Americans for the Arts presents a series of essays commissioned for the 2007 National Arts Policy Roundtable



A Program of Americans for the Arts

Thinking Creatively and Competing Globally: The Role of the Arts in Building the 21st Century American Workforce

Essays by Paul Houston, Ken Robinson, and Hamsa Thota

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Introduction

This is a world in which a very high level of preparation in reading, writing, speaking, mathematics, science, history, and the arts will be an indispensable foundation for everything that comes after for most members of the workforce. It is a world in which comfort with ideas and abstractions is the passport to a good job, in which creativity and innovation are the key to the good life, in which high levels of education—a very different kind of education than most of us have had—are going to be the only security there is.

— "Tough Choices or Tough Times"

A report from the New Commission on the Skills
of the American Workforce, 2006

America's workplace has changed. The 21st century business environment is global and knowledge-based; accelerated advancements in technology have effectively ensured that today's workplace is no longer limited by geographic boundaries. Once the unquestioned economic superpower of the world, the United States is under increasing pressure to maintain its global competitiveness.

These challenges have been the subject of numerous research reports and policy forums. Increasingly, workforce preparedness is recognized by both business and education communities as a major factor for ensuring America's future economic success. Many of these studies have also indicated that this preparation demands a rethinking of how schools are educating students to thrive in the workplace of the future.

Business leaders increasingly acknowledge critical thinking, creativity, and innovation as among the top applied skills necessary for workers at all levels in all industries to succeed in the new economy. Yet, our nation's education system remains geared more toward the 19th century industrial economy rather than prepared to meet the challenges of life and work in the 21st century.

Amid the growing consensus that business as usual can no longer be tolerated in our educational system is also a budding recognition among policymakers that the arts may provide some solutions to the global competitive challenge. Many of the same reports that identify the crisis in education have also directly called for reinforcing the role the arts play in developing 21st century skills needed in order for students to compete and succeed in the new global economic environment. The Governor's Commission on the Arts in Education Findings and Recommendations report (Education Commission on the States,

July 2006) focused on the importance of arts education to the development of a flourishing creative national economy, suggesting that "the Creative Economy... relies upon people who can think creatively, adapt quickly to new situations, and problem-solve. This industry, which is growing at a faster pace than total U.S. business growth, increases the demand for workers with the skills that are gained through the arts in education."

With America's economic edge at stake, how can we build a 21st century workforce that is both knowledgeable and creative? What role can and will the arts play in ensuring that America leads the world in innovation and ideas?

THE NATIONAL ARTS POLICY ROUNDTABLE

These questions formed the basis for a series of discussions among 32 high-level leaders from business, government, philanthropy, education, and the arts. These leaders gathered in October 2007 at the Sundance Preserve in Utah for the second annual Americans for the Arts National Arts Policy Roundtable, *Thinking Creatively and Competing Globally: The Role of the Arts in Building the 21st Century American Workforce*.

Established in 2006, the Roundtable is co-convened annually by Americans for the Arts President and CEO Robert L. Lynch and Chairman of the Sundance Preserve Robert Redford. It provides a forum for national leaders to discuss issues critical to the advancement of American culture and recommend the public policies, private-sector practices, and research needs that are necessary to move from thought to action.

The 2007 National Arts Policy Roundtable focused on the challenge of preparing students to enter the workforce with the creativity and innovation skills that are essential to ensuring that American business and culture will prosper. This topic emerged as one of the key recommendations of the 2006 Roundtable, where participants felt that the arts could play a key role in America's economic competitiveness.

THE AUTHORS

As part of the preparation for the 2007 Roundtable, Americans for the Arts commissioned three original opinion essays from internationally recognized experts. These essays are intended to provoke new thinking, provide a "big

picture" perspective, as well as to help stimulate ideas for repositioning creativity and the arts as a cornerstone of learning. The writers are leaders in the fields of education, business, and policy: Dr. Paul D. Houston, executive director of the American Association of School Administrators; Sir Ken Robinson, Ph.D., global consultant and expert in the field of creativity and innovation in business and education; and Hamsa Thota, Ph.D., chairman and president of Product Development & Management Association.

First presented to members of the 2007 Roundtable, these essays contribute to the ongoing national dialogue now taking place. We placed no restrictions on the authors in addressing this topic. As such, the opinions expressed are solely that of the authors, and do not necessarily reflect those of Americans for the Arts.

THE ESSAYS

Paul D. Houston, executive director of the American Association of School Administrators since 1994, approaches the topic as a former teacher, administrator, author, and international consultant. In his essay, he takes a provocative look at what we value as a nation and how it impacts the way we approach education and how we define the role of the arts in society. His most current book, *The Spiritual Dimension of Leadership: 8 Key Principles to Leading More Effectively*, co-authored with Stephen L. Sokolow, was published in February 2006.

The essay by Hamsa Thota, Ph.D., approaches the topic personally, from the standpoint of an innovation and new product development expert whose personal creative journey began in the rice fields of India. Just as scientists explore and seek understanding of the physical world, the artistic process allows individuals to explore their own creative potential. Tapping into the creative potential of our children is as important as using any other natural resource. The former vice president of research, development, and commercialization for Rich Products Corporation, Dr. Thota holds 10 U.S. Patents and serves as a member of the U.S. National Innovation Initiative Strategy Council.

Ken Robinson's essay likens our current crisis in education to the now widely recognized global climate crisis. Like the "canary in the mine shaft," when the health of the arts in schools declines, there are serious long-term consequences for the quality of individual lives, for the health of communities, and for economic competitiveness and sustainability. His recommendations challenge us as a sector to rethink the strategies that are now needed to reverse the status of the arts in our educational system. As an internationally known expert in the field of creativity

and innovation in business and education, Robinson consults with governments, major corporations, and cultural organizations worldwide.

By choosing to focus our attention on the role the arts can play in helping to build the 21st century workforce in America at the 2007 National Arts Policy Roundtable, we join with the growing number of private- and public-sector voices concerned with whether our country is prepared to meet the challenges of a new global economy. These leaders are calling for a re-examination of how we prepare students to succeed, and indeed thrive, in the workplace and society of the future. We believe that the arts are a key component of meeting this challenge.

We would like to express our gratitude to Davis Publications, Inc. and The Ruth Lilly Fund of Americans for the Arts for their support of the 2007 National Arts Policy Roundtable.

