COMMONALITIES IN THE TIME-BASED ARTS: 
A NEW APPROACH TO 
THE TEACHING AND PRACTICE OF THE ELECTRONIC ARTS.

Richard Povall with Neil B. Rolnick 
iEAR Studios, Rensselaer Polytechnic Institute 
Troy, NY 12180-3590 USA 
povall@iear.arts.rpi.edu, rolnick@iear.arts.rpi.edu

ABSTRACT

This presentation demonstrates a new pedagogical and practical approach to the teaching of the electronic arts, namely: computer music, video art, computer imaging and animation, and performance with the electronic media. It shows the unique curriculum for a Master of Fine Arts in Integrated Electronic Arts at Rensselaer Polytechnic Institute, and how the development and implementation of that program is affecting the approach to non-major undergraduate teaching of the electronic arts. This program approaches the arts through a common core of technology and time-based thinking, providing students the opportunity, at the graduate level, to work closely with artists of other disciplines, and to experience work outside of their specialty; and providing undergraduates with an approach to art that has no barriers between disciplines, encouraging them to create art in an integrated environment.

Taking as their guiding concept the realization that the time-based electronic arts share conceptual processes, compositional processes, and common formalistic goals, Professors Neil Rolnick and John Sturgeon set out, in the early 1980s, to build a program in integrated electronic arts within the technologically-oriented environment of a major engineering institution. Theirs was a fine art approach to the subject, neither a theorectical nor a solely technical one. They created the iEAR (Integrated Electronic Arts at Rensselaer) Studios. This fall, iEAR began a unique Master of Fine Arts program in Integrated Electronic Arts, and this presentation outlines the pedagogical, practical, and technological issues raised in developing and implementing this program.

SOME BACKGROUND


Rensselaer Polytechnic Institute, based in Troy, New York, is one of the nation's leading technological universities. The iEAR (Integrated Electronic Arts at Rensselaer) Studios are a part of the Department of the Arts and have, since 1981, provided growing facilities and academic programs in computer music, video art, and computer imaging and animation. In September 1991 Rensselaer enrolled the first class of graduate students in a new Master of Fine Arts program in Electronic Arts.
Before the establishment of the MFA program, academic programs in the iEAR Studios were limited to undergraduate non-majors, since Rensselaer does not offer any undergraduate art or music degrees. Since its inception, the iEAR Studios have taken as a goal the promotion of a lively creative environment: within the technologically sophisticated environment of Rensselaer. To that end, there have been numerous programs which have brought major electronic artists to perform and work with students. Over the last ten years, iEAR’s Electronic Arts Performance Series has sponsored several visiting artist programs, commissions of new computer music, video exhibitions and concerts in Troy, an annual concert of Music from Rensselaer in New York City, satellite broadcasts of video presentations, and compact discs and records of music created in the studies. With the initiation of the new MFA program, the school has put significant resources behind the concept of the trans-disciplinary nature of the arts which make significant use of the electronic media. The curriculum of the new program indicates the intent of the Department and of the faculty to focus on and promote art which is not constrained by traditional disciplinary boundaries.

WHY INTEGRATE?


For more than four decades, the electronic arts have been a force in the art world. Audio technology and video technology were once very separate, very different, and almost always very difficult to coordinate and synchronize without large budgets and highly specialized production equipment. It was only in the 1980s that video became an accessible, affordable technology, although broadcast quality video remains prohibitively expensive as an artist’s tool. Although both technologies used tape as a storage medium, audio was cut together, cheaply, with a razor blade; video with an expensive editing controller. The audio artist, if you will, had a very visceral, direct contact with his or her medium: the video artist, while able to exert a control as fine as the audio artist, at least in mechanical terms of minutes, seconds and frames, was one step removed from the physical process of manipulating an image or creating a finished piece. Truly collaborative work between these two groups of artists certainly took place, but often the levels of frustration and expense limited the kinds of collaborations that could exist. Students of these arts were taught (and continue to be taught) in very separate facilities and often with very different aesthetic and historical approaches.

With the dawn of the digital era, audio and video technologies have changed enormously, and are rapidly becoming indistinguishable. The technology has made it much easier for video artists and musicians to work together, with much less expensive equipment, and in far more complex and coordinated ways. Audio and video now share the same tools: the computer, and continue to share the same space: the time domain. This common technology is allowing artists and musicians to work together in ways that were once unimaginable. Developments in computer technology have expanded the capabilities of information access to include database access to image and sound through time-code frame accurate and interactive video disk technologies. This expanded information network continues to offer new interdisciplinary challenges in creative expression and communication.

