

“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change.” Charles Darwin

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When I was a graduate student in composition at New England Conservatory, I worked on a project as a film composer’s assistant. My duties included the realization of chord symbols as voice leading under the composer’s melody, some orchestration, notation decisions, and copying the final score and parts in ink. My primary technological tool was a six-inch, clear ruler with pennies super-glued to the bottom so the ink wouldn’t smear as I moved it across the page. I also used a set of drafting pens that invariably clogged within minutes of setting them down.

Recently I saw an advertisement in a Los Angeles newspaper for a film composer’s assistant:

“LA based Film composer seeks full time, detail oriented, multitasker. Duties will include some engineering within Logic and Pro Tools, studio maintenance, PC and Mac maintenance of hardware and various software plugins. Must be fluent with Gigastudio, Reason, Ableton Live, Native Instruments and many more. Good understanding of signal flow and MIDI is essential, putting together demo CD's and DVD's compulsory, and knowledge of blanket licensing, web casting, digital distribution, viral network, meta data management, and digital aggregators necessary. Some office work and cleaning required.”

In a period of twenty-five years this job has changed so much as to become two unrelated jobs with the same title. The skills and knowledge for one do not prepare one for the other. My education as a music student prepared me well to perform the first version. I wonder if the music education I would receive today would prepare me to do the second.

We are gathered at this society to discuss a wide range of ideas inspired by Hildegard von Bingen, a woman who holds a unique place in the history of creative individuals. What are the characteristics of Hildegard that make her so interesting to us today, nearly one thousand years after her life.

She was a woman who mastered all knowledge available to her in music, science, medicine, and the nature of spirituality. Moreover, in each of these areas she advanced the ideas she received to a higher plane.

Hildegard was a highly accomplished and recognized artist, scholar, educator, and institutional leader, remarkable accomplishments for anyone, but especially notable for a woman of that time. For a woman to attain such accomplishment in the twelfth century would seem to be impossible, except she did it.

Hildegard was driven to reach her creative, intellectual, and personal potential. She embraced all that she found and was able to overcome imposing barriers. She advanced the cause of humanity on all of these fronts and was a true agent of change.

I have some things I’d like to say with regard to change within our educational system. I think it’s important for me to place these remarks in the context of my professional life which I will now do very briefly.

I have dedicated my career to writing, performing, and teaching music. For nearly thirty years, I’ve been an institutional leader, today serving as President of McNally Smith College of Music. I’ve attained a certain level of skill and fluency in an unusually wide variety of styles and practices: blues, rock, jazz, bluegrass, songwriting, classical guitar performance, and composition of concert works for a variety of media.

In the 1980's, I became an early user of music synthesizers, drum machines, sequencers, signal processors, multi track recording, computer composition and notation software, and integrated this technology into concert music, music for dance, and works in various popular styles. I experienced for myself the potential for technologies developed initially for popular music to be integrated into concert music and other artistic and educational applications.

Advances in technology dramatically changed the way many of us made music: how we composed it, recorded it, produced it, mixed and edited it. Then the Internet took off, the iPod arrived and the way we listened to music, marketed it, distributed it, purchased it, shared it, and used it in our daily lives changed in ways few imagined. Raise your hand if you predicted that one day more money would be spent on ringtones than on CD's. Please note, CD's themselves will be relegated to the background, as was vinyl, within a very short time.

But outdated technology is nothing new: 78's gave way to 45's which were nudged out by 33's. Eight tracks changed our listening habits, especially in our cars. Cassettes pushed them out, and now cassettes can hardly be found. The steady drumbeat of change is ongoing. But what is markedly different is that the tempo of change went from andante to presto in a very short time, and is now moving at a speed that, like a drum loop on my laptop, no human can match.

Technology has fueled revolution in every single aspect of how we create, produce, procure, and experience music. However, there is one critical aspect that has remained mostly unaffected, dare I say stagnant: how we teach music is relatively unchanged by technology and the massive changes in society and the music industry.

Let us note one crucial fact at this point: technology has not wrought these changes. People have. Technology is merely a means, a tool, albeit a powerful one. But it does not operate independently of human agents who decide when, how, or whether to embrace new knowledge, tools, and techniques. At least, not yet.

The question is not so much about technology as it is about us. Can we as educators embrace change? With incredible ease we have available to us the music of Africa, China, and Indonesia in its abundance of rhythmic layers, rich textures from exotic instruments, and fresh and vibrant tone colors. We have instant access to improvisational traditions from India, Brazil, New Orleans, and Harlem. We have the ability to see music in vivid color with the full sonic spectrum presenting a visual map inviting new and deep theoretical insights. We have the opportunity to bring all these and many more musical treasures into the classroom to shape our understanding of art and culture, of history, and of the future.