Marete Wester Director of Arts Policy Americans for the Arts

Creating a Whole New World: Placing Arts and Education in the Center of the Flat Earth By Dr. Paul D. Houston

One of my favorite songs is "Amazing Grace." I love it for its meaning but also for the idea that grace is "amazing" and makes such a "sweet sound." It is a song that provides forgiveness, hope, and possibility: "I once was lost, but now am found, was blind, but now I see." As I look at America, I see us blindly abandoning those things that made us great as a nation. We are living with a blindness today that could cost us our future. Our blind spots center on what we value as a nation and how we are approaching education and the place of the arts in American society. We are in need of some amazing grace.

I think that it is no accident that the word "culture" means both "the arts collectively" and "the shared beliefs and values of a group." In most cultures, the arts frame the values and beliefs that exist in that culture. In Hawaii, there is no word for arts because they are at the center of everything in the culture. In America, the arts are too often defined as frivolous add-ons or a product of what some pundits call "Hollywierd" that is seen as a contaminant to our real culture. Our culture is shaped by our language, our images, and what we pay attention to. And those people who we raise to iconic status reflect our shared values. A culture is defined by those it adores. The real contaminant in our culture today is what we choose to value and adore. Today's American icons are business titans, sports stars, or pop idols. Our values seem to be built around wealth accumulation, sports excellence, or fame (which also seems to make one wealthy). We might remember that Tiger Woods signed a multimillion-dollar contract with Nike before he had played one round as a professional and Michael Jordan's endorsements dwarfed his playing contracts. The Bible says that where your treasure is, there will your heart be also. America has come to treasure itself, and therein lies the problem.

Further, America has also become a place where pop culture tends to substitute for real culture. Recently we have seen the nation fixated on people who are famous for being famous. We are to a point where someone such as Paris Hilton is covered breathlessly by the national media simply because she is famous. It has been reported that last year Paris made more than \$7 million dollars just for being Paris. It is said that most of life is just showing up—for Paris Hilton that can lead to big bucks.

Education is not immune from the influence of a culture run amok. At the policy level, it is now widely reported that Bill Gates is the most influential person in education reform. Is this because of his broad knowledge and experience in education? No, it is because his foundation gives millions of dollars away to influence what happens in education. At the child level, our children are influenced by what Paris and Britney wear, and for years they were told they should want to "be like Mike." While this is played out in school, the entire culture—including parents and the media—is responsible. What our children are taught to value tends to come from the popular culture, and what our schools emphasize tends to be shaped by the economic culture of our country. The result is that we have collectively raised a generation of children who seem to know the price of everything and the value of nothing. We are reforming schools—not around the ideas that would create a more vibrant culture, but around economic imperatives, and that could exact a great price on our future.

Education has always had as a part of its mission the preparation of generations equipped with the skills to provide economic sustenance for themselves and their families. Over the last several decades, education has increasingly been seen *solely* as the place students receive preparation for the workplace. In essence, schools have become the "farm system" for corporate America and the holistic aspect of education has been overrun by concerns for America's place in the global marketplace. This has led to a distortion of understanding about what is true and what is important about education and how it is delivered.

At points over the last half century, schools have been criticized for limiting America's ability to compete in the global marketplace. One can go back to the late 1950s when the Russians launched Sputnik and America was rocked with recriminations and self-examination. America's falling behind in the space race was largely blamed on our schools. There were panicked stories in the popular media about "what Ivan knows that Johnny doesn't," and there was a flurry of activity to improve America's educational standing. Money poured into schools for new programs in science and for teacher preparation. When a mere decade later America landed men on the moon and proved its ascendance in the space race once and for all, the schools were not given much credit for this achievement—and they probably shouldn't have received credit. American schools were no more responsible for John Glenn and Neil Armstrong's accomplishments than they had been at fault because Russia launched a satellite before the United States had done so. Glenn and Armstrong, and most of the folks at NASA, were products of American public education, but they had attended school when Johnny was supposedly falling behind Ivan. Their space flights were the result of American ingenuity and know-how and a government that was focused on a successful outcome.

In the 1980s, America was rocked by the "Nation at Risk" report, which pointed out the failings of American education. The report argued that our lowered economic standing against Japan and Germany was a result of "a rising tide of mediocrity" in our schools. The report suggested we had unilaterally disarmed ourselves educationally and called for improved rigor. Again, less than a decade later, America had vanguished the economies of Japan and Germany, prevailed in the Cold War with Russia, and was once again standing astride the globe as the preeminent economic and military power in the world. Once again, the schools were not credited with making this so and once again, they should not have been. The education system has always been a player in the nation's economic success by producing what was asked of it. In the 1950s it was workers for the factories of the industrial revolution, and in the 1980s it was more high-tech workers for the emerging information age. But America's reversal in the 1980s had as much to do with economic policy, the emergence of the high-tech industries that America dominated at that time and government policies that supported business.

Today there is rising angst about the emergence of China and India as world economies and there are fears that the United States is falling behind these economic behemoths. Once again, the schools are targeted as the culprits of our supposed failure to compete. And again, the pundits have it all wrong. It's not the schools, it's the culture. There is much discussion about how schools in China and India are superior to American schools—but this panic is misplaced. The vast majority of children being educated in these countries are receiving a substandard education. Yet, China and India are turning out large numbers of young people who are disciplined and excellent at linear, sequential work. America continues to turn out students who are individualistic. In fact, the schools that have consistently turned out a rather rambunctious, and somewhat rebellious product in the way of children who have a mind of their own and speak it at every opportunity may well be creating the conditions for America's continued dominance on the world stage. But this will only be true if America pulls back from its current efforts at school reform and reexamines what makes America what it has always been.

Today's threats do not come from India and China but from our own myopic and insular view of our own culture. There is a real danger in trying to compete head-to-head with China and India numerically—or to do so from an income standpoint. Put more simply, since those two countries account for about three billion people, only about 10 percent would have to be engineers and scientists to create a scientific workforce that would match the entire population of the United States. Further, given the relative size of these countries compared to our own, they would only need to educate 10–15 percent of their population to high standards in order to engulf us in skilled workers. Our entire workforce cannot match this reality. It is the rule of large numbers—a small percentage of a large number is still a large number. Further, their workers work for a fraction of American wages. The future of head-to-head competition with these countries does not look bright.