Education has, as usual, fallen far behind the trends of the real world, and continues to educate students in a tight-knit, single discipline environment. The technological unification of the
time-based arts that has seen artists working together increasingly over the last decade has been almost totally ignored by academe — particularly in the classroom.

New Curriculum, New Pedagogy

With a history of providing students with facilities and faculty that at least encouraged students to collaborate on new pieces, and with a number of experimental courses in multidisciplinary areas, Rensselaer’s decision to support the development of a new MFA program was the result of a bold initiative by two iEAR faculty members: composer Neil Rolnick and video artist John Sturgeson. Their proposal: to develop a new MFA program specifically oriented towards the teaching and practice of integrated electronic arts. The primary goal of the program is to support artists in the development of their careers, to provide them with an informed insight into the nature of their work and its role in society, and to provide myriad performance and production opportunities both locally and regionally. The program, now in its first semester, offers a curriculum designed to meet those ends.

Creative Work
- Creative Seminar I & II
- Advanced Individual Projects
- Master’s Thesis

Performance
- Installation/Performance Workshop

Skills Courses
- Computer Music Studio
- Video Studio
- Computer Imaging & Animation Studio
- Integrated Studio

Theoretical Seminars
- Electronic Arts Overview I & II
- History and Criticism Seminar I & II
- Electives, independent studies, and experimental topics courses.

The program is structured on the model of an art school within a technological environment, rather than the more usual practice of treating the electronic arts as a quasi-scientific research center within a art of music department. The result is a curriculum which stresses artistic creation and performance over technical research. Students are expected to master the tools of their craft, but the primary emphasis is on learning to use those tools to an artistic purpose.

The only courses teaching traditional “disciplinary” art and music topics are the three basic studio skills courses. All the other courses share an integrated, electronic arts approach. This is not to say that the teaching of, let’s say, specific music compositional techniques, is totally abandoned. A course such as the Creative Seminar or Advanced Individual Projects has plenty of scope to deal with individual compositional issues, although the emphasis will generally be working within an interdisciplinary or multidisciplinary environment without compromising
individual craft and technique (or perhaps learning how to compromise within a collaborative venture).

A result of the interdisciplinary emphasis on creation and performance with multiple media has been the need to expand the faculty's own perspectives and skills. Since all the faculty have been trained either as musicians or as visual artists, the theoretical courses, the integrated studio course, and the creative seminar are all being taught by a musician/visual artist team for the first year. This provides the faculty with an opportunity to gain both skill and perspective on this integrated approach to the electronic arts in dialog with colleagues who come at both technical and aesthetic problems from a different perspective and training.

A dip-into spin off from the thought processes that went into creating the new graduate program was the opportunity to totally rebuild the undergraduate curriculum. Historically, JEAR has offered single semester courses for undergraduate non-majors in Music Composition, Computer Music Composition, basic skills courses in Video, and Computer Imaging, and higher level courses in Video Production and Video Art/Image Processing. All have been taught separately, albeit in an atmosphere that supported collaboration and cross-disciplinary work by students.

A redesigned experimental undergraduate curriculum was implemented in the Fall of 1991. Its purpose is to provide a kind of disciplinary arch — beginning with an integrated electronic arts course, then moving to single discipline skills courses, and finally moving back to multidisciplinary electronic arts upper level courses.

As in the graduate curriculum, the new undergraduate courses are designed to break down traditional boundaries which separate the various electronic arts. Before taking and of the specific skill courses in computer music, video, or computer imaging, all students are now required to take a full year introductory course in which they are introduced both to historical and aesthetic issues, and to practical hands-on studio projects with all the available media. They are then able to take individual skills courses in the various studios, as well as special studies which emphasize an integrated approach to the material.

THE EMPHASIS ON PERFORMANCE AND DISSEMINATION

EXAMPLE: Intermedia Performance: Payroll: House Arrest / All That Glitters

The structure of the MFA program places a very heavy emphasis on performance and practice. Students are encouraged not only to perform at Reneselaer, but to perform in the immediate area and in the region. As well as performing their own work, they are required to produce concerts, exhibitions and installations of works by fellow students and visiting artists. In the Installation/Performance Workshop, which all graduate students are required to take three times for a total of 9 credits, students produce a performance series and gallery installation series that features at least one event per week. This course represents 20% of the final credit requirement, and, together with the Master's Thesis (another 15% of the total), is the very heart of the program. The emphasis on performance and public presentation is an attempt to provide an environment that both fosters the arts in the locality, and gives each student direct experience in producing his or her own and the work of others. It also represents a philosophical viewpoint: the emphasis on performance and community involvement makes a number of statements. It says that artists are not part of the academic ivory tower, but are
important members of their community who should be constantly interacting with that community. It says that no art work is complete without public exposure and dissemination — that exposing the product is as essential a part of the compositional and creative process as any other. It says that art should happen almost anywhere — in concert halls and galleries, in public spaces on and off campus, in community spaces, on the sidewalk and in the mall. At the same time, the student is not encouraged to compromise his or her artistic ideals, investigations, concepts, or style to cater to a broad-based audience. He or she is simply encouraged in an awareness of what rôle the artist is playing in the 1990s; the decision of how to express that rôle is entirely personal.

