

National Arts Education Association Talk, March 3, 2012; 3:00 - 3:50 PM; **3rd General Session, Hilton Grand Ballroom 3rd Floor; John Q. Easton**

Thank you very much for inviting me to join you today, for the opportunity to speak, and for being able to meet with your new Research Commission later today. I am both honored and flattered to be here.

In this brief session, I want to talk about three topics:

- A little background on my agency, the Institute of Education Sciences, and our mission and work
- Some of my personal thoughts about the importance of the role of the arts in education
- And finally, some thoughts on a research agenda that could prove fruitful in today's climate of reduced resources, accountability and emphasis on the use of evidence in decision making

Part One. Some background on IES.

IES was established by Congress in 2002 in the Education Science Reform Act. Built from the Office of Education Research and Innovation, IES now includes four centers. The National Center for Education Research and the National Center for Special Education Research both primarily make grants for research and training; the National

Center for Education Evaluation and Regional Assistance evaluates federal programs and sponsors the Regional Education Laboratories, the What Works Clearinghouse, and ERIC, the Education Resources Information Clearinghouse; and the National Center for Education Statistics, which conducts the National Assessment of Educational Progress. As you probably know, NAEP primarily focuses on reading and math, but we also assess other subjects, including science, the social studies, and fine arts. We released our last report on arts education in the summer of 2009, showing how about 4,000 eighth graders performed in music and another 4,000 in visual arts. We assessed students' ability to observe, describe, analyze, and evaluate works of art in both music and in visual arts. And in visual arts we also assessed students' ability to express ideas and feelings in the form of an original work of art. NCES also conducts international assessments, and collects scores of other statistics, including our premier longitudinal surveys, such as the National Educational Longitudinal Survey (NELS: 88), the source of much fruitful research on arts education.

IES is the government and the country's agency for education research, evaluation, statistics and assessment. Above all, we strive to be accurate and objective. We have some independence from the Department of Education, for example, we have our own review process for both funding decisions and for our publications. We must be seen as non-partisan, non-political and trustworthy while at the same time providing policy relevant information to decision makers in the government and elsewhere. Our

FY12 budget appropriation is just under \$600 million, and the President has requested an increase to \$621 in FY13. IES research priorities states that: “The Institute seeks to understand causal linkages to the greatest extent possible by conducting or sponsoring rigorous studies that support such inferences.” I will come back to this idea later.

I’ve been at IES for almost three years now and my singular goal is to make our work as relevant and usable to both policy makers and practitioners as possible. I talk about my goals for our work at IES at every opportunity. I think that our research and evaluation can be more relevant and usable to practitioners and policy makers; and I think at the same time we can build a stronger science of education that helps us understand more about the school improvement process, better teaching, and more student learning and the policies and practices that we need to put in place to reach these goals. As we often say and hear, education research needs to move beyond trying to discover “what works” to learning about why, when, where, for whom and under what conditions.

IES is noted for rigor, thanks to the efforts of its first director, Russ Whitehurst, who really raised the quality standards and expectations for education research across the country. We are now at the point where we can aim for that sweet spot where we conduct and sponsor research that is both relevant and rigorous. I am intent on retaining rigor for which IES has made its mark, but also intent on expanding our efforts from a distinct focus on validating programs, interventions, etc. to creating a broader

view of building understanding of the systems, and context and the messiness and complications of school improvement and the many outcomes that we value for our children.

My thinking is clearly influenced by my previous work in Chicago, where I spent about 30 years working with or for the Chicago Public Schools doing research and providing information that would help guide improvement strategies. I really loved that work and believe that my colleagues and I made many useful contributions. I liked doing the research and the inherent challenges in making sense of a jumble of data, but I also got as much satisfaction from interacting with school leaders, helping them understand the implications of the work and especially learning from their perspectives and experiences.

Part Two. Some personal interests and beliefs.

I would like to shift gears now and talk about some of my personal interests, convictions and beliefs.

