



Arts Education in Maryland Schools Alliance

Imagination Conversations in Maryland:
Nurturing the **Imagination/Creativity/Innovation** Continuum

Arts Education in Maryland Schools (AEMS) Alliance

In partnership with Lincoln Center Institute

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Imagination Conversations in Maryland: Nurturing the **Imagination/Creativity/Innovation** Continuum

Introduction:

Civic, business and education leaders including President Obama and Governor O'Malley have highlighted innovation as critical to the future success of our young people and our nation in the increasingly competitive and complex global economy.

The Lincoln Center Institute (LCI) has been hosting a national series of "Imagination Conversations"¹ to elucidate the centrality of what they call the **imagination/creativity/innovation continuum** in building capacity for innovation. It is their intent that these conversations will inform education policy and practice nationally.

The AEMS Alliance has been invited to lead Maryland's participation in and contributions to LCI's Imagination Conversations.

Conversations about imagination/creativity/innovation were initiated in Maryland two years ago at the Learning, Arts, and the Brain (LAB) Summit sponsored by the Johns Hopkins University (JHU) Neuro-Education Initiative, and continued in October 2010 at the JHU Brain Science Institute Science of the Arts Speaker Series.

In response to the invitation from LCI, AEMS has extended and expanded on those earlier conversations in a number of ways:

- AEMS has conducted an online extension of the conversations held with teaching artists, arts teachers and artist/teachers in preparation for the LAB Summit and partnered with JHU in extending the conversations from the October Science of the Arts event through an online discussion conducted on a platform created by the JHU Brain Science Institute.
- During February 2011, AEMS hosted breakfast conversations, which engaged Maryland innovative leaders from across sectors including business, public policy, the sciences, technology, education, and the arts. Interviews are ongoing with additional key leaders.
- On June 9, 2011, the annual AEMS CAFE (Cultural Arts For Education) Conference will be devoted to the Imagination Conversations with plenary and smaller group discussions around the imagination/creativity/innovation continuum.

These conversations are already shaping new thinking about the role of imagination in education and stimulating research ideas.

In conceiving and planning the Imagination Conversations in Maryland, AEMS seeks to inform local, state and national education policy and practice at two levels:

- To contribute to the Lincoln Center Institute's series of state conversations, which will culminate in LCI's national conference in July, which will feature an

¹ <http://lciweb.lincolncenter.org/imaginationconversation/>

action plan for policy makers, educators and community activists to put imagination at the forefront of our school curricula.

- To identify and build support for strategies for local and state policy and practice to nurture the imagination/creativity/innovation continuum in Maryland.

The context for the conversation is timely. The President's 2011 State of the Union Address highlighted innovation and education as priorities. Education policy is in flux at the Federal level. There is growing concern that NCLB's heightening the impact of standardized testing is diminishing the capacity of educators to build the creative thinking needed to innovate.

In Maryland, the Governor focused on innovation in his 2011 State of the State Address as well as in other settings. Further, this discussion is critical in the context of state and local reform efforts in education driven by Maryland's Third Wave of Reform, the Federal Race to the Top Program, the move toward National Curriculum Standards, and required state curriculum, all of which are affecting state and local policy in profound ways. If imagination, creativity and innovation are deemed to be of value, then education policies should clearly and concretely reflect that fact. There needs to be thoughtful analysis of how that value should be reflected in expectations for student outcomes and educator effectiveness measures as well as other kinds of decision making affecting resources for education whether fiscal, human, or time in the day. It is hoped that the Imagination Conversations will be useful for education in the workplace and other settings as well as in public education.

Maryland is a national leader in education as well as in other sectors; the Imagination Conversations initiative aspires to contribute to and extend that leadership.

The Structure of the Conversations:

In each case, the Imagination Conversations were framed by stating the goal of identifying and exploring strategies for building the capacity for imagination/creativity/innovation in educational settings.

The Conversations focused on these three questions:

1. What is the role of ***imagination/creativity/innovation*** in our own domains?
2. What conditions and strategies nurture ***imagination/creativity/innovation*** in our work?
3. ***What conditions and strategies best nurture imagination/creativity/innovation in education?***

In addition to helping frame the questions, LCI gave us additional direction as follows:

To provide a thread of consistency across the many national conversations that are taking place, we are using the following definitions for imagination, creativity, and innovation, which we see as sequential and interrelated in practice:

Imagination: *the capacity to visualize new possibilities - for thought, action and/or the use of materials*

Creativity: *engaging the imagination to conceive, express, or produce something highly original*

Innovation: *engaging imagination and creativity to produce an advance in a field of activity.*

In practice, the formulation of imagination/creativity/innovation as a continuum proved invaluable. We focused on strategies supporting this continuum without trying to dissect which facet a particular strategy affected. Those understandings were implicit for the most part.

This Report includes:

- Executive Summary with reflections and recommendations garnered from all of the Imagination Conversations in Maryland.
- Part 1: Conversations with Maryland's Leaders in Innovation:
 - A compilation, which merges the five small group conversations among Maryland's leaders in innovation held at breakfasts on February 8 and 21, 2011.
 - Summaries of each of the five group conversations.
 - Notes from an interview with an individual leader in innovation.
- Part 2: An online conversation among Maryland arts teachers, teaching artists and artist/teachers.
- Appendices: relevant documents.

Executive Summary: Reflections, and Recommendations from the Maryland Imagination Conversations

Important themes have emerged in the Imagination Conversations in Maryland starting two years ago at the JHU LAB Summit, and the JHU Brain Science Institute's October 2010 Speaker's series conference on the Science of the Arts, and continuing through the Imagination Conversations with Maryland's innovative leaders in February 2011 and the online conversations first with arts education professionals and subsequently extended across sectors.

The first major theme is the growing understanding of neuroscience and cognitive science research that points to the arts as central to brain function. That is, sensory-based art activities engage emotional as well as motor, intellectual, and memory centers in interconnected ways. It is clear that humans are "hard-wired" for the arts. This means that the arts are essential to the whole child and that they support learning in many powerful ways. There is momentum in Maryland toward achieving a deeper understanding of the role of the arts in learning by linking brain-research discoveries to innovative approaches in education in and through the arts. While the gatherings around neuroscience and the arts were broadly conceived, much of the discussion focused on imagination, creativity, and innovation (ICI) and the capacities of ICI are one of the areas that is attracting interest for research. Effective partnerships with research institutions such as the Johns Hopkins University, the University System of Maryland, and the field of arts education hold great promise in this arena.

The second major theme is the extent to which leaders across sectors—business, public policy, science, technology, education, and media—identify developing strategies to heighten innovation within their fields as well as building the capacity for it through education as absolutely critical.

Further there is strong congruence on how ICI is understood among sectors. The report captures the ways in which that plays out across fields through responses to questions about (1) the role of ICI in their domains; and (2) what conditions and strategies nurture and sustain ICI. There are certain commonalities:

- Explicitly valuing ICI.
- Establishing a culture of ICI and elevating innovative practices.
- Seeking individuals with heightened capacity for ICI with skills such as communication, collaboration, resilience and critical thinking.
- Creating open environments whether spatial, temporal, social, that encourage cross silo, collaborative efforts. In practice this means moving away from traditional hierarchical structures.
- Understanding that ICI and "thinking out of the box" involves flexibility, agility, opportunism, risk-taking and using failure in order to learn and responsiveness to and relishing of change.
- Artists and arts educators described strategies for ICI in their own work as artists, which they draw from in working with students. These include exploring multiple approaches, connecting the disparate, "disabling

defaults” in their minds to escape what they already know in order to discover the new, flipping things, using serendipity (mistakes sometimes) to enhance ICI. Important for ICI are: understanding process, flexible time and space, trust, listening and being open, wondering, having a spirit of inquiry, envisioning, using metaphor, non linear ways of thinking, understanding the relationship of emotions and memory to creating narratives and conveying ideas.

- Getting an effective balance of accountability and discovery through open and continuing evaluation, reflection and adjusting of thinking and practice.
- Nurturing and sustaining ICI is conscious and deliberate. The structural, organizational and strategic conditions to nurture and sustain ICI are created very purposefully.
- ICI requires the commitment and direct involvement of leadership and broad ownership as well.

Participants in the conversations were thoroughly engaged in listening to one another and learning about ICI strategies from other sectors. In some cases the discussions were quite nuanced. One interesting discussion that emerged was the very conscious innovation taking place at institutions of higher education. Through the conversations and a subsequent interview with the President of UMBC, practice at that institution is highlighted as a snapshot of what ICI can look like at the university level. Inasmuch as institutions of higher education in Maryland work closely with PK-12 schools (our Governor is committed to P-20 efforts), sharing values, culture, strategies, and practices of ICI presents an opportunity for PK-12 to extend its conscious efforts to strengthen ICI.

The most extensive section of the report addresses the question: ***What conditions and strategies best nurture imagination/creativity/innovation in education?***

Significantly, most if not all of the commonalities cited above apply as aspirations for the innovative practice of education across disciplines, which in turn will nurture ICI in students.

There was consensus that ICI should be valued, that a culture of ICI should be created across PK-12 education, and that capacity for ICI should be nurtured in students at all levels.

The report includes descriptions such as those from the leadership of City Neighbors Schools and the Lucy School, who give clear insight into how ICI strategies and conditions can be operationalized in school settings. Comments by school system leaders as well as the State Superintendent reflect strategies for innovative practice and the importance of creating a culture of ICI at those levels as well as identifying critical issues that need to be addressed.

Points of particular interest include:

- Consensus that innovative practice, by definition, cannot be cookie cutter or rigid. Understanding that a rigid system cannot produce innovative thinkers among teachers or kids and requires leaders to be tolerant of ambiguity and risk-taking.
- Arts Integration is expanding in Maryland and is seen as offering a very effective pathway to creating schools that embody the values of ICI and nurture that in students. Arts Integration is emerging as a trend in middle schools as well as elementary schools in Maryland. While in many cases it is an individual school

initiative, there are school systems that have identified arts integration as a systemic goal.

- Innovative practitioners in the arts can lead in creating ICI culture in schools, including disciplines beyond their own.
- STEM education has been identified as a priority in education nationally and is linked with goals for innovation. Interestingly, some of the most successful STEM programs in Maryland are STEAM programs; the arts provide the critical dimensions of ICI through experimentation, discovery, and critical thinking; this embraced at the higher education level in some of the most innovative programs such as those at UMBC cited in this report.
- As noted above, ICI has been a clear goal in higher education. But at the other end of the spectrum, early childhood practice also has actively embraced ICI culture. Ways in which EC practice and ideas can inform K-12 education merit exploration.
- While the value of ICI is widely acknowledged, there are issues around establishing the credibility of approaches in the context of accountability in education under current and emerging federal and state policy mandates. While there is concern that some aspects of ICI are difficult to measure, educators in the conversations from arts education and arts integration schools countered that in the context of arts education and arts integration, there is constant measuring and assessment, which teachers, schools, and school systems use to assess student achievement in the arts and to measure the quality of programs. Further, they are confident in the relevance of their assessments and evaluations in enabling them to expand student capacity in ICI.
- The Conversations reiterated and expanded on findings in neuroscience and cognitive science that had been shared at the JHU LAB Summit and the JHU Brain Science Institute's Science of the Arts conference.

Recommendations from the Imagination Conversations for Strategies to Nurture ICI in Education

- Ensure that corporate Maryland as well as education, community, and opinion leaders fully understand the critical connection between nurturing imagination and creativity in education and building capacity for innovation in students.
- Articulate the vital role of arts education in developing ICI.
- Recognize the value of ICI and reflect that value in policy and practice in instruction and accountability across the curriculum as well as in the arts.
- Identify models of ICI culture in schools and school systems and elevate them so that more educators and parents understand the value of ICI to students now and in their futures.
- Develop and implement a research agenda focusing on studies about ICI along the spectrum from neuroscience and cognitive science and controlled studies in classroom settings to evaluation of instructional practice. It is particularly

important to study practices such as arts integration that are successfully building ICI in order to inform scale-up of viable models. This would flow naturally from what has already started with the LAB Summit and the BSI Science of the Arts Conference.

- Recognize and support the role of teachers in supporting ICI. To the extent that teachers model creative thinking, they are most inspiring in enabling students to be imaginative and in building ICI culture in their schools. Teachers need to be trained to be creative, to value creativity explicitly, and to enable students to see themselves as creative agents whose individual capacities for imagination and creativity are very important. To the extent that teachers model creative thinking they are most inspiring in enabling students to be imaginative.
- Build the capacity of teachers to integrate skills and content across arts disciplines as well as across other content areas as a way to help students gain understanding of complex ideas while nurturing their creativity.
- Make the intersection of art and technology a nexus of creativity. Teachers working in the arts disciplines need to be trained in all the ways technology can extend student creativity and, likewise, teachers in technology need to be trained in the ways that the arts are terrific ways to understand and apply technology creatively. Technology should be considered a creative enterprise directly linked to the arts.
- Infuse ICI in teacher pre- and in-service training as values and ways of thinking to be transmitted to students as well as to be used in effective teaching. Share the thinking emerging from the Imagination Conversations with AEMS Deans' Roundtable and HEAT (Higher Education in the Arts Task) Force to inform their work.
- Focus on sharing creative practices among teachers that purposefully bring the ICI Continuum to students in meaningful ways.
- Inform Teacher/Program evaluation based on student growth. ICI should be factored into student assessment and in turn teacher and program evaluation tools. Portfolio Plus, which is under development for the fine arts, affords a useful model. This links to the current work being done at the state and local levels under Race to the Top and Maryland's Third Wave of Reform.
- Engage the public—reach parents, community leadership, scientific and business sectors and the general public. The Ultimate Block Party (September 2011) will afford an initial opportunity. An article by Susan Magsamen from the JHU Brain Science Institute who is one of the founders of the Ultimate Block Party articulates the relationship of the event to child development including the nurturing of ICI. It is Appendix A.
- Conduct ongoing conscious analysis of opportunities to intersect ICI across all aspects of education. Include facilities, curriculum, instruction, teacher training, community outreach, out-of-school programs, Early Childhood, etc.

- Inform and engage business, higher education, and public policy leaders in ICI initiatives in PK-12 schools. Draw on their insights and perspectives to better align instruction with the need for an inspired and innovative citizenry.
- Set and reach the goal of raising the quality of ICI in arts education opportunities for students in Maryland and make transparent the transformative impact of the arts on students' capacity to imagine, create and innovate.

These Imagination Conversations affirm strategies already under implementation in Maryland in arts education. In addition, they have paralleled the development of policy recommendations over the past two years. The January 10, 2011, Presentation to the Governor's Educator Effectiveness Council (Appendix B) reflects this in the description of work already underway and additional policy recommendations in the context of the State's Race to the Top Initiatives. Of interest is that the fine arts were invited to make this presentation because the ongoing work in the field is regarded as a model for other subject areas and specifically for the non-tested areas. The work of the arts education field in the state in the area of assessment in particular is viewed as thoughtful and innovative.

The Imagination Conversations have proved to be most valuable in engaging community leaders from many sectors in an exploration of ways to support the imagination/creativity/innovation continuum in education. Further, the conversations have led to deeper understanding of the unique and powerful role of arts education in nurturing the imaginations of our children, thus enhancing their capacities as creative and innovative citizens.

The contributions of all of the participants in the Maryland Imagination Conversations thus far are deeply appreciated.

Part 1.

Conversations among Maryland's Leaders in Innovation

February 8 and 21, 2011

Hosted by Arts Education in Maryland Schools (AEMS) Alliance

Venable LLC Offices

On each occasion, the guests were divided into small cross-sector groups; there were five groups all together. Their facilitated conversations were recorded in summary note form and electronically.

The five conversations are merged in the **Section A.** of this part. The texts are transcribed from the electronic recording so that authentic voices are captured as much as possible with minor editing for clarity. Use of five different fonts enables the reader to have a sense of the five distinct groups. Remarks have been organized in the sequence of three questions posed and within those, grouped according to broad themes that emerged in the conversation. These cross-cutting themes include culture of imagination/creativity/innovation (ICI), value of ICI; as well as some characteristics of ICI such as questioning, risk taking, motivation, and collaboration; and intersections with education policy such as balance of risk-taking with accountability.

Section B. includes the notes from each of the five groups as recorded during the conversations and lists of the participants in each group.

Innovation in Maryland higher education emerges strongly in the breakfast conversations. In **Section C.** of this section are notes from an interview about ICI with Dr. Freeman Hrabowski, President of the University of Maryland, Baltimore County (UMBC). A related article, which focuses on innovative work at UMBC, is Appendix C.

The participation of exciting and innovative leaders from multiple sectors was invaluable in these conversations—they reflected very different perspectives and life experiences. There was however, appreciable overlap in their valuing of ICI and even in strategies for developing capacity along the continuum.

Section A. Selected transcribed remarks from five groups, merged and organized thematically.

Question 1. What is the role of **imagination/creativity/innovation** in our own domains?

Value of Culture of ICI and what it looks like across sectors

Mark Fetting (*CEO Legg Mason*) -- When we go out and visit companies, there's a little bit of the Oscar Hammerstein's "you know whether a show's going to succeed if it nails it in the first 5 minutes." You know a good company within the first five minutes of walking around. There's a vibe in a creatively oriented company. These places really do encourage things just as literal as the kind of office layouts and the way they construct their campus settings, the kind of folks they attract, the attire that is the norm, to get excellence in creative output ---some companies are more driven to create than others - the really innovative companies have to have this ---really innovative hospitals and teaching institutions have to have this. On the other hand there's a lot of rigor. For example, Google is prestigious -it's very difficult to get a job there---you think of Google as really creative but there's a lot of rigor to working at Google, a lot of real work being done, a lot of competitive rivalry percolating through the place, but they do it in a setting that's obviously oriented to create and innovate.

Michael LaRoi (*Director, Advanced Concepts and Technologies Division, Northrop Grumman Corporation*) -- What does ICI do for us in the workplace? Gives us discrimination, identity, and branding. Innovative engineering discriminates us from our competition, identifies us as a trusted supplier, we create discriminators. Analog gives more flexibility and its granularity is different.

Mark Fetting -- ...I'm reminded of a conversation I had recently around *what is the competitive advantage in the US going forward at a time when our education statistics are not particularly good*. Other countries - Singapore, Scandinavian countries....there are a number of them doing demonstrably better than we are.

Canada. I came back to the creativity piece...What our colleagues ...in Singapore ... do to get those children positioned to be in that top flight is profound and you have the sense that if they don't make the cut, ...Life isn't going to be the same and you have to overcome that --so the offset is this ability to create, to inspire. I think it's very important --ultimately I think it's what distinguishes us. So we got to really nail it -- if we're losing this ability.

In our business right now there's a huge thrust that the markets are being taken over by ... quantitative investing techniques—it's mathematical—it's called passive investing, you just match the index, then maybe you can get ahead of it in terms of a little eighth of a point here and an eighth of a point there. It's very mathematical, there's no real creativity around discovering an undervalued company ahead of the market and ...or an undervalued bond ...and so there's a huge fight in the industry about *can active managers, which are the hallmark of our firm, survive going forward or is it just going to be taken over by the machines.* ... in contrast to much more entrepreneurial aggressiveness....

Warren Buffet would be the icon of active investing—he is famous for not having a machine in his office, he doesn't look at stock prices on a daily basis, he just tries to find undervalued companies and invest in them over the long haul-- a very creative concept—our principal competition are these passive managers.

Britt Kirwan (*Chancellor, University System of Maryland*) -- In higher education there's this debate between active and passive learning - the passive learning is what I grew up with when you went and sat and listened to someone lecture for 50 minutes. Active learning is where the student takes responsibility for learning the material and the professor is sort of the guide on the side. Terms are the same in two entirely different industries. We're moving towards the active learning model- there are all sorts of examples that students do much better in active learning, particularly this generation of students. They are so used to flows of information and multi-tasking. The active learning model seems to be the wave of the future in higher education

Stuart Frankel (*FTI*) For us taking it from the business side, we have 3500 people we work hard to keep as individuals... The concern is ongoing: how do we not keep them in a box, ... let them be more creative, and we are struggling constantly, rewarding people for that creativity in addition to rewarding them for the immediate success that they have. FTI is a venture company in that you work on a project and you are rewarded for the success of that project. At the same time ...if you can ... bring a team into that process and enter younger or diverse people within FTI. We call that creative thinking as well. We are reaching all the time.

We have a conference that we are sponsoring in Beijing at the end of next month; we'll have 1300 people there—part of that is to try and exchange not only what our people do in different parts of the world but how they work with their competitors in different parts of the world and also how they work with clients and potential clients in different parts of the world. Because their definition of working and creativity is often very different from ours, it's an ongoing process. We have tried to be the antithesis of the *no child left behind* process where it's a rigid form of grading; rather we try to open up a larger industry. As we grow into a larger company, that gets harder ... trying not to have a corporate culture but trying to have a free thinking culture.

Results are always the bottom line—the bottom line last year was \$1.8 billion. So it's grown nicely from a start-up with a \$5 million investment. How do you make that culture grow and how do you maintain it at 3500 employees? We keep saying that it is creative; the bottom line will be driven by not putting people in the box. ... look at the company. There are probably 25% that are excellent -- the ones that chase around, the ones who have the most fun --another 25 or 30% of the company are industry experts in 17 fields, 4 of them are led by Nobel laureates so those people themselves are in a world of creative thinking; and the rest are attorneys and forensic accounting people and it all mixes together; but they are so different. Getting a forensic accountant to think out of the box is a whole different challenge than getting a group that's led by a Nobel laureate. There's great management at FTI. The challenge is again to try and think as individuals creatively. The business base is so structured, so to break someone free of that structure in his or her thinking --that person is trained as an accountant, that person is trained as an attorney, that person is trained as a law enforcement person. Now they have to think not only as a team but as individuals on the team, and to think creatively. So it's ongoing.