Example: Miller: Youth Empowerment Video Workshops: samples from Welfare the Force; Talkin' About Dropkin' Out et al.

The emphasis on broadening the exchange of information within surrounding communities is supported by the iEAR faculty (particularly Branda Miller and Richard Povall) and by technologies made available to iEAR students through the resources of a large technological institute. In the 1990/91 concert season, a new series of satellite broadcasts was launched by the faculty member John Sturgeon. This series is being expanded by current faculty member, Branda Miller, and has become part of increasing efforts to reach out into the community both immediate and at large. Satellitecasts, interactive installations, information networking, cooperation and involvement with cable and community programming, video equipment workshops with Humanities, Architecture and Engineering students, and within surrounding communities: these are the tools and the techniques used to make a positive statement of artistic commitment and involvement in the community.

FACILITIES

The development of the MFA program has meant a significant increase in the physical and technical resources available in the iEAR Studios. The facilities include a computer music studio, an audio workstation center, an undergraduate video studio, a computer imaging/animation studio, an off-line video editing studio, and an integrated studio suite which includes state-of-the-art production and post-production facilities for music, video, and image processing/animation. To support the program’s emphasis on performance, portable music and video performance equipment enables students to perform without disabling the other studies.

The studios are being constructed and equipped over a three year period, although they are operational in the first year of the program. At this time, computer music is based on Macintosh digital stereo recording and MIDI systems; video formats include Hi-8, U-matic SP and S-VHS; image processing is based on Amiga 2500 computers. In the second year the video format for on-line editing will move to BetaCin SP, and Symbolics and TDI computer graphics and animation systems will be added. The performance equipment includes multiple large monitors, a projector, processors, players, and camcorders for video. It also includes a MIDI setup which matches the equipment in the studios, allowing students to prepare materials in the studio which can then be easily moved to performance.

ICMC 186
Central to the design of the new facility is the urge to build studios that support total integration between music and image, at all stages of the creative process. Thus, it is possible for students working with a musical sketchpad in the digital audio workstation center to work from base one with images in mind. It will be very easy to move between the different studios, not only because formats are becoming standardized, but because synchronisation, the lifeblood of all time-based arts, will be always easy and always possible.

The Integrated Suite, comprising audio and video production equipment, an on-line editing suite, and a production studio, is the heart of the IEAR Studios. The design approach is unique, and abandons the typical production/post-production paradigm found in industry and thus generally supported in educational environments. The main studio has all the high-end tools necessary for the on-site creation of audio, video, and image processing elements. Artists can work together at the elemental level on new pieces, or a single artist can make work utilizing multiple elements in this one studio. In a typical post-production scenario, all of the separate parts will already be complete by the time they reach the studio, there to be assembled into a final product. This approach is specifically avoided in the Integrated Studio, even though single element, specialized studios also exist as part of the overall facility. The design of the studios is central to the driving force behind IEAR’s academic program: indeed the studios themselves are the core of the program. Students have the opportunity to work in an environment that not only reflects the goals of teaching them how to be collaborative artists in a multimedia world, but in a technological environment that more truly reflects the state-of-the-technology, and certainly the trend of the future technology. Because of RIT’s extraordinarily rich technological environment, students are encouraged to work with experts in many experimental fields. An example of this is the recent invitation to provide creative input and expertise to the Image Processing Laboratory on the RPI campus in its work as the New York development site for High Definition Television. Experimental areas such as extended realities and virtual realities will be central to the teaching and to the ongoing development of the facilities. Bringing graduate students into this kind of arena not only breeds working artists who are not afraid of the technology they are using, but students who typically challenge the technology they are using either by creating new technologies or by stretching the utility of existing ones.

CONCLUSIONS

There are no precedents, no available texts, and surprisingly little research for this kind of teaching. The IEAR faculty are leaping into an abyss of knowledge that can only be gathered from many disparate sources. It is the goal of this new venture to bring together much of this knowledge and enrich it with new levels of creativity, research and interactivity. Hopefully, the program will nurture artists who will continue to work themselves as interdisciplinary artists, and to work with others in an intelligent, experienced multidisciplinary context. They will, at the least, have a tangible sense of thinking as artists in disciplines other than their own think, and will ultimately view themselves as electronic artists who can approach their work from many different perspectives.