It would be instructive to look back to Sputnik and study

our response. Russia succeeded early on by building bigger rockets. It was planning its moon expedition around the assumption that it needed a huge rocket to launch its "moon lander," and almost as huge a rocket to return. America created Apollo from the concept of three ships: one relatively larger ship to escape Earth's gravity, a smaller ship to orbit the moon and return the

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astronauts to Earth, and a lander that would be left on the moon with a very small rocket to take the astronauts to the circling orbiter. This made the return much easier because the payloads were much lighter. It was a creative and innovative approach created by NASA scientists that allowed America to skip many of the steps Russia had to take. Innovation and creativity trumped brute size.

So our inability to compete with China and India on size alone might not matter. If the flattening Earth—described by Thomas Friedman in his *The World Is Flat*—is part of the problem, the conceptual economy described by Daniel Pink in *A Whole New Mind* may well be the solution. Friedman brilliantly describes the challenge of a world where jobs can be done anywhere in the world by people with the right skills. Pink describes a world where that is true but less important because the nature of work is changing. Pink points out that the jobs that can be done anywhere involve the skills of sequential, linear thinking—skills that characterized leaders in the industrial age and workers in the information age. He suggests that if your job can be done elsewhere cheaper or by a machine, (computers are great at linear, sequential acts) then you are in trouble.

But, if your work involves creative, innovative thinking such as storytelling, design, or empathy, then you are in good shape because your job can't easily be outsourced. He suggests that we are moving into a conceptual world where these creative skills are most important.

The last century was called by many the "American Century" because of our domination in military and economic terms. But, as author Ben Wattenberg described it in The First Universal Nation, our domination and the making of the first universal nation may well have had more to do with our popular culture than anything else. He pointed out that it wasn't the "electronic boxes" that were being produced in the Far East that were important, it was the software, the movies, and the music that went into them that created culture. This has been brought home to me as I have seen children in the remote Amazon rainforest wearing Michael Jordan's number 23 t-shirt, and I once had a very lively discussion with a group of Maori children in New Zealand about the plot lines on the evening soap opera Melrose Place. The universal images that the world watches and the sounds they listen to most often emanate from American shores. Yes, in World War II our military might have liberated Paris, but it may be Paris Hilton who is winning the current war for world influence. For better or worse, American popular culture trumps all others.

America's real power is not in our engineering but in our "imagineering," a phrase created by the folks at Disney. Disney also gave us the song "A Whole New World" from the movie Aladdin. The reality is that America has been producing the world anew for some time through our popular culture and our economic power. It is now time to recognize that our future economic power will come from the culture we create and that will come from what our schools produce. And our success is much less dependent upon the skills our children have than upon our children's ability to see the world through fresh eyes. The future will be shaped by those who see through new eyes and who can imagine new things. For that to happen, schools will need to be freed up from the coercive policies that have been promoted, in part, by big business, so that students can find their own voices and visions.

One of the many ironies of our current discussions about education is that money is not seen to have anything to do with the quality of education, even though education is seen as the path to more money for individuals and a stronger economy for the nation. When it is brought up, educators are told that "money doesn't matter"—this in a culture where money is the only thing that matters, where brilliance is equated with checkbook size, and where iconic status is achieved through the power of the purse. It is also ironic that the current fears of our education quality are

framed through economics—we can't compete globally without better educated workers. So, it would appear that the only place money is not important is in the education of our young.

This shows up in international competition. While the United States has cut taxes that go to support education both at the federal and state levels, other countries in the world are increasing their investments in education. For example, China has increased spending on colleges and universities tenfold in the past decade. We have also slowed our investment in research and development at the very time other countries have accelerated theirs. We currently rank seventh in the world in percentage of GDP devoted to research. But money isn't the only issue.

In a piece written for Newsweek magazine in January 2006, Fareed Zakaria interviewed the minister of education of Singapore. Zakaria pointed out that while the students in Singapore outperform the students in the United States on tests, years later the American students are much more successful in the world of work—particularly as inventors and entrepreneurs. The minister explained that both countries have meritocracies—in Singapore it is based on testing and in the United States it is based on talent. He went further to explain that what makes a student successful in innovative behavior—such as creativity, curiosity, or a sense of adventure—is not on tests and is not tested for. This is where America has an edge. The minister went on to mention that Singapore must learn from America's culture of learning, which challenges conventional wisdom even to the point of challenging authority.

While Singapore is trying to copy what we do best, we are trying to copy Singapore in the one place that will not give us an economic edge—the culture of testing. Where we might want to copy Singapore is in their treatment of teachers. In Singapore, beginning teachers make more than beginning doctors, lawyers, and engineers. When I questioned this on a visit there, I was reminded that you would not have doctors, lawyers, or engineers without teachers. And yet, any chance we might have to compete internationally in education hinges on our teachers' ability to educate our children effectively and creatively.

The greatest irony is that at a time when America needs its creativity and ingenuity the most to compete with the enormous scale of our competitors, we have chosen to, as "A Nation at Risk" warned us against 30 years ago, unilaterally disarm ourselves. We are reshaping our educational system to look more like Singapore, with more emphasis on a culture of testing, and less on a culture of culture. The very things that make America uniquely American—our innovative spirit and our creative expression—are

being pushed out of our schools in favor of a narrowed curriculum built around norm-referenced, high-stakes tests. Schools are now sometimes rewarded, but mostly punished, for their performance on multiple-choice tests, the least creative and innovative activity found in schools. And because the stakes are so high, (schools that don't meet testing standards risk being labeled as "failing" and risk losing control of resources and students) other activities are being shed. So courses such as art, music, and creative writing are less valued and less taught.

America is currently caught up in a frenzy of test-based reform, designed ostensibly to benefit those who have been "left behind" by our culture. The problem is that the authoritarian model, which emphasizes the achievement of the left brain, is doomed to fail with many children. And this failure will not be because they do not test well, for there is every indication that when emphasis is put on tests, the scores rise. Just ask Singapore. Those who promote this kind of reform are fond of pointing out that that whatever gets tested gets taught. Yes, it does. And what is not tested gets left behind. The real test will be faced when we ask whether this increase in scores will lead to increased success for students.

The "test and tremble" model of school reform that is the current craze, which values a narrow measure over broader success, is unlikely to move us toward a more conceptual, creative society. And we are not likely to capture the imagination or the talents of those who have been left behind if we stay on the present course.