Nina Hoffman (*Consultant*) -- National Geographic wanted to create more of a team spirit, more of a collaborative effort among all of the 1400 employees—On a survey they asked each employee to tell what they were concerned about and wanted to see changed. 4 items became the focus...2-3 people from each department joined teams. By putting them in charge they could be as creative as they wanted.The NG Society learned that there is not just one way of learning or doing and if you give someone the freedom of going outside and looking outside, what they bring back can be very, very stimulating—the future directions committees. Space needed to be more friendly and open. Teams given carte blanche --galvanized the entire staff. Being open to listening is key.

Marin Alsop (*Music Director, Baltimore Symphony*) – Stuck on the idea that creativity is a word that can only be used for someone in the arts. My parents were both professional musicians. They just nurtured a sense of possibility in me. ...My parents were unskilled at these other things that they were passionate about; my father wanted to build houses, so he

taught himself. There's this sense of: "Oh, I can figure that out." This *can-do* feeling. My mother got breast cancer. She had always wanted to be a potter so she went and figured that out and then she wanted to weave. There is a sense that you are a creative individual so you can do anything you want to do; you just have to figure it out. So, oddly, creativity doesn't have anything to do with music; of course it does, but music was just the platform to arrive at that. When people say "I'm not creative" I think, oh you poor person, but of course you are. It's all about this measuring and judging and putting into boxes that maybe we need to get away from...You have to embrace chaos a little bit.

Brenda Jews (*AEMS Trustee, Educator*) -- Creativity is always called to the table when you want to rally folks around and you want them to be optimistic. When you want to get the buzz going, get people together whether it's for change or for consistency, for focus, fire peoples' rockets, renewed energy, what can be possible, coming to it without the pessimism.

Imagination, innovation, and play lead to a feeling of equality in a classroom. No matter your skill level in a particular area you could pop with an idea and all of a sudden you are the same as the person who is no. 1. That experience can make all the difference to one's can-do spirit.

Richard Chisolm (*Cinematographer*) -- huge films are more like a construction site...no creative input, as I'm a bricklayer...the brick layer would get fired walking in the trailer talking about an idea. Creative process in film -1, 2 or 3 people --writer director --way before you got there, so 70 creative people are working on something but they're not allowed to be creative. Extrapolate that down to a classroom ... where children are bricklayers... I don't have the answer but I have the question – how to make an environment that's progressive, innovative, creative for the future. Where we can organize it still and not have it fall apart but also have it constantly open to those people who can help those kids be creative.

Victoria Brown (*Director, The Lucy School*) -- It is possible to do that – it is possible to have key players at the table at the beginning then on a continuing basis in education and on a film if that was your objective in setting up that. At Lucy School, arts teachers, classroom teachers, teacher's assistants meet every week and talk about what direction we are going and what would work this way, and there's always that process and theatre productions work that way too, where the designers tech people all sit around the table. Like an indie film with the freedom to do that.

David Troy (*Software Entrepreneur*) -- In my field which is primarily software development and creating new products a key thing is to just imagine wouldn't xyz be cool, ...well what's missing in order to xyz....we've got to invent that thing and discover that thing that has those properties. And so there's this constant pushing to grasp those things, which have not been identified ...and then there's also a pushing how to disrupt how things have been done previously. So to the extent that we all think we know how certain things work, and I'll just take email as an example ... A lot of people think they know how email should work and one of the things I'm into is to say *what if it didn't work that way?* What if it had always worked a different way? Would you now think we should put that feature into the product or should we try some new different way? It's a constant push to question the status quo as well as to conceive of things that have not yet been identified.

Creativity is the precursor to innovation ...And I also think about examples like Apple how they've been very successful at pushing things forward...Not by adding new complexity but by pushing simplicity, and simplicity is the hardest possible thing to achieve in a product but often leads to the most creative solutions.

They are pushing towards a right brain view of the world as opposed to a left brain analytical view of the world. If you think about it, a few years ago a smartphone had a lot of buttons and all these features and doodads and things that you could do. Great for the left brain computer tinkerers of the world but when the real world wanted a smart phone they wanted one that looked like a little smooth pebble and that had software that does all the complex stuff. But in terms of user interface and design it's a very simple piece of work.

Bill Buckner (*Annie E. Casey Foundation*) Process ... goes back to the 19th century – industrial development. But there are folks who are turning that paradigm upside down and looking at ways of doing software design starting with the end user so you have a high level framework but you develop something quickly. Let end users have input and you adjust design along the way, which would be your end user development. ...I've been doing more work with open space conferences where you have the primary theme of the conference you want and you invite folks based on that theme, but the actual curriculum and topics that are going to be discussed are actually developed by those who are most interested in the concept ...it's a new problem—how do you come up with design, creation that allows more participatory involvement? I just think with social media and things like that, that's the wave of the future, but the question becomes on the education front *how do we take advantage of technology and this new push for involvement by people to move the agenda forward.*

David Troy -- We're starting to see signs of things like that emerging with things like Kickstarter.

The two different techniques you're talking about with software are:

Waterfall, which is kind of where you do all the specifications and then there's this very rigid kind of plan that you follow like the movie making model. And the other is agile where, basically, you engage the developers and the end user in a conversation about needs ... you end up engaging in this creative process between the end user and the developer and it does evolve and change over time and the great thing about it is that no work gets done that isn't fundamentally serving the need of the end user. We are seeing that start to evolve with models like Kickstarter for the creative projects like film and a lot of other areas in life, but we're not seeing any mechanism like that developing in government or public education. I would be very encouraged to see any mechanism like that that started to bubble up. Maybe Teach for America is like that. And there's a woman named Diana Laufenberg out of Philadelphia who we featured at the TED x conference in Atlanta back in November who is using infographics and asking kids to create infographics about topics as a way of helping them explore quantitative and qualitative relationships – to create work that is not necessarily right or wrong—it's just output and then they can talk about whether it's good and whether different people's approaches are better than others ... To find those things and elevate them would be great.

There's a lot written on agile software development-- a lot of parallels to that in other domains too. More iterative, fast changes, fail fast. Try something - if it screws up, oh well, try something else. Give people freedom to fail, as Diana said. You can't learn anything if you don't try something and fail. Failing is ok. Quit having that stigma in the educational environment that failure is a bad word—it's really not—it's how you learn stuff.

...The danger is when you have these big waterfall approaches and you go and build it and it flops—think about big flop expensive movies.

...when there is a desired end product and the question is *how can we do that effectively*; bringing in as many opportunities to test things seems like a good thing. Everything won't work but how do you make the adjustment?

Stick with it long enough to know it was a failure—in my experience when I try to learn something new. If I was at level 6, I'm going to drop down to level 4 and then accelerate once I have that new frame. I often see with projects, you get that little slippage and if you quit, you don't get the hockey puck effect because you didn't stick long enough...doesn't mean stick forever but you have to invest long enough to actually achieve the benefit, right? You have a cost up front for the big bang.

Buck Jabaily (*Director, Greater Baltimore Cultural Alliance*) – We're too results based—creativity is the ability to make mistakes and art is knowing which ones to keep. Not enough importance put on process. It's always *get it done as fast as possible* to get the product. And these kinds of processes obviously take more time and they take a lot more investment.

Entrepreneurs are incredible at being able to fail—they're used to being out of the comfort zone. There are three concentric circles and here's the circle in the center where you feel completely safe and then there's another circle where you feel slightly unsafe and a third circle where you're totally out of control and the best learning and the best work happens in that middle place where you're not safe and out of control. You're taking manageable leaps.

Sonja Brookins Santelises (*Chief Academic Officer, Baltimore City Public School System*)—The arts benefitted my life...impacted how I thought about school, how I thought about life in the world. What we are lacking in the education of today's youth is a way of engaging them in meaningful ways that don't have to be plugged in a wall...don't have to have 50 images per 30 seconds. Arts are one of the key ways to do that in an age when teachers more and more are looking for a way to change their practice and broaden it. Arts are a foundational way to do that and accessible and can enter at various points...all the way to a kindergarten teacher thinking about their practice differently and making connections to neuro-science about how kids learn...sometimes this is most easily accessible through the platform of the arts. For me, benefit in having a populace that understands and appreciates the arts ...we're a better society because societies that value the arts generally tend to lean more towards thinking about the world differently. How to do more creatively in an age of shrinking resources? Outside the box... how can a large organization incorporate change across vast numbers? Creative folks can see outside the structures that already exist. In large bureaucratic organizations, it's having a critical mass of those kinds of people that move beyond. ...Have to be able to imagine a society that's different from the one that exists to be able to see beyond it -- beyond the daily routine of the bureaucratic whether in an ancient school department or the segregated south. Regardless, you have to be able to see beyond what currently exists and imagine different structures in different ways.

2. What conditions and strategies nurture **imagination/creativity/innovation** in our work?

How is ICI cultivated?

Bill Ferguson (*State Senator*) – After 28 days in the legislature -- creativity is not cultivated, not desired, not welcome.

David Troy -- How do we take ideas from other disciplines and apply them? One of the issues—... there are rules we don't break, there's a top down hierarchy, ... So you're talking about flat organization structureone of the things that's key to creativity is to break down these top-down structures ... we need to be bringing ideas in from the bottom up and people at the top need to be smart enough to allow that to happen.

Also, how generations approach power—boomers tend to be more top down—“I've been working at this, I've got the credentials, I'm installed in this office—I'm going to run things from the top down”Gen Xers are sort of “whatever, let's just get it done. We want to see it happen.” Gen Yers are lots more collaborative, “let's do things, let's compliment each other a lot.” Quite different. Public education is controlled by boomers, so more top down...maybe Gen Yers will morph... and be more top down – inherent power structures that exist—one of the frustrations with young teachers with top down is that it feels very difficult to get anything done because there's a lot of top down command and control and it's very difficult to break through that.

Regarding adaptability, researcher on entrepreneurship Sari Seravathy studied the entrepreneurial mind and has blown up the stereotypes about entrepreneurs. Lots of people think entrepreneurs are big risk takers, dare-devils. They're really not ...what they do is they employ a different kind of logic. She characterizes it as effectual logic. She calls the process of being entrepreneurial being effectual and the idea is that as you execute on your entrepreneurial idea you are changing the world around you, taking into account new positive developments that occur and that you can use to your advantage. So one of the problems of sort of top-down causal analytical forward looking thinking is that you can take into account everything that you know right now and plan for it but if information comes along that actually changes your assessment, you're really not that able to respond to that in that kind of logic. What she notes is that a lot of corporate leaders who are in charge of big companies have a more waterfall approach to problem solving and it's ... very military strategic, tactical implementation but that has no place in entrepreneurship and frankly does not have a lot of place in this kind of a process either where we're trying to respond to changing realities. We need to be open ... if your plans are so rigid and so top down strategic/tactical that you can't respond to stuff in real time, you do yourself a disservice and you become uncompetitive with other countries and other systems that allow for that kind of adaptability. (Saras Saravathy U VA School of Business, article in inc., *How Entrepreneurs Think*)

Mary Ann Mears (*AEMS Founder*)—From the non-profit sector, it's important to be opportunistic and reinvent frequently

David Troy -- on the topic of creativity within hierarchy—there's an urban planner Charles Landry who suggested that the thing you really need to make cities great is creative bureaucracy...notion that yes, bureaucracy is a necessary condition in order to manage complex systems, but just because it's bureaucratic doesn't mean it has to be broken. Just because it's rule-based doesn't mean the rules can't be bent. you need people in positions of power who are willing and able to recognize things that are interesting and worth doing and bend the rules sufficiently to cause them to happen. Within the context of a company – you should be allowed to take risks and you need to be accountable if they go wrong, but hopefully you have management that is smart enough to know that if you don't allow people to take risks, nothing good will ever happen. Allowing for creativity and bending of the rules even in a structured environment

Bill Ferguson -- UMBC has this new program for chemistry and biology -- all project based collaborative based learning. ... Normally you can't get into a lab and participate until your graduate year or 4th year in college. They flip the script and your third week

in school you'll be in a lab setting up labs that you created ...it's a lot of ownership and collaboration amongst early year chemistry students. Other places have gate-keeper chemistry courses to get rid of the kids who can't take it... We need more stem related professionals. ...We need these inclusive environments so if somebody has potential of washing out we need to push them and help them back into the system. Amazed—so common sense.

Organization/Structure

Michael LaRoi –Northrop Grumman's business is engineering, computer science, and defense. We put together the Innovation Institute—set all rules aside, all previous notions aside – sought the best way to recruit people, bring them in, and execute this.... three years ago ...We removed cubicles and have lots of conference space, windows— When you can sit and look out a window ... and imagine...it helps... For 23 years we were not allowed windows due to security ... With space, you can engage with people. We actually set up laboratories with some of my senior management in the middle and all the young engineers and the collaboration spaces were along the windows, and even the ability to construct your floor space. In fact—being engineers, sometimes we go all over the place. ...Like rooms where you allow (open classrooms) children more space—we move our meetings, our design forums in different areas of the floor space—So open space and windows are important.

Voice -- diversity of opinion and age – young, middle and senior staff—when you come into my area, there is no seniority. ...

I have noticed the newer hires are very into video games and stuck in a mould. I grew up with art, physical education, shop ... and music. I played the French horn and the trumpet. If you ask a lot of our mathematicians, engineers, computer scientists, they all had that, but if you ask the ones coming in now, all they care about is getting that 4.0 and knocking off this curriculum and that curriculum and trying to show "I am the best engineer possible." When you set them down, they can't communicate they can't free think, they're basically waiting for you to say, "go assemble this, go assemble that." So the whole purpose of the innovation center was ... was bring in, allow that collaborative engaged thinking, set the rules aside. In the defense specifications—if you go in constrained you come out constrained....

Engineering and science -- it's tied to art. ...There are five floors in the innovation center. When I named my floor "Teton," I had to explain that it's not an acronym; it's a mountain range. You're creating a studio. What is an artist in a studio? You put in things that inspire you. If you're in a laboratory space, it's a studio for creation, for learning and in my sense, execution. I can sit around and be inspired to do it. Metaphor!!

Catherine Leggett (*Lawyer*) – There is a paradigm shift in my workplace. To allow music is a big deal in financial services, which is usually a quiet environment. ... Workplace is very rigid; people conform in the work place. The millennials are pushing the workplace to be different to allow innovation and creativity... Music is inspiring. So first earphones were allowed, now soft music plays in the workspace. Complexity...workplaces tend to be structured and rigid but that is changing because young people want transparency, they want inclusion, they want to be heard. There is little commitment to the employer; if you get them for 3 years, it's really good...5 years is a big thing. So the workplace is changing. Schools have the opportunity to foster this (ici) now because the workplace will be ready when these children get out of college.

Donna Wiseman (*Dean, College of Education, University of Maryland College Park*) -- Universities should be where creative spaces are everywhere, but as you know, universities really get bogged down and in our college we had been arranged the same way for 30 years, so we went through ... reorganization which everyone just dreads--I can't tell you what creative ideas I've seen coming out of that; just shaking people up a little bit. We don't have the physical space to change, but in our minds we had the strings to change our organizational structure. Different people are talking to different groups, so different ideas are coming forward. ... Get those environments where they can really be mixed up. Sometimes you have to step in and really change the way people work together in order to get those creative conversations going.

Training and Recruitment

Stuart Frankel -- We look for the people with the best skills who look like they're winners. What warms my heart most is finding the person I call the accidental tourist -- this is a guy or a woman who maybe is a philosophy major—or something I find totally unexpected, excelling through a company. A person who has the curiosity and the creativity to excel. Where do you find those people? They can come from the best schools, they can come from schools you've never heard of. ...accidental tourists who have that creative curiosity and match that with their discipline, are the ones who are the gems. Get them to be creatively educated first and then give them skills and put them to work.

Mark Fetting -- More personal than corporate—I for one try to challenge our folks not to hire on the pedigree and the performance record alone but to really kind of get down and find out if this individual has confronted some challenges, had some failures, dealt with things that are kind off the page as an essential requirement for someone who is going to succeed. Joe Paterno, the coach at Penn State is always looking for somebody who excels, who is driven from within as opposed to someone who succeeds, which is just kind of an external affirmation of success—that drive for excellence is more of a *within* piece. ...You find... folks with superb records and they've been on a track, "I've wanted to be an investor all my life." Some of those folks have the *within* piece also. But some have been on a track where they've been driven externally as opposed to internally.

Risk Taking and Questioning

George Ciscle (*MICA*) -- Most artists enjoy posing the questions and answering them. Basis of creativity is not being afraid -- has to be in a place of nurturing and a place of safety where you can do whatever you want. Celebrating creativity is essential in school and in the workplace. If you're afraid you're going to lose your job you're not going to pose a question.

Need to be safe and have confidence in the process -- applies anywhere there is anxiety in our culture to stay in line.

Susan Magsamen (*JHU-Brain Science Institute*) -- Whether kids or adults, science or arts or leadership, play where creative/problem solving, improvisation, or risk occurs is where we see creativity --- content and research are part of the process so it's not one thing or another -- a combination.

Bill Buckner -- Being wrong is a part of creativity in the work place—small groups of people having an idea and not asking for permission and waiting for the power structure but just going out and doing it. When it works, people say ok and buy into it. Allowed – not sanctioned risky... this generation pushes for the ability to allow questions—folks who have experience know a lot of things but they also lose sight of the simple questions—forcing them to stop and have to answer the question that new people ask-- that conversation often becomes the spark of a new idea because they go, “actually I have never thought about it that way. I don’t why—I’m willing to question”—Something new happens—upping the omniscient, all knowing is never going to be a place where creativity/innovation thrives—people leave.

Stacie Sanders (*Director, Young Audiences Arts for Learning Maryland*) – 2 parts to our domain: We bring artists into schools and create opportunities for students to imagine and create and then I step back and look at it as I am the director of a non-profit organization that has to operate in that industry. There are a lot of things that our organization has to do in this kind of economy, in what's happening in education, for us to even be relevant. We had to innovate --- at the same time that we are encouraging our artists and the teachers that we partner with to provide learning opportunities that build these skills, as a leader I've had to step back and say *what kind of environment am I putting in place that is encouraging our staff to imagine and create.* And I've noticed and looked at the indicators that you need in a creative classroom – it's the same thing you need in a work environment. ...Is the staff that I have allowed to ask why? What if? Are they in an environment where they can test those kinds of assumptions and questions? Are they allowed to fail? Am I allowing risk-taking? If you look at high stakes testing and what's happening, teachers are afraid to fail; it is something that has such shame to it. Until you can give.... so much that needs to happen in the environment that just will create the opportunity for students to be creative...to have...risk taking and failure that are allowed.

Ownership

Mike Chalupa (*Principal, City Neighbors Schools*)...Act of creating creates a sense of ownership. So our tagline for our school is *inspired to create* –we see our role as not taking what has been done before and applying it -- although being very well versed in all of those things -- but really looking at almost everything with fresh eyes and a blank slate. And then coming together and creating from there whether that's looking at a student or a particular practice. We could wind up with the same practice if we just took somebody else's kind of mandate to do it but when we get together and we create from the problem that is in front of us and we come up with that solution together, even if it's the same solution, we now own it and have come to that process of realizing its importance and are really being able to live it. Just essential for a thriving organization and school culture: personal and institutional investment and integrity.

Collaboration

Buck Jabaily -- And also the team approach: corporate world is increasingly embracing the idea that you put people together with a topic and you let them go in teams and let them go as opposed to people in their cubicles each having their task and their roles.

Barbara Landau (*Johns Hopkins University, Chair, Department Cognitive Science*) -- The National Science Foundation is providing targeted money for programs that specifically do inter-disciplinary studies ...universities should be places of great innovation and creativity but actually very often they are very stuck and there is the individualist mentality. We...had a grant for 10 years—you have to create a curriculum that embodies interdisciplinary training and research. Then that makes you take people in our department, for example who are trained as psychologists, trained as neuroscientists, trained as linguists, come together and figure out what the pieces that an individual trainee or a faculty member would need in order to do more creative research... The fact that NSF has really endorsed this and the number of these programs around the country really attest to the fact that people in science really understand that you need the multiple perspectives but you need some kind of organizational push to make it possible and worthwhile to break down the barriers that you have.

We use problem centered research so that you come not as a psychologist or a linguist, rather you think about the problem of language learning and consider what all these different perspectives give to solving that problem.

Leaders are saying *figure it out, come up with a program that has a perspective from art, from music, from math*. Problems in spades at Hopkins as students come in so focused; our problem is getting them out of that box.

Context of graduate and undergraduate—to foster being able to think beyond the paper, we are having small groups, having students send in questions ... about the paper, compiling them all and having everyone discuss everybody else's questions. You have to set up the conditions for these group interactions, which then really open up people's eyes to other perspectives.

Mary Ann Mears—UMBC is structuring the chemistry program so that students collaborate in hands-on research and laboratory work starting freshman year.

Leadership

Marin Alsop -- How do you balance the collaborative model with the achievement needs? ...Unless someone manages the team approach it can digress into a holding pattern, a very frustrating holding pattern. You need really skilled people at the top pulling it and helping direct it but not dictating.

Lisa Shepley (*Director of Education, BSO*) – Marin listens to her community partners ... that's vital. If she's not listening to what's important to people, how is she going to pull those people into the concert hall across all levels. She is a true leader...

Leadership is vital and crucial—it's the brand and style of the leadership that can unleash the creativity...look at Steve Jobs—he's created an environment and

work ethic that encourages and unleashes innovation and creativity as opposed to other styles of leadership that may even suppress creativity --

First music director to sit down with me to talk about how things are going and what changes need to be made—it absolutely raises the bar for me—I have to be ready at any moment to answer any question. She knows how to pose a challenge that inspires as opposed to threatens.

