..." Louisiana state pre-K currently serves 25 percent of the state's 4-year-olds. ■

Who Doesn't Go To Preschool?

In 2006, California voters defeated a preschool education for all initiative partly because "experts" assured them that most children already attend preschool programs and that expansion of public preschool education for all would primarily benefit the middle class. A new Rand Corporation study now reveals that the California children who have the most to gain from preschool education are the least likely to participate. They found that while 59 percent of all children attend center-based programs, only 45 percent whose moms have less than a high school diploma attend. Moreover, they found that no more than 15 percent of those who could benefit the most from high-quality preschool education are enrolled in classrooms that meet quality benchmarks for instructional supports that promote higher-order thinking and language skills.

The overall picture of early education in California was alarming as well. Only one in four California preschoolers attending center-based programs was taught by a teacher with a BA degree in early childhood or a related field. Only 22 percent of children were in classrooms that were rated between good and excellent for space, furnishings, and activities. For the study, Lynn Karoly and colleagues surveyed more than 2,000 California households with children eligible for pre-K, interviewed teachers and administrators from 600 pre-K programs, and visited 250 center-based programs across the state. ■

Census Data: Hispanic Youngsters a Burgeoning Group

Recently released census data show that of the nearly 21 million children younger than 5 in the country, roughly 25 percent are of Hispanic descent. The percentage of young children of Hispanic descent is projected by the U.S. Census Bureau to grow, with more than half a million more Hispanics expected to be in this age group by the year 2020. With increasing numbers of Hispanic preschool-age children eligible to enter into pre-K education programs across the country, questions abound on how to reach this population and how to most effectively teach them, especially since some of these children may be English Language Learners. NIEER addresses these concerns and others in a policy brief entitled “Is Public Pre-K Preparing Hispanic Children to Succeed in School?” The brief is available online at <http://nieer.org/resources/policybriefs/13.pdf>. ■



State-funded Pre-K Programs Deliver on Promise

Two new reports from NIEER show that state-funded pre-K programs are providing outcomes consistent with the promise of preschool. The first of these studies, “Longitudinal Effects of the Arkansas Better Chance Program: Findings from Kindergarten and First Grade,” estimates the effects of state-funded pre-K in Arkansas on children’s language, mathematics, and literacy skills through the end of first grade, finding positive and statistically significant outcomes on these measures. A second study, “Impacts of New Mexico PreK on Children’s School Readiness at Kindergarten Entry: Results from the Second Year of a Growing Initiative,” found similar results for children entering kindergarten after attending that state’s pre-K initiative. Both reports are from ongoing studies, which will continue to collect data until the children reach the fourth grade in Arkansas and the first grade in New Mexico. ■

Colorado’s Education Package Includes Preschool Expansion

A number of education bills recently signed into law by Colorado Governor Bill Ritter will boost the status of preschool education in the state. Collectively known as the Colorado Achievement Plan for Kids, the new laws plan to increase access to preschool

and kindergarten programs, calling for 22,000 more 4- and 5-year-olds to be enrolled over the next six years. In addition, the state’s content standards, which currently cover third to 10th grade, will address prekindergarten through the first year of college. ■

Preschool for All Benefits Kids From All Backgrounds

Oklahoma’s state-funded preschool for all program boosts children’s skills dramatically, whether they are from disadvantaged families or middle-income families, concludes a study from Georgetown University. William T. Gormley and colleagues measured the skills of 3,500 incoming kindergartners in Tulsa, finding that those who had been enrolled in the state’s preschool education program had improved reading, math and writing skills compared to those children who attended no public preschool program at all. They also found that children attending Head Start programs staffed with fully certified teachers paid at public school scale through participation in Oklahoma’s pre-K program made large gains. Gains for disadvantaged students, however, tended to be largest in the public school classrooms.

“These findings from a large and rigorous study provide strong evidence that preschool education for all has positive impacts for all children, especially those in poverty,” says NIEER Director Steve Barnett.