Many of you may know the recent book *Drive: The surprising truth about what motivates us* by Daniel Pink¹. As the title suggests, *Drive* is about the factors that motivate people in the workplace. You can see a wonderful 10 minute video on

¹ Pink, D.H. 2009. *Drive: The surprising truth about what motivates us*. New York: Riverhead Press

youtube about this work. Just Google “Daniel Pink + Drive”.² Pink presents substantial evidence to suggest that the simple reward structures and incentive systems currently in place in many work places and occupations are out of date and actually can be counterproductive. Of course, everyone needs to have enough monetary compensation to live in modest comfort, but after a base line, the three factors that motivate most people are autonomy, mastery and purpose. Autonomy and purpose mean what you think they do. In the workplace people like to be able to make some choices on their own and they like to feel that their work is meaningful. Certainly we know that most teachers enter their profession in order to make a difference in the lives of children and that they also like to exercise their considerable professional judgment.

Of the three factors, I’d like to talk some about the quest for mastery. Over 25 years ago, Benjamin Bloom, my dissertation advisor at the University of Chicago, studied highly successful adult swimmers, pianists, tennis players, neurologists and mathematicians, by conducting intensive interviews with these individuals, their families and their coaches and teachers.³ He and his students asked how these people, the top in their fields, reached such high levels of success. They wrote a book from this study called *Developing Talent in Young People*. One of the most notable findings from this vast study was the huge investment and commitment of time, energy and effort that

² <http://www.youtube.com/watch?v=u6XAPnuFjJc>

³ Bloom, B.S. (Ed). 1985. *Developing talent in young people*. New York: Ballantine Books.

these experts and their families made in developing their skills. But it wasn't just hard work that led to success: it was focused, deliberate and strategic effort. A more recent book, by Geoff Colvin, *Talent is Overrated*⁴, makes these same points, arguing that success depends not solely on either talent or luck, or some combination of them, but instead on deliberate practice. Many hours of practice are necessary to reach a high level of success (some suggest the "ten year rule" or 15,000 hours), but reaching elite status requires "practiced designed specifically to improve performance," often with the help of a teacher and with continuous feedback.⁵

Let me talk about another concept: grit. It means pretty much what you think it does: "perseverance and passion for long-term goals."⁶ According to Angela Duckworth and her colleagues "Grit entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress. The gritty individual approaches achievement as a marathon; his or her advantage is stamina. Whereas disappointment or boredom signals to others that it is time to change trajectory and cut losses, the gritty individual stays the course." Grit is measured very reliably with questions like, "I am diligent," "Setbacks don't discourage

⁴ Colvin, G. 2008. *Talent is overrated: What really separates world-class performers from everybody else*. New York: Portfolio

⁵ Colvin, page 66

⁶ Duckworth, A.L., Peterson, C., Matthews, M.D. & Kelly, D. R. 2007. Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*. 92(6):1087-1101.

me” and “I have overcome setbacks to conquer important challenges.” Grit is related to, but not the same as self-control. Grit is **not** related to IQ. Duckworth and her colleagues have conducted a series of fascinating studies about grit and consistently find that it predicts success over and above other attributes like intelligence, self control, and grade point average. For example, grit predicted which freshmen cadets made it through summer training and their first year at West Point better than the other predictors. Grit predicted which children succeeded in the National Spelling Bee contest, largely because gritty children worked harder and studied longer than their less gritty peers.

About 20 years ago, a University of Chicago psychologist named Mihaly Csikszentmihalyi wrote a wonderful book called *Flow: The Psychology of Optimal Experience*.⁷ Flow is that state of mind when you are fully immersed, focused, energized, engaged and involved and feel somewhat outside of yourself. Back when I read the book, I was a long distance runner and had experienced that amazing sensation of flow, “in the zone.” Runners, rock climbers, musicians, computer programmers, writers, artists and others engaged in a wide range of activities can and do experience flow. I really liked the fact that a respected academic studied this phenomenon, gave it a name, and built a theory and program of research around it. In the many years since I read the book my thoughts have returned to this concept many times. I think about

⁷ Csikszentmihalyi, M. 1990. *Flow: The psychology of optimal experience*. New York: Harper and Row, Publishers.