There is no question that a significant portion of America's children are not performing to world-class standards. This is mostly because America is not performing to world-class standards in dealing with the social issues that plague many children and their families. Children who were born to mothers who lacked adequate prenatal care, who received inadequate medical preventive attention, and who received no or substandard preschool programs come to school already left behind. It is difficult for the school to catch them up—particularly when the school itself is located in a community that cannot raise adequate resources to compete with other schools in middle-class neighborhoods.

American educational practice revolves around a deficit model where students' shortcomings are identified and remediated. However, all students come to school with both deficits and assets. Since motivation is a critical part of the educational process, it is difficult to use a deficit approach to motivate. Constant failure tends to lead to despair and not a belief in possibilities. Cognitive scientists remind us that fear inhibits cognitive processes and yet

we are trying to make children and schools smarter by threatening them and scaring them to death.

The poor children in America bring many assets to school with them every day. And these assets are often in areas that would bring greater success to America in the global marketplace. If you look at one of the "creative" cultural gifts America has given the world, such as music, you would identify genres like jazz, blues, bluegrass, country, rock, R&B, and hip-hop, to cite a few. What do all these forms have in common? They all came from a part of our society that had been left behind. The children on the Native American reservations in the Southwest may not perform at grade level, but if they are tasked with assignments to "design," (one of Pink's basic skills in the conceptual world) they are highly proficient. Basketball players in the ghettos of our inner cities might not know what the concept of

systems thinking is, but if put on a basketball court, they know where 10 people are moving through time and space, how to anticipate their movements, and can create elegant responses to them—the essence of a systems-thinking approach. Classrooms full of immigrant children might have trouble meeting the goal of Adequate

Creativity is often found at the margins of a society—that is where ideas and imaginations are free to roam. We need to spend less time on identifying what children do not know and more time celebrating what they do know.

Yearly Progress set by No Child Left Behind, but those same children code shift, culture shift, and language shift multiple times during the day—something most middle-class Americans cannot do in this increasingly diverse global world. Creativity is often found at the margins of a society—that is where ideas and imaginations are free to roam. We need to spend less time on identifying what children do not know and more time celebrating what they do know. We need to find ways to build upon these strengths to help them learn what else they may need to be successful in their own lives and be productive citizens for the world.

When I was growing up, I was one of those students who hated math and science. I would not fit well into the flat world. And the truth is, I wasn't that much happier about social studies and literature. It was years later, when I became superintendent of schools in Princeton, NJ—a hothouse for theoretical mathematics and quantum physics—that I learned that what I had learned in school about math and science had the same relationship to *real*

math and science as a log has to a blueberry. Math isn't about mastering rules and memorizing times tables, it is about finding the elegance in a well-stated problem. And science isn't about learning periodic tables and formulas, it is about exploring the mysteries of the universe. And social studies isn't about trying to remember when, where, and who—it is about better understanding the human condition. And literature is not about probing plot lines or grammatical niceties, it is really about understanding ourselves. Learning must be about elegance, mystery, and probing our inner universe. And the best way to approach a lot of this is through the arts.

The great cellist Pablo Casals once remarked that "each second we live is a new and unique moment in the universe, a moment that never was before and will never be again. And what do we teach our children in school? We teach them that two and two make four and that Paris is the capital of France. We should also teach them what they are." He reminds us that each child is unique and capable of anything—of becoming another Beethoven, Michelangelo, or Shakespeare. That they are all marvels and that it is our task is to make the world worthy of its children.

The culture of a culture drives it forward and defines it with each generation. The culture of modern America creates our pre-eminence in the economic environment, because of our unique cultural gifts. Many of those gifts emanate from the parts of our society that are seen as "less than" and who need, more than any other part, to receive every advantage that we can give them—to make the world worthy of them—because it is their gifts that will ultimately lead us home.



Dr. Paul D. Houston has served as executive director of the American Association of School Administrators since 1994.

Dr. Houston has established himself as one of the leading spokespersons for American public education through his extensive U.S. and international speaking engagements, published articles, and media interviews.

Prior to joining AASA, Dr. Houston was superintendent of schools in three uniquely different public education systems: Princeton, NJ; Tucson, AZ; and Riverside, CA. His K–12 education experience also includes serving as an assistant superintendent in Birmingham, AL, and as a teacher and building administrator in North Carolina and New Jersey. He has also had the pleasure of serving in an adjunct capacity for the University of North Carolina, Harvard University, Brigham Young University, and Princeton University.

Dr. Houston completed his bachelor's degree at The Ohio State University and received his master's degree at the University of North Carolina. In 1973, he earned a doctorate of education from Harvard University.

Dr. Houston has published more than 200 articles in professional journals. He co-authored the books *Exploding the Myths*, (1993); *The Board-Savvy Superintendent*, (2002); and *The Spiritual Dimension of Leadership: 8 Key Principles to Leading More Effectively* with Stephen L. Sokolow, (2006). His columns have been collected and published in his books, *Articles of Faith & Hope for Public Education* (1996) and *Outlook and Perspectives on American Education* (2003). Houston is co-editor for a series of books on the "Soul of Leadership" with Corwin Press. The first books in the series, *Engaging Every Learner* and *Out-of-the-Box Leadership* were published in 2007.

Houston is committed to advocacy for public education and the children it serves.

The Arts & Creativity in Education: Keys to American Economic Competitiveness in the 21st Century Hamsa Thota, Ph.D.

Few would disagree with the proposition that the key to American competitiveness in the 21st century lies in the education of our children. But to what end? I believe that as we seek to reshape the competitive landscape of this Age of Global Innovation in which we live, the single most important thing we can do is purposefully nurture the innate potential of our children to become explorers in life.

That brings us directly to the role of the arts. Art, like science, is a discovery process. Just as scientists explore and seek understanding of the physical world, the artistic process allows individuals to explore their own creative potential. Tapping into the creative potential of our children is as important an achievement as using any other natural resource. Its value lies in a future return on increased expression of creative abilities of our children in their daily lives. But a medium is necessary for a child's inner truths to become a product. Children need to be introduced to different artistic modes in order to be expressive and attain a fluency in expressing their "spirit," just as they become proficient with a new language. If we hope to awaken the "fire in the collective American belly," our children need to mature into adults who know what they are capable of achieving, and know how to make informed choices as they pursue their versions of the American dream. These are skills that can't be measured merely by increases in scores on standardized tests. Relying solely on methods of vocational education and only giving children tools for routine productive processes is a dereliction of our duty to develop the creative and competitive spirit of the next generation of America's workforce.

