PROCEEDINGS
The 88th Annual Meeting
2012

FOSTERING AND SUPPORTING STUDENT CREATIVITY AND INNOVATION

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Youth Population

We live in an increasingly youth-oriented world. According to United Nations Population Information Network 2010 data, approximately 43% of the world's nearly seven billion people are under the age of 25! With only a little imagination, our minds reel with the implications for the future brought by this staggering fact. Also noteworthy is the fact that the largest percentage of this growth in youth-centered population lies in Asia and Africa. Because many of these key regions are economically challenged with low standards of living, it is a young, poor world that is rising.[1]
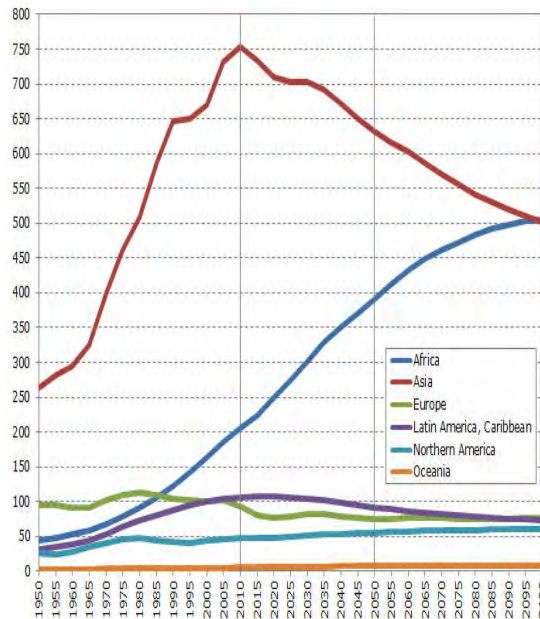
Population trends 1950 to 2010.[2]

Viewed from a global perspective, this rising youth population is predominantly poor, yet they are globally connected with technology they take for granted.[1] They are collaborative and intensely social, many preferring net connectivity to face-to-face communication. They are hungry for action and have high expectations. Many are feedback driven, craving attention. They are inquisitive and creative, customizers and experimenters, and they blend personal and professional lives. They are determined with a sense of urgency about the future of our planet and humanity. Increasingly, they are concerned about the cost of education and how to make a living.

Critically, those of us working in music education must remain keenly observant about where this rising population gets its inspiration. Clearly, their sources are pan-stylistic and genre deviant. The old fashioned notion, *schools of composition*, has long been out the door. Partly in response to radical changes in the career landscape for music and the evaporation of formerly defined career pathways, the idea of the creative *collective* is emerging again. Groups are banding together in mutual support of each other. Many of our students want their work to be perceived as socially relevant, and more and more, they want to have a creative role in the music they play.

In his 2012 NASM meeting on strategic planning, Doug Lowry, Dean of the Eastman School of Music, posed this question. "Should the academy mirror what's going on in the outside world?" It's a smartly provocative question. In a sense, the need to ask it points out that the academy may be falling behind our evolving youth culture. Creative students already know what's going on in the outside world, and we would do well to listen to them when considering our strategic restructuring. Each institution will construct its own response. They must do so, however, while being fully mindful and knowledgeable about that outside world, whether choosing to mirror it or not. In the current environment, possibly the best thing we can do for students is offer ways to release their creativity; this we can do. To understand how, we must first learn from what students are already doing, on their own.

So, what are the fundamentals in this new environment? What can schools do? Principally, we must nurture and fertilize emergent creativity, and then get out of the way! Creative activities must be nurtured; they cannot be pre-configured or legislated. This creates huge challenges for our top-down administrative and financial planning machinery. For example, one of the most effective tools an insightful music executive can bring to bear is a budget for the unknown, funds to fuel that which emerges from the contingent possible. Yet, this is the most difficult kind of resource to acquire. High-level institutional planners would be wise to allocate such contingencies in this new creative economy.

When a student enters our academy and asks, "What do I have to do?," we should answer with, "What do you want to do?" This is a tough question for students who may be emerging from many sadly formulaic, teach-to-the-test, secondary school environments. Yet if they can survive this moment on entering our creative communities, with gentle support, they will have a good chance of developing the tenacity necessary to eventually invent the career pathway that will enable them to succeed. Along the way, the academy must give them the agency with which to clearly frame what sets them apart, as unique, creative voices for our culture.