Findings from the study appear in Volume 320, Issue 5884 of the journal *Science*. ■

New Tool Costs Out Quality Pre-K

Those bright-eyed youngsters walking through the pre-K doors for the first time are an eager bunch—eager to explore, learn, and hopefully acquire skills that will benefit them over a lifetime. The extent to which those long-term gains occur depends in great part on program quality. And, quality costs money. Having an authoritative handle on the costs of various quality components and the ability to run scenarios to determine what yields the best bang for the buck can be a tremendous help.

Help has arrived by way of a cost estimation model developed by the Institute for Women’s Policy Research (IWPR) and Early Childhood Policy Research (ECPR), that enables policymakers to determine a per-child estimate for pre-K programs across 12 levels of quality.

The estimation model is based on a study that assumes all high-quality pre-K programs should possess the characteristics that provide benefits to children and families according to IWPR’s report, *Meaningful Investments in Pre-K*. “The estimated costs of a six-hours-per-day program range from \$5.17 per child hour at the lowest-quality level, to \$8.18 per child hour at the highest level,” says Barbara Gault, primary author of the study. Those costs in annual terms showed the lowest-quality program would cost about \$5,741 per child and the highest-quality program would cost about \$9,076 per child.

Gault cautions that the actual costs for different quality improvements depend upon each state’s current pre-K costs, quality level,

and program design and goals. Still, the cost grids provide a general guide to assess the potential change in costs for moving from one level of quality to the next.

For example, the report pointed out that:

- Reducing the class size of a six-hour program with BA teachers with early childhood credentials and paid at typical pre-K level wages from 20 to 15 would increase a state’s per-child-hour costs by approximately 20.5 percent.
- If that same program kept class sizes at 20 but improved teacher quality to BA degreed teachers with early childhood credentials but paid at typical kindergarten teacher levels, the per-child-hour costs

increased by about 11.3 percent.

On the other hand, according to the report:

- A six-hour program with a maximum class size of 20 led by teachers with child development associate (CDA) credentials would cost only 18.3 percent more by reducing class size to 15.
- The same 20-child class that improved teacher quality to the highest level would result in a 29.8 percent increase in per-child-hour costs.

The cost estimates considered the cost of quality based on three class sizes—20, 17 and 15 children per classroom as well as four teacher qualification/pay levels ranging from a bachelor-degree-holding teacher

with early childhood credentials paid at typical kindergarten teacher levels to a teacher with a CDA credential. The cost analysis calculated the per-child cost of each of the 12 levels of quality for three-, six- and nine-hours-per-day pre-K programs. The estimates are based on a 185-day program. The hours-per-day options included in the study were a half-day with two daily sessions at three hours each; a school-day session of six hours; and a nine-hour workday session.

Table 1 summarizes per-child costs on a per-hour and per-year basis for each combination of teacher-qualification/pay, class size, and hours per day. The complete report is available on IWPR’s website: www.iwpr.org. ■

Table 1: Summary of Costs Per-Child/Hour and Per-Child/Year by Quality Level

Class Size	Per-Child, Per-Hour Costs			Annual Per-Child Costs, 185 days per year		
	15	17	20	15	17	20
Teacher Qualifications						
3-Hour Program						
Bachelor’s Degree I	\$8.82	\$8.12	\$7.33	\$4,893	\$4,506	\$4,071
Bachelor’s Degree II	\$7.91	\$7.32	\$6.66	\$4,390	\$4,062	\$3,694
Associate’s Degree	\$7.11	\$6.62	\$6.06	\$3,947	\$3,672	\$3,361
CDA	\$6.76	\$6.30	\$5.79	\$3,751	\$3,499	\$3,214
Teacher Qualifications						
6-Hour Program						
Bachelor’s Degree I	\$8.18	\$7.49	\$6.72	\$9,076	\$8,313	\$7,454
Bachelor’s Degree II	\$7.27	\$6.69	\$6.04	\$8,070	\$7,425	\$6,700
Associate’s Degree	\$6.47	\$5.99	\$5.44	\$7,184	\$6,643	\$6,035
CDA	\$6.12	\$5.67	\$5.17	\$6,792	\$6,298	\$5,741
Teacher Qualifications						
9-Hour Program						
Bachelor’s Degree I	\$8.20	\$7.42	\$6.54	\$13,649	\$12,348	\$10,884
Bachelor’s Degree II	\$7.14	\$6.48	\$5.74	\$11,889	\$10,795	\$9,564
Associate’s Degree	\$6.21	\$5.66	\$5.05	\$10,338	\$9,427	\$8,401
CDA	\$5.80	\$5.30	\$4.74	\$9,652	\$8,821	\$7,887

Source: Pre-K Now, using IWPR calculations.