WHY AMERICAN COMPETITIVENESS NEEDS THE ARTS

Art Teaches the Competencies of Creativity

The artistic process is a creative process that requires fortitude and perseverance. The discipline the arts require is a largely untapped learning resource for schools and workplaces alike. The arts as part of the academic curriculum teach children the personal sat-

isfaction and ownership that arise from their physical efforts to create a product of their own imagination, while giving them invaluable practice wrestling with frustration productively and tenaciously. For similar reasons, developing creative skills in the arts is just as important in the workplace—especially for those industries, such as manufacturing and services, who must continually introduce creativity and innovation into their processes in order to remain competitive.

Most schools view the arts as essentially leisure activities, because they believe that arts education lacks the rigor found in math and science curricula. This overlooks the tremendous potential for creating a nurturing educational environment in which artistic endeavors become a training ground for children's emotional development. The creative effort needed to transform an abstract insight into a product in the physical world is inevitably a painful process of trial-and-error and self-discovery. Whether it is an engineer's design and construction of bridges and factories or an artist's sculpture, each product retains a fragment of the individual who created it and is a testament to the manifestation of that creator's inner world. Providing opportunities for children to internalize the creative process and to develop facility in creative production builds the vital competencies that America needs to cultivate purposefully for the 21st century workforce.

Art Provides Tools to Help Innovators Transcend the Limits of the Known

Redefining artistic pursuits as the practice of "competencies in creativity" applied in a productive process invites art into the realm normally reserved for science. In his 2005 American Scientist article, "Technology and the Humanities: How do insights from C. P. Snow's lecture on the 'two cultures' reflect on the practice of engineering?" Henry Petroski asserts that "in engineering, it is not so much science as it is ingenuity that is applied to solve problems and satisfy needs and wants."

He describes how the Wright Brothers, when faced with the limits of scientific investigation and knowledge then available, turned to ingenuity and invention—which allowed them to transcend the limits of the engineering practices of their time. Petroski states that "even more so than science, engineering is akin to writing or painting, in that it is a creative endeavor that begins in the mind's eye and proceeds into new frontiers of thought and action, where it does not so much find as make new things." In the absence of science, engineering calls on the creative competencies taught by and expressed in the arts. Can we accept this definition of engineering? Absolutely! I believe that with the acceptance of such a definition, engineering and the sciences in general become a form of artistic expression. If so, shouldn't we think about the artistic education 21st century engineers need to succeed?

ENGAGING THE BUSINESS COMMUNITY

The Challenge

The expression of creative competencies in business problem solving, once the exclusive domain of executives, is now required throughout the workforce. And in today's world, an educational process that develops a creative workforce is not a luxury but a necessity. Since America's global competitiveness hangs in the balance, the business community is a natural ally to the cause of creativity, and consequently, the arts. I maintain that business leaders are overlooking an opportunity for competitive growth by not demanding that the American education system deliver a workforce with competencies in both creative and productive processes. But the fact is, for the most part, they are not. Why? Perhaps it is because today's business leaders are products of an educational system that exclusively emphasized the utility value of productive processes and largely ignored the enriching potential of creative processes. "You don't know what you don't know" rings true here.

> Art (in) Education = Creativity (in) Business: Making the Case

The question therefore becomes "how do we energize the business community to champion arts education in order to develop a creative (and therefore competitive) workforce for the 21st century?" I believe that the key is to change the way business lead-

ers view the arts, and that will only come when two things happen.

First, we need to give business leaders opportunities to experience how the arts, in a learning context, build competency and mastery of the creative process. Through my collaboration with the Americans for the Arts program Creativity Connection, I have been able to introduce arts-based creativity programs into a variety of business environments. Thus, I've had the opportunity to experience first hand the ability of art-making to spark innovation by transforming routine productive processes into creative processes. I have seen quantitatively oriented, highly skeptical colleagues come away from these sessions as true believers who recognize the relevance of arts education to their work as engineers and innovators. I am convinced that most business leaders—who are, after all, under pressure to deliver the kinds of outcomes that require creativity at all levels of their organizations—will react similarly when they have the opportunity to directly participate in the artistic process itself. Nothing less will do, for I believe that in this matter, there is no substitute for hands-on experiential learning. If we view the business community as a consumer base, a tested and true method for bringing innovation to the marketplace is to give these 'customers' the opportunity to experience the enrichment potential of the creative process, through the medium of artistic expression. Once these leaders see the personal and organizational value of unlocking their own creative potential through artistic processes and experiences, we can expect them to champion the role of the arts as a learning tool, in the workplace as well as in schools.

Second, we also need to develop ways to speak to business leaders in the language of measurable outcomes. While the creative process is qualitative by its very nature, there is no reason to assume that the capacity of certain kinds of tools to measure and to foster the emergence of the creative process in both children and adult learners can not be better. Through better research and measurement, the argument for creativity is more convincing from the perspective of productive process-oriented business leaders.

SUMMARY: TWIN OPPORTUNITIES

The challenge we have before us is twofold: 1) how to transform current American education system; and 2) how to educate America's business leaders in the practice of creative competencies. The concepts of "art as leisure" and "education for vocation" are remnants of a bygone era that emphasized mastery of productive process while undervaluing the creative process. A fundamental means to effectively transform the American education system is by enriching it with new curricula focused on developing creativity. For this to happen, strong support from the business community is required. The best way to engage business is to target and coach individual business leaders on how to apply the creative process in their own businesses. Business leaders who achieve success by practicing competencies in creativity will become champions of a new mindset—one that values educating our children in both the creative and productive processes. Ultimately, successful application of the creative process at the individual level will collectively pave the way for large-scale practice of creative competencies at the organizational level. This, then, is a mission critical initiative for the arts field: to become co-creator of unassailable American competitiveness in the 21st century.

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Dr. Thota's experience on family-owned rice fields in India, taught him early on that the value of harvest is dependent on the ecosystem within which product is harvested and marketed. He also learned that value extraction depends on how the producer positions itself within the value chain. Later in the United States, he applied his learnings to innovate and commercialize more than 200 food products as vice president of research, development, and commercialization for Rich Product's corporation.