What is core?

How should we define a core curriculum in this environment? What now are the relevant fundamentals of music? Again every institution will find its own answer and must be encouraged to freely do so. Its answer will help define its institutional personality and position in the landscape of choices students have for acquiring knowledge these days. Many of these choices lie well outside the academy. On the meta-level of curriculum design, I would suggest just a few guiding principles. One, let the core be defined by emerging practice and stay flexible. Keep a hand on the pulse of what students really need to achieve success in their own, self-defined career pathways. Also consider what they need ultimately to sustain that success throughout a long life. This requires a sensitive blend of wisdom and non-attachment to the biases of our own training. Two, maintain a high exit bar. Whatever the students are doing, they should strive to become the best possible in that practice.

Again at the meta-curriculum level, four essential core competencies emerge. One, be able to identify the disciplines of a unique practice. If we can enable our students to not only invent the unique frame that defines their creative voice, but also to identify for themselves what fundamentals they will need to achieve success within that frame, what they will need to know and be able to do to contribute significantly to the cutting edge of their practice, we will have given them one of the most valuable tools we can provide. Two, acquire the agency to materialize

results. Students need to know how to get stuff done well and telegraph that agency to the professional world. They must produce high-quality products, again inside their own creative frame. Three, they must have communication competency, the ability to engage and bring the world at large into their world. And four, collaborative competency is critical. Their ability to succeed will depend increasingly on working with others, in interdisciplinary contexts as well as socio-economic and cultural contexts.

Creativity education requires sensitivity to new modes of learning. Davidson and Goldberg[3] identify several clear directions that have emerged from studies in new patterns of attention and learning in our culture: self-learning, horizontal curricular structures, credible collective investigations vs. one-way flow of information from specialists, de-centered pedagogy, networked learning, open-source education, connectivity and interactivity, and lifelong learning. All of these are re-shaping priorities in curriculum design. Creativity assessment tools are also needed, though creativity is difficult to quantify. Descriptive techniques arising from interdisciplinary critique may be more effective.

To sum up, effective pedagogies for creativity in our time must focus on teaching students how to acquire and develop unique artistic practices. We must teach them to ask what are the first principles of their unique practice and how to define their particular creative universe. After that, we must help them delineate the discipline and outcome measures needed to refine their practice. This is a student-centered approach. If, while being teachers, we are also practicing, creative artists, we will have a leg up in this process, for we will have engaged in it ourselves.

Strategic planning in the present age is pressing on us, to be sure. Our academies are largely unsustainable in their current business models, and new ones will require rethinking our very functions. To start with, it's important to ask probing questions. Here are a few such questions and points to consider that we have started with in The Herb Alpert School of Music at CalArts. Perhaps they may be useful; there may be many answers.

- How can we re-construct our curriculum so that it clearly communicates our attitudes about crossover thinking, stylistic blends, transdisciplinarity, both within music and across the arts, and the pan-genre inspirations our students are bringing to their creative work today?
- How can/should we best respond to the levels of preparation, exposure, and experience we see today among our incoming students?
- What are the best ideas we can bring to the challenge of most effectively enabling our students to succeed in the new global, VUCA (volatile, uncertain, complex, and ambiguous), horizontally networked, career world today?
- What is the most effective role for our school in the new DIY, multi-generational, educational marketplace that is fast emerging today?
- What is the best way to approach our curriculum—what is basic and what is opportunity-generating—in a world that will demand: individualized plans for access to education, ways to support a variety of rates and styles of learning, preparation for blended careers, yet-to-be invented financial strategies to pay for each individual's education, changing attitudes toward assessing work—(e.g. strong trends toward portfolio-based assessment), and alternative systems of certification or "*badging*?"
- How can we integrate project-based learning more effectively and clearly into our curriculum and in a way that both encourages developing core skills, while enabling students to find their true directions, <u>own</u> them, and from that, derive amplified motivations to learn?
- How can we best support the full engagement of everyone in our community in the exciting challenge of remaking our creative, educational, and art-making environment? How can we best counteract complacency?