Lisa—have worked for 3 music directors and without hesitation—Marin has been the most invested in embracing the community and all facets of the community. She has tried to make sure that everyone in the city of Baltimore and the state of Maryland can somehow claim ownership of the orchestra and she has done some extremely daring things to try to gain the community accessibility to the orchestra – project a couple of years ago---*Life a Journey through Time*-- partnered with a National Geographic photographer and ... projected his photographs above the orchestra to try to give people not only the opportunity to tap into music but to give them another medium in which to come and appreciate the orchestra's work. ...trying to find as many touch points to get people who may not be solely interested in music ...to give them a point of access to the orchestra....very customer/service oriented – but once the orchestra is on stage—at that point in time the process is a very creative process. It begins with eye contact at the moment of the downbeat, listening, feeling – watching the smallest gesture from the podium. They respond and work together. ..Within the same structure but different every time depending on the interpretation from the podium, or the smallest flourish she makes with the baton....

Innovation in Higher Education- a model for K-12? Alignment with PK-12?

Britt Kirwan --People think of the university as a repository of knowledge and a source of disseminating knowledge, but universities like Kathy's (UMBC) and College Park and UMB have a very important research mission and so there is the expectation that the faculty and the students, particularly the graduate students, will be pushing out the current boundaries of knowledge discovering new things. It's a very important dimension of activities that go on at our major universities. This, of course, is reflected in the graduate programs because the graduate students eventually write a thesis to get a degree and they must solve some problem, use their creativity and imagination to develop some new knowledge. I think an exciting thing is happening at universities and you certainly see it at UMBC which is pushing down this notion of discovery and

innovation and creativity into the undergraduate populations so that universities very intentionally have research opportunities for undergraduates where they will work alongside a professor or be given a project of their own to work on. It's also being driven into the curricula. For example, engineering programs around the country have changed their degree requirements and in their senior year in an accredited engineering program, students have to solve some major problem. So they are given some task, some innovation ... a situation that needs a new solution. Students work in teams and they can't get a degree unless they come up with a credible solution to this challenge so it brings out their innovation and creativity. Innovation and creativity is very much part and parcel of the modern university. I think we've got a long way to go. We're not as effective as I think we need to be throughout the curriculum and throughout the experiences of students on our campuses. I also think there is a lot of room for improvement in the learning with the K-12 sector so that when students come to us they come through an experience that will facilitate the unleashing of their creative talents and potential. So I'd say we've made some progress in this general area at the undergraduate level but we still have a lot of work to do.

Mark Fetting -- We had an interesting discussion a couple of weeks ago with Dr. Alonso on this very issue around if you believe that the arts and creativity are important and ultimately a real driver to achievement for students, then why aren't more of the principals in his system (where over the last three years he's been trying to give more authority to the principals to make their decisions), why aren't they actually putting more, which they can do, into the arts? Versus ...the concern is that because of the test scores, we have a kind of very straight and narrow curriculum. There's a short term/long term kind of decision that has to be made.

Britt Kirwan-- and this emphasis on assessments and testing is an impediment to bringing the more innovative creativity into the classroom

What we hear from the corporations and businesses that hire students is that they aren't adequately prepared for the jobs of today --a great concern--that has led us to develop advisory groups for various disciplines from the external world to rethink the curriculum. In fact that's what led to some of these changes in engineering. It is an issue in terms of our competitiveness as an economy. *Are we developing the people with the skills that are really necessary to keep our economy as competitive?* Real issue. Part of it is their ability to use their knowledge in creative ways when they leave college in whatever occupation they're in. We have got to do a better job of sparking creativity for people to be

able to synthesize what they know and apply it and adapt it into the situations they'll face when they go into investment or whatever the industry is.

It's very important that we are raising standards, increasing the rigor. We are also developing programs because they allow creativity, attract better and better students. There's a program that captures that philosophy we call the Gemstone Program. ...If you're admitted into the Gemstone Program you're in a group of a dozen students. During the first term of the fall semester, you as a group have to design, come up with some major problem that you're going to solve over the 4 years - you stay together and you take courses to enable you to gain the knowledge to attack that problem. When the students are seniors they develop a project and they present this...unbelievably dazzling— for example one was that the highway moves, not the car....Those kinds of programs get kids excited, not the rote traditional, one course after another after another...they have something they want to accomplish and then they design the curriculum so they will have the skills. This takes a special quality of student and teacher

Question 3. What conditions and strategies best nurture **imagination/creativity/innovation** in education?

Value

Nancy Grasmick (*Maryland State Superintendent of Schools*) -- For me this is a passion, a journey about the inclusion of the arts and now we have arrived at the point that the arts are leading the way in terms of crafting the kind of learner that we would like to see in this 21st century with all its challenges. We can't minimize the work --we are talking about a million children in the state of MD who are part of the public school system. I think there is so much potential for the success of our children if we really, really implement the kinds of directions that this conversation will hopefully yield. Maryland has set standards for the arts --one of the first states to do so. And we have been engaged in this work for a long time, I think it has in many ways influenced what is happening across the state of Maryland but it is still not completed work. This whole notion of creativity and imagination is influencing the direction that we need to take.

Diane Bragdon (*Principal, Wiley T. Bates Middle School*) - The success of middle school education depends on student engagement--getting kids engaged in instruction. Students become most engaged when they're allowed to unleash their imaginations. It's when they learn. It is central to what I do.

Mike Chalupa - There is deeper learning around creativity. Partnerships, the business community are bringing in artists which is nice but peripheral to core work - if we are really going to institute these ideas of *ici* in our schools that message has to be coming from North Avenue (school system headquarters). We can't be having these conversations and at the same time principals go in for their evaluations and the only things you are

evaluated on are your test scores...It can't be that half of your charter school renewal is just based on your test scores. ...If we are really talking about change then it has to be policy and that message has to be deeply engrained in the structures that are coming --otherwise all of this work is great but it will still remain peripheral - just kind of nipping at the edges of what's happening in schools.

Culture of ICI

Bobbi Mc Donald (*Founder, City Neighbors Foundation*) -- Charter schools are charged with bringing innovation to the system. That's what the law says we're supposed to do - take public education and say—*what are the possibilities, how do we do it*. From my perspective in designing schools, designing the environments of the schools, we work very hard to connect the actual physical environment to support the mission and vision of the school. Not to innovate just to innovate but to say that if we believe this and the relationship between the students and the teacher and that students need to express their knowledge in many different ways, what would the schools look like, how would the school be scheduled? When and where would conversations happen? So our whole mindset in designing the schools has been one of innovation, not just doing what has been done before.

We've made the work of the school to always be creating the school, to be answering the question, *what is the best school we can imagine?* So teachers have time every week to meet collaboratively to be asking what are we doing and why. They have the power to change and move and be responsive because the work of the school is to create the school. So we don't think we're right and we're done—it's the process. The logo has a big path in it --it's all about the path. It's not getting to the summit, it's the journey. How to create this environment that allows for that; how to make it so the teachers do have those deep conversations.

Mike Chalupa - don't have educators in the building who are afraid of failing ...this has to be modeled by the principal and made ok—has to be a norm in the organization. If we try and it bombed... we reflect on it. We do a lot of peer critique and revisions over and over again Important to allow yourself breathing room to make those mistakes and go back. Hardest thing is to self-critique but the key to true success is being able to self assess, "how can I do this a little differently" ...and those are all very creative processes. Other piece—understand the default culture of school - things that we have learned about what education is supposed to be through our own learning and through education schools that keep us contained.

Susan Magsamen -- acknowledging the box and the mythology in the box. If you're going to break free, you kind of have to know and clear all of that out of the way so you have a fresh palette. I think you have to acknowledge what those things are first. Reflect, not just evaluate...go to the next stage when looking at issues of failure.

Stacie Sanders -- One of the conditions needs to be that it's ok for administrators, teachers and students to challenge assumptions. That condition has to be in place at all levels.

Bobbi McDonald -- One of the things in our mission statement is that our students will leave deeply enlivened—one of the phrases we had a big argument when we created our mission statement which we worked hard on there was an argument on the table— *You can't measure that. How are you going to measure that?* We need to have some things in our mission statement that are immeasurable, that can't be measured, and that may be connected to this conversation. Because it is difficult to treat 3500 people not as just 3500 people, but as individuals. I think it's that same immeasurable enlivened conversation that needs to be part of any organization that's going to be flexible and creative and have room for people to actually have input.

Lyn Frankel (*Chair, AEMS Board of Trustees*) - As in Daniel Pink's Book, *Drive*, you give them what they need and free rein to do what they need to do it and their accomplishments and the feeling of accomplishing are what motivates them.

Bobbi McDonald - Standards matter. You need to revise and edit and your peers are going to critique your work together because...there's an ethic of excellence you can establish and part of the way is through shared critique...that is problem solving, it's creative.

Questioning/ divergent thinking/creative problem solving/critical thinking

Victoria Brown -- ...Early childhood is a very critical time to engage children in imagination and to always ask them *what if? What if?* So in all the work we do at the school we are always asking children, *what's another way to solve a problem* as opposed to, *there is one answer to a problem* and that's been true in my world as theatre artist teaching theatre at Gallaudet University. We always get students to think of other ways to solve a problem, an opportunity in all the arts for problem solving. What is key is that we're not teaching divergent thinking—have to see that there's more than one way to solve a problem. Science should be genuine inquiry so it's not just collecting colored leaves but *how did the leaf get red?* Not giving the child the answer but breaking them into groups to collaboratively come up with the answer about why the leaves change colors. At the end it doesn't matter if those 8 year olds know how leaves change color; they have thought about it like the person did who came up with it.

Susan Magsamen -- A lot of people think a quiet classroom is a successful classroom ...passed a law in Finland that it's ok to yell. Use your voice - share your voice...messiness is part of nurturing an environment.... Be ok with things being messy....

Brenda Jews -- Imagination, innovation, play lead to a feeling of equality in a classroom. No matter your skill level in a particular area, you could pop with an idea and all of a sudden you are the same as the person who is no. 1. That experience can make all the difference to their *can do* spirit.

But schools still – *you are in this classroom in this building, you do this work in isolation, you're in your nice straight rows, you have a place where you sit*—as opposed to having a more fluid environment, time can be stretched and you can have more choice and you can gravitate naturally --not always but at some point-- to what draws you.

John Turtle (*Department of English, Goucher College*) Another thing that is for me dear is heuristics, experiential learning and saying that learning can come through experience, structured experience. But experience that might bleed over in time, that's one of the most difficult things about heuristic approaches to learning - that it often isn't possible to limit it in time or quality. How do we arrive at learning models that are truly about experience?

Bob Embry (*President, Abell Foundation*)-- I would say that in addition to the arts the most successful education is debating – having to challenge somebody else's assertion.

Mark Fetting ...the importance of the teacher to the creative process – at the end of the day creation is largely a “from-within” kind of thing. But it's nurtured; it's a combination of an inquiring mind that's intrinsically driven ... but isn't it always combined with some teacher who has nurtured that, supported that?

Kathy O'Dell (*Associate Dean, Arts, Humanities, and Social Sciences, UMBC*) -- Back to arts as the lens through which to look at the ICI issue....What I am proposing is not only that all kids need instruction in the arts –I do think that – but what I'm seeing as necessary (turning the sculpture a quarter of a turn) is that as arts are integrated into education, the depth model is very important. You really learn clay; you really learn painting. But even further, just as important as the depth model is teasing out the different 21st century skills that are so important across disciplines. Critical thinking is one of them, and I think that sometimes those of us in the arts don't even see how integral critical thinking is to what we do. And if we don't see that, how are we proposing to other disciplines that they see it? There is no art without critical thinking; that is what the creation of art is about. This works. That doesn't. Why? We figure that out, we move on to the next step. This is much like scientists' way of thinking: Ok, that gets me a little closer to my hypothesis. This part did work well. That actually sets me back from the hypothesis and so on. In a way the arts can become the model discipline for learning those skills: critical thinking, the importance of process, the importance of risk taking, and even failure to get to the next step of the hypothesis, toward the thesis. Arts as the lens. Arts are valuable in terms of being able to play the piano or paint a picture; but as important, maybe more important, is the learning of critical thinking.

Leadership/Structure/Organization

Bobbi MacDonald – the teachers have the power that generates the inspiration among people in the environment we've created because they know that if they come up with something—they are empowered to make change in their environment and we do that with the kids too. For example, incoming 9th graders designed the cafeteria. Created and designed – we have never had a problem or a fight in our cafeteria with 90 kids from 23 schools across the city—not once. ...there are pictures of their families all over the place. Kind of a lounge, cool—cool ideas—they had a budget, they had a space – so they're in this creative thing too, their words matter. Our motto is “inspired to create” and my job is *how do we keep allowing that so that we are also running a good business*. Create a strong structure and leave room for the unknown.

A great leader or a great system will allow the teachers to do their best work; the teachers allow their students to do their best work and it's based on a vision of the role of the student. Do they have capacity? Are they able to do this? Sometimes we're up against a vision of the child in Baltimore City as not being able. We get kindergartners who have been read to for thousands of hours and then we get kindergartners who have been read to for 40 hours period and those guys are in class together and that teacher has to respond to both, but if she's seeing them both with the deep capacity to live an inspired life and to find who they are and do meaningful work, they'll both raise up to that expectation. ...So the system and the school and the leader are all allowing the teacher to have that vision of the student. ...physical environment really matters—when you walk in the door it's a message—every wall is talking to you of what your capacity is or what it's going to be like. In our high school ...to completely change the paradigm for those kids, we encourage this feeling of being in any great office—*you're going to have good conversations here, you're going to meet with your peers and do good work*. The environment allows us to be treated a certain way.

Andres Alonso (*Superintendent, Baltimore City Public School System*)—Look at City Neighbors Hamilton—working to be a K-12 campus. The physical environment where the kids are is tremendously meaningful. They are redoing the environment with no sharp angles; they have worked on the colors; instead of lockers they have pods ... places where they can leave their things and work together with each other. They have worked so hard on this idea of creating an environment where the kid is going to emerge as a certain kind of person. Nothing stops any school in Maryland from thinking in those ways. ... In the 1970s and 80s, there was a movement towards open classrooms—all those buildings are gone—because teachers hated it. Instead of changing the way they taught to make use of the open space, they tried to re-create the closed space. This conversation is at the core of my thinking about how we change the system moving forward. The constraints are humongous. I have 6500 teachers, even people who are coming into the profession anew ...some are more open but they are not necessarily more open. So this conversation is very, very important, and what I hope emerges is a way of pushing us forward in a way that is not superficial.

Diane Bragdon—we can't continue to teach school the way we have for thirty years – we're still telling kids to put their cell phones away when that's how they learn.

Look at the nuts and bolts of the structure of middle schools - (in my case the schedule, who the teachers are, and the curriculum.) Take them apart and teach children in a way that the whole emphasis is on 21st century skills – have them work on problems collaboratively; give them the time they need for exploration. How can we build creativity if we're not giving kids time to delve into the things that excite them. We're not doing it in 50 minute periods and classes of 30 with a very prescribed uncreative curriculum. We have to look at the structural elements and rebuild them. It's a huge job. But I think the arts are a way to start doing that.

Policy

Victoria Brown -- Have to find a way to influence those principals—look at the Superintendent in Cecil County who has a music background and is turning middle and elementary schools into arts integrated schools throughout that county.

Diane Bragdon--It really is about the superintendent. My superintendent, Kevin Maxwell has allowed us to innovate in that we have our middle schoolers selecting a major in the arts—they select dance or vocal or instrumental or visual arts. Every other day the kids have two periods to just delve into their art—they have a major. That's a battle with the Federal Regulations of NCLB and the fact that in an urban setting we struggle with making AYP – but everyone who experiences allowing kids to do (what they're doing in our school), realizes that if you're going to raise student achievement you're going to have to break out of the box and allow kids to be creative. The only way to allow them to do it is to give them the time they need to explore and solve problems and you can't do it in the rigid traditional school schedule. You have to come up with another way to allow them the time---giving them 2 ½ hours a day just to delve into the art that they love, that is their passion, raises achievement on those same standardized tests.

Victoria Brown -- In terms of a policy for creating a school that supports creativity and innovation, I think one of the key pieces is giving those teachers freedom and flexibility within the time structure so if a teacher -- I strongly support project based learning—wonderful models all over the country in that -- so if a teacher is doing a project and she imagines that it is going to take 6 weeks to do that but the children are bored at 5 weeks—she can move on to something the children are interested in or if it's going to take 10 weeks because within the learning process you're achieving those goals –without checking them off—to have that flexibility and for potential for it to be school wide or cross grade is critical. So that requires time built into the week for teachers to be able to plan together to have brainstorming time. At Lucy school we have a two-hour meeting every Friday—we end school early to just brainstorm and share. The collaboration between teachers happens throughout the week as well. The principal needs to foster the collaboration between teachers and maybe teachers who have a great project can switch over and teach it to another class—the flexibility within that school system.

Nancy Grasmick -- it has to be a paradigm shift.

Andres Alonso -- I struggle with this conversation, which often romanticizes the past. I started teaching in 1986, which was before the standards movement and one of the first things I was taught by my mentor was that you don't smile until after Christmas. So with this notion of creativity and imagination, if you are in a profession where you are socialized to value control over anything else, what happens? And that preceded standardized testing and everything else. There is a fascinating book called *How Teachers Taught* written by Larry Cuban in the 1990s, which tracked the profession, and what he concludes is that it has hardly changed in 100 years. Often what people adduce as the result of standardized testing I tend to see as a kind of distilling of an essence that is very much about rigidity, about control, about simplifying, reducing ambiguity which I tend to associate with a lack of belief in the ability of kids and communities to learn. I don't think it is a coincidence that the poorer the community, the neighborhood the school system, the higher the likelihood that you are going to have rigid top down teacher centered pedagogy, and an absence of enrichment because at the core of the work, there is a lack of belief at some level in the capacity of the children in those communities.we need to wrestle with root causes if we are going to push the conversation in new directions; it goes back to how people define teaching and learning.

My sense is that most people are far more influenced by who they had as a teacher when they were growing up than by anything that happens in a school of education.

Donna Wiseman - there's research that shows that.

Andres Alonso -- If you were taught in a certain way and you gravitate toward that, then the only real innovators are those who push in different directions. In any profession, the real innovators are few, and they tend to move on to do other things. A real struggle (back to question number two):quasi political organizations (school systems) and the notion of innovation have to be thought of in the context of politics and in the context of permissible mistakes. What I find in most central office systems is a system almost overwhelmed by the transactional element of the work, which doesn't leave much room for innovation unless there is a leader who has huge tolerance for ambiguity and has confidence about certain elements of the work... [and an ability to] challenge thinking. A conversation about moving from North Avenue -- I want everyone in one room with no walls so people cannot go hide in their room and think that it has nothing to do with them. We're thinking about those things as ways of shifting how people think about the work and how they interact with each other in order to propel a difference in thinking. We are going into a reorganization again because of dollars and because I want the work to be more innovative. I've highlighted that the way central offices are organized by division is insane because the schools don't experience 70 different components; the schools experience a kind of inefficiency and weight of a support system coming from above. So part of what I've asked is *how do we replicate our schools in the way we're [centrally and administratively] organized*. ...Systems say they have organized differently but they have not. The concern is with how people experience change as in, *where am I in the new work*, rather than focus on change. Complete change of mindset...nothing more important than how teachers define the work. With teachers and principals, the greater level of expertise, the greater they perceive their range of options. The greater the level of mastery, the more choices you see within that narrow field. Give people enormous room and what is remarkable is how little of it is used; because at the core the belief system is not there to do things differently.

Nancy Grasmick -- I began my career teaching the deaf. At the time I started you were not allowed to teach signing, so the students did not have language. So how did I teach them? I used the arts because they could express themselves through the arts; they danced, did drawings, incredible pantomime. I found these children to be among the most creative I have ever seen. We have the ability to begin early weaving in of the arts. Dick and Mary Ann are taking on this challenge. I have given talks about integrating the arts in a much more significant way in our early childhood programs. (We have stunning early childhood programs in Maryland.) How do we begin at this earliest age using the natural curiosity of children, their willingness to be outside of the box ... [how do we] nurture that? ...Then the concern begins in the traditional, more formalized schooling. What we are attempting to do is to say that taking the children to the symphony or a partnership once a month isn't what we are about. What we are about is the integration of the arts across every classroom so that the processes of the arts are defining how we teach the academics. There has to be a conscious effort by every superintendent to put value on the arts. When we see budget cuts and we see people say we have to get rid of art because we can't afford it; the arts have to be so interfaced with the academics that you can't say we're going to get rid of the arts because the arts are part of the daily program of delivery to the children. But we have to change the paradigm in terms of who are the master teachers. Are we looking for those qualities and defining those master teachers? What are we doing at the teacher preparation level? We have 22 institutions in the state of Maryland. What are we doing in those 22

preparation institutions to ensure that people are exiting with the belief system first of all and then the expertise to execute? That's the agenda. We're not going to succeed in preparing people for your situation (employers in the room) unless we can do this. We are not creating the right pipeline now... and we should acknowledge it. And we haven't conveyed it to teachers.

We talk to a lot of teachers and they believe-- because they have experienced it and because they believe that's the value of their supervisors and principals-- that the classroom needs to be quiet, those children need to be seated, that's the only way they're going to achieve the goals and they are accountable for their achieving the goals. But when I see great teachers and great principals, that is not their agenda. But it can't be episodic. It can't be "I'll take the children to the symphony"—that's fine; but it's got to be systemic.

Mary Ann Mears -- Timing is good because so much is happening in the process of reform in education. We need to understand this value and this value needs to be part of that conversation.

Nancy Grasmick -- Arts are a model

Andres Alonso -- Some of it is implementation rather than policy—that it is culture more than policy. I do think that there is a tension between what is happening around effectiveness in school reform, which is calling for measurement of value-added elements that pushes against what we are talking about.

Mary Ann Mears – Unless we redefine what we are measuring and how we are measuring and use multiple measures and not just standardized tests.

Nancy Grasmick -- Absolutely very clear but we haven't arrived at the point of defining those. This is for the evaluation because people treasure what is measured. So we are working in this group to talk about what those parameters are and that's why I felt so strongly about the arts presentation (to Governor's Educator Effectiveness Council - see Appendix B.) because I wanted people to begin to think in a different way.