Dr. Thota played a key role in transforming the Product Development and Management Association (PDMA) into a global organization during 2000–2007 serving as member of its board, vice president of conferences, president, and chairman of the board. He chaired and co-chaired several prestigious PDMA conferences on product development and innovation management in China, India, and the United States, and he successfully championed the formation of PDMA China in 2007 and PDMA India in 2006. He is a member of the U.S. National Innovation Initiative Strategy Council and contributes to U.S. Council on Competitiveness dialogue on "innovation metrics" and "the future of U.S. manufacturing." He also serves on the advisory councils of Creativity Connection, Americans for the Arts, and Billion Minds Foundation.

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The Arts and Education: Changing Track Sir Ken Robinson

The premise of the Americans for the Arts National Arts Policy Roundtable is that the arts have a fundamental role in promoting the creativity and innovation on which the United States increasingly depends. The paradox is that at the very time when the arts should be ascendant in public policy and especially in education, they are actually in decline. This is a much bigger issue than it may seem, and it calls for some radical rethinking in the arts and in education.

Early in 2006, I spoke at the Ted conference in Monterey, CA. One of the other speakers was Al Gore. He gave his talk on the climate crisis that became the Oscar-winning documentary, An Inconvenient Truth. I assume that most people with any sense now accept that there is a genuine crisis in the earth's resources; that it is potentially catastrophic; and that the way that we've been behaving as a species for the past 300 years has probably got something to do with it. One climate crisis is probably enough for most people. But I believe that there is another climate crisis, of which most people are even less aware. It is exactly analogous to the climate crisis in the natural world, and its consequences are just as serious. This is a crisis of human resources.

We are all born with tremendous capacities, but our systems of education and work squander many of our best talents and those of our children. Fixing all of this isn't just about improving the quality of the arts; but like the canary in the mineshaft, the health of the arts in schools is a good sign of the overall atmosphere in education that students are breathing every day. When the arts in schools are sick, there are serious long-term consequences for the quality of individual lives, for the health of communities, and for economic competitiveness and sustainability. Why is this—and what should be done?

A growing library of books and reports all confirm that the world is engulfed in an economic revolution and that the United States is as vulnerable to it as everyone else. This revolution is being driven by two main forces: technology and demography.

The first is technology. Information technologies in particular are transforming the economic and cultural land-scape faster and more profoundly than many people seem to grasp. Digital culture has been described as the first genuine generation gap since rock and roll, and I think it is. Children and teenagers are living now in a different world from their parents. They network, communi-

cate, and create online in ways that many adults don't really understand and often fear. The next five, 10, 20 years will see even more profound changes that may divide our children technologically from their children.

We're all impressed by the huge advances in computing power in the last 50 years and doubtless walk with an extra spring in our step if we've bought an iPhone. But the real revolution in information systems has yet to hit us. I'm told that the most powerful computer on earth currently has the processing power of the brain of a cricket. In the near future, the most powerful computers will have the processing power of a six-month-old human child. At that point, we will cross an historic threshold: computers will then be capable of learning.

I asked a prominent computer designer what that means. He said it means that they will be able to rewrite their own operating systems in the light of their 'experiences.' The next step could be a merging of information systems with human consciousness. How's that going to feel? It may sound improbable, but 30 years ago the only person with anything approaching an iPhone was Captain Kirk.

The second main driver is demography. In the last 200 years, the population of the earth has risen from one billion to six billion. Half of that growth has been in the last 30 years. Most of it is not in the established industrialized economies but in Asia, the Middle East, and the so-called emergent economies. The birthrate within the traditional populations of Western Europe, the United States, and Japan is mostly declining. The growth in those populations is mainly through patterns of migration. The population of the United States just passed the 300 million mark, mainly as a result of migration from South America. The Asian and Hispanic economies in the United States are growing now at a faster rate than the U.S. economy as a whole.

In every way, technological innovations and demographic changes are interacting in ways that make the present tumultuous and the future unknowable. The economic challenge everywhere is to maintain competitiveness and prosperity in a world where the nature of work, the sources of wealth, and the supply of labor are being transformed week by week. The challenge to the United States is not just the availability of cheap manual labor in other parts of the world. The United States is competing with highly educated and skilled intellectual labor, which is also less expensive at the moment.

It would be wrong to think that these skills are only linear and routine and that other regions are creative deserts—they are not. There is huge creative talent in and moving toward China and India. There are major economic challenges emerging in Russia, the Middle East, and other parts of Southeast Asia and South America. There is no doubt that the United States and Western Europe have an enormous, historic advantage in creativity and innovation over many other parts of the world. But the gap is closing every day.

This global revolution is not only economic: it is also cultural. We are living in a world of explosive population growth, of unprecedented social mobility, and of instant access to information and ideas. All of this is raising profound questions of identity, values, and purposes. Globalization is usually thought of as a process of homogenization, and in many ways things are becoming more alike wherever you go: a Starbucks on every corner, the same hotel chains in every city give or take the room service menu, the same fast-food stores and iconic clotheslines. But all of this is a little deceptive.

There is also a powerful counter-trend toward localization—toward the reassertion of national, regional, and local identities. As globalization gathers speed, questions of cultural identity are resurgent everywhere. The French are in no rush to stop being French. For the first time in modern history, the United Kingdom is arranged in regional assemblies. And the Americans aren't giving up on being American. Instead, we all exist, like Russian dolls, in increasingly complex cultural layers. These issues of identity are potentially corrosive, as we're seeing continually in the Middle East and in other deep-seated regional conflicts and in Western responses to them.

One of the great ironies is that we are now more connected technologically with other cultures than at any other time in human history, but there seems to be little gain in cultural tolerance and understanding. The issues are urgent. If we're to have a chance of economic sustainability and cultural stability—as nations and as a species—we have to address how we use and care for the earth's natural resources. We also have to think differently about ourselves and each other and make much better use of our human resources. In particular, we have to focus on developing the abilities we now need most of all: imagination, creativity, and innovation.

I think of creativity as the process of having original ideas that have value. There are many misconceptions about creativity. One is that only special people are creative. It isn't true. We are all born with tremendous creative capacities. What is true is that relatively few people seem to discover and cultivate them fully. A second misconception is that creativity is about special things, like the arts. This isn't true either. Creativity is possible in every area of human activity. Some of the most creative people I know are scientists and mathematicians. What is true is that the processes of creativity have common features in every field. Some of the most creative ideas come from dynamic interactions between different ways of thinking. There is a lot of art in science and lot of science in art. Creativity is about making connections. One of the most important connections we have to make is to see that economic and cultural growth and sustainability are intimately related.