Notes: 1) Costs include direct and indirect service costs and system infrastructure costs except workforce development. 2) Data on teachers’ salaries come from the “National Prekindergarten Study” (Gilliam 2006) and U.S. Department of Labor, Bureau of Labor Statistics 2007b (for Bachelor’s Degree I).

Michael Levine: Man with New Media Mission

Michael Levine heads up the new and, many would say, much needed organization dedicated to research and development in the area of digital media for children. Named for the legendary co-founder of the Children's Television Workshop and creator of Sesame Street, the Joan Ganz Cooney Center



was launched by Sesame Workshop last December. Levine brings impressive credentials to his new challenge. Prior to joining the Center, he served as Vice President of New Media and Executive Director of Education for Asia Society, managing the global nonprofit organization's interactive media and educational initiatives. Before that, he oversaw Carnegie Corporation of New York's groundbreaking work in early childhood development, educational media and primary grades reform.

Q: How did the Joan Ganz Cooney Center come to be?

A: About two years ago, senior executives at Sesame Workshop saw the need for a research and development center that could explore the

value of interactive digital media for children and begin to harness its educational value. They consulted with experts in scholarly and industry perches and came up with a plan for the Center. We launched at the end of 2007 and are off to a running start in 2008.

Q: How did you get involved?

A: I was busy managing interactive media and global education initiatives at Asia Society. I had gotten to know the folks at Sesame Workshop when I was doing child development work at Carnegie Corporation of New York. When they called about the opportunity to direct the newly endowed Center, it sounded like a dream job—a chance to make a difference in an area that's growing rapidly, yet an area about which we know little in terms of its effects on kids or its educational potential.

Q: We hear lots about new media for young children. Could you talk a little about what that covers?

A: Billions are being spent on digital applications that engage kids 24/7. The key here is interactivity—as opposed to traditional one-way media like television. Videogames are highly interactive and now target “gamers” as young as 6, with some 3- and 4-year-olds already aspiring to learn all the new technology. A number of the major entertainment companies now have virtual worlds like WebKinz and Club Penguin where

children enter a whole new world where they interact with others online and participate in those communities. A recent example of this which has a wonderful curriculum focus is Panwapa, a virtual world launched last year by Sesame Workshop. More than 110,000 kids worldwide in more than 100 countries are now learning from each other about global connections and financial literacy through this virtual world.

Another growing segment is sophisticated game platforms like Wii that open up new avenues for children to interact with others through group and family play. These hi-tech group activities are analogous in some ways to the old board games like Chutes and Ladders, Parcheesi and Candyland. Wii games for 3- and 4-year-olds are on the way, and many of the most innovative games on this platform already are geared towards childhood fitness and activity levels we have never seen before in an “interactive” media product. We also shouldn't forget that cell phones are increasingly aimed at younger children. And then there are electronic learning aids like those developed by Leap Frog that have been around for a few years.

Q: How do we know the educational value of all this?

A: Well, that's our dilemma. Commerce is not standing still. These applications are coming to market before we know a lot about their underlying science or their effects on children. In a way,

we are making it up as we go along.

Q: How does the Cooney Center figure in the solution?

A: We are fortunate in that, while we don't have enough answers about new media, we do know a lot about how children develop. The folks at Sesame Workshop—and the Joan Ganz Cooney Center—have 40 years of success with educational television to draw upon. Our mission at the Center is to support research, innovation and investment in technology to advance children's learning in much the same way Mrs. Cooney's early research led to the Children's Television Workshop and the development of Sesame Street. Of course, these days we're looking at a more diverse technology environment that is moving more rapidly.

Q: Obviously, the folks at Sesame Workshop and your center see promise in the new media as far as education is concerned. How so?