Jay Tucker (*Coordinator of Fine Arts, Maryland State Department of Education*)

There are lines of intervention going on already, but they don't always take hold and grow. We've been trying to provide programs to encourage teachers to teach in different ways for 15 years now and each time we have a new wrinkle and lose money, those programs such as MATI (Maryland Artist/Teacher Institute) are cut. A lot of schools have invested in those programs. They are very successful; the leadership in those schools is committed and that enthusiasm is transmitted to teachers who become leaders themselves and this magic is passed on to kids and they do things in creative and innovative ways. We're down 150% for dollars for funding programs like that. Even recognized by local systems, at least 5 are picking up and providing similar programs. So there is some movement...There's no one who supports arts education more than our leader (Nancy Grasmick)—anywhere in the country. There are things going on and teachers are taking ownership, which is very important. And it's no longer top down; it's coming from the grass roots up and it's making a

difference in the environment in those schools. The stories have been told over and over but the system still doesn't listen because you have to make AYP. Stakes are really high. We're talking about the new freedom the principals have in the city schools; yes, they have freedom but they have to meet AYP and if the math scores are down the dollars are going to go to mathematics, or language arts.

Assessment/Accountability:

Andres Alonso -- In the public imagination there is deep belief in this notion of the numbers and what the numbers mean, because the numbers have been defined as being about simply reading and mathematics. There has been a de-emphasis on many other things ... so you have this tension in this conversation, which is about what motivates people in terms of the work.

Mary Ann Mears -- Portfolio assessment is actually looking at student work to show what has been learned.

Donna Wiseman -- We measure teachers the same way. For example, the national boards certification does measure teachers in multiple ways and measures more creativity.

Sonja Santelises -- The question is really around this qualitative aspect because so much is quantitative.... the answer can't be that we can't measure it. Somehow we have to be able to communicate what the learning is in a particular domain. One of the pieces that we've been looking at-- just starting with our summer school --to the credit of Linda Eberhart --took enrichment model to the lowest performers--usually enrichment is for the highly gifted... We are trying to figure out what the assessment is; if it's a task based assessment versus a *fill in the bubble*. Part of what we are using the summer for is to create more task based or creative construction kinds of problem solving tasks that give kids the opportunity to demonstrate what they now can do that they couldn't do before. My push to this group is that we're going to have to be able to measure. Because I'm thinking now that, if we know that arts are essential, Dr. Alonso is constantly asking this question about how to pair that with the big drive we have around engagement-- engagement not just with kids talking, but with kids owning their learning.

The common core assessments that are being proposed are a lot more dynamic even on the traditional academic content piece ... People expect exposition and portfolios. How do we bring that back in a kind of high level accountability pressure cooker in a way that has meaning....what are we going to measure? How will we bring it back?

Andres Alonso -- The common core standards moment is an opportunity for us because if it's done well, I don't see how people can do what they have been doing in the past. But the gravitational pull is going to be to adjust at the margins and keep doing the same thing. It matters tremendously and we struggle with the ability of teachers to know content deeply. Expectations in national core standards are an intellectual *tour de force* ... they ramp up the game in an extraordinary way. Learning cannot be rote any more....they're asking for huge critical thinking, huge inferencing. The ability to write, the ability to communicate are privileged in the way the standards are designed. Whether they are broad enough to encompass many, many things, is the real question.

Since April, we've been working around *what does it mean* over the summer with 300 teachers working with a single standard - *What would it mean for a teacher in a classroom, around preparation, around knowledge, around possibilities, around looking at student work, around expectations?* Part of what they interacted with was the notion that this could be revolutionary. It takes a far better rounded teacher in order to deliver it...opportunity there -- We should look deeply at what that iteration of a work that in the past hasn't worked could mean for this question of imagination because I don't see how it could be done well without imagination in the teaching.

At some level we are going to need to get to a definition of what good teaching is that is very transparent.

Mike Chalupa-I don't think there is anybody saying we shouldn't have assessment but the question is how multi-faceted? Standardized testing might have some role but the question is what weight and what scope?....If this conversation is going deeper - assessment needs to be more central. I don't think you can have a test on 2 days in March that ranks. But what is the other 70-80% telling you.

Stacie Sanders -- In addition to training artists in the standards and curriculum that schools are currently being held accountable for ...we also overlay this other framework that says *how do you know that students are actually increasing in their ability to imagine and create...* just have to be explicit in what you are defining as a goal and how you are making sure that it is there. ...how to design, deliver, and assess arts learning experiences that build 21st century skills.

Mary Ann Mears -- Measuring is constant for us as artists and arts educators — we do qualitative measuring all the time.

Technology is an opportunity. We are at a point where, because of technology, we can make a quantum leap—digital age – and capture images and sounds in a portfolio. A portfolio that is not just collection of work, but also captures student reflection and reflects process – instead of just results on a bubble test, here's the student's work, the real work. There are platforms for music and theatre and dance and visual arts portfolios to live in the cloud—fabulous opportunity. Instead of saying we can't measure the arts, understand that we're in the world where people do measure and evaluate and someone does have to decide whether we're going to invest in the art teacher. Kevin Maxwell is going out on a limb and saying we can do this in your school, (Diane); he's got to be concerned about justifying that to the tax payers.

Victoria Brown -- It is possible; ... We use the State Curriculum and 3 times a year when evaluating, our students are testing 2-3 levels above on those objectives. The teachers have the freedom to meet those objectives however they want, using art and also project based (problem based) lessons—the arts are so powerful as a medium in addressing problem solving. I see it as I train teachers around the country who say they just close their door and do what they want to do—but I also notice that there's a big difference when the principal allows that freedom. Nancy Grasmick is a strong supporter of the arts but you go into "X" county and they have to write their objective on the board and the supervisor comes in and if what they are doing isn't related to that one objective, they're written up. So rigid. Nancy Grasmick doesn't want that.

Mary Ann Mears -- Fear factor is coming from the very top in our country – upping the ante on accountability for teachers on very limited measures.

Britt Kirwan – the issue is *-does the end become the test scores or is it a means to measure—in k-12*. My sense is that the test scores have driven too much of

the way we teach kids and they're not learning in a larger context and then applying knowledge to these tests. They're being taught specific knowledge that's on a test—that's where our system has broken down....This emphasis on assessments and testing is an impediment to bringing the more innovative creativity into the classroom.

Bobbi MacDonald --We take the stance that we're going to teach the way we know it's right to teach and we'll let the test scores take care of themselves. You have to have some courage right now in this day of standardized testing to just stand in that and be ok with that. Luckily our kids do pretty good on the testing but when the test comes up we say, "guys the test is coming up; these are the kinds of questions you're going to see." Kind of teach it as a genre. "Here's the kind of thing you're going to do; do your best; it's important to show what you know." We prepare them for it. And then we get back to our work, which is a lot of projects. The complexity of the conversation is that we do tons of assessments; our curriculum is rooted in a deep assessment; because you can't teach in this way without knowing where kids are at; because you have to be constantly challenging them. There has to be a balance. A one shot test doesn't give you the same information that daily informal and formal assessments give you, so the teachers have to be creative about *how do we know kids are learning?* How do we measure it? And what are our standards? So there's no lowering of the rigor, it's just that we're going deep instead of trying to cover a lot in a shallow way. We're going deep on a few other things. I heard a great definition of rigor the other day--"rigor is being in the presence of an adult who is passionate about learning and wants to share that with you." The role of the teacher is changing.

David Troy --find a way for students to take on independent work ...it's how to keep kids from being bored --- do a project about what interests them. It needs to be evaluated and managed in some reasonable way.

We all had maybe 3 great teachers—a lot of the great things happened by accident. We are not optimizing for great teachers—we're optimizing to get people through this process. And if you think back to the whole industrial nature of the way this system is designed—every aspect was developed for a world that doesn't exist right now—We ought to be optimizing for great experiences. I don't know how you measure that but it ought to be that when kids graduate 12th grade they look back and say I had 95% great experiences rather than I had 3 great teachers.

Buck Jabaily -- Graduating seniors are a resource—We should do exit interviews – Sit them down to create the structure that would have made their educational experience the kind they wish they would have had. Be on top of trends that would have helped them.

Stacie Sanders – Schools look to professional artists to come in and give students a break ... to be creative when it should be that every day, that kind of environment should be in place. Sometimes even

what the YAMD artists are expected to do can be very restricted. A lot of times people are assuming that when our artists are going into a class, that it's a truly creative process but I've seen our artists have their hands tied behind their backs and have to be very much focused ...on what the schools want ... They only have 4 days to deliver, so what you see is some skills and knowledge being gained but not necessarily a creative process. So we've actually tried to identify that as an issue and work with our artists and make sure that that creative process is always in place.

Nancy Grasmick --Teachers are fearful—funding is wrapped up into whether children learn math and reading.

Marin Alsop – it is challenging in a school system to balance when the pressure is always on to measure what you've done. The thing about creativity is that you can't really measure it. It's not about arriving somewhere. It's about a process. How do you measure a process? I imagine it must be a very big responsibility and that's why people probably feel out of control if there's too much creativity because, "look we got to stop and measure what we did." Just looking at El Sistema in Venezuela ... bringing classical music to the poorest kids would change their lives...still complete chaos—it's a mess...They don't have the right equipment. But it has nothing to do with having the right tools; it's about the experience; being part of this thing. It's messy. We like things neat - very American. –We're done with today, check it off the list. There's something very American about that.

Cognitive Development

Britt Kirwan -- We are on the leading edge of a major revolution in education and it comes about because of a relatively new field called cognitive science. Because of MRIs and other instruments, you have scientists now who understand the brain in ways that never were even possible and they know what parts of the brain produce great creativity. They are designing exercises that will stimulate that part of the brain -rather than just throwing out information and hoping that some of it will stick over time, they are actually understanding how you get into the brain and make the connection to expand the knowledge and the ability to create. — I heard an unbelievable lecture by Nobel Prize winner, Carl Weiman ... He has devoted his life to how we can develop a new generation of students who understand science and how to create new knowledge. He's partnered with these cognitive scientists and so they are designing curriculum and experiences that they know will stimulate and grow certain parts of the brain. Phenomenal!

Babara Landau -- Efficacy studies show how creativity can help reading and math—if a teacher understood that they had greater freedom and still get to the end game—would that free them up to be more creative teachers?

Karen Carroll (*Dean, Art Education, MICA*)—What conditions and strategies do not nurture ici?... Is the education environment boat going one way-- let's talk about holistic development wherein you can nurture creativity—while the other boat is going the other way—let's assess everybody. Let's assess the kid. Let's assess the teachers, the principals. When are we going to get the picture?

Canada has gone for holistic education. I'm being invited to Singapore to talk about holistic education.

Holistic education connects very nicely with neuro-science; it says that you have to treat the whole child and consider the child as the whole human being. You have to consider their feelings as well as their intelligence, so it's very much an emotional intellectual proposition and a social proposition. Holistic education understands that learning is a social proposition done in context with learners and it really extends to all dimensions of child development. It is not focused narrowly on how one does on a math or a reading test. It serves multiple intelligences. It understands that all children are uneven in their development, that they will be good at some things and not so good at others. You help them to learn and become stronger, and you work a lot on their self-efficacy so that they are empowered to learn.

Bobbi MacDonald – It's a problem if teaching isn't based on child development and what we know about how kids learn.... The best way kindergartners learn is through play. That is what the classroom should look like and that's what they should spend their time doing with a master teacher who is doing literature and science all day long with them through play. But most of our kindergartens look like first grade pushed down. We believe in a great early childhood program. We know early childhood and child development; let's push that up. Why does a school become a place that's not fun or not joyful or not creative? When it is that people are engaged; they learn so much more. We're going to have to be strong—change the tests. Do what's right!

Sonja Santelises -- When I think about the blend of deep knowledge with creating something new, the arts bring that to mind better than any other instructional philosophy. When you try to tell teachers, yes, kids need to have multiplication tables to the point of automaticity but at the same time if all you understand is that $8 \times 8 = 64$ and you have no idea how that interfaces with the calculus that you're doing ten years ...later you don't have that relationship. ...At some point you have to do scales, practice dance,...there's a code within that science that is necessary to master. But if you only master it to the point of regimentation, to the point that all you can do is regurgitate and you can't innovate around it, then somehow you haven't reached the purpose. This balance is hard to reach in education—We want it to be a recipe.—You either do this or you do that. So yes, having a base of knowledge, we haven't scrapped that; but you can't just stay with the rudimentary skill practice because that doesn't create leaders - you're just educating kids to go through a system.

Creativity is the key element that's missing.

Brenda Jews – Children need to be able to blossom in their own time. Schools should be structured developmentally....Experts at any age, at different times -- chisel away at the way we think about talent and performing.

Sonja Santelises -- Personalized learning is important. Sometimes we develop later in one area than in another, so it's key to have the capacity to let kids develop in their own biological and cognitive ways so that a late bloomer isn't seen as somebody who isn't succeeding; who may have strong physical motor skills early on but isn't a great reader. But that doesn't mean they won't be a great reader. We need capacity for understanding critical period differences.

Susan Magsamen -- One way to create this, is to have more common language about developmental milestones, about cognitive development, about how we learn through our senses. The arts are such a strong vehicle because they're sensory. Even understanding the common sense approach to, *I smell it; I taste it; I hear it; I see it.* Your brain changes and that's learning - whether changing through positive experiences or stressful experiences or painful experiences. Common language is very important. We all come at this from different places, different belief systems and values and education. We make it sound pretty lofty. Really it's pretty basic. We learn through our senses. How do we maximize that? The arts are an obvious answer with cultural pieces and process pieces in addition.

Teacher Training

Victoria Brown – A big part is teacher training from the very beginning in our education programs at universities. Don't just have classes in science and math and language arts, but also have classes in teaching methodologies that reinforce creativity and innovation, not only in the student but for the teachers. The teacher has to learn to be creative and innovative.

Donna Wiseman – I am very interested in how we can really prepare teachers to work in this way. They are one of the crucial points in all of this... We have to have them be ready to walk into schools and be able to do this. We plan this same kind of conversation to happen inside our college on how to empower innovative thinking and really get our programs where they can be more innovative.

When we are preparing teachers, they are also learning so much from their mentor teachers. Not only do we have to talk about changing teacher preparation, ...we have to talk about what they are seeing when they go into the classroom - particularly in their very formative years of learning to teach. We know that's when they learn the most, when they are working with their mentor teachers and starting out in their teaching career.

Nancy Grasmick – Schools are organized in an environment that is very *siloesd*. I visited Exchange City, a program where children run a city. There is no structure—children assume all of the roles....huge creativity. Our teachers feel insecure, that they need this excessive structure to feel like they have control of the children and it's very siloesd. The very best teachers are the ones who can use the arts ... to teach math...to teach reading, ...social studies. So the biggest complaint I get is that you have a curriculum and it restricts us. No! The best teachers don't feel restricted. We have a set of goals. We're going to accomplish the goals but we don't tell you how to do that. So much has to do with the way we prepare teachers and what the vision is of teaching. The value that has persisted for so many years is that the classroom has to be quiet; you have to be in control, every child has to be in his or her seat. The most creative piece I see is with our young children, the pre-kindergarten and the kindergarten where there is activity and people seem to be able to recognize that that kind of artistic engagement, creativity, etc. is acceptable. But the minute they get into what is perceived as the formal

schooling, it has to be this rigidity. It's unfortunate because you have to break down all the barriers when these people get to universities or the workplace. But we should be doing that and I think the arts are clearly the vehicle for breaking down those silos. It's really a challenge, but the best teachers know how to do it.

It has to be inculcated in their level of preparation and the messages they get from their supervisors, their principals etc. We don't say this is a constraint; we say students have to reach the goal but it's up to you as a teacher to determine how they are going to reach that goal. But I don't think they've had exposure, to be honest with you, in their preparation programs to knowing how to do that with a level of comfort and expertise.

Mary Ann Mears -- We do have models supported already by many correlative studies but it's another thing for the teacher to have confidence. And it's a values issue....the teacher as a creative agent and having a sense of themselves as a creative agent is vital in order for the children to not have their creativity squelched. Children start off as creative. There is research that shows 98% of five year olds score high on divergent thinking; a few years later it's gone. Perhaps it is a combination of things in school and out of school as well as the messages they are getting about conforming.

Donna Wiseman - Talking about STEM to STEAM (including the arts in STEM), we are not really evaluating our future teachers on how they think about that integration and how they use the arts at all. Do schools (beyond AI schools) pair teachers across disciplines? That is a mechanism for really generalizing the point. This is the way to make it STEAM not STEM. Clearly we need the math and engineering and the science and we need the arts independently, but they're usually so siloed in schools.

Parents/Community

Marin Alsop – It is important to have a sense of validation even early on, however that happens - validation in the broader community. Include the parents in those celebrations.

Sonja Santalises—Particularly in schools with underserved populations, I do not assume trust of the institution. Part of it is fundamental (for parents) to believe what we say might be developmental milestones, or what we believe is the way that kids learn. We have to acknowledge that and I think this is what accountability is supposed to be. Accountability says *I am responsible for your child's learning and I own that*. It has been reduced to test scores. ... When I was still teaching, I realized that parents in that community, because of their particular experiences in society, in life, and in their neighborhood, were distrustful of institutions that promised that by doing something, their child was going to have success. ..When you have communities that are constantly rife with chaos and failure, the experience is very different. The need for a safe environment means that there does need to be some structure, because there are kids whose whole lives are in chaos.. So with this idea of creating a safe environment where it's safe to fail, what are the safety instructions in educating children whose lives are very vulnerable?...In one school, a number of parents said they don't want anyone else experimenting on their kids and that's what it felt like for them. What mattered was being able to say we own it; we're not just experimenting --- we are vitally invested in your children succeeding —the trust comes from being able to own it and being accountable.

Susan Magsamen—We need families and parents as partners—let's build this together—

Michael LaRoi -- Communication of vision, collaboration are some of the most important things...Wouldn't it be worthwhile to let a lot of the art teachers and superintendents who work with them come out in the community and listen—see and hear, “you made a difference.” To know they are valued.

Section B. Summary notes by group

February 8, 2011

Group #1

Lyn Frankel, Facilitator

Lisa Hamm, Recorder

Andres Alonso, CEO, Baltimore City Public School System (BCPSS)

Nancy Grasmick, Maryland State Superintendent of Schools

Nina Hoffman, Consultant

Barbara Landau, Chair, JHU Department of Cognitive Science

Michael LaRoi, Director, Advanced Concepts and Technologies Division, Northrop Grumman Corporation

Catherine Leggett, Lawyer

Mary Ann Mears, AEMS Trustee

Janice Webber, AEMS

Donna Wiseman, Dean, College of Education, University of Maryland College Park

Facilitated Discussion - Question One

What is the role of Imagination, Creativity and Innovation in your work domain?

- NG—arts leading the way in crafting the education for over 1 million school children in MD, so much potential if we can implement the kinds of directions this conversation will yield. MD has set the standard for the arts. Influenced what is happening across the state of MD. Creativity is influencing the direction of learning in MD.
- BL—we know that the arts work in schools but we don't know the science. She wants to help us understand how the science can work in the schools to help learning.
- ML—Creates discrimination, identity, branding, analog world give you more flexibility than the digital world.

Facilitated Discussion - Question Two

What conditions and strategies nurture Imagination, Creativity and Innovation in your workplace?

- ML—in his industry engineering, defense, etc, put together an innovation center, how would you recruit and put it together. Remove cubicles, lots of conference space, windows, if you can look outside it helps you imagine. Engage with people, set up senior management in the middle, younger designers on the outside by the windows. Multi-curriculum in Baltimore County, open up the room, lots of space. Move meetings and design forums to different areas of the space. A voice: brought in a cross section for diversity of age and level, no seniority. Paradigm shift, engineers are used to rules and hierarchy, tried to change this. Arts, music, shop class part of the older curriculum,

- younger engineers do not have this background, focus on grades and being the best. If you go in constrained you come out constrained. Engineering and science is tied to art. The Teton Innovation Center name of the center, creative space for execution. Communication, vision and collaboration some of the most important things. Let art teachers hear from the community that they made a difference. Fruits of their labor, they are valued. Those that can speak, collaboration, exchange ideas, often have arts, sports background.
- NH—NGS wanted to create a more collaborative atmosphere. Put out a survey asking employees what they wanted to see changed in the culture. 70-80% response rate. 4 items focus—future direction, what is membership, how do we communicate better, office space environment and what does the brand mean and how do you move it forward in the future. Created teams not in management, interviewed internal and external, presented to executive management team. By putting non-management they were able to be more creative. Spoke to other marketing departments. Not just one-way to learn, great thing to look outside and see what works for others and bring it back. Hired a Brand Manager, changed the space. Really galvanized the staff. Different ways to learn and express yourself. Continuum curtails learning. Act of listening creates change. Are teachers fearful to try and teach a different way? Are there studies that teachers can see based on how the arts work in the schools and the success?
 - DW—Works in a university where creativity should be everywhere. Arranged the same way for 30 years. Shaking people up creates creativity, change organizational structure. So many things in university setting do not foster change. Seems obvious but sometimes you need to step in to motivate people to make change. Sometimes a visionary leader can direct resources to foster this. Student teachers learn so much from mentor teachers; need to change what they are learning. Lots of pieces.
 - LF—Daniel Pink, what motivates people, you give them what they need and free range to do it. Accomplishments and feeling of accomplishing is what motivates them.
 - BL—NSF, provides money for specific interdisciplinary studies. Create a curriculum that fosters interdisciplinary studies, what are the pieces that a student or faculty member needs to succeed. People in science understand that you need multiple perspectives. Perspective from visual arts, math, music. Students so focused at JHU, problem to get them out of the box. Being able to think beyond the paper, small groups have students send in questions then discuss them as a group in class.
 - MAM—doing something similar at UMBC, collaboration. Hardiman just received a grant to study arts based education in schools. Teacher as a creative agent, it is vital for the children to not have it squelched. Children start out as creative free thinkers; they learn this in the classroom and out of the classroom.
 - NG—in so many ways we devalue our children, think that the only way they can learn in this siloed environment. City model, students run the entire city, children assume all of the roles. Never seen something executed so well. All engaged in activity, high level of respect, creativity and pride. Teachers feel insecure; need structure to control the children. Best teachers can use the arts to teach all the other subjects. Some teachers say they feel restricted by curriculum, best ones work with it and create a different atmosphere. Pre K- and K most creative because there is activity, artistic engagement acceptable. Once they are in a more formal setting they go to the rigidity of a formal classroom setting. Have to undo all of this thinking. Don't say this is a constraint, just that the students needs to reach a goal.