The third misconception is that you're either creative or you're not and there's not much that can be done about it. The fact is that a huge amount can be done to cultivate creative abilities. It's to do with providing the right conditions for growth. Providing these conditions is one of the

main challenges for education and for arts policy. Our current systems of education do not provide these conditions and they were never intended to. They were designed in the 18th and 19th centuries primarily to meet the needs of the industrial revolution. In almost every way they are out of step with the technological and economic imperatives of the 21st century.

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The real problem that confronts the arts in education lies in the dominant assumptions about the purposes and nature of education that are rooted in industrialism and in the intellectual traditions of the Enlightenment. One illustration is the hierarchy of subjects in schools, which is being reinforced by the current programs of reform. At the top are languages, math, and sciences; then come the humanities; and at the bottom, the arts.

There are two reasons for this hierarchy. The first is economic. There is an assumption that math, languages, and sciences are more important for national economic development than the arts. The second reason is cultural. There is an assumption that education is really about developing academic ability and that the arts are not really academic. For both reasons, the arts suffer when budgets tighten and when conversation turns into economic competitiveness.

The most significant national reform program in U.S. education is the No Child Left Behind Act (NCLB), and its effects on the arts are a powerful example of the problem we face. NCLB was introduced to address issues of economic competition by raising standards in public education. The jury is still out on the benefits and achievements of NCLB. From the point of view of the arts in schools, the impact has often been negative.

One report claims that more than 70 percent of schools have cut back or eliminated arts programs entirely as the direct result of NCLB. I doubt that earnest politicians sat in smoke-filled rooms in Congress plotting the end of painting in schools. The collapse of the arts may not have been intended, but it was inevitable.

It happens because policymakers are focused on promoting standards in the subjects they think are more important, especially languages, math, and sciences. The arts aren't victims of a deliberate assault, but of collateral damage. NCLB recognizes that math and literacy levels in the United States are too low. The assumed remedy is to focus almost exclusively on them and to push other disciplines to the margins, including the arts. This is an example of a mindset in public policy that is often self-defeating. I think of this as the septic focus. This is the tendency in medicine to look at a problem in isolation from the context that produces it: to treat symptoms and not causes. It isn't working, and it isn't a surprise to anyone who knows about learning.

I doubt that many young people leap out of bed in the morning wondering what they can do today to raise their state's reading scores. Learning is a personal process: to succeed in any task, learners have to be motivated and engaged. Raising reading and math scores means exciting and motivating students to want to do better in these things, not just punishing them if they don't. It means engaging their passions and imaginations, not numbing their minds. This calls for a rich curriculum, not a honed-down one.

Despite all the major reform programs of recent years, many of which have marginalized the arts, the needle of national educational achievement in the United States has hardly moved at all. The United States still faces high drop-out rates, low graduation rates, high teacher turn-over, low professional morale, and low international standards of education. The truth is that the current system doesn't need to be improved; it has to be transformed. No country can hope to prosper in the future simply by doing better what they did in the past. We need to think and act differently. The real value of the arts is not in making marginal improvements on the peripheries of the existing

system of education, but in transforming the heart of it. To achieve this transformation, we have to do something more than argue the case for the arts against the sciences, or math, or literacy. We have to see the issues whole and make common cause with others who are trying to move in the same direction. We have to connect with overarching ideas and principles that unite those who see the need for educational transformation. Creativity is one of those ideas and so is culture.

The arts and arts education have fundamental roles to play in helping the United States to engage with the economic and cultural challenges it faces. The first is personal. Conventional education focuses on developing particular forms of academic ability. The arts illustrate the tremendous richness and diversity of human intelligence and that there is much more to the human ability than a narrow academic curriculum recognizes. A balanced educa-

tion gives equal weight to the arts, the sciences, math, and the humanities, and recognizes the many ways in which they can feed into and enrich each other.

The second broad role is cultural. As the world becomes increasingly connected and interdependent, it is essential to

Learning about the arts is the surest way to understand our own and other people's cultural values and sensibilities, and to understand the true nature of diversity.

nurture a deeper sense of cultural understanding and tolerance. The arts in all of their forms are at the very heart of the cultural identity of every human community. Learning about the arts is the surest way to understand our own and other people's cultural values and sensibilities, and to understand the true nature of diversity.

It doesn't do to assume that we all know what we mean by the arts, or that we mean the same thing. If asked what the arts are, people often recite a list of art forms: music, theater, visual arts, dance, and literature. Lists like this look innocent, but they can be dangerous. Some cultural groups don't think of the arts in this way at all, and those that do usually have a hierarchy in mind: classical music before jazz, or jazz before blues; ballet before the tango, contemporary before salsa; painting before movies. The fact is that a definitive list of arts forms would exhaust the memory of Wikipedia and a full debate about their relative value would exhaust us all. The arts are fundamental forms of human expression and communication. The forms they take are as diverse as human imagination and they are dynamic. The popular arts of one generation may become the high arts of another.

The third role is economic. A vibrant, innovative economy certainly needs great scientists, technologists, and mathematicians and it needs a literate workforce. It needs a high proportion of all of these to be adaptable to change and innovative in creating new opportunities for employment and sustainable growth. But a strong economy needs much more: it needs writers and artists, performers and designers of every sort energizing the culture and breathing inspiration into daily life. In a strong creative culture all of these processes affect each other and raise the whole tide of aspiration and achievement.

Effecting this transformation in the arts and education means thinking and acting differently. First, it needs a theory of change. It's sometimes assumed that the change for the arts in education has to come from the top in new sorts of public policy. That certainly helps, and continued advocacy is essential. In moving forward, I believe it is essential to broaden the debate and make common cause with others who are moving in similar directions and have common interests in change.

The arts are not alone in feeling marginalized. The major science and technology organizations in the United States are also deeply worried that their disciplines are in decline, and that they are not being taught in ways that facilitate passion and innovation. They are deeply anxious about levels of student enrolment in science programs in colleges and of federal funding and support. There is much to be gained from sharing insights and concerns with these and other professional groups and in pressing for common purposes rather than sectional interests.