Yet in spite of what we can bring to bear from diverse cultures, in spite of the technological tools for creating, understanding, and performing music, the curricula in the vast majority of music departments, colleges, and conservatories looks very much the same as it did in past decades. With the exception of a course or two here and there, it could be from past centuries.

The music industry today is evolving at a seismic rate. This is a result not only of technological change, but also because of rapidly changing habits of music listeners and concertgoers. Again, technology has not caused the changes; it has merely facilitated them and created an environment that allows us to move swiftly in new directions.

To borrow an illustration from a different subject, Robert Reich, former Secretary of Labor, identifies in his book **Supercapitalism** two main determinants that have transformed our economy, our society, our government, and our lives. These are 1) the consumer's increasing ability to demand the best deal on every purchase, and 2) the stockholders' demand for immediate high return on investment. These are the overwhelming forces dictating corporate behavior, government regulations, and the rise of the lobbyists.

Reich maintains it is not the tax breaks for the rich causing our economic malaise, nor is it the dismantling of corporate restraints, the busting of unions, or the weakening or elimination of regulatory agencies. Painful as these may be, they are symptoms. What gives rise to these symptoms are the ongoing demands for the highest profits and the lowest prices. We must

fully understand and respond to these underlying forces if we are to address the conditions that result.

In like manner, musicians and consumers of music have dramatically changed the means by which we experience music. Technology has provided a powerful stimulus and tool for these changes in consumer and practitioner's habits and behavior. It is essential for us to understand these changes so we may exert a measure of control over them, and help our students prepare for a dramatically different reality they face after graduation.

Music business leaders are baffled and struggling to keep pace with the enormous changes in their industry. So is the legal community as well as the regulatory and legislative branches of government that must assess the impact of these changes and act swiftly to protect consumer rights and intellectual property. You may have noticed that swift and sure proactive response is not a strong point of government agencies, so the problems and pressures are mounting.

A huge range of stakeholders must work together to craft creative solutions to these new problems: musicians, consumers, inventors and creators of technology, the broadcast industry, the Internet gurus, institutions of public policy, legislators, intellectual property lawyers, concert promoters, talent agencies, the recording industry, promotion and marketing agencies, and many more.

Where in this collaboration are our music schools, conservatories, and music departments? How are we shaping this environment so critical to the future of our art, and our young practitioners of it who leave our halls hoping to sustain an income through music?

There may not be a lot of full time jobs waiting for our graduates, but there is a lot of work for those prepared to do it. Musicians are at work writing, arranging, performing, touring, and recording in domestic, international, and virtual environments. Yet for the most part, our institutions of higher learning in music unleash steady streams of new graduates annually without providing even the most basic survival skills for a career.

This is not the music industry that held sway for the past several decades with clear roles for the artist, management, the recording companies, the record label, radio and TV broadcast industry, distribution and sales mechanisms, concert promotion, and so on. Here are some interesting facts that hint at the scope of change:

- Record sales have been in general decline for the last seven years.
- Sales in the first three months of 2007 are down 25% from the previous year.
- About 800 record stores (including Tower Records 89 locations) closed in 2006.
- Well over 100 million iPods have been purchased.
- Many artist managers now view records as a promotional tool rather than a source of income. More money is made on merchandise sales and concert appearances.
- There are number one chart albums last year that wouldn't have made the top 30 list in 2005.
- Digital sales have risen 54% to 173.4 million, but it's nowhere near great enough to offset losses in record sales. Nearly 60% of digital sales are one song at a time.
- It's estimated that one billion songs a month are traded on illegal file-sharing networks.
- CD prices have fallen as a result of pressure from retail giants like Wal-Mart, Best Buy, and Target who represent 65% of the retail market.
- Warner Music Group reported a 74% drop in profits for the fourth quarter of 2006.
- Music sales are sliding even at the monster retail locations. Best Buy has been steadily reducing record floor space.
- Paul McCartney has signed with a new label: Starbucks.

- While signed with Capitol Records, Radiohead earned \$2 million in royalties on the album *Hail to the Thief*. Independently they released *In Rainbows* on the Internet, asking consumers to pay on a voluntary basis. Forty percent of those who downloaded the album paid an average of \$6, grossing \$5 million in digital and physical sales. (from *Rollingstone Magazine*, April 17, 2008 “Who Needs Labels”)
- Artists like Madonna and Trent Reznor (Nine Inch Nails) are leaving their labels and remaining unsigned or forming unorthodox partnerships to maximize their freedom, control, and profits.

As educators, here is the central question we must address:

What elements are critical to shaping a relevant contemporary educational experience that truly prepares students to reach their creative, intellectual and personal potential?