- CL—Workplace has now allowed music. New workers are pushing the workplace to be different, more creative. Music is inspiring. The workplace tends to be structured and rigid but it is changing because younger workers want transparency, openness. Schools have the opportunity because the workplace will be different and ready for these new workers.
- AA—political organization, permissible mistakes, systems are overwhelmed by the transactions of the work. Need leadership that can allow ambiguity and confidence. AA office was the same colors as when Alice Pinderhughes was there. No one would change it for 20 years. He wants a different space, more open with no walls so everyone is together to think and collaborate, to work together. Propel a difference in thinking. Organized by departments at headquarters, not like this at schools. Replicate how the schools experience the work. Look at others cities to see if they are organized differently. So much better than it used to be but so much work to do. Everybody reacts to change differently, concerned for their role. Most important is the change in mindset from the top down. The greater your expertise the more choices you see within your narrow field. Give people a lot of room but they use very little. They do what they believe in.

Facilitated Discussion - Question Three

What conditions and strategies best nurture Imagination, Creativity and Innovation in education?

- AA—The conversation often romanticizes the past. You don't smile until after Christmas, as a teacher you have to have control. How Teachers Talk, 1990's, Ira Cuban, tracks the history of the profession. Teaching profession has hardly changed in 100 years. Standardized testing is about reducing ambiguity, simplifying, and rigidity. Lack of confidence, lack of belief in capacity of children in those communities. Uncomfortable with the scapegoating of testing. Work has to be about how we create more productive kids. Wrestle with the root causes, how people define teaching and learning. Most people are far more influenced by the teacher than anything that happened in the school system. Real innovators are few in any profession.
- NG—Fascinated by the discussion. Taught to the deaf in Baltimore City. Was not allowed to use signing, so taught through the arts, dance, drawing, and pantomime. Some of the most creative children she has ever seen. Language can have a chilling effect. We have the ability to start early. MAM and DD have taken on her challenge to introduce the arts at as early an age as possible. Tap them when they are willing to be out of the box, open-ended, with creative expression. Partnership with the symphony once a month is not what it is about. Integration of the arts across every classroom every day. Conscious effort by every superintendent. Arts need to be part of the daily delivery program to children, so they cannot be cut out of budgets. Who are the master teachers, at a preparation level, exiting with a belief system and tools to execute. Not creating the right pipeline now. We have not communicated to teachers these needs. Great teachers and leaders do not worry about quietness of the classroom.
- MAM—Timing is so great for this. So much in education that is in the process of reform. Understand the value, looking at educator effectiveness. Arts field is the model. Testing issue is the latest manifestation of the argument. Cop out to say that you have to teach to the script because teachers can't do it.

- NH—Son's teacher decorated her room, comfy chairs, tree house, reading areas. Teacher was ostracized by other teachers and passed over for promotions. It is a mindset that needs to change.
- AA—Former Hamilton Middle School, new charter K-12 school, Physical environment, no sharp angles, worked on colors, pods for the older children, no lockers so they can work together. Nothing stops any school in MD from making these changes. 1950-60's cinder block architecture with windows that shut out the light. 1970-80's move towards open classroom environments. Now have walled off the open space schools. At the core about how he wants to change the system going forward. Constraints are huge, 6,500 teachers. Some more open but not most. Way of pushing us forward that is not superficial but is deep and can inform policy. Some is culture and implementation, not all policy. Policy changes: measurement of value added elements, pushes against what we are talking about, unless you redefine what value added elements are. Have not been defined, people treasure what is measured. Want people to begin to think in a different way. In public imagination there is a deep belief in the numbers. De-emphasis on many other things, only look at math and reading. Quickest way to have people pay attention to the arts is to have a test for the arts. Need a definition of good teacher.
- DW—National Board Certification does measure teachers differently.
- ML—Have we looked, studied students who have been taught and track them thorough college and career. Have they been successful? Where are they now, where did they go, what did they do? Track through high school reunions and Facebook, use social media.
- NG--\$250 million from Race to the Top, each student has an identifier and teachers, so you can track them through high school, college and workplace. Most important for the schools in this state as an economic tool.
- MAM—If you are going to tie teachers to student performance, need to also tie student performance to teacher training. Ask what helps new teachers. Ask them about imagination and creativity.
- DW—Follow up after 1 year and 5 years with new teachers. Everyone is worried about STEM, need to change it to STEAM, to add the arts. Don't think we evaluate new teachers on the arts.
- BL—Do schools match a math and music teacher to collaborate together? Only done in arts integration schools.
- MAM—Do this in arts integration schools, only occasionally is a teacher trained to do this outside of this setting.
- NH—Done naturally in computer areas of school. Creating on the computer.
- DW—Integrate technology piece into this conversation, use it as a tool and not let it use us.
- JW—AA public schools use technology. MICA integration program free to school systems. Some systems paying for this to offer their teachers this professional development. Engages the teacher and the learner. Growing in MD.
- AA—Do we need major national curriculum reform?

- Yes, on a deeply cultural level we are still fighting the wars that have been lost for a long time. Could put new people in classrooms tomorrow and we would have the same results.
- What do we need to do to change the system? Opportunity to change common core standards. Gravitational pull is going to be to adjust the margins and keep doing the same thing. We struggle with the ability of teachers to know content deeply.
- New national standards are a move in the right direction. Huge critical thinking, writing and communication. Whether they are broad enough to encompass the large ideas. What would it mean for a teacher in a classroom around preparation, takes a far better rounded teacher?
- Doesn't see how it can be done well without imagination.
- MAM—Is the core standards approach going to prepare students for the workplace?

JW—Uses imagination in teaching music to illicit feelings and musicality. Students are encouraged to use their own personal experience in this process. If JHU students are thinking in their science hat they often cannot access musical feeling, but if they use their imagination, they can create the musicality. Contemporary music utilizes different multi-media and creative, innovative and imaginative materials. Marin Alsop, reaching out to different groups, nurtured imagination when she conducted a BSO concert with film depicting space and a Black Hole along with narration recreating a mythological tale into a futuristic story. "Icarus at the Edge of Time" A scientist first explained and demonstrated through video what a Black Hole was; a narrator then explained the myth and read the recreated children's story based in futuristic space, while the orchestra performed a composition commissioned for this concert.

Group #2

Susan Magsamen – facilitator

Barbara Smith -- recorder

Marin Alsop -- Music Director, Baltimore Symphony Orchestra (BSO) – “it’s about the arts, but it’s not about the arts – I can do that, while I can do this”

Emily Blumenthal, Education Curator, Walters Art Museum – imagination plays a role in daily work and practice

John Ceschini -Director, AEMS

Michael Chalupa - Principal City Neighbors Charter Schools now serving about 720 kids; mentioned a progressive education summit

George Ciscle – MICA, interested in connecting the artist to community and outside of the art world; creating partnerships

Deb Emerson—AEMS Trustee – the arts are critical to our children

David Hess -- Sculptor

Brenda Jews AEMS Trustee

Sonja Brookins Santelises – Chief Academic Officer, BCPSS-- in an age where teachers are looking for ways of changing practice, the arts are a feasible way of doing this – the arts are a platform – how to maximize the arts in this day of shrinking funds and resources

8:00 a.m. Facilitated Discussion - Question One

What is the role of Imagination, Creativity and Innovation in your work domain?

Susan – Why have the arts always been so important to me? Am I creative? “My grandmother was a knitter, family learned to knit, we had to pick what to knit, what kind of yarn, think about time management, process of doing it, practical application, artistic practice, learned resiliency, breathed life into something, created something out of my head, became a problem solver. And could be traced back to something such as learning how to knit.” Let’s take it from there.

Marin Alsop – It’s so interesting, we get stuck in thinking creativity is only in the arts; her parents were unskilled in certain things but had the sense of “I can figure this out”; creativity is figuring it out; her creativity doesn’t really have anything to do with music, but music is her platform. Measuring and judging, putting creativity into boxes, are what we need to get away from. Everyone is creative; very challenging to always measure what you have done – can’t always measure a process – it’s a huge responsibility to measure. A program in Venezuela is bringing classical music to poor kids. It looks like a mess, it is a mess - a complete disaster, very chaotic, kids playing wrong sized instruments, but it works! - In America this wouldn’t happen because of not having the right tools, the right instruments – but, it’s messy, it’s creative, it works.

Emily Blumenthal – risk occurs in problem solving, using creative processes, whether related to science, math, or play; content and research is a part of the process – it’s not one thing or the other

John Ceschini

Michael Chalupa – The act of creating is creating ownership, not taking what has been done before, but looking at everything with fresh eyes and a blank slate, whether a student or a

practice – Create from the problem in front of us and create a solution. Now you own it, which is essential for a thriving organization. Susan - which is integrity and ownership.

George Ciscle – You need to acknowledge that part of the creative process is chaos and failure and you shouldn't jump past it. Students are used to coming to school, sitting in the classroom, working by themselves, but what's the connection to others in their own lives?

Deb Emerson

David Hess – What's the difference between answering questions and posing questions? Artists do both with their subject matter. He told a story about his son creating a sculpture – David thinking it was a rocket ship, but 10 year old son saying “Dad, it's abstract” – basis of creativity is not being afraid, and needs to happen in a nurturing and safe place that celebrates creativity. It's essential in work place – if you're afraid of losing your job, you're not going to be creative. You need to be safe.

Brenda Jews - Creativity leads to a sense of equality, a *can do* spirit. Creativity is always called to the table when you want to rally folks around and to be optimistic, whether for change, consistency, focus. What can you do to fire people's rockets, renew energy, thinking about what is possible without the pessimism, but optimism and equality.

Sonja Brookins Santelises – What does it take to incorporate change across mass numbers of kids? - A critical mass of creative folks, who can and need to imagine, seeing beyond what currently exists, seeing beyond bureaucratic ways and what already exists, the blend of deep knowledge and creating something new. The arts bring this forward more than any other teaching structure; if all you understand is $8 \times 8 = 64$, than you don't relate to other practices; Need to move beyond rudimentary knowledge; Susan – bureaucracy doesn't like chaos; we don't like the discomfort of going to a new place; we don't like the unknown; we marginalize the arts; they're too expensive, but need to turn the system and not to rationalize. Need to develop the knowledge in order to teach that way, but there is a frontend investment

8:20 a.m. Facilitated Discussion - Question Two

What conditions and strategies nurture Imagination, Creativity and Innovation in your workplace?

Susan – The system wants us to work outside of the box, but not too far; if we could create an environment, what would it look like? Set the stage for risk taking and problem solving. Some believe a quiet classroom is a successful classroom, but to use your voice and share your voice is important. Susan mentioned a Neil Gaimond film – you don't always know the next place, it ultimately comes into focus, you learn your new environment – it's an easier process when you have a traveling companion, role model. – Parents, mentors, others help you move through processes, not just teachers.

We do develop in certain areas at different times. We shouldn't be so fast to pigeonhole kids but recognize development at different times – create conditions which have more common language. We learn through our senses. The arts are sensory, and are a learning vehicle; a common sense approach of hearing, smelling, seeing. – The brain changes and that is learning – positive, painful, stress – so important because we all come at it differently.

Marin Alsop - It's so important to give yourself breathing room, the hardest thing is to self critique, which is part of a creative processes – how do you balance a collaborative model with

achievement measure; need someone at the top to manage a team approach so it doesn't develop into a holding pattern –someone to facilitate and not direct. Technology can't be eliminated but needs to be incorporated in a more acceptable way to play and engage; Transparency in communicating and ability to say "I'm scared" is essential.

Emily Blumenthal

John Ceschini

Michael Chalupa – Risk taking is a key thing – We don't have educators in our building/charter school that are afraid of failing, but this has to become a model and made okay. Failing needs to be okay, and learn from it. Default culture of schools, we have learned what education is supposed to be; what schools should look like. We need to acknowledge the box it is in and break free - need to clear it away, acknowledge it and create a new palate. For parents and kids, the idea of failure is very tough; Susan - Parents are a huge variable in all of this; a larger piece of being perfect.

George Ciscle – It's refreshing to hear an educator use the word reflect and not evaluate; Kids need everyone working together, exploring together, not just one person who might let you down.

Deb Emerson – I work in such a strange environment, close proximity to colleagues; I need to be creative in how to process and perform. Everyone reacts differently and the creative piece is learning how to deal with all.

Susan- Your working environment requires a highly creative process. It's a pressure cooker – a model for collaboration, communication, creativity, character, which needs to be combined and preformed. This process creates stress, pressure, anxiety. What's the default in this situation for high performance results – how can people feel free to take risk - professional development courses? In a sink or swim atmosphere, need a sense of ownership. Try to find ways to promote yourself and work together. What do others value and how do you add value? – What works, what doesn't, take risks, (worst traders don't take risks), willingness to fail is huge.

David Hess – quantitative apparatuses that we plug into; a person who has to reflect about the individual problems and situations isn't quantitative; creativity is squashed because of quantitative measures. Video games where kids are plugged into a score are not creative; kids playing in a toy box will creatively problem-solve; step back and experience learning without computers especially when you need to quantify. He finds huge differences between designing on the computer and drawing in a sketchbook or playing with materials in a studio; important for kids to realize that computers are not the only way. Schools have ways of making you go through every stage, every step, receiving a badge of honor proving you've been through each stage, before you can blossom. Opportunities come at any age. One's talent and learning can blossom at any time.

Brenda Jews – A team approach is so important in invigorating a team to continue to move forward. Schools are still 'in the classroom, in your row, do your work', as opposed to having a more fluid environment, instead of gravitating naturally to what draws you.

Sonja Brookins Santelises– Have to be very mindful, particularly in under privileged areas, that trust in the schools is not assumed. Acknowledge the trust issue, "I'm responsible for your child learning and I own that". Communities with chaos and failure especially need structure in

schools. Kids are already living in chaos, they need structure and safety. Parents don't want anyone experimenting with their kids, (example, open classrooms) before coming in with new fangled ways – need reassurance we're invested in their child's learning – Trust needs to build, families are partners; build together – parents, coaches, and others in lives continue to build – it takes a village.

8:45 a.m. Facilitated Discussion - Question Three

What conditions and strategies best nurture Imagination, Creativity and Innovation in education?

Susan – What are some real practical outcomes that could be applied in Maryland? How do we build that trust on a very practical level?

Marin Alsop – It's important to have a sense of validation however that manifests, at any age. Parents should be included in the celebration of kids so that they also have a sense of glory.

Emily Blumenthal – The Walters is working with the city to have a pre-K day on May 19th. A day for all PreK kids to visit cultural institutions as a field trip. Free admission to cultural institutions is very important. Access to these institutions regardless of economic climate and area. Susan – the Walters has been working to show that connection and make this a reality, noting the Walters has free admission.

John Ceschini

Michael Chalupa – I'm hearing a greater commitment and understanding but still feel it's somewhat peripheral to the core work. To institute these ideas, the message must very clearly come from North Avenue. Evaluations of principals, teachers and schools cannot focus only on test scores. There must be policy change from central office.

George Ciscle – Community arts and social justice are very important, such as the Arts in residence program. It's about exposure to artists and skills but we need to take it to next stage of application. Some kids have never seen a play, dance, etc.

Deb Emerson

David Hess – Internships open doors for school kids. His own personal experience is that offering kids internships tends to lead to paid internship. A model is needed in which we really do mentor kids at a very high level, learning and educational process, a window into a company so that kids can envision themselves as adults, making decisions and earning respect.

Brenda Jews – Can we get the business community to step forward and commit to hire that child, which offers incentive for basic survival? Also feels cultural institutions must reduce/eliminate costs, in order to offer these tools that are so wonderful for children in the city and allow all to experience the arts, etc.

Sonja Brookins Santelises – The answer can't be “we can't measure it;” the answer is around **qualitative** measure, not **quantitative.**” We need to communicate the learning, figure out the assessment tools – test based, fill in bubble, task based, creative construction, problem solving

to demonstrate what they can do now that they couldn't before. How do we pair that with big engagement, the core of the work. We need to get to the core, a dynamic measurement tool.

There are models out there but what will work for the common core? We'll always have state tests, but what are the other measures for assessments. How multifaceted is it. Standardized testing has some role but how much of a role. What is the weight of the standardized tests.

It is extremely important to pitch the changes to parents and community in a way that builds trust and avoids pushback. Gaining financial support is very important. When the time comes, the message needs to be conveyed in real time.

9:15 a.m. Wrap – up

Susan ended the session by mentioning that this conversation will continue online. An opportunity to continue the conversation online will be offered through a link to the Johns Hopkins Brain Science Institute website. Everyone was encouraged to continue the conversation and email Susan afterthoughts.

Group #3

Kathy O'Dell, facilitating.

Robin Payes, recorder

Karen Carroll, Dean, Art Education, MICA

Dick Deasy, Consultant

Mark Fetting, CEO, Legg Mason

Stuart Frankel, Consultant, FTI

Britt Kirwan, Chancellor, University System of Maryland

Bobbi MacDonald, Founder, City Neighbors Foundation

Lisa Shepley, Education Director, BSO

Jay Tucker, Coordinator of Fine Arts, Maryland State Department of Education

What is the role of imagination, creativity and innovation in our workplace?

- Bobbi: charter schools bring innovation to the system. Designing schools and school environments to support mission and vision of school. Build relationships between students and teachers, where are conversations happening, how to facilitate schedules and curriculum. *We made the work of the school to always be creating the school.* Teachers meet collaboratively to ask *what are we doing and why.* It's all about the path – not the summit. How do we make it so teachers can have that deep conversation? They are empowered to make changes. Incoming 9th graders created and designed the cafeteria – no fights in cafeteria as a result. 90 kids from 23 schools across the city. "Inspire to create." Leave room for the unknown.
- Britt Kirwan: universities are a "repository of knowledge". UMB, UMCP and UMBC also have a research mission – students will be pushing out the current boundaries of knowledge. Reflected in grad programs where students must solve a problem. Exciting thing at universities is pushing down notion of creativity into undergraduate population. Research opportunities for undergrads. It's being driven into the curricula – engineering programs have changed degree program to give students a major problem to solve. Situation that needs a new solution for students to solve or they can't get their degree. For a degree in architecture, a problem is posed and you need to come up with a solution. Innovation is part and parcel of today's universities. Needs improvement throughout curriculum and aligning with K-12 so students, when they come to us, they've come through an experience that will unleash their creative potential. Made progress...more work to do.
- Mark: what are prospects for U.S. going forward when our education statistics are not good relative to the world. I come back to creativity piece. We have families who are positioning their students to study with merit scholarships in Singapore (ages 12-14) – the challenges they have to overcome! Creativity distinguishes us. In his business – there's a thrust that the markets are being taken over by quantitative investment techniques. Passive investing – mathematically based. There's no creativity in discovering undervalued companies. Can these active managers survive going forward or is it being taken over by machines. Warren Buffet is icon of active investing.
- Britt: In higher education – debate on active vs. passive learning. Used to be just passive learning. Moving towards active learning model – students do much better in active learning. Particularly this generation with multitasking and information flows that they've grown up with.

- Mark: discussion with Dr. Alonzo recently: if you believe arts and creativity important, why aren't more of principals in his system actually putting more into the arts. Concern is with the test scores. Short term vs. long term decisions. Testing is an impediment to bringing creativity into the classroom.
- Bobbi: have to have courage these days to take the stance that we'll teach the way we feel is best and let the test scores take care of themselves. We do tons of assessment. Can't teach in this way without knowing where the kids are. One snapshot doesn't tell you everything about how they're learning. No lowering of rigor – going deep, instead of trying to cover a lot in a shallow way. "Rigor is being in the presence of an adult who's passionate about learning and wants to share it with you."

What conditions and strategies nurture imagination, creativity and innovation in your workplace?

- Stuart: on business side, we have 3500 people who we work hard to keep as individuals, consultants and directors. How to not keep them in a box and allow them to work creatively? We are constantly struggling to reward them for that creativity. "FTI is an eat your kill company". Mentoring people constantly. Taking 1300 people to a conference in Beijing soon about how they work with competitors and clients throughout the world. Their definition of creativity is different than ours. Free-thinking, not corporate culture. Not practicing rigid grading but we want to see results. Bottom line is always what shows results. Grew from 20 employees to 3500 employees. Blend of different cultures – Nobel laureates and forensic accountants. To break someone free of thinking of their field to think as a team and as individuals within a team is a challenge.
- Bobbi: in mission statement – students will leave deeply enlivened. You can't measure that. Is that a problem? We need to have some statements that are immeasurable – deeply enlivened conversations and creativity.
- Mark: personally, I try to challenge our folks not to hire on the pedigree, but to find out if this individual has had challenges, dealt with failures as an essential requirement for someone who is bound to succeed. Joe Paterno is looking for someone who is driven – comes from inside. Drive for excellence is an internal process, not just looking for success, which is more of an external motivation.
- Brittt: corporations say they aren't adequately prepared for jobs of today. That's of great concern. Advisory groups from corporate world to revise the curriculum, including the changes in the engineering program. Are we developing people with the skills to keep pace with this economy? Part of it is to use their knowledge in creative ways in whatever occupation they choose. We have got to do a better job to synthesize what they know and adapt it.
- Mark: Conditions and strategies: when we visit companies we know within 5 minutes, which is a good company to invest in. They're creative. Office layouts, campus settings. Kind of folks they attract – attire. Some companies more driven to create than others. Hospitals, teaching institutions. On the other hand, there's a lot of rigor. Google – very prestigious job. But a lot of rigor and competitive rivalry. They do it in a setting that's oriented to innovation and creativity.
- Stuart: creativity – what warms my heart the most is the "accidental tourist". Maybe a philosophy major. But with the creativity and curiosity to propel themselves through a company. In Baltimore – Renaissance people – are not necessarily the most likely to fit a profile. Get them to be creatively educated first, learn a skill and then put them to work.
- Mark: leadership. Marin Alsop's leadership of BSO.