- What is our response to the already rapidly changing models now emerging for higher education in general—(flexible *horizontal* structures for collaborative learning, often aided by new technologies, replacing old authoritative *vertical* structures, for example)?
- What is our response to rapid evolution towards competency based assessments and measuring artistic accomplishments when judging eligibility for graduation, instead of relying on the old participation grids, like "year level," and "residency requirements" that are possibly outmoded and no longer viable?
- Are "degrees" relevant for the future, and if so, what should they be?
- How do we enable multiple styles of engagement and levels of access to education that students in the future will demand and are already demanding?
- How do we respond to rapidly evolving trends in trans-stylistic, trans-disciplinary, pan-inspiration-based creativity that is obviously driving our students' work these days?
- Are we fully apprised about changing styles of learning, attention, and cognitive engagement that are now evident among students in general and that demand reassessment of old models for effective pedagogy and learning how to be life-long learners?

The realities of today's employment environment are upon us. Formerly standard, pre-defined jobs for musicians are shifting, changing, or disappearing. This includes the worlds of orchestras, operas, the film and gaming industry, recording, festivals, touring, online distribution, and so on. Recent data from the Strategic National Arts Alumni Project (SNAAP)[4] indicates good news: a relatively high percentage of graduates from schools of the arts in the U.S. are employed. However, these alumni are making their livings predominantly through blended careers, garnering about half their income from the field they studied in and about half from other kinds of gainful employment. This suggests that to act responsibly towards our students now, we should help them understand and acquire skills that may be valuable in the newly emerging workforce. These skills are also shifting. A study by the Institute for the Future[5] identifies ten skills critical for success in the future workforce: 1) sense-making, 2) social intelligence, 3) novel and adaptive thinking, 4) cross-cultural competency, 5) computational thinking, 6) new-media literacy, 7) transdisciplinarity, 8) design mindset, 9) cognitive load management, and 10) virtual collaboration. Many of these sound like essential skills for creativity as well. Consequently, blending them in a curriculum that gives agency for developing unique creative practices should not be so daunting, once we take up the challenge of <u>true</u> creativity education.

It may be useful to delineate a set of key challenges in the strategic restructuring that must be in our futures.

- Inventing adaptable business models rather than the typically unsustainable ones plaguing higher education today.
- What to do about student debt?
- Dancing with the lightning evolution in career climates for artists today.
- Preparing artists for inevitably necessary, blended careers.
- Rolling with the changing patterns of public support for culture—(The U.S. has always trailed the "free world" in this; now the "free world" is starting to copy our bad habits).
- Deciphering what's really changing and what's not new in arts education—bringing faculty along in this investigation.
- What's the role now for the time-honored 1-on-1 mentoring model? Mentoring will be key in the new flexibility required for future curriculum models. It must be taken very seriously, even considered like a course or music lesson, in which students are carefully guided through the myriad options from which they will be able to choose.

- How to support interdisciplinarity without making interdisciplinarity a discipline. Interdisciplinarity is fundamentally emergent and about access to courses, facilities, and open time for thinking and collaboration. If interdisciplinarity is scripted in the curriculum and turned into a discipline, it will be deadened.
- Budgeting for emerging of phenomena that can't be known or predicted in advance—actually the unknowable often ends up being the most powerful.
- What to do about assessment trends?
- Integrating venture thinking and entrepreneurship into pure art education.
- What are the *disciplines* students need in a *transdisciplinary* world? If we can't know, how can we best provide an array of options and make them accessible as needs become spontaneously articulated among students.
- How to balance substance with nimbleness, flexibility, and adaptability. We need supremely adaptive academies capable of quick and wise responses to change. This is one of our biggest challenges.

Initiatives at CalArts

Here are some examples of things we've tried and initiatives that are continuously emerging at CalArts and may be relevant to this discussion.

