

**WHAT WE LEARN AND HOW WE TEACH:  
PEDAGOGY IN NEW MEDIA/COMPUTATIONAL ARTS**

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There are many moments from my undergraduate art education that I can point to as milestones or as containing significant insights. Many were failures, the kinds of failures that should happen in college, behind the protective veil of academia and away from the eyes of critics. Working in the medium of computational art, I fell again and again into the common pitfall of losing artistic depth in my work due to months spent in the miasma of technology. With a tempting array of high tech processes and equipment, it is easy to lose sight of one's original artistic impetus while wrestling with lines of computer code that won't evaluate or the infinitely convoluted