- Lisa: I've worked for three music directors but Marin has been the most invested in embracing all facets of the community. Everyone in Baltimore and Maryland can claim ownership of the orchestra. A project is called "Life a journey through time" – collaborated with National Geographic photographer and projected pictures with the symphony. "Icarus at the Edge of Time" – astronaut came in to talk about black holes. Combine the music with something else to give people a touch point with the orchestra. Very customer service orientation – listening, feeling, communicating with your eyes. How do these things translate in business place. Next year, we are going to follow Marin's tour around the world for students to follow in geography in real time project.
- Kathy: is one condition of creativity the quality of the leadership?
- Lisa: I believe absolutely yes. Marin says, "Let's have a theme that bleeds throughout the season." Coming up, the theme is nature. So students and families can revolve around that. The High Seas – anything that relates to the ocean that can give children a chance to relate that to their own experience.
- Karen: Marin felt Baltimore was a place where she could do such things. A leader with a vision, but also found the right place to be creative and could go out of the box and innovate. Needs supportive partners among donors and audience members.
- Britt: leadership is crucial. It's also the brand and style of leadership that can unleash creativity. Steve Jobs has created a work ethic that unleashes that creative force. Some leadership styles may suppress creativity.
- Lisa: in my 13 years in the orchestra, this is the first music director who has sat down and asked how things are going.
- Karen: how does that impact you
- Lisa: I have to be prepared. It raises the bar. She knows how to pose a challenge in a way that inspires.
- Mark: there's an element of teacher in what she's doing. At the end of the day, creation is a largely "within" kind of thing but it can be nurtured. Always combined with some supportive teacher. Louis Armstrong dropped out of school when he was 11 years old. He was in a school for orphans for 18 months. Good news is it had this music program – and a teacher who noticed his talent and got him a cornet.
- Lisa: Orchids Program: Designed to be a program for social change – after school program between 4 & 6 p.m. If they learn music, fine. But it's designed to give them a safe place to be.
- Karen: need an "accidental teacher" as well.
- Bobbi: teachers allow their students to do their best work. Vision in Baltimore City is students are not expected to be capable. That's the challenge. Allowing kids to rise up to expectation by inspiring vision. Physical environment matters. What is your capacity? In our high school, we wanted to change the paradigm. Our high school has a nice feeling. You can have good conversations here. Then, high standards are also part of ethic of excellence that can be established. Creative problem solving.
- Mark: transformation at UMCP. How important was creativity and innovation in that transformation?
- Britt: very important. Raising standards and increasing rigor. Developing programs because they allowed creativity attracted better students. Gemstone Program – students apply to get in. If you are admitted, you're in with a dozen students. In first part of fall semester you have to come up with some problem you will solve over those 4 years. Seniors present their project after they've stayed together for their tenure. Ex: the highway moves but not the car. Not rote expectation of one course after the other. Requires a special quality of student and teacher.

- I think we are on the leading edge of a major trend in education through cognitive science. Because of fMRI – science understands how creativity shows up in the brain. Designing exercises that will stimulate that part of the brain. Heard an unbelievable lecture by Carl Wieman, Nobel laureate. He has devoted life to how we can develop a new generation of students who understand new science. Designing curricula to stimulate and grow parts of the brain. He is at British Columbia to get it funded. Now back in US. Will be lecturing in March at UMCP.
- Bobbi: we are not being able to teach the way kids need. The best way kindergartners learn is through play. School should be fun, playful and creative.
- Karen: drive for accountability is dampening creativity. Holistic education – connects with neuroscience. Consider the child as a whole human being. Emotional-social-intellectual proposition. Tends to all dimensions of child development. Multiple intelligences. Empowering children to learn.
- Dick: Inspirational conversations – then you come to this moment. The way schools are currently running. So what needs to be moved? What are potential points of influence that can reverse the trends and capture the attention of children and teaching? University of Texas: head of brain sciences should be tapped.
- Are there some lines that can merge with intervention that are practical and effective and can galvanize change? Is there a possibility that there are some lines to pursue to succeed in re-forming schools?
- Mark: Alonzo does have a belief that every child deserves a strong education. Why is a sense of better achievement incompatible with creativity? Accountability between students, parents and system.
- Britt: issue is, does the end become the test scores or is it a means to measure. The test scores have driven too much of the way we teach kids. They don't apply the knowledge. That's where the system has broken down.
- Lisa: In orchestra world, we could create the best symphony and if no one comes it doesn't matter. So are we criticizing a system – international campaign to educate families? Make it the pride of the community that the educational system is functioning so well. Make sure children have appropriate places to learn. Parents provide support system.
- Kathy: that is a strategy that needs to be pursued.
- Jay: what are lines of intervention? They're happening but they don't always take hold. We've been trying to encourage teachers to teach in new ways. Then the economy goes south and the funding goes away. Started program teaching school teams to integrate arts across the curriculum. Creates a new environment for the children. Can create a very successful school. Leadership is committed. That enthusiasm is transmitted to the teachers and creates leadership among them. That magic can be passed to the kids in innovative ways. But we are down 150% in funding for programs like that. I think there is some movement. Much has occurred because there is good leadership at top. Teachers are taking ownership of it. Making a difference in the schools and these schools are successful. But the state doesn't listen because the stakes are really high because there is a measure for annual progress. Dollars go to funding wherever the test scores are problematic.
- JHU Brain Science Institute will sponsor an online conversation to continue the creativity discussion.
- Kathy: **Summary** – we've been talking about conditions and strategies to foster creativity, imagination and innovation in learning. Some strategies could include: 1) arts integration in a research-focused way in stimulating creativity involving parents and teachers 2) cognitive science 3) shared critique 4) environment 5) focus on individuals 6) maintaining high standards and ethics of excellence 7) accidental tourists and teachers 8) permission to fail

and learn 9) being able to listen and commitment within the leadership and 10) making sure kids are deeply enlivened.

February 21, 2011

Group #1

Lyn Frankel, facilitator
Lisa Hamm, recorder
Diane Bragdon, Principal, Wiley Bates Middle School
Victoria Brown, Director, Lucy School
Bill Buckner, Casey Foundation
Richard Chisolm, Cinematographer
Bill Ferguson, State Senator
Buck Jabaily, Director, Greater Baltimore Cultural Alliance
Mary Ann Mears, AEMS Trustee
David Troy, Software Entrepreneur

Facilitated Discussion - Question One

What is the role of Imagination, Creativity and Innovation in your work domain?

- BB—At Casey he thinks of imagination as starting to determine what is possible, new worlds, the beginning of a spark of an imagination.
- DB—The success of middle school depends on getting students engaged, it is central to success when they can use their imagination. Involved in their education instructions, it is when they unleash their imagination they learn.
- VB—Early childhood is a very critical time to engage children in imagination and to always ask them what if? All work - What is another way to answer the problem? Always another way to solve a problem or create something. It is possible to have key players in the beginning and throughout the process, need to set it up that way. Teachers meet every week so they have that process and can tweak it. Freedom to do this.
- DT—Software development and create problems, just imagine. What is missing to get to XYZ, need to discover what has those properties? Constant pushing to grasp what has not been discovered yet, how things works, what if it didn't work that way or if it worked a different way. Constant push to question status quo and what has not been identified yet. Creativity is the precursor to innovation. Apple very successful in pushing things forward with simplicity, often leading to the most creative things. People who fund large projects often don't want to make changes. It is about the funding and capital. Similar to public schools where they follow the same curriculum.
- MAM—Apple thinks about pushing things forward, right brain vs. left brain. Software does all the complex stuff - rest of it is very simple.
- RC—In filmmaking, a lot of times we are working with ideas that were already conceived and created beforehand. The problem is that imagination is only being applied at the front end of projects. Scripts and planning, just like curriculum or conference agendas, have already been done by someone else. Artists, kids, teachers—all end users are often not involved in creative processes. How do you create openness and creativity and make projects malleable for end users but not chaotic? More people need to be able to be creative in the process than just the conceiver. The perception of a filmmaker as an artist is not usually valid. Working on a movie, people often have little or no creative input, as if on a construction site, like a bricklayer trying

to talk to an architect about an idea. Creative processes are all too commonly conceived by a few people beforehand. I've seen many music classrooms in schools, where the same limitations are in effect. They are like bricklayers or camera operators. How can we make an environment that is progressive and creative for the future, open to all who are going to be creative, one where students can steer the process and be outside of the curriculum box? Then there's the money problem. In film there is an inverse relationship between what is funded and what is creative. Stupid movies get \$10-15 million investment. Independent filmmakers and artists try to get funding for creative, innovative and meaningful work and can't get it. All the people who should be giving them money are not. The most important ideas are neither being funded nor encouraged, by both government and private resources.

- DT—Creativity has to go back to the root or you are just brought in at the last minute as a craft person. Multiple outcomes.
- LF—Problem based learning, like in China. Interesting way to do.
- BJ—Got into theater because it is the way he could solve the most problems. Director solves the most problems. Most times hired to complete the vision of someone else. You have to sacrifice your income to be more creative. Entrepreneurs are good at being out of the comfort zone. That is why they succeed. Best gross is in the middle circle.
- BB—Industrial development process goes back to 19th century. There are people now who start with the end user and then they adjust the design along the way. Conference development, open space conferences. Select the primary theme of conference that you want and invite folks based on that theme, develop ideas and concepts at the conference. Person who wants to lead discussion. How do you come up with a design that allows for more flexibility? On the education front how do we take care of this new push to move things forward. Can imagine a different process. How do we develop it? Creativity is applying what is known across other industries. Within education it feels like the idea of looking out is not the norm as it should be. In his work, bring his experiences from other sectors that can be applied, unique perspective. This type of conversation is important; education isn't way different from other things. How can you achieve creative end results? Everything won't work but how do you make the adjustments, stick with it long enough to see if it is a success or a failure. People quit, don't stick long enough.
- DT—Kick starter, waterfall, agile, - engage end user and developer about needs, creative process between the 2. and it evolves and changes over time. No work gets done that is not serving the fundamental need of the end user. No mechanism of that to use in government or education. Maybe Teach for America is an example. There are some teachers who do this. Problem based approach. Info graphics about different topics as a way for them to explore quantitative and qualitative approaches.
- BF—Treat teachers in public education like widgets, can go anywhere. People centered industry, don't allow for any creativity. Have to follow the curriculum principals are held responsible for - being at a certain point at a certain time. Track using dollars correctly. Teacher is a warm body handing over information. Charter school different setting. Some charters do fail.
- MAM—Had Innovation Schools in Baltimore before charter schools. 30 out of 40 charters in Maryland are in Baltimore City. Freedom within the curriculum, they don't intend it to be so rigid. Trying to think differently. How do we bring this to the attention of the education field?

- DT—A lot written on agile software development, could use this as a model, allow for freedom to fail, can't learn anything unless you fail. It is really OK.
- BJ—too results based. Creativity is the availability to make a mistake. When it gets to performance, sometimes it takes away the creativity piece and adds stress.
- DT—Waterfall can create a big disaster with software or movies.

Facilitated Discussion - Question Two

What conditions and strategies nurture Imagination, Creativity and Innovation in your workplace?

- BF—It is not cultivated in legislature, not welcomed, very powerful hierarchy.
- DT—There are some religious aspects to public education, similar to church structure. Top down leadership structure. Need to breakdown the top down the structure to cultivate creativity. Generational, the Baby Boomers more top down structure. Gen X'ers, let's just get it done, want to see it happen. Gen Y more collaborative. This all informs what happens. Inherent power structures. Teachers - it is very difficult to get anything done.
- LF—Dr. Alonsos's # 1 thing is to change the mind set.
- BJ—Similarity between education and cultural non-profit. Non-profit regional theater movement, 50 years old, built hierarchy structure. Now have to reinvent the structure with the economic down turn. Hard for people to accept the new normal. Audience can see a model that is not working or is not interesting that their leaders do not believe in.
- MAM—Fear factor, No Child Left Behind and Race to the Top. How do you counter that?
- BB—Small groups of people in a work place just going out and doing it, being rogue. If it works, people buy into it. People must be given a little bit of leeway to try it and take a risk. Generational piece, push for the ability to allow questions, folks who have experience know a lot of things but they lose site of the simple questions. That conversation can become the spark of a new idea. I am willing to question what I have been doing. Busting up the all-knowing hierarchy, never going to be a place where creativity and innovation thrive.
- VB—It is possible. There is wiggle worm. Look at curriculum 3 times a year to make sure they are on target. Still testing 2-3 grade levels above the norm. Teachers have the freedom to teach to meet the objectives. Project based very similar to problem based. She trains teachers around the country. Some close their door and teach that way. Some principals are more open than others. Nancy Grasmick likes arts integration - more open learning, freedom for teachers. Cecil County superintendent has a music background, allows arts integration.
- MAM—disconnect; our top leaders know this is the way to go. How do we achieve this?
- DB—AI about the superintendent, they have to choose a major in the arts, raise student achievement. Can't do it in the same rigid curriculum, helps raise achievement. It is not going to hurt them to allow creativity.
- BJ—Google, 3M, 80/20 rule allows people to be creative, benefits all.
- DT—Must have a creative bureaucracy, to have great cities. Just because it is rule based doesn't mean that you can't bend the rules sufficiently to allow things to happen. Should be about freedom to take risks in a company. Good management style.
- RC—The boomer generation has to be the source of leadership, because it has control of money and leadership. And I think we can advance educational systems greatly if we take away emphasis on quantitative testing and measurement. It's the wrong thing to emphasize. Quantification might be good for math and science—bad for the arts and cultural enrichment.

- MAM—Measuring is constant as an artist, more qualitative. Technology can make a quantum leap. Digital age is really about sound, images, all that you can capture. Portfolios reflect process so that instead of showing results in tests, show student portfolios as results. In the real world people do evaluate and measure for funding etc.
- DT—Some notion of qualitative measurement is important. Risk in education system, top down, degree, top down, rise to power, model is starting to break down. You don't need this structure anymore to educate children. Rise of home schoolers, why do I need to participate in this structure. Forming new system and ways to learn outside of this. There has to be a renewed focus on relevance and focus on needs of younger people. Non-profit now easy to form and run without all the structure. If you fail to engage the younger generation they will look elsewhere.
- RC—Years ago my 12 year old son declared classroom education a waste of time. He said: "If I stayed home tomorrow with my computer I could learn so much more about the subjects than I could learn in 5 weeks at school!" How do we take his realization as a child and see how to move forward and respond to it?
- DT—We need to make sure that education is not just simply downloading information from Internet.

Facilitated Discussion - Question Three

What conditions and strategies best nurture Imagination, Creativity and Innovation in education?

- BF—UMBC has a new program, Chemistry, all project collaborative-based programs. Instead of waiting until the end of school career you start in freshman year. STEM related professionals, inclusive environment, so use common sense, don't weed them out, help them succeed.
- MAM—Some of the students so resistant, so narrowly focused. Very difficult at first to be collaborative and share, have to push them out of the box.
- BB—Engineering background. Collaborative work is good, multi-age, across grade levels, helps make creative, better environments, mimics real world. In his 6th grade had a project based learning experience. Had to be prepared to share what you were learning with other grades and adjust ideas across other ages.
- DT—K-8, hard problem when we segregate the ages, can be examples to others. Need to Understand. Keeps kids longer.
- MAM—In Baltimore City, getting rid of some of the middle schools.
- BF—Idea was to lessen # of transitions.
- VB—A lot of research PreK-3rd grade will actually give those children the thinking and learning skills to succeed in any school. Importance of early learning. It is about size - to keep classroom sizes and campus sizes down to foster learning.
- DT—Anything you are going to learn about fundamentals you will do this in PreK-3rd.

- DB—Can't continue to keep school they way we have done it for 30 years. Nuts and bolts of the structure of education. Take a look at teachers and curriculum emphasis of 20th century learning. Time for exploration, how are we going to encourage creativity and innovation in 50 minutes with the curriculum we have. Need to re-build them. The arts are a way to build them.
- MAM—Arts curriculum for the state, open-ended so teachers have a lot of freedom. Some still looking for the script/cookbook.
- RC—Here's another policy idea: what if government had a mentor program for older teachers that shakes them up to get them out of the box? Take a sabbatical and train to be a different kind of teacher. Mentorship is one of the most proven ways for people to rise above poverty and their challenging situations. You could assign a small group of students to each mentor, encouraging real world talks about math, science and literature, etc. And if the arts were redefined to be as important as the core subjects, then you might have a truly creative and educational interaction.
- DT—If we are going to find a way for kids to take on independent work projects, we need a channel to evaluate and manage this. Each had 3-5 really great teachers. Great things happened by accident. We optimize for the process, need to optimize for great experiences. Evaluate experiences at the end, not 3-5 great teachers.
- VB—Teacher training from the very beginning needs to allow teachers to not just have subject classes but teacher methods, how to be creative and innovative. Give teachers freedom to have flexibility and project based learning. Start and stop projects based on interests within the learning process and assessing that you are achieving the goals. The potential for it to be school wide or cross grade. This requires time for teachers to plan together throughout the week. This happens at her school every Friday for 2 hours. Principal needs to foster this, flexibility with the school system. Teachers working with other classes to work on projects. Immigration project-K-2 with many families from other countries. Become a person from another country. Include all aspects of them leaving their home, -why, experiences. 12 week project, 3x week for 1 hour. Wrote journals about experience. Critical thinking and developing a much broader idea of a project.
- BF—Dr. Alonso's struggles with getting out the message of collaboration. Takes a lot of time to plan this. In city, teacher contract does not allow for this type of planning because of time constraints.
- BB—Problem solving, Problem Solving 101. How would I introduce private sector problem solving to kids? Introduced to kids in Japan, corporate clients also bought the concept. If we can get the cycle of problem solving learning into the school system, students will begin to ask questions and challenge in a way that they do not now. Fosters creativity and innovations, What If? Imagine a great 7 year old being told they have to do it one way. How do we get this problem solving into the curriculum early?

- VB—The arts are problem solving, visual arts, drama, music, it is all there. We are not teaching divergent thinking, there is more than one way to solve the problem. Science should be discovery that they think about. Is the curiosity there, doesn't matter that they know but that they want to know. Information only is remembered if they are curious.
- RC—Another challenge: How do we look at the future and leave room for changes that we cannot even conceive at present? If we make a curriculum now that is just as rigid as the old ones, we haven't done much. We should now know that whatever we develop needs to be unlocked, evolving and able to change over time.
- BJ—Graduating seniors are best resource, what worked the best for them, what could have made things different. They are seeing what is out there.
- DT—Entrepreneurial mind, employee a different type of logic, effectual logic. As you execute on your endeavor you take into account what is happening around you and change your plan based on that, respond to it. In current system you can't change based on what is happening now. Need to be open to new stuff coming along and take into account in real time; you do yourself a disservice by not reinventing. Sarah Saravaty—How Entrepreneurs Think? Inc magazine article.

Group #2

Kathy O'Dell, facilitator

Beth Wood-Roig, recorder

John Ceschini, Director, AEMS

Dick Disharoon, AEMS Trustee

Bob Embry, President, Abell Foundation

Stacie Sanders, Director, Young Audiences Arts for Learning Maryland

John Turtle, English Department, Goucher College

Question 1 –

- DD – background in music education, greatest mission is to not only develop intellectual potential but creative potential for children; science and math need to do this as well; need to be able to solve problems creatively, needs to be a balance; when we talk about arts integration, often we hear people say we infuse the arts into core subjects; arts should be core subjects, not just infused.
- KO – Imagination and creativity as a connective process
- Dd – yes, as a connective process. When he started teaching 50 years ago, teachers had freedom and flexibility to develop innovative and creative ways to teach a lesson; teachers need to be able to figure out creative and innovative ways to teach lessons; too many restrictions on teachers today, on time and flexibility; creativity portion lost for teachers – school becomes boring for kids and teachers. Example – elementary music curriculum so prescribed.
- SS – schools have looked to professional artists to come in as a break rather than arts as part of every day in the schools. Even what artists are expected to do in schools is fairly restricted. Artists are even restricting themselves. Not necessarily a creative process. Needs to be identified as an issue so that the creative process is always in place.
- JT – nationally there is a movement to measure outcome – intimately connected to funding. Creativity is lost within the rigidity; arts adjuncts and arts in school need to be able to translate learning arts into rubrics that can be measured. Longer period of learning if needed. Artists need to be able to speak in quantitative language.
- DD – for 30 yrs. Assessing has been an issue
- Ss – develop training program – design, deliver, and assess arts experiences that build 21st century skills. Also overlay framework – how do you know students are accessing their ability to be creative.
- JT – responsibility of politicians and educators outside the arts to learn how to assess arts. Testing as a measurement is completely different than feeling and sensing that are so important to the arts. How we get along is deepest, most important problem – transforming conflict – arts thematizes conflict, emotionalizes it. Biggest problem – students don't know how to negotiate conflict. Conflict transformation – connecting it to how we teach the arts – number one issue. Problem solving taught through arts – example: within story craft, always begins with a conflict.
- KO – build that out to macro – everyone needs to bring conflict to table, to share goals and methods.