Reverse Funnel

In recent strategic planning sessions, CalArts faculty members have developed the concept of the *reverse funnel* approach to undergraduate core curriculum design. In this structure, all students enter through the narrow end of a funnel, during which they receive first-year instruction in what has been determined to be core for all. These subjects, though somewhat modular, are guided by what faculties determine to be essential to enable students to collaborate and work with each other in musical pursuits subsequently, during their remaining years in school. If we ask, "What do they need to be able to work as musical artists together?", clearly common, core competencies emerge for each musical community. After this, the curriculum becomes structured in modular pathways that fan out to the large end of the funnel. Students may collect those competencies necessary for their emerging individual voices as creative and effective artists. When competency levels are sufficient and the portfolio of work and courses is adequate, a degree could be granted. This plan is under development.

The Idea of Programs

The idea of curricular *programs* or bounded, specialized pathways may be outmoded. Alternatives to the idea of programs are being considered. The boundaries of programs at CalArts are presently quite permeable, though detailed requirements may sometimes make them still too rigid. New models may emphasize openness and project-based, customized, portfolio assessment for assigning credit, as opposed to traditional metrics like seat-time, year levels, standardized tests, etc. Student self-assessment may also become a part of new models. Evolving requirements may offer choices among areas of emphasis, showing alternatives and lists of options. For this to work well, effective mentoring is absolutely key! Finally, to effectively guide new creative voices, faculty must also live an artistic synthesis and see *art not different from life*.

Research in Art Schools

In new models, creative research should be encouraged as core, and not just left to graduate programs in research universities. Developing new forms of art and new art works can be substantiated as research. Research programs on creativity itself should be developed. Rethinking research in the arts, sometimes in collaboration with other disciplines, may reveal ways to open doors for new sources of funding not traditionally in the sights of music units (i.e. NSF, NIH, etc.).

Interdisciplinarity

Interdisciplinarity is fundamental in today's students' thinking. Most have already manipulated creative content in various media from childhood. Again, interdisciplinarity is about access to the widest possible spectrum of instruction, facilities, and time. It's about giving oneself the license to *establish a practice* that does not grow directly from extant practices. So what does it need to flourish? It must not be made a discipline itself. It needs academies of possibility, where attitudes support trying things without fear of failing. It needs open spaces in the curriculum, along with flexible and engaged mentoring. It also needs pooled resources applied by those watching—ourselves, as music unit executives with our faculties—to support powerful emerging work imbued with possibilities.

Creative Commons

To partially address the matter of time restrictions exacerbating interdisciplinarity, CalArts established a Commons.[5] Commons is a student-led effort to affirm interdisciplinary ambitions. Required courses may not be scheduled during Commons, so all students and faculty are free. (Commons currently runs Thursdays 4:00 to 7:00 PM every week). It is a time when all students at the Institute, unencumbered by formal academic responsibilities, have the opportunity to meet, to create, to invent, to discuss, and to engage in the possibility of dynamic, collaborative art-making across métiers. Commons is a time for conversations that one didn't know one had the time for. Commons is a place for conversations one didn't know one could have. All facilities that can be made available to students across the Institute must remain open during Commons. Though Commons is a young effort, indications are that students are taking good advantage of it.

Interim

During two weeks taken from the regular course schedule in January, faculty and graduate students may propose to offer special immersive and intensive workshops, seminars, collaborative projects, short-term classes, and other activities they could otherwise not pursue during the normal academic schedule. A kind of educational county fair has emerged in which students are encouraged to engage in special projects, often trying areas of study and investigation they have never tried before. Extraordinary work has emerged from Interim. Opportunities for interdisciplinary work are common during Interim. Interim is required of all students; they earn one unit of course credit and receive a grade for participation in an appropriate number of hours of work and submitting a written *experience report*. Student responses to Interim have been overwhelmingly enthusiastic and positive.