Why have our educational institutions not evolved along with the music industry? Music industry executives are tied to their industry models that are rapidly becoming irrelevant. Are music educators tied to our curricular models and are these too becoming irrelevant? Is it that we cannot teach to the changing environment because we have not experienced it, understood it, or learned it? When choosing our educators do we value their experience of this evolution, or do we insist upon academic credentials above all?

After nine years as Vice President/Provost of Berklee College of Music, and having nearly thirty years of experience as a teacher, performer, composer, and institutional leader, I entered the job market sadly aware of the fact that I was considered unqualified to even apply for entry level teaching positions in most colleges and universities because I do not hold a doctoral degree. I am very happy with my current job, and report this fact not with bitterness but merely as an observation which I believe is both important and relevant to the subject at hand.

I believe that the institutions themselves must embrace change, and with enthusiasm. We must provide programs of professional development, bringing opportunities for learning and growth not only to our students, but to our faculty as well. We must find new models of involving industry professionals on the leading edge as practitioners to bring their art, creativity, and experience into the academy to invigorate our teachers and our students, and make these institutions of higher learning think tanks of future development, not museums of past practice. We must use technology to make this possible, with video conferencing, web casting, and the hardware and software programs developed for musical skill building, as well as the creative aspects of composition, performance, recording, etc.

It is often deemed acceptable to teach harmony, counterpoint, ear training, music history, ensembles, and all the fundamentals of a music education in the same way, year after year, decade after decade. I suggest this is flawed because music itself is evolving, as is our wider exposure to new music through history and geography. We should provide fresh insights, new approaches, and the application of new technologies in dynamic, diverse curricula.

When **Sonic Design: the Nature of Sound and Music** came out in 1975, co-authored by Robert Cogan and Pozzi Escot, I was stunned by the fresh approach, the depth of the analysis, the breadth of the musical examples which drew from jazz, the music of China, Indonesia, Native American music, contemporary composers, and yes, even Beethoven.

This work utilized a different way of labeling intervals which seemed appropriate and useful, particularly since it was shorn of the inevitable tonal implications of the traditional naming system of major, minor, perfect, and so on. The analyses themselves were presented in a logical and revealing framework describing a multitude of ways in which music’s motion through time and space may be realized.

Perhaps the most unique aspect of their approach was the clear explanation of how musical color can be seen as a central aspect of form, and how the elements of dynamics, articulation, instrumentation, and orchestration create a unique thumbprint of color that can reveal astonishing insights into the formal structure and even the emotional impact of a composition. What a rare and unusual accomplishment in musical analysis! I was certain that this approach

would revolutionize the world of music theory and become the new standard model of music education. I'm still waiting.

Why have teachers been reluctant to embrace this new approach? Did we not understand it? Were we unwilling to make the effort required to study and learn it? Were we simply too comfortable with prepared syllabi, lectures, midterms, and final exams? Or, perhaps the approach in Sonic Design was simply wrong headed. But in that case, couldn't we at least participate in a vigorous, scholarly debate about the merits or the lack thereof in this fresh look?

Music as an art, a vocation, and a commodity rides the intense cultural currents of globalization, digital media, and the Internet. Students emerging from our institutions of higher learning must learn to navigate these powerful currents or be dashed upon the rocks of irrelevance. There is no other choice.

Please understand that I do not advocate that educators embrace mere trends or chase after the latest musical style. But these changes in the real world of music, musicians, and the music industry are not a trend. It is a vastly different world.

I suggest that we reexamine the infrastructure of our educational programs and systems to ensure that we nurture both creative expression and experiential learning to cultivate entrepreneurial thinkers and innovators. This is necessary in order to prepare our students to engage, adapt, and thrive as leaders of change in music and society.

Peter Senge, writing in his book **The Learning Organization**, states "Real learning gets to the heart of what it means to be human. Through learning we re-create ourselves. Through learning we become able to do something we never were able to do. Through learning we re-perceive the world and our relationship to it. Through learning we extend our capacity to create, to be part of the generative process of life. There is within each of us a deep hunger for this type of learning."

Professional development of our faculty must be a high priority within the academy. The school should provide it, the faculty should take advantage of it, and performance reviews should take note of it. Helping teachers continue to grow and develop is essential to the intellectual health and prosperity of our schools.

Moreover, the valuation of education in our society must be renewed. It seems as if art and science are diminished today with our national attention riveted on pop trivia, celebrity, sports, and "national security." Effective leadership in the academy, in business, and in our government must emphasize the importance of knowledge, research, and above all, imagination. Let us continue to hold Hildegard as a model and guide in this respect as well: as a true lover of learning and leader of change.