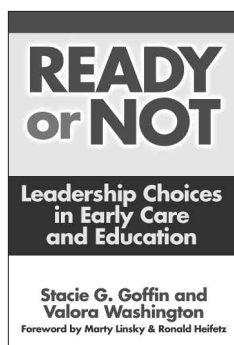
A: We think the educational potential is great and largely untapped. There are pockets of innovation in wonderful research laboratories around the country, including the MIT Media Lab, which is doing new work on projects to advance learning. We need to find a way to take these pockets of innovation, and connect them to the capital needed to penetrate the mass market. We will be trying to build a few new models ourselves. For example, we at the center are creating an

CONTINUED ON PAGE 11 >>

Related Reading

Ready or Not: Leadership Choices in Early Care and Education

Stacie G. Goffin and Valora Washington, 2007
 Teacher's College Press
 New York, NY
 128 pp., ISBN 978-0-8077-4793-3
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In *Ready or Not: Leadership Choices in Early Care and Education*, the authors define integrity as the willingness to speak and act on behalf of what you know is right. By calling the question, “What defines and bounds early care and education as a field?” these women challenge the early care and education field to define and delineate its boundaries. Goffin and Washington call for a “leadership manifesto” (p. 4)

by posing six questions that force members of the early care and education field to decide:

1. What is the early care and education field’s defining intent?
2. Does the field’s intent vary by setting or by auspice (e.g., centers and schools; regulated family child care; license-exempt family, friend, and neighbor care)?
3. What chronological span describes the ages of children served (e.g., birth to the start of kindergarten; birth to age 8; prekindergarten through grade 3)?
4. What is the field’s distinctive contribution and competence as a collective entity?
5. Is early care and education a single/unified field of endeavor or a field comprising subfields (such as health care)?
6. To what extent are we, as a field, willing to hold ourselves accountable to one another and to be held publicly accountable for results in return for the autonomy to deliver programs based on the field’s knowledge base?

One useful feature of this book that will help the field during decision-making is the chart of the history of the field in Appendix A. This chart shows that over the last several decades the field has grown tremendously. Currently, the field is being defined from the bottom-up with state and local initiatives cooperating to creatively use their resources and funding. Although states have made tremendous efforts in building the local infrastructure of our field, the authors charge us to take a national focus, with the federal government taking on some of the responsibility for early care and education.

One of the reasons for the field’s growth is that we have done an excellent job of convincing parents, policymakers, foundations, and business owners of the benefits of early care

and education. It is now common for funders, economists, health care professionals, and even CEOs to know of the compelling cost-benefit ratios of classic studies like the Chicago Parent-Child Centers, the Perry Preschool Project, and the Abecedarian Project. However, the authors point out that even our biggest accomplishments might pose a future problem if the field continues to waiver with uncertainty and indecision. For instance, Goffin and Washington refer to a performance gap. The performance gap is the distance between the results we have attributed to early care and education and the field’s ability to deliver these results due to the lack of quality in some of our current programs (p. 28). The authors offer the harsh—yet accurate—criticism that the field has failed to own up to the disparity in quality. This disparity in quality may come back to haunt us once funders, policymakers, and program evaluators conduct longitudinal studies expecting to see the same long-term benefits for which the field has become famous.

The truth is that very few (if any) of current early care and education programs have the standards, array of services, or the longevity of the three classic studies. As a field we fail to openly talk about the limitation of all of the current programs in comparison to the classic programs. Even more so, we are afraid to seriously consider what raising the standards would mean for the field. The authors pose the question of whether early childhood teachers should be required to have bachelor’s degrees. All of the classic programs employed teachers with bachelor’s degrees. The authors do not have an agenda or preconceived notion for such a question, but they recognize that by mandating such a requirement some programs (or sectors) would take a “loss.” The field has historically not been willing to make tough choices that would result in any program or section taking a loss, but this avoidance behavior is not acceptable, especially in light of the fact that we are going to be held accountable for the benefits we have promised to produce.