Examples of Interim subjects offered in 2013 included:
- African Drums & African Music Concepts Lessons
- Afro-beat & Dancehall movement class
- Ambient Atmospheres
- American Treasures: Two Pillars of American Music & Song
- An Introduction to the Music of Christian Wolff
- Art Lande: Improvisation and Creativity
- Art Lande: Jazz Standards, Advanced Improvisation & Composition
- Bach Chorales
- Bach's easier keyboard pieces
- Baltic Pagan Solstice
- Bodies, Sensors, and Sound
- Creativity Transfer Two
- Early Music on Modern Instruments
- Field trip to ARUP

- Flight Workshop
- From the GRM to Mego: A Survey of Electronic Music
- Indian Rhythm for Improvisers, Composers and Performers
- Inside The Black Box: Basic Electronics for Musicians
- Interface Design
- Intonation Workshop: The Performance Practice of Extended Meantone Temperament and Wolfgang Amadeus Mozart's Theory of Harmony
- Jazz Duo Concepts
- Jeff Franzel Songwriting Workshop
- Max/MSP Crash Course
- MFA Intensive - Jazz Composition
- Open Instrumentation Symphonic Jazz Band
- Quantum Hyperopera
- Radical Chamber Music
- Radical Self-Expression via Burning Man's Ten Principles
- Singer Songwriter Recording Project 2013
- Sound is Movement
- Taking Your Music on the Road: concert tour planning and booking for the self-promoting artist
- The Art of Transcription
- The Latin Easter Mass - History and Performance
- The Music of James Tenney
- The Rock Horn Project
- Three Panel Discussions: TIME, THE FUTURE, THE AUDIENCE
- Towards a Musical Consciousness: Exploring Mind, Music and Nature
- Transcription and Analysis of Freddie Hubbard's Trumpet Solos
- Unity in Diversity—Music and Dance of Indonesia

Performer-Composer Program[6]

  Performance, composition and improvisation have been tightly integrated throughout most of the long history of music across global cultures. The era dominated by rigid separation of composers and their iconic products from performers who must interpret their instructions is drawing to a close. Though great monuments of musical art have been created during this brief, minor bubble in exclusively Western music history, new practices are increasingly emphasizing a merging of performing practices with composition practices in new creative voices. Systems of new musical notation also often demand very creative performers with high-levels of virtuosity and fluidity in navigating complex, alternative musical languages. This fundamental shift stimulated CalArts to establish a Performer-Composer Program for upper-division BFA and MFA students some time ago. Recently this has been extended to the DMA level as well. It is important to emphasize that this program is not a double major in performance and composition. Rather, the program seeks musical artists whose work exhibits a thoroughgoing integration of their personal composition and performance practices, and who are prepared to pursue their creative, scholarly and professional goals at the highest level. It is intended that graduates will be prepared for a wide variety of professional careers including individual artistic entrepreneurship, positions in education, and work in both public and private cultural sectors. While rigorous, the program offers each student the flexibility to co-design with his or her advisors a curriculum addressing individual needs and objectives. Extraordinary creative products are emerging from this program.

Open Learning Communities

  Collaborative learning, both peer and facilitated, has become more and more important in our environment. In this context students are encouraged to define their own problems, question

and analyze assumptions, generate new ideas, and take sensible risks. As online education infrastructures become more available to faculty, lectures, reading, and research takes place more out of class, freeing class time for collective problem solving and more individual contact. This exploration of free-learning pedagogies also makes use of digital discussion forms and other technological tools.