- DD – educators have no one to blame but selves – we are experts but we let others tell us how to teach/learn. Agree – young people not knowing how to negotiate.
- JC – Imagination and Creativity are part of the language of business. The more we can connect what we're doing to this language, the better results. Massachusetts developed measurements of success, schools' ability to deliver opportunity for success. If you measure that, helps parents to make choices as well.
- DD – we have to be the ones to help corporate people see how this is done – not have them tell us.
- SS – within the domain of bringing artists into schools, there were lots of things we had to do to be relevant, we had to innovate. What kind of environment am I putting in place to encourage our staff to imagine and create? Same thing needed in work environment. Is staff allowed to ask why/what if? Are they allowed to fail? Am I allowing risk taking? Teachers are afraid to fail.
- JT – Arts are about human fallibility. About exposing human fallibility. Art that transforms is where the heroine experiences some failure. Doesn't translate into society's notion of profit.
- KO – Risk taking so integral to arts. Also can apply it to scientific process. Need to talk across that disciplinary line. Science and arts are closest across academic bounds.
- JT – Experiential learning. Not possible to limit it in time and specific structures. True experiential learning – how did it feel to practice? What effects did it have on the ways that you are approaching your art? These are real issues that artists approach each day.
- BE – works for a charitable foundation that gives away money. Responds to requests for money, investing money, public policy role in state/city/etc. school boards. Each area trying to encourage something new to happen (innovation). Arts don't play a role in that – no hostility, but just no role. In his 20 years of education, arts very peripheral, not main focus. Skepticism most helpful in challenging assumptions, etc. – offers different perspective.
- JC – Arts are not just set of skills.
- BE – Difference is focus on data. You are trying to force art into a mold that it doesn't fit. Art is not quantifiable.
- JC – Set of skills is easier to assess. There's a relationship between art skills and critical thinking.
- DD – These are skills that transcend disciplines.
- JT – We need greater proficiency in analyzing arts products.
- DD – to translate skills
- JC – you can't quantify everything; there is not necessarily transference to life skills from skills being tested.
- BE – You can't think about something unless you have factual basis. How much do you need to know before you can think creatively? One school of thought - If you are testing knowledge, not necessary because you can look anything up. Still, familiarity with subject is important for success.
- JC – If you don't experience something, you are not going to be drawn to subject.

- DD – Acquisition of knowledge and experiencing something needs to happen at same time. If you wait until college to ask students for creative solutions without this background, it will be difficult for students to be successful. Along the way, students need creative opportunities to develop these skills.
- JT – What is urgent about the arts? Within the arts, conflict and how we try to get along is exposed. How can we keep the heat of that urgency alive?

Question 2 & 3 together

- KO – which conditions and strategies can be transferred into education?
- SS – It's okay for administrators, teachers and students to challenge assumptions.
- JT – Interject the arts in a great fashion into this conversation. Should be the lens through which we view imagination & creativity. Poor kids need more time in classroom for imagination, innovation and creativity.
- DD – II C do require time. Too many structures, restrictions, etc. – no time for imagination, innovation & creativity in classroom. Condition – relax restrictions in classroom to allow more time for Innovation, Imagination & Creativity.
- SS – Need to stop looking at content through silos. When people can see relationships with things that don't necessarily connect. More integrated approach.
- JT – Example of integration – stories always a part of integration. What goes across all these disciplines?
- BE – Class and race tension. People critical of accountability in schools. Comes from middle class assumption that kids know how to read. Look at arts as over and above what's necessary. Kids in Baltimore City – half aren't graduating, underperforming. Assumption that we are catching up children not performing. Heavily programmed curriculum. Another tension – challenging assumptions. If critiquing the art, need to know background of art. Tension between questioning assumptions and order. Religion as example. Tension between questioning and acceptance. In course at Hopkins on debating, public school teachers were almost totally incapable to challenging assertion.
- JT – teaches visual verbal rhetoric class - rhetoric a part of classroom learning. There are hierarchies in how we are informed. Assumption about certain data – not questioned. Artists do this – try to challenge assumptions.
- DD – raising the recognition of arts – integration is precisely the way to do that. Integrating the arts across the curriculum. As teacher, biggest shock coming from elementary classroom to Jr. HS then to HS – everything (learning) more segregated in upper levels. Undergrad education for teachers not taught to develop ability to think critically to challenge assumptions.
- SS – Preparation of visual arts teachers, very little time to practice as an artist. If teachers don't have that ability they can't create that learning environment for students.
- DD – Music education – choral education same issue. Happened because so many other requirements put in place to complete degrees.

- JT – In Baltimore City, not honest about taking responsibility for the way the outside life of kids is affecting class experience. Conditions and strategies – home where kids are attended to, cared about, necessary for learning and success in school. Switching between worlds for kids is hard. We are not having this kind of conversation about race in education.
- KO – Strategy for public education that would never leave the home life behind. Substrategy – working into the curriculum training in “coat switching.”
- JT – Peers are also really big influence. Important to help kids find ways to step away from peer influence. Mothers who care so much, but the peers are huge pressure.
- BE – Citing Coleman study, main difference in what makes a difference in outcomes, home life, peer group, and then teachers. Citing study about poor children who were assigned to schools by income not race – more successful. Teachers are not trained to challenge assumptions. Specific interventions with teacher training important.
- DD – We need to restructure undergraduate education. Silos exist in higher education as well.
- JT – UB teaches Learning communities – quantitative, Literature and interdisciplinary pods. Learning communities do this kind of innovative work.
- DD – Arts integration still a silo because teachers are not modeling it. Kids come into music education with specific paths – band director, choral teacher, etc. – first, should be music educator.
- KO – Arts as the lens approach – structurally real merit. Yes, depth model is important, but as important is teasing out these skills that are so important in 21st century thinking. Critical thinking is one – very important, across disciplines. Arts can become the model discipline for learning those skills. Arts as the lens, learning of critical thinking.
- BE – is that true? Aren’t there many performers/artists who are technicians, not creative?
- KO – Can’t be a blanket statement. – You’re right.
- JT – Artists can be interpretatively excellent. What about art as virtue? Or something of the highest regard... to what end are you producing the art? To what moral purpose?
- JC – Using the lens for 21st century skills. How do we teach kids to be critical thinkers/ collaborative, etc? Focus on how to develop those kinds of learners, could change whole way we teach. Has to be modeled, otherwise teachers will not change teaching.
- DD – Questions techniques. – Never extended beyond. Extended questioning takes more time.
- JT – Kids never asked questions about themselves or their ideas. Questioning them important, not just delivering material.
- DD – Example of teacher who closed door at beginning of each day, kids sat and shared to start the day. Then could go forward to have some great learning experiences. Going back to point about home and peers, etc.
- JT – Asking why students don’t want to do work?
- BE – America was known as the most innovative society in 19th and 20th century. Was it because of schools doing something? Is school a variable in education? Or is something else? Availability of venture capital, etc? We do spend a lot of time and money on

education, so how can we make it more effective than it is? Critical thinking, teaching skepticism most important. Go through history, people who questioned social order, not popular. If one is willing to accept that you are teaching students to be questioners, there are a lot of people who don't want that. But the short answer is encouraging teachers to teach questioning.

- DD – and to help kids know that it is okay to be wrong. Kids so used to no. Used to tell students, I don't care if you make a mistake. If we make a mistake, we'll go back and fix it.
- JT – More of these conversations within the public policy power centers!

KO – conditions and strategies

- Idea of no silos, making more connections
- Ok to challenge assumptions
- Ok to make mistakes
- Power of debate, doubt and skeptical thinking
- Critical thinking
- Recommend increasing attention given to home life and peer group pressure
- Time – condition needs to be attended to, better used, increase in time on tasks
- Learning how to transform conflict/what conflict is/what transformation is
- Teaching children how to do “coat switching”
- Continued conversations like this!
- Teachers ask questions of students to unload baggage, inform identity, enhance ability to learn

SS – experiential learning can't be rigid, controlled; risk taking, coping with uncertainty; ability to modify and adapt; condition for allowing uncertainty

JT – encourage discovery

SS – teachers have to be comfortable with that

DD – teachers have to be taught to be comfortable with that.

Section C. Notes from Interview Dr. Freeman Hrabowski, President, UMBC

March 11, 2011

Re: Imagination/Creativity/Innovation

CRITICAL TO INNOVATION AT UMBC:

- Crossing silos
- Start by asking questions—what would it mean to be different? Use imagination to consider possibilities.

For example, on the issue of the numbers of women in science departments, we needed to look at what was wrong with the picture. We hadn't asked the right questions. We needed to look at the placement of women. There were women technicians and lab assistants—women working in low-level positions. When we looked at higher-level positions, only 12% were filled by women. It mattered what the women were doing and what their standing was.

Part of imagination and creativity is to look at the existing situation differently...not business as usual. What questions haven't you asked?

ROLE OF IMAGINATION/CREATIVITY/INNOVATION—STRATEGIES/CONDITIONS:

- Key:
 - Building a culture of trust so that people say what they think; they are not afraid that they may say the wrong thing or fail. Environment allows people to make mistakes.
 - Along with trust, encouraging people to try things.
 - Accountability is important—if it doesn't work, stop. But take time to learn from failures. Often, we can learn more from failure than success.
 - Willingness to revamp and revise.

- How a leader can provide support:

Appreciate good thinking.

- Important to identify excellent thinking.
- Focus on solving problems.

Create a circle of people to have robust dialogue to get clearer understanding of issues.

- Encourage people to look at issues from different perspectives--create a space for people from different perspectives.
- Listen with an open mind to different people with various perspectives (often people are listening to frame their own winning argument).
- Identify the right people for the conversation
 - Respected
 - Authenticity
 - Great experience

- Consider how to combine people—some are consensus builders, others are provocateurs; may need both
- Try the group—if it doesn't work well, learn from failure.
- Let the group feed off each other's ideas.
- If unsuccessful—don't sweep under the carpet—put a light on it and learn
- Listen to the voices of the people affected—faculty, students...

TO NURTURE ICI:

Come up with a question to encourage that thinking.

Questions will shape the conversation.

For example: UMBC wanted to be more receptive to students. We asked three questions:

- What are the biggest problems?
- What are the solutions?
- Who's involved?

Students came up with "Prove It!" Campaign. Student leaders say to students, "don't just complain, propose a solution and there will be implementation funds for the winning proposals." Students are urged to be creative, to work with people from different parts of the campus, to engage partners in the process. Examples of winning proposals: An environmental group created a Green Space for congregating outside the Center for Art, Design, and Visual Culture on campus; another group worked on a biodiesel project to develop a sustainable energy source for UMBC.

Part of ICI is involved with building excitement around thinking about possibilities. The more people are talking across sectors, the clearer the language becomes and the more ownership of solutions occurs.

Some groups that didn't win the Prove It challenge went ahead anyway to carry out their proposals, which resulted in more groups feeling empowered on campus to think about and implement creative solutions. And not all of these addressed campus issues—some had to do with service, big issues related to the larger world, and in some cases to academic work.

Another example: UMBC encourages group study. Students identified the need for more spaces for this kind of group work. University is creating the physical space to accommodate this need through a major re-design of the first floor of the library.

HOW UMBC INNOVATES:

SCIENCES

- Chemistry Discovery Center
 - Changed paradigm for instruction and learning.
 - Flipped the program so that first-year students now work in groups and get hands-on lab experience: real problem-solving work. Historically, first year chemistry students got organic

- chemistry or other “wash-out” courses and were discouraged. Now, we have more students, more engaged, with better performance.
- Success of the Chemistry Discovery Center interested other departments and led to reallocation of resources.
 - CASTLE (College Active Science Teaching and Learning Environment) was created.
 - Deans brought other departments together to talk about what was learned from the Chemistry Discovery Center that could be applied to other areas—a discussion ensued about innovation in how space was configured/used.
 - Decided to have computer screens that could be flipped down and out of the way to make space more open.
 - In the new CASTLE spaces there is now more flexibility to accommodate groups larger than four.
 - So Math and Physics are improving on the Chemistry model.
 - CASTLE is a destination—with connotations
 - Also, the issue of student responsibility has been underscored: Students can't come into class if they are late. Supplies are loaned not given.
 - These are examples of comprehensive designing of learning environments that grew out of listening to faculty and students.

VISUAL ARTS

- David Yager (former Executive Director of the Center for Art, Design, and Visual Culture) helped Michael Summers (Howard Hughes Scholar at UMBC) with using technology for visualization of AIDS virus. Yager also helped other scholars working with data analysis in Geography, Chemistry, etc., based on the notion that 3D visualization helps to understand relationships.

MUSIC & DANCE

- Using technology to look at possibilities quickly and as a tool to experience.
- There's a thread of technology that is drawn through the arts at UMBC.

THEATRE

- Conversations about how people come together to create a production.
- Students learn about project management, setting goals, using people's different strengths, interpreting text, discussing responses of the audience, learning about expression.

SUGGESTIONS FOR K-12

- Give students the chance to use their experiences in popular culture and relate them to historical works.
- Connect what students have experienced to what others experience, in order to understand why artists do what they do, to see connections.
- Provide students with opportunities to try.
- Playing the piano helps understand how hard it is and also that it is fun.
- Help students access the arts, give them more tools—e.g., understanding Langston Hughes through appreciating rap.

Part 2.

Compilation from the January 2011 Online Conversation among Arts Teachers, Teaching Artists and Artist/Teachers.

In early 2009, in the interest of facilitating meaningful conversation among researchers from neuroscience, education, and related fields with artists and arts educators, in preparation for the Learning Arts and the Brain (LAB) Summit hosted by the Johns Hopkins Neuro-Education Initiative in Baltimore, Maryland, in May 2009, conversations were held with artists and teachers engaged in teaching and learning in and through the arts. Group sessions were conducted with teaching artists (artists who provide services to schools such as residencies), artist/teachers (classroom teachers who are trained in arts integration), and arts teachers (specialists in the arts disciplines—dance, music, theatre and visual arts). The focus of those conversations was around three questions:

What do you think is happening in your mind/brain when you are creating art and when you are teaching as an artist/teacher – teaching artist – arts teacher ?

As an artist/teacher- teaching artist- arts teacher working with students, what do you think is occurring in their minds/brains when they are engaged in the arts?

What are interesting questions for research as you think about the arts and learning and the mind/brain?

Most of those conversations focused on imagination/creativity/innovation. In the context of the current Imagination Conversations, the teaching artists, artist/teachers and arts teachers who participated in 2009 were contacted and invited to extend the earlier conversation online in January 2011. In this iteration, the conversation addressed this question:

What conditions and strategies best nurture imagination/creativity/innovation in education?

The 2009 document, **A Compilation of Thoughts from Maryland Arts Educators on Learning, Arts and the Brain**, is in Appendix D.

Victoria Brown, Ph.D.

Director, Lucy School: An Arts Based School and Teacher Training Center

RE: What conditions and strategies best nurture imagination/creativity/innovation in education?

Following is a response to this question that includes detailed feedback from two of my master teachers at Lucy School, Jill Brenner and Chris Isleib, who have also both taught in the public schools. Lucy School is an arts-based school and teacher training center in Middletown, MD for children ages three through third grade (www.lucyschool.com). The school has adopted Maryland Department of Education Curriculum objectives, but we surpass these objectives through an arts infused curriculum that values and nurtures imagination, creativity and innovation as well as the aesthetic appreciation of art and nature.

Conditions:

First we must create an environment infused with possibility and the freedom to create and explore. How can we expect children to be creative when teachers are not allowed to be creative? Teachers need flexibility and time built into the day to be creative and to allow creativity to happen. They need permission to have a time in the day for quiet and a time for making noise and the flexibility to extend an activity as student creativity begins to surface. Teachers need a comfortable environment - physical comfort as well as feeling comfortable to make mistakes. In our current education system, teachers and students are made to feel that making mistakes equates to failure. Yet failure and the act of trying something new, over and over again is exactly what leads to creativity and innovation - the process of developing original ideas.

Teachers need time in the day and permission to allow for individual self expression. Even arts specialists, generally obligated to teach technique and facts about an art form, need freedom to allow for creative self expression. Students should be given daily opportunities for creative self-expression, not just in the art room or with a visiting artists, but in the classroom as well. And, particularly in early childhood, children should have an extended time every day for play - indoors and out (see attached paper *Playing to Learn* by Susan Engel). Early childhood is indeed a critical time to nurture, promote and applaud a child's natural divergent thinking skills. A tree can be purple and snow can be "left over clouds crumbled up and thrown down for children to play with."

If teachers are to sustain a classroom that supports creativity and imagination, they must be provided sufficient cooperative planning time with fellow teachers. This should be a weekly meeting time to brainstorm and share creative activities. Ample quality long-term professional development is also necessary. Regarding arts integration, for example, teachers are best able to adopt this methodology in three year time period where they receive initial intensive training, modeling and ongoing support.

For this to happen, university education programs and professional development must shift focus away from objective-based teaching that promotes convergent and linear thinking. Educators must develop methodology for fostering lateral and divergent thinking skills. They need to learn open-ended questioning techniques. They need practice in fostering and verbally recognizing/appreciating student curiosity and creativity. They need to understand how to use and to teach varied strategies for solving a problem. Teaching reading comprehension, for example, must go beyond recall of

story facts. Children benefit from practice in drawing inference, imagining alternative endings, and predicting "what might happen next." Math should be viewed as an opportunity for cooperatively exploring different ways to solve a problem.

Clearly such changes must be recognized and adopted by Federal and State Education authorities and would require mandates for extensive restructuring (and funding for professional development).

Strategies:

Arts Integration. The most effective strategies for nurturing imagination, creativity and innovation are those that engage the child in the learning process and provide opportunity for divergent thinking and problem solving. The arts offer abundant opportunity for creativity. Classroom teachers, who often lack confidence in teaching the arts, can learn (through professional development and modeling) to foster creative expression and innovation by using the arts as a learning medium (arts integration). For example, in teacher led drama activities, children benefit from the sustained use of imagination by pretending to be someone else and/or in some imaginary place. They practice creative problem solving when they take on the role of the protagonist of a story and improvise solutions for challenges and conflict within the plot. Story dramatization is particularly suited to enhance reading comprehension and divergent thinking as students make choices in character personification, inference making and acting out alternate scenarios. In middle and high school, students can take on roles in the classroom to engage in imagined conversations and debates between characters from literature and history. All of the arts provide rich opportunity for exploring the open-ended question, "What if...?"

Project-based learning. Another excellent model for fostering creativity and innovation is project-based learning. This is a hands-on instructional methodology that provides authentic learning opportunities to engage students and motivate curiosity. The project comes from the interests of the students and encourages students to express and reflect upon their own ideas and those of their peers. It is an excellent model for cooperative learning, as their decisions influence the approach to the project and its outcomes. The arts enhance and support project based learning.

Play-based learning. Children are fully engaging their imaginations and practicing creativity when they participate in extended free play. Young children, in particular, need extended play times daily, before, during or after school. Teachers can enhance creative play by providing a variety of open-ended play materials, such as assorted fabrics, large and small blocks, and non-representational props such as pine cones, tree branch "cookies," cardboard tubes, boxes, plastic piping, yarn, and plastic straws for example. A child stretches her imagination when she uses the pine cone to be an apple or pretends to be a bird with "pine cone" eggs. Turning a paper towel tube into a spyglass, stethoscope, soup ladle, then flashlight is practice in divergent thinking.

For middle-school and high- school students, the arts can potentially provide this same opportunity for play.

Note: A project-based, arts infused approach to learning is at the heart of our program at Lucy School. Additionally, children have ample time for child initiated free play and exploration. It is a powerful and most effective learning environment. Please consider coming for a visit to see for your self!

Lee Boot

Associate Director, Imaging Research Center, UMBC

1. What is the role of *imagination/creativity/innovation* in our own domains?

I'm assuming, based on the involvement of Lincoln Center and the mailing list, that this discussion is taking place in relationship to arts education, not all education. If I'm wrong about that, I apologize, but if that's true I want to make a point early on that I think can be helpful:

It seems to me that the traditional role of the arts, taken as a whole, is to move us in some way—e.g., emotionally. Good work, and even progress in the arts, can be made without stunning creativity or imagination. It can rely upon the excellent execution of known structures. This is particularly true of collaborative arts in which some roles are defined by their execution demands, rather than authorship. (That's not to say that excellence in those roles does not benefit from some use of the imagination, but rather that the overall work may not always depend on it.) That said, I think we can all agree that imagination, manifest in creative decisions (choices that are both novel and effective) that lead to innovation, can expand perception, create profound experience and increase our understanding of ourselves and the world—not to mention build careers and get talked about. Still, imagination/creativity and innovation are always and automatically part of the arts, nor are they the sole domain of the arts. I think it's important to keep that perspective.

In my domain, I work in a research lab exploring whether valuable knowledge, that can help people in their lives, can be most meaningfully and effectively expressed through the arts rather than the more pedestrian communication methods (text books, health pamphlets, public service announcements, etc). It's like integrative arts for the whole society. The work demands innovation because our culture is not used to looking to the arts to provide this function, even though civilizations we typically admire produced great arts for this purpose—using them to express the ideas they thought were most important and doing it in affective, ubiquitous and culturally-resonant ways. We're trying to figure out how produce art that once again takes up this ancient role of helping weave knowledge into culture. Mostly we fail. Even those in the arts often prefer not to see work done in this area. We have a lot of cultural navigation to do.

2. What conditions and strategies nurture *imagination/creativity/innovation* in our work?

We use everything: systems, random, immersion and incubation, trial and error, call and answer, luck, skill and experience. We construct work around ancient ideas about what makes art affective, like using stories, metaphor and ambiguity to reveal the meaning of mere information. Effort is aimed at procuring moments of intuitive insight, then acting on them. Failure is the norm. Things take forever—but then something works and there is suddenly value.