This book is for those who are committed to growth in early care and education, and it should be required reading for all leaders in the field. The tone is inspiring because the authors remind the reader that leaders are not always those who are in positions of authority, but those who are fighting against the established norms. The authors argue that our goal should be to stop relying on individual leaders and move toward a community of diverse leaders who are committed to adaptive leadership. Adaptive leadership necessitates that we begin to engage in reflective examination that may require us to acknowledge the field’s shortcomings and failures as well as its successes. ■

Reviewed by Stephanie Curenton
 Assistant Professor, Bloustein School of Planning and Public Policy and NIEER

Get the Lead Out. Childhood Lead Exposure and Crime: Is There a Connection?

Researchers from the long-running Cincinnati Lead Study have associated childhood lead exposure with criminal behavior, including violent behavior, in adulthood. While other studies have suggested this association, they relied on indirect measurements of childhood lead exposure. These new findings, garnered by correlating the blood data with arrest records, provide a clearer link between early lead exposure and subsequent violent behavior.

For five years, starting in 1979, researchers recruited pregnant women from low-income areas of Cincinnati where there was a high concentration of lead-contaminated housing. The women's blood lead concentrations were measured during pregnancy and the children's levels were measured regularly until the age of 6 ½. Information about how many times the children were arrested, from the time they

were 18 years old until the end of October 2005, were obtained from local criminal justice records.

From a total of 250 children who were followed at least through age 6, the researchers identified a total of 800 arrests, including 108 for violent offenses. Other arrest categories included offenses against property, drug offenses, fraud, obstruction of justice, serious motor vehicle offenses, and disorderly conduct. The researchers noted that data on convictions was not collected because criminal convictions from a trial represent less than 10 percent of all criminal arrests. Using negative binomial regression models to estimate the association between blood lead concentrations and arrest rates, the researchers found that for every five micrograms per deciliter increase in blood lead levels at 6 years of age, the risk of being arrested for a violent crime as a young adult increased

by almost 50 percent.

Among the limitations of the study, the authors note that the measure of arrest likely underestimates actual criminal activity because most criminal behavior never comes to the attention of authorities. They also suggest that impaired intelligence from lead exposure could make it more likely that a criminal offender will be caught, while noting that other studies suggest that lead affects social behaviors independently of intelligence.

Other news about the effects of lead exposure includes a recent article in the *Orlando Sentinel* that cited studies at Johns Hopkins University and the University of Michigan linking mental decline in seniors with the amount of lead absorbed decades before.

Meanwhile, the *Baltimore Sun* reported that, according to the state and city health officials, the number and percentage of Baltimore children with elevated levels of

lead in the blood continued to decline.

The Cincinnati study produced strong local reaction, from incredulous letter-to-the-editor writers and the media. In response, co-author John Paul Wright explains in a Cincinnati *Enquirer* op-ed that the lead-crime connection remained even after adjusting for variables, including poverty and "bad parenting." He points to accompanying research using brain-imaging that found specific areas of the brain affected by childhood lead ingestion. The affected areas relate to self-control and decision-making, factors he says are clearly related to criminal behavior.

The findings from the Cincinnati Lead Study are available at <http://www.plos.org/press/plme-05-05-dietrich.pdf>. The UC Health News press release about the study is available at <http://healthnews.uc.edu/news/?/6986/>. ■

Michael Levine: Man with New Media Mission

>> CONTINUED FROM PAGE 9

intergenerational game for the Wii platform that helps teach kids essential reading skills. In it, adults and children participate in a new literacy and play pattern. We are also going to develop a new comic strip tool that will enable 5- to 10-year-olds to create their own strips interactively and put some of their favorite characters into play.

Q: Applications like these have the potential to reach around the world. Could you talk about your global initiatives?

A: I already mentioned Panwapa, the Workshop's first virtual

world creation. We also have The Global Schoolhouse Project in which we're reviewing educational media materials, web sites and game content that focus on literacy and other skills that we hope can help transform education for low-income and minority children around the world with rich multimedia content. Part of that initiative is the International Children's Digital Library which houses the world's most diverse collection of open source digital children's books. It has over 2,000 titles from 40 countries in more than a dozen languages that children and families can download in a variety of formats. ■



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