N-to-N Learning
With National Science Foundation (NSF) support, CalArts has been developing methods and facilities for teaching computer science to artistic students. Ajay Kapur, Director, Music Technology: Intelligence, Interaction and Design Program (MTIID)[7] and Associate Dean for Research and Development in Digital Arts at CalArts, and colleague, Ge Wang, of the Center for Computer Research in Music and Acoustics (CCRMA) at Stanford University, have developed an N-to-N teaching facility. Unlike the old model of one-to-many instruction, in which information flow is mostly one-way from instructor to students, the N-to-N model takes place in a classroom where all exercises and project work being carried out by students is visible to everyone in the classroom all the time. The students' work is displayed on digital monitors circling the room for all to see. This changes instructional dynamics dramatically; and outcomes show a marked increase in the level achieved by projects realized after only a short time in operation.
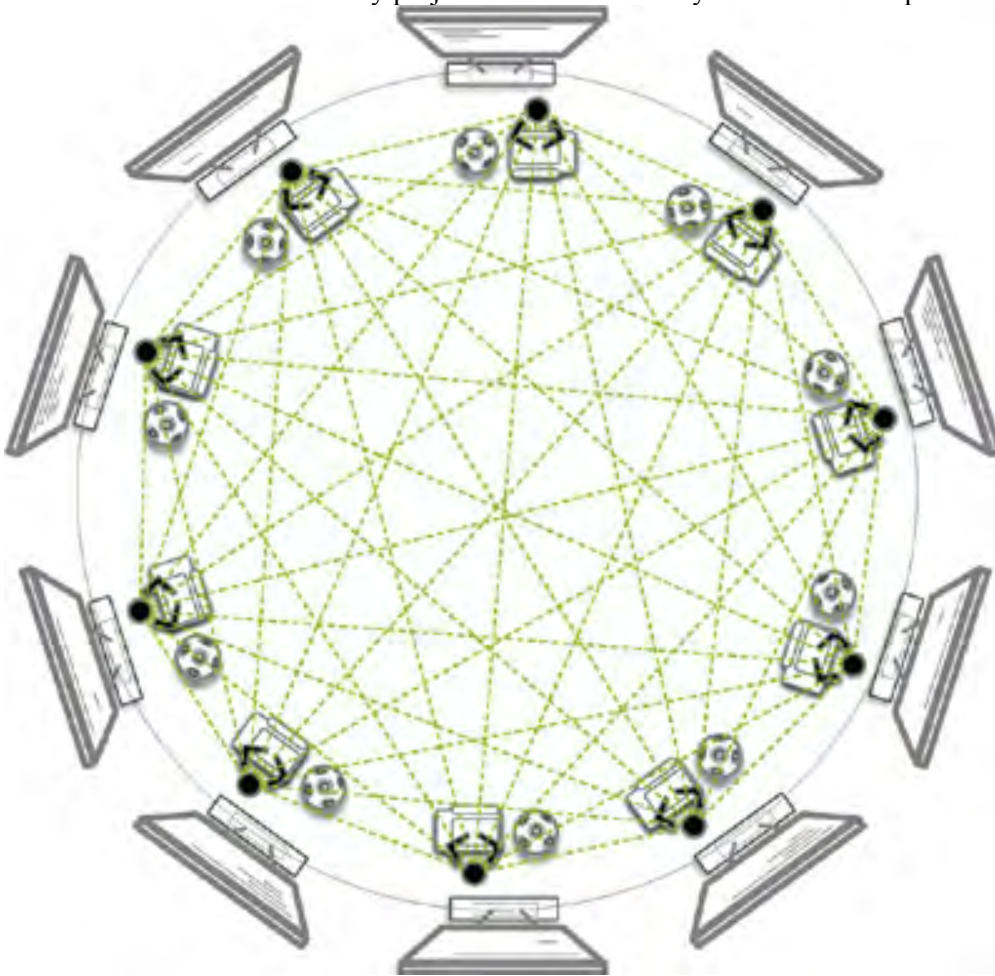
N-to-N Learning Model employed in CalArts' *Machine Lab*

Open Source Studio[8]

In another extension of peer community learning, CalArts' Center for Integrated Media offered a course recently in which students, faculty, and remotely present visiting artists located around the world participated in a new-media studio and critique course, Open Source Studio. The results highlighted what can be accomplished with telematic tools today to broaden access to distributed learning communities.

Interdisciplinary Courses

Though interdisciplinarity cannot be legislated or prescribed, some approaches to course design can be particularly effective. Here are two examples from CalArts.

Composition-Choreography

This is a seminar team-taught by the author and choreographer Colin Connor of The Sharon Disney Lund School of Dance at CalArts. It is not a course about how to set already composed choreography to music or how to choreograph already fixed compositions. Rather the class gives collaboration assignments in which students are asked to make works through which they investigate a genesis place wherein composing and choreographing are conceived as being the same, not different. Students are asked to take music, dance, language, and theater back to an origin point that may reside only in gesture and originate new work from this place. Sometimes prompts are given, such as those from the author's *Six Composition Lessons— Frames for Future Music*.[9] Creative teams often emerge from this class that develop extraordinary new work for years afterward.

Improvised Musical Theater

An innovative, two-semester, interdisciplinary course that has given students new perspectives has been developed by CalArts' Performer-Composer DMA candidate, Kristen Erickson.[10] An excerpt from the course description reads as follows.