3. What conditions and strategies best nurture imagination/creativity/innovation in education?

This might sound audacious, but I think a viable answer is pretty simple, though not at all easy. The most important condition and strategy would be that we define successful

education in terms of its ability to prepare students to be imaginative, creative and innovative. We develop ways to assess whether we are succeeding or not, we build curricula that will allow people to get there. With rare exceptions, this is not what we do. This is not how we define success. As a society, we give lip service to these things, but our actions betray our true values. They show that as a culture, we have consistently decided, at least in the K-12 arena, that short-term economic success will drive education policy. Skills that most predictably make people eligible for the high-paying jobs require high competence in the most known, linear and memorization-based ways of thinking. Unfortunately, this decision is short sighted. It serves industrial labor demands in the short term, but does not capitalize on our strengths as a nation in ways that will best build the economy of the future when more of the prescriptive types of thought are automated. In my opinion, the way to “best nurture imagination/creativity/innovation in education” would be to align what we do with those goals. Of course that would require a set of choices that are not yet embedded in our broad cultural understanding of what education should do. Education policy is a reflection of culture more than a way to build it. Consequently, to achieve change in education, we must achieve change in culture. I see an opportunity here for the arts. Weren't the arts once considered the language of culture? The arts could, conceivably, build the cultural discourse that helps shift the common wisdom—the socially normative understanding of the importance of imagination, creativity and innovation.

Richard A Roberts
Music Teacher
Howard County Public Schools

In my experience, Lee hits it on the head: *We use everything: systems, random, immersion and incubation, trial and error, call and answer, luck, skill and experience. Effort is aimed at procuring moments of intuitive insight, then acting on them. Failure is the norm. Things take forever—but then there's something that works. That's where the value is.*

What the arts provide is an opportunity for children to have an aesthetic experience. (Check out, if you haven't, Ken Robinson's RSanimate talk on the changing paradigm in education and how aestheticism relates to it.) From my own perspective as an instrumental music director, we're all about the process. In fact, the process of understanding a work of art (in our case a piece of music) is arguably more important than the actual performance of same. We spend time in rehearsal coming to grips with the elements of music in exactly the way that Lee describes, e.g. systems, random, immersion and incubation, trial and error, call and answer, luck, skill, and experience. We do tend to fail every day, but the kids keep coming through the door every day and we look at the progress that we make over a span of time as something that's useful. As Lee says, that IS where the value is. Why do students continue to engage themselves in a class that 1) isn't part of everybody's experience, 2) requires lots of outside of class work to accomplish small goals, and 3) they can quit at any time? It's because it's an aesthetic experience and they aren't getting that sense of being alive anywhere else in the building!

There's a poster in my rehearsal space that reads "Happiness is not around the corner, happiness is the corner." I think that's the fundamental difference between what happens in arts classes and (for lack of a better word) academic classes. We focus on the process and academics focus on doing well on the test.

**Karen Bernstein
Dancer, Teaching Artist**

...I see the most important issue here is making sure that every school in MD, VA, and DC embraces the arts. This is the main reason I got into arts integration. If this was the only way I was going to be able to introduce dance into the schools, then I would find a way. Interestingly enough what I found was that I was not only able to at least get the students out of their seats, they were learning and enjoying it. I was seeing how much the students needed to move and seeing how much they wanted to learn outside of the box. I understand that arts integration will never substitute arts for arts sake, but being a teaching artist allows me to introduce children to creativity. An extremely important subject for any student.

With all the press on the importance of 21st century skills and how the brain reacts to the arts, I hope politicians will finally understand what artists have been talking about all these years. The arts are not an extra, they are an extremely important part of all children's education.

**Shelley Johnson
Arts Integration Specialist
Lynn Lewis
Art Teacher**

On the imagination article- wow, do I remember when I taught, articulating similar words especially regarding the students at Potomac ES (affluent, high functioning student body). The students, the majority of them were heavily involved in organized activities after school and on weekends- ballet, horseback riding, sports, gymnastics etc. The students embraced arts integration because it allowed them the opportunity to use their imagination, be creative and of course work with other students. I remember going into a classroom during a social studies unit on immigration. The students were making 3D small clay trunks maybe 4 x 5 inches that were going to hold their most desired treasures for the voyage across the Atlantic. They were making miniature frying pans, small blankets, tiny clocks, tools etc. with such enthusiasm and a desire to share with anyone who walked in the room about what they were making and creating. If you had asked me before hand, I might have said the assignment was not sophisticated enough for these students who traveled around the world and were exposed to so much. Yet here they were, engaged and critically thinking about what was necessary to take on a voyage to the new world and completely involved in the project.

Shelley

"Traveling Trunks" was published in School Arts Magazine in September of 2004. In addition to the project the fourth graders from Somerset annually go on a field trip to the Ratner Museum in Bethesda, where they see David Ratner's bronze sculptures and talk with David Ratner about the sculptures he has permanently on display on Ellis Island. At the end of the unit he allows us to have an artist's opening in his museum. Parents, fourth grade teachers and I display the students' trunks, and provide refreshments. Students invite their relatives and proudly show off their work, like real artists in a real museum setting!

Students do write about their work, sometimes in art class if they are finished early, sometimes in their classrooms. One student in particular wrote a powerful description

that was included in the article but I'll rewrite it here for you:

"Migrating is very hard because it means leaving your friends, family, and many belongings behind, but immigrating is even harder. Leaving almost everything and everyone you have forever is extremely painful, and sadly millions of people a few centuries ago experienced that terrible feeling. That's why when packing only a few precious belongings before departing; the most meaningful and handy things are stuffed in a small, magical trunk."

If I were to pack a trunk...I would bring six belongings: a hat because of the weather's indecisiveness, two shoes, obviously, a pot/kettle, a basket...for the treasures found along the way, an ax, and my blanket... your treasure trunk is annoyingly painful to pack. What if I could only choose ten things to represent my life? Day after day that question was, and still is, asked. That's because life doesn't fit into a box."

- Molly Burness, grade four

The entire project involves a collaboration between classroom teachers, art teacher, and working sculptor, David Ratner. It's been a wonderful integrated experience.

Lynn

One other factor that helped this particular lesson succeed was being able to plan with the fourth grade teachers and their willingness to both communicate goals of social studies curriculum and let me integrate a creative art project to keep the objectives open-ended. In other words kids did not just have to learn historical facts about immigration thru Ellis Island, vocabulary.. ; they were asked to interpret individually. Their different ideas and styles were celebrated. In Montgomery County these days I'm afraid 'sameness' is the goal.

The fact that I've been allowed to be creative with lessons is something I deeply appreciate at my school. Both teachers and students thrive with this opportunity. I'm not sure if this is valued in the county.

Michelle S. McDonald (Ms. Mimi)
Dr. Henry A. Wise, Jr. Senior High School
Dance Department

What role does imaginative thinking play in achieving creative and innovative achievements in your field of endeavor? In dance imaginative thinking takes on a very significant role. I was watching an interview today with Ulysses Dove (Choreographer - known for his work with Alvin Ailey American Dance Theater). He stated that I have to have a clear concept of what I want the dancers to do. That takes imaginative thinking. Everyday before I reach my students I have to imagine what I want them to do and what I want them to look like while they are participating in dance class. The students too have to bring their imagination along with them as we cipher through the technical and the creative aspects of dance. This is never more evident than as you plan for a production; the students and the instructor both have to imagine what you want the show to look like.

What are the strategies and conditions within your field that continuously nurture, promote, and reward such thinking? Some of the strategies and conditions that are

used in the field of dance to continuously nurture, promote and reward imaginative thinking are the use of creative visualization, observation, and the formation of patterns.

How can we replicate or emulate these strategies and conditions to advance imaginative thinking and creative and innovative activities in the nation's schools? How we replicate and emulate these strategies and conditions is by incorporating all disciplines into dance. Meaning to have students work with poetry and literature, solve a math problem through movement, create a piece of work based on the solar system, or dance through history.

Pam Land
Director of Theatre Arts - River Hill High School
The Howard County Public School System

The snow/ice day afforded me time to finally respond to these questions. So wonderful!

1. What is the role of ***imagination/creativity/innovation*** in our own domains?
In the domain of Theatre Arts, imagination, creativity, and innovation are everything. It is via creativity and imagination that we are able to bring stories to life on the stage. It is via creativity and imagination that we are able to reach inside of ourselves and realize the ways and means of the characters in a story. It is via creativity and imagination that we are able to create the world in which the story takes place and make it become real for an audience. Through this use of our imaginations and creativity, we are able to hold up a mirror to our society--it by looking into this mirror that we hope to inform, to motivate, to seek empathy and positive change. Innovation is also critical in finding the means by which we can bring these stories and characters to life. Innovation allows us to meet an audience where they are and bring them to the story. Innovation is what allows us to tell ancient stories as vividly and accessibly as contemporary stories.

2. What conditions and strategies nurture ***imagination/creativity/innovation*** in our work?

Trust is key! There must be an atmosphere of trust and mutual respect in order for imagination, creativity, and innovation to grow and flourish among our students. For Theatre Arts, there **MUST** be a sense of a cooperative and collaborative community of trust and respect at all times. This trust and respect must come from all directions.

Everyone who feels valued typically feels able to take the risks that are necessary for imagination, creativity, and innovation to live and fly. When students feel that they can take risks and will be valued, they will soar in the areas of imagination, creativity and innovation. The truth is, the things that nurture these things in our work are the same things that nurture these things in education. Theatre Arts is about our humanity! That doesn't change dramatically with age.

Susan Rome
Performing Arts and Academic Club Coordinator
Baltimore Lab School

I really love Mary Ann's most recent question regarding "right answers." (I am wondering how you counteract the "only one right answer" mind set in school settings and also how you give the time and space for students to explore freely and broadly and also to focus deeply when they need to in order to pursue ideas into new territory and to understand the meaning of what they are doing....And if you have ways to do that are they supported/valued in school policy? Mary Ann)

I began a musical play-writing course this year with the question (posed to a large group of 7th and 8th graders): "What do you think the single-most effective killer of creativity is?" I got responses such as TV, video games, etc. (all great answers!) But what I was looking for was "school." (all irony aside)

Because of high-stakes testing, we tend to lose innovation and creativity in our academic conversation. I teach at an arts-based school for kids with moderate to severe learning disabilities, and for the past decade, have been completely bowled over by the diversity of response and the absence of conventionality in our kids' approach to all sorts of problem solving. Because our kids have to meet standards, they are required to do a little "code switching" where they have to be fluent in "correctness", but also know that they are allowed to explore possibilities...If we can get them to that spot, and keep their frustration to a minimum, there is so much that can happen!

I just hope that my inherent conventionality doesn't inhibit their vision!

Glad to be a part of the "conversation" –

Pat Cruz
Education Director
Young Audiences/Arts for Learning

My response to the Imagination, Creativity, and Innovation conversation:

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

She says everything I would like to say, and does so so eloquently!

Eileen Cave
Interrelated Elementary Art Teacher
Prince George's County Public Schools

Here's my personal perspective:
What role does imaginative thinking play in achieving creative and innovative achievements in your field of endeavor?

I am a visual arts teacher instructing students in grades Pre-K through 6 at four different schools throughout the year. Creativity is the heartbeat of my vocation. I love the versatility of my job, because I am challenged to approach each day preparing for lessons that create a studio frame of mind. Whether students come to my art room (at my base school,) or I am instructing from a cart brought to their classroom, each art lesson must stimulate their desire to create something that they feel good about while developing a "right brain skill" from my curriculum domain. I have 30 minutes for Pre-K, 45 minutes with kindergarten, and 75 minutes with grades 1-6, four times a year. Do I think this schedule offers enough time to stimulate significant imaginative visual thinking? Absolutely not! But keeping that creative spark ignited in each student's mind is essential to their well being, until we are resourced to provide "all the arts for all the children."

What are the strategies and conditions within your field that continuously nurture, promote, and reward such thinking?

The art world remains the strongest motivating and supporting factor in my world. I continue to paint and exhibit apart from the classroom, and the opportunity to invite students and their families to local shows, encourage class and family museum field trips and student art lessons during vacation time—these things help to create a community network of support for the arts and an appreciation for culture and art history. I am an advocate for arts integration. Our school district just eliminated tuition reimbursement, so I keep my professional focus by attending workshops at the state and national level to remain motivated. My most appreciated reward?—every time I return to a school and the children ask “When are we having art?”

How can we replicate or emulate these strategies and conditions to advance imaginative thinking and creative and innovative activities in the nation’s schools?

While nationally the theme of 21st century skills-building resonates in the education field, there has been little if any recognition of the value that the arts (through curriculum arts integration) play in building and nurturing creative minds at my school district level. The emphasis on testing and teaching for higher test performance continues to dwindle funding that should support arts education. A national ad campaign promoting the best practices at the most successful school districts must be launched as budget cutting minds are now planning for FY 2012, or we suffer the consequences of not sufficiently nurturing the creative spirit in our students. I suggest reading the following article:

Check out this piece on [newsweek.com](http://www.newsweek.com):
The Creativity Crisis at <http://www.newsweek.com/2010/07/10/the-creativity-crisis.html>

**Karen Bernstein
Dancer, Teaching Artist**

1. What is the role of imagination/creativity/innovation in our own domains?

This is a very difficult question to answer as an artist because I want to say of course I use imaginative thinking in my creative and innovative achievements, I am an artist. As a dance consultant I work with individual dance artists and professional dance companies to improve their choreography, performance, and education skills (in-studio and in-school). I also work as a teaching artist and educate artists and teachers in arts integration. With all the hats I wear, I apply or teach others how to use imagination/creativity/innovation to be the best they can be.

2. What conditions and strategies nurture imagination/creativity/innovation in our work?

"Sparks of Genius" by Robert and Michele Root-Bernstein talks about the 13 thinking tools of the world's most creative people. I would say that I use most of the 13 thinking tools as a performer and educator - observing, imaging, abstracting, pattern recognizing, pattern forming, analogizing, bodily-kinesthetic thinking, empathizing, dimensional thinking, modeling, playing, transforming, and synthesizing - using the "Five Minds for the Future" (Howard Gardner) disciplinary mind, synthesizing mind, creating mind, respectful mind, and ethical mind and at the same time teach the 21st Century Skills -

Learning and Innovation Skills (4 C's: Critical Thinking, Communication, Collaboration, and Creativity) and Life and Career Skills (especially Social and Cross Cultural Skills).

3. What conditions and strategies best nurture imagination/creativity/innovation in education?

A choreographer must use all three in their creative process.

A performer must use all three to wow their audience.

A teacher in-studio and in-school must use all three to capture their students and guide them.

As a teaching artist I use these reasons why movement is so important...

* Movement brings the curriculum to life. Students “climb inside” books to embody the content for a deeper learning experience that builds personal, emotional, and kinesthetic connections.

* Kinesthetic teaching is the “natural language” of children. Give your students permission to “speak” this language, and they will amaze you with their ability to communicate ideas, thoughts, and feelings.

* Movement transforms the environment of the class into an active, kinesthetic experience, allowing the children to think and learn differently.

* Movement activates the neural wiring throughout the body, making the whole body the instrument of learning. You will wake up the learner, increase his/her energy level, and improve information storage and retrieval.

* Through muscle memory, when movement is put to a word, the word will be remembered.

* Students learn best by hearing, seeing, and doing.

* Creative movement often reaches students who are usually unreachable and challenge those students already considered successful.

* The creative process will build teamwork, spatial awareness, and self esteem.

Maria Barbosa **Visual Artist / Teaching Artist**

What is the role of *imagination/creativity/innovation* in our own domains?

I am a visual artist, a teaching artist, and I depend on my imagination.

Some years ago I stumbled upon the work of Gunther Kress, a professor of semiotics and education at the University of London. In his book “*Before Writing. Rethinking the Paths to Literacy*” (1977), Kress proposes that imagination is a form of sign making free from boundaries and usual social constraints: “(Imagination) is depended on and enhanced by the ability to engage in free movement among forms of (internal) representation - not confined, for instance, to staying within language, or the visual, or the tactile, but able to range freely across modes.”

Looking back at my work as an installation artist, I realize I have been ranging freely to the anxiety of gallery directors and curators. My work includes images, sounds, words, movement, tactile experiences, and, my goal, viewer participation. Most of the time, I document viewer participation with a video recorder activated by a movement detector placed in the exhibition space.

Considering Sir Ken Robinson's definition of creativity ("the process of having original ideas that have value"), I realize that I gauge the "value" of my work by the amount and quality of viewer participation observed in the videos. The video documentation takes me to new questions, to the use of my imagination and to a new representation of my ideas, understandings, projections and uncertainties. My work is about people's movement through established or assumed borders, communication, miscommunication and the ways language free or pigeonhole individuals.

Also, looking around, I found that creativity and innovation may or may not be considered to be the same. For some creativity $CREATIVITY = IDEAS$ and $INNOVATION = IDEAS + ACTION$. For others, $CREATIVITY = NOVELTY$ and $INNOVATION = NOVELTY + VALUE$. In my answers, I chose to use Sir Ken Robison's definition.

2. What conditions and strategies nurture imagination/ creativity/ innovation in our work?

My imagination, creativity and innovation are nurtured by observation, reading, curiosity, determination, empathy, ideals, beauty, proportion, balance, fairness, the importance of community and the respect for human rights. Those conditions, and probably many others, are constantly feeding my hunger to imagine, create and innovate. I work all the time, and my art is an integral part of my life. As artists, we cultivate the ability to find the extraordinary in the mundane.

I do enjoy the quiet times when I get lost in the artistic process. But lately, time has been hard to come by. Nevertheless, I manage to find everyday a few golden minutes of contemplation.

3. What conditions and strategies best nurture imagination/ creativity/ innovation in education?

We could list many "best" conditions and strategies suitable to our diverse population of students.

However, present educational practices inhibit the use of modes of expression outside the written language, and exclude the arts from what is called the academic curriculum. This uni-modal form of instruction can overtime restrict our students' imagination.

Based on the importance of imagination on my past profession (Cell Biologist) and present (Visual Artist), I ask the following questions:

1. Imagination/ creativity/ innovation requires time alone and reflection. Can our schools, overwhelmed by test-taking policies, time restrictions and endemic disruptive behavior, offer students some quite, reflective and creative time?

2. Imagination/ creativity/ innovation requires the ability to move easily across media

(synaesthesia). Can our schools, tied to verbal and numerical modes of expression, help students use a variety of media to represent, investigate and analyze educational interests and dispositions?

Paraphrasing Kress, we know that tomorrow will not be like today. We can only **imagine** how tomorrow will be. Curriculum has the function to prepare students for what we know today, and today's uncertainties ask for an education that highlights reflection, imagination, creativity, innovation, and synesthesia (multimodality.)

Lenore Blank Kelner
Arts Integration Specialist

Mary Ann, I have enjoyed reading your comments and found the comments from Vicki's teachers really meaningful.

Through MATI and several other venues, I have been working with a book called, *Sparks of Genius* by Michele and Robert Root-Bernstein. It outlines 13 Thinking Tools that the most creative people across all disciplines use to imagine and create. It is a wonderful book. For my work in drama, the one Thinking Tool they outline that is the most profound for me in working with students and teachers in the Thinking Tool of Empathizing. The idea that we can feel, be in another's shoes and through that gain new insight and understanding.

When students or teachers take on the role of another person or even a significant object they think and see in a new way. For example when we work with the novel, *Freedom Train* by Dorothy Sterling I have the students not only take on the role of Harriet Tubman at various points in her life, but also become the forest that protected her, the North Star that guided her, etc. The result of this is a far deeper understanding of the content. The students speak from another perspective and get in touch with their emotions. I find helping students and teachers think not just with their mind but to also tap into their hearts a key to imaginative work. I find this to be true for all students at all grade levels.

For teachers, having them experience this type of approach in a workshop setting allows them to experience the benefits first hand. They know for themselves and can envision how students will respond to becoming characters and thinking in new ways.

The other part of Empathizing for teachers is to see learning not through their eyes but the eyes of their students. I urge teachers to step into the shoes of their students and see how that student learns and thinks. This helps teachers adapt and modify their instruction so that every child can be a creative and successful learner.

Linda G. Popp
Baltimore County Public Schools
Visual Arts Coordinator

I hope it's not too late to come down from the balcony, and join the dance. I found some time this weekend to go over the conversations and found them very interesting reading.

1. I/C/I in my domain - former at teacher, now an arts administrator, always an artist. As an arts administrator in a large public school system, I find I have to be very creative and

find innovative ways to work within the system to keep fighting the good fight for our arts programs, teachers, and students. I think it was much easier to be creative and innovative in the classroom than in my current office - or at least it feels that way.

Things move slower, but then the ripples in the pond can be greater. There is something magical about being in the classroom with groups of kids who are all working away at some artistic problem. Their creative energy is contagious. I miss it. But, then, that's probably a good thing because I'm always reminded of why I want to continue to find ways to make sure that every child is experiencing the best possible visual arts program possible. So, whether I'm working on curriculum, professional development opportunities for teachers, or service to schools, I want to continue to make improvements so our students will have an education that fosters their imagination/creativity/innovation.

2. Conditions/strategies to nurture I/C/I - I agree with the discussion that the I/C/I part of the work is the process, but I want to say that the product is the motivating piece that often makes us want to continue. I think of the OLD Saturday Night Live skit --- It's a dessert topping AND a floor wax. Students need the process and the product. We do too.

One strategy that I see being used more and more in the classroom is the sketchbook/journal ---- in grades K - 12. It's used for studio practice, research, reflection. It documents the creative process for the student/artist. The process becomes an artful product.

3. Conditions/strategies to best nurture I/C/I in education - We talk about 21st century skills, but in most cases, we are teaching to the test. I was shocked to discover that in the core subjects most lessons are scripted, benchmark assessments need to be met.....very little room for I/C/I. Teachers need professional development and time to collaborate. In most cases, they are not encouraged to be creative or imaginative. They need to be creative and imaginative before they can teach their students to be.....I am so thankful that I am in the arts. More emphasis needs to be placed on the creative problem solving process, and not just finding the one right answer. Offering students options. Encouraging them to find their own voice.

Thanks for this opportunity.