how important the concept is to me personally, I think how important and potentially useful it is in making the workplace both more enjoyable and more productive, and I think how crucial it is for children to have these sorts of optimal experiences that can encourage, motivate and sustain them. These experiences can change lives. As Csikszentmihalyi said “It is the full involvement of flow, rather than happiness, that makes for excellence in life.”⁸

Some time after I read this book, I stumbled into a community art center back in my Hyde Park neighborhood in Chicago and signed up for a 10-week ceramics class. I became fascinated—and quickly obsessed—just learning how to throw. To say that I persisted and persevered is putting it mildly. I loved sitting at my wheel, slowly and painfully learning how to make pots. First was to make them on center and more-or-less symmetrical, then not too heavy, then graceful, then strong, then graceful AND strong. The subtleties grew along with the technical challenges. But as those of you who make pottery know, throwing is the easy part. The hard part is glazing, requiring incredible experimentation and trial and error combined with thought, and concentration. How do I match the right glaze to this form? Will this glaze break when it’s thin, change color when it’s thick? How can I accentuate that curve? Bring attention to the delicate lip? Use contrasting glazes to make an unexpected and new whole? Finally, how do these pieces express me and my understanding of the world? Not often,

⁸ Csikszentmihalyi, M. 1997. *Finding flow*. New York: Basic Books.

but sometimes I experience flow when I am making pots. I am more likely to feel extreme frustration, but I know that I'm on an important quest. When people learn that I'm a hobby potter they often say, "how nice, that must be so relaxing." I tell them, no, it's not at all relaxing, what's wonderful about it is that it's so challenging and demanding. I keep at it for two reasons: every once in a while I make a really nice pot, but just as important, sometimes I get enraptured in the experience of making them and experience flow.

As Dan Pink suggests in his book, there is a reciprocal relationship between experiencing flow and striving for mastery. Perhaps flow can also help you become grittier. When you have experienced flow in a meaningful pursuit, whether it's in performing, writing, studying, running, or painting you are likely to be more willing to invest additional effort in practicing, revising, editing, reworking, and even just starting all over. You have seen the evidence first hand that there will be rewards, probably internal rewards only, for these efforts to persist, persevere, stretch, improve and get better, even as demanding and difficult as they are.

So why am I here talking about these concepts: sense of mastery, deliberate practice, grit and flow? The short answer is that I think that they have been short changed by the education establishment for several years now and it's time to bring them back. There are many other constructs that I could add to the list: emotional intelligence, positive emotional development, social emotional learning, creativity,

cooperative problem solving, for example. These are probably just as important as educational achievement defined by standardized test scores for the future well being of students. Many of these concepts are called “non-cognitive skills” or sometimes “soft skills,” both of which are terms that I think undermine or underplay their importance. Using NELS:88, James Catterall, in *Doing well and doing good by doing art*⁹ established connections between involvement in arts in middle and high school with many pro-social behaviors as well as achievement and college going. Good arts education may indeed help children develop some of these skills.

Its very clear that our recent heavy emphasis on accountability and on reading and math achievement scores are one reason that these others have lost favor, but I think that there are many other reasons as well, including our lack of resources in schools and our greater deserved focus on the great gaps between minority and non-minority students, and increasingly between rich and poor students.

Part Three. Building a research agenda and stronger evidence base for the visual arts.

As I’m sure you know, we live in a very evidence focused environment now. With scarce resources, all levels of government want to be sure that they are getting the most for their dollars. The federal government, led by the Office of Management and Budget, is especially evidence focused. You can see it in several of the new programs coming

⁹ Catterall, J.S. 2009. *Doing well and doing good by doing art*. Los Angeles: Imagination Group.

out of the Department of Education, especially the i3 grants, which use a tiered evidence framework for grant making. The more strong evidence available, the more funds available. I3 is also willing to fund innovative ideas where there is less evidence, but in these cases are requiring good evaluation strategies to learn from the implementation.