Throughout the semester we will adapt improvisational games from both music and theater to a broader interdisciplinary environment. By playing, analyzing, and modifying these games, we will employ an iterative design process for creating performances. In addition to recent developments in interactive fiction, we will study the work of Viola Spolin, John Zorn, Augusto Boal, Sun Ra, Merce Cunningham, John Cage, Butch Morris, Pauline Oliveros, The Wooster Group, Nature Theater of Oklahoma, The Sims. The fall semester will focus on algorithmic strategies for improvised performances. Improvisational games and algorithms are both made of rules. Building on this, we can adapt concepts from computer science and video game design theory to our performances.

Pedagogies of Creativity

Broadening the traditional offerings focused on standard music pedagogy that prepare students for the inevitable teaching in their careers, Susan Allen, Associate Dean in the Herb Alpert School of Music at CalArts, has created a two-semester set of course on the pedagogies of creativity in general, *Toward Creativity: Pedagogy, Praxis, Philosophy*.[11] These topics are considered very important for future teaching competencies.

Global Collaboration Projects

Conceiving and producing collaborative production projects with international partners has become one of CalArts' most effective ways of building communities for its students in a world context. Many continuing, international, professional partnerships have grown for students from these projects, which have flourished after graduation as students become alumni. One prominent example is an interactive opera, called *AH!*, conceived by the author and writer,

Martine Bellen. Young composer-performers from ten countries were engaged in a collective project realized through workshops and international, telematic collaborations, and then finally produced in performances and installations for the local Los Angeles public as well as a global public via the Internet. The musical and text structures of *AH!* also reflect the characteristics of new music notation styles in which alternative pathways may be taken by performers. In this example, the thirteen stories of the AH! text are arrayed in a mandala form, which may be traversed in different ways by following linking lines connecting parts of the stories with each other and their corresponding musical materials.

(An image in a mirror cannot be captured without considerable distortion of mind. Which is the original face?)

(trying to fix him up with a mirror image)

Well Used Dollar Bill (a flash of lightning)

Mirroring

(a flash of lightning, a cloud, earth)

Nested Awakenings (inhaled exhaled, saw the dream, stepped out of it)

(his wife had died)

(a deep sense of peace, a rush of calm)

(There her robe vanished, no incense, no flame)

(on illusory air) -or- (In that moment,) -or- (no flame)

(I'm not afraid of death, I just don't want to be there when it happens)

(Strangers in our body.)

(a moth, maybe, nothing more substantial than a filmic flame)

Trouble Is My Middle Name

Passengers —Parasites

(the movie is over and it's time to live)

(The good ones sleep better)

His hands rest in the dirt and he breathes. He's laid to rest.

(The viewer will open his eyes)

(If we practice mindful living, we will know how to water the seeds of joy)

These are for you, she thinks, as she gently presses them open to take root. Sprouting love.

(Her mind will continually produce deluded constructions)

(When she sits she sees!)

(Will your eyes be closed when [times come?])

(Sometimes I sleep)

One shouldn't give rise to aspiration while abiding in sound

Must one know one is to be invisible?

The Story Of Being Invisible

a mystic Shape did move Behind me

The Origins Of Conflict

(*AH!*)

Can something make a mark with no meaning?

Now he is aware that he can be perceived in countless ways

(Magic-lamp shadows cast dancing fireflies and platinum moon-moths glow)

Two Glimpse One

(Thirty-two marks on his rag-and-bone-shop body.)

(One of the caves was sealed by a perfectly fitting boulder.)

(could not believe their eyes)

Alone I cannot be

In the chiliocosm (countless universe) of living and non-living space.

What happens when your communication system vastly differs from that of other life forms?

What is the evolutionary function of dance?

(The Group begins to observe itself)

(They are together, living their purpose, which is to be The Group.)

The youth jiggles his shoulders and arms, jingles

Intergalactic Archeologists

(their pliant bodies form the church's interior)

(isolate stasis)

The Group

(they will transform into the spectators)

(to measure the size and dimensions of the cosmos)

(time, space, ... hearing these passages of moment)

(Science had finally tallied the theater of divinity.)