It's also essential to engage major businesses in the conversation. One of the current ironies is that the pressures in schools that are constraining creativity and a broad curriculum are being promoted in the alleged interests of improving economic competitiveness—that is, to help business prosper. In my experience, business leaders are deeply concerned that students coming through the system, including college graduates, are lacking the very qualities that businesses most need: the ability to think creatively, to communicate well, and work in teams. These are exactly what strong arts programs help to promote.

Much of my own work with corporations is about how to revive the creative abilities that so many people have lost touch with, partly as a result of how they were educated. The real interests of business in the global economy must be brought into the conversation about the real contributions of the arts in education. The argument for the arts is not only economic. But there is an economic argument and it has to have the support of the corporate sector.

The advocacy case has to be strengthened wherever possible with stronger and better information about current and shifting patterns of provision for the arts in education. More data is needed on what's going on or not going on and where, as well as what specific steps should be taken to improve provision.

Advocacy is important, but it's not enough. Real change comes from the ground up, and that means encouraging and empowering practitioners to persist and improve. It's essential to gather and support models of good practice. Education is a personal process, and good programs are always unique because of the people and places involved. But there are important common principles inherent in best practices and these need to be unearthed, illustrated, and promulgated.

The action has to start soon. There are many state governors who are urgently seeking new strategies and solutions in education. A series of pilot programs could be established in a consortium of states working together. These programs could explore how the arts can be used within whole school reform initiatives to improve students' motivation and achievement and to enrich the culture and environment of schools. A strategic alliance of states and other agencies could have immense influence on the national climate in education.

The overall quality of arts education has to be improved. There are great programs and expert teachers throughout the United States. But the cumulative effect of cuts in arts programs in schools means that the numbers of teachers with strong arts skills coming through the system are in decline. It's vital to tackle the issues of teacher education and professional development. It's also essential to tap into the vast reservoir of creative expertise and passion in America's huge community of professional artists of all sorts. A consortium of conservatoires and arts schools could help to shape a new profession of teaching artists. Working alongside teachers, they could help to transform the quality of arts education for future generations of students.

Educators of all sorts need to embrace our young people's intuitive relationships with information technologies. Digital platforms provide enormous opportunities to support arts learning across the country. A national initiative to explore how best to do this would have immense benefits for teachers, artists, and students alike.

In the end, this is all about changing the climate in education and in the workplace to make better use of the human resources on which the economic and cultural development of the United States actually depends. This can

start now and small changes can make a big difference. In this respect, human resources are like natural resources. It's about providing the right conditions for growth. If we do, the growth will come. It always does.

Death Valley is one of the hottest and driest on earth. In the summer, temperatures can reach over 50 degrees centigrade, and in an average year there's less than two inches of rainfall. Not much seems to live in Death Valley, hence its name. But 2004 was not an average year. In the winter of 2004–2005, something remarkable happened. It rained—a lot. In three months, more than eight inches of rain fell on the valley. That's more than four times the average and the most rain to fall on Death Valley since records began more than 90 years ago. In some parts of the valley the rains caused floods, mayhem, and destruction. They washed out roads and bridges. But the rains brought more than destruction to Death Valley; they brought life too.

In the spring of 2004, the normally parched floor of Death Valley was covered by a lush carpet of vibrant wildflowers. All over the valley, a dazzling diversity of plants and flowers sprang from the sand, from the cracks in the rocks, and from the desolate interiors of old carcasses. The display was so startling that people traveled across America to see something they might never see again. Death Valley was alive. The blush of flowers showed that Death Valley wasn't

dead after all. It had been asleep. The potential for life was there all along. The seeds had been dormant in the arid ground for decades. All they needed were the right conditions to grow and flourish. For several weeks they did and then the sun reclaimed the valley and the vitality of the plants sank beneath the ground where they lay dormant until the next time.

There are immense creative resources lying dormant in our students and in our organizations: in schools, colleges, public institutions, and companies. The current climate of high-stakes assessment, narrow forms of accountability, and rigid conformity is suppressing the very qualities it is intended to promote. The two climate crises we face are intimately related. Dealing with them will need all our creative resources. Jonas Salk once said that if all the insects were to disappear from the Earth, within 50 years all forms of life would end. But if all human beings were to disappear, within 50 years all other forms of life would flourish. Human imagination and ingenuity has brought us all to a perilous place, because as a species we have not thought widely enough about the consequences of what we do. The only way forward is to harness our most distinctive capacities as human beings: imagination, empathy, and creativity. These are what the arts are about, and we risk more than we imagine when we cut them from our schools and our lives.



Sir Ken Robinson is an internationally recognized leader in the development of creativity, innovation, and human resources. Now based in Los Angeles, he has worked with national governments in Europe and Asia, with international agencies, Fortune 500 companies, and nonprofit corporations. Robinson has worked with some the world's leading cultural organizations, including including the Royal Shakespeare Company, Sir Paul McCartney's Liverpool Institute for Performing Arts, the Royal Ballet, the Hong Kong Academy for Performing Arts, the European Commission, UNESCO, the Council of Europe, the J. Paul Getty Trust, and the Education Commission of the States. He was professor of education at the University of Warwick in England for 10 years and is now professor emeritus.

In 1998, Robinson led a national commission on creativity, education, and the economy for the U.K. government, bringing together leading business people, scientists, artists, and educators. His report, "All Our Futures: Creativity, Culture and Education" was pub-

lished to huge acclaim. *The London Times* said: "This report raises some of the most important issues facing business in the 21st century. It should have every CEO and human resources director thumping the table and demanding action." He was the central figure in developing a strategy for creative and economic development as part of the peace process in Northern Ireland, working with the ministers for training, education enterprise, and culture. The resulting blueprint for change, Unlocking Creativity, was adopted by politicians of all parties and by business, education, and cultural leaders across the province.

He speaks to audiences throughout the world on the creative challenges facing business and education in the new global economies. His latest book, *Out of Our Minds: Learning to Be Creative*, is described by *Director* magazine as "a truly mind opening analysis of why we don't get the best out of people at a time of punishing change." John Cleese said, "Ken Robinson writes brilliantly about the different ways in which creativity is undervalued and ignored in Western culture and especially in our educational systems." In 2005, he was named as one of Time/Fortune/CNN's Principal Voices. In 2003, he was knighted by Queen Elizabeth II for services to the arts.



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For more information on the National Arts Policy Roundtable, visit www.AmericansForTheArts.org/go/PolicyRoundtable.

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