Earlier I mentioned that IES “seeks to understand the causal linkages.....” between programs, policies, and practices on the one hand and student outcomes on the other. This is code language for saying that we believe that experimental methods are very important in education research. The past decade has also shown that they are more feasible than previously believed. In a true experiment you randomly assign units – students, teachers, schools, districts – to different conditions, for example treatment vs. control, or treatment 1 vs. treatment 2 vs. treatment 3. An experimental design, or what we call a randomized controlled trial, is really the only way that you can be certain that an observed outcome can be attributed to the condition or treatment. When you don’t randomize, there are always other factors that might be responsible for the outcome, including self selection into the treatment condition. You can’t really be certain whether it was your program or some other observed or unobserved factor that caused the difference.

I am not advocating that you all run out and start conducting RCTs right now to prove that arts education improves student learning. I would like to make a more subtle

and probably more difficult request that goes something like the following. I may be on thin ice here, because admittedly, my knowledge of arts education research is limited. But here are my thoughts nonetheless. Build a “theory of action” for arts education, specify a variety of short-term, intermediate-term and long-term outcomes that you as arts educators value. Include the kinds of variables I have been discussing. Begin a coordinated and coherent plan of research around this theory of action. Use multiple research methods, including some RCTs.

Let me step back and describe a recent study that’s received a great deal of press coverage and attention among educators, called “The long-term impacts of teachers: Teacher value-added and student outcomes in adulthood.”¹⁰ It was written by three economists: two from Harvard and one from Columbia. The researchers assembled an enormous data set that allowed them to follow over 2.5 million children from grades 3 to 8 into early adulthood. They had school test score and administrative data combined with tax records for these same students 10 to 12 years later so that they were able to study the relationship between school experiences and adulthood success factors like earnings, college attendance and early births.

You are all familiar with the concept of “value added.” While the use of value add is controversial (as any newspaper will tell you), and the statistics complex, the ideas

¹⁰ Chetty, R., Friedman, J.N. & Rockoff, J.E. 2011. The long-term impacts of teachers: Teacher value-added and student outcomes in adulthood. National Bureau of Economic Research. Working Paper 17699.

themselves are simple. Using test score growth from one year to the next, statisticians estimate how much additional learning students made because of their specific teacher compared to similar students with other teachers. These researchers found that students who had one high VA teacher in reading or math in grades 4-8 (+1SD above average) were more likely to attend college at age 20, have steeper earning trajectories and reduced likelihood of having children as a teenager. This study provides clear evidence that good teachers matter, not just in the short-term, but in the longer run as well.

What I find fascinating about this study is that the high VA teachers gave students a bump up in their test scores and in their learning rates, but 2/3 of the bump faded out after a few years. This is a common finding in education research. An intervention that may look good in the short term loses its impact over the long term. But here we have the fade out in test scores yet we still see the improvements in other important outcomes, like going to college, earning money and avoiding teenage births.

What's going on here? I hypothesize that the effective teachers, measured by high Value Adds, are indeed boosting their students' achievement, but they are also boosting other important skills, traits or attributes, perhaps like grit, perseverance, problem solving, self-control, engagement, problem solving, cooperation, emotional intelligence, social emotional learning, perseverance, or sense of mastery, the things that I talked about earlier. They may even be enabling students to experience flow when

they are learning, doing school work, or some other activity. Or things that I haven't mentioned that we value like self-expression or creativity.

So back to art education and its research agenda. I suggest developing a serious theory about what specific arts-related activities engender what specific outcomes at what point in children's development, and then positing how these may be related to other positive outcomes, including but not limited to achievement as measured by test scores. Then hypothesize how these variables relate to each other and which of the relationships are direct and which are mediated by other factors. I would continue excellent longitudinal research like James Catterall's, but I would also conduct some real experiments, but not necessarily focusing on student achievement as the primary outcome, but others that you art educators and I value. These studies can provide us with the causal linkages derived from research methods that policy makers are expecting and will trust. Then build on these studies and show both how and why the outcomes we value from arts education are important in developing youth into productive, healthy and happy adults.

Thank you for your attention and time. Congratulations on your great work. Please keep at it and help students gain the wonderful fulfilling experiences that the arts can provide.