(the worrying of prayer beads while jumping and jiggling)

Cans With Labels

Measurement— Tallying Divinity

(unique to the individual who gathered the numbers)

(stars tallied)

Heads Or Tails (coins)

(the coins clinking)

AH! — Linked Stories Mandala-Wheel

Very strong musical and educational pedagogies and enduring professional alliances developed for the participants in this project. Its full scope can be seen on the *AH!* project website.[12] Other internationally produced projects undertaken by CalArts have garnered similarly powerful results.

Creativity Transfer

Exporting creativity encourages ideas for creative solutions. Venture thinking can be gently introduced into our pure-art academies for positive effect without conflicting with art-for-art-sake agendas. Entrepreneurship and venture thinking can inspire the current generation towards creative output. *Creativity Transfer*[13]—a name derived from typical *technology transfer* operations of research universities—is an umbrella under which the author is encouraging such activity. Workshops and seminars have been offered and other projects are underway. Student responses have been energetic and positive. It has been particularly inspiring to observe how often students are ahead of us in understanding the importance and scope of this kind of thinking in the arts.

Creativity Unites

        Creativity unites core inspiration, passion, competency, venture thinking, career, and agency. A school of possibility should always focus on enabling possibilities and avoiding the rigid decision-making traps that can close institutions off from essential flexibility, responsiveness, and adaptability, and also from inadvertently throwing out core, tested values. Our curriculum is here to draw out the talents of people who participate in it, not to be a game of limits to be conquered.[14] Creativity is a positive, joyful deviance living at the core of culture. James Carse reminds us, "Culture continues what Mozart and Rembrandt had themselves continued by way of their work: an original, or deviant shaping of the tradition they received, original enough that it does not invite duplication of itself by others, but invites the originality of others in response."[15]

Education as Open Space

        This I believe: Education is open space, fundamentally emergent, fueled by collective invention and critique among individuals integrating information at rates and in styles unique to each, and supported by systems for acquiring the techniques, skills, and disciplines necessary to realize projects in thinking and materializing with maximum ease and efficiency.

        We don't educate—in the sense of doing something *to* someone anymore, we compose opportunities for discovery in order to maximize the emergence of *education happening*.

ENDNOTES

[1] Salkowitz, R. (2010). *Young world rising, how youth, technology and entrepreneurship are changing the world from the bottom up*. (Hoboken, NJ: John Wiley & Sons, Inc.).

[2] United Nations Population Information Network. (2012). Online: http://www.un.org/popin/

[3] Davidson, C.N. and D.T. Goldberg. (2009). *The future of learning institutions in the digital age*. (Cambridge, MA: The MIT Press).

[4] Future Work Skills 2020. (2011). (Palo Alto, CA: Institute for the Future). Online: http://www.iftf.org/futureworkskills2020

[5] See: http://calarts.edu/commons

[6] See: http://music.calarts.edu/programs/performer-composer

[7] See: http://mtiid.calarts.edu

[8] See: http://oss.calarts.edu

[9] Rosenboom, D. (1987). Frames for future music (Six Composition Lessons). In The Future of Music. Compiled by L. Polansky, *Leonardo*, 20,4, 363-365.

[10] For examples of K. Erickson's work see: http://www.kevyb.com

[11] For course descriptions see: http://courses.calarts.edu/taxonomy/term/filter/5?field_course_code_value=MX&keys#MX400A

[12] See: http://ah-opera.org

[13] See: http://music.calarts.edu/creativity-transfer

[14] Rosenboom, D. (2008) A School of musical possibilities. [Online: http://www.davidrosenboom.com/media/school-musical-possibilities]

[15] Carse, J.P. (1986). *Finite and infinite games*. (New York: The Free Press, Macmillan, Inc.)

Useful Websites for Open Education Resources (OER)

    Creative Commons: http://www.oercommons.org
    Department of Education: http://www.openeducation.net

Open Education (U. of Mich., IU, MIT, Stanford & uPortal consortium: http://www.open-education.org
Institute for the Future: http://www.iftf.org
Future Work Skills 2020, (IFTF): http://www.iftf.org/futureworkskills2020

http://www.davidrosenboom.com
http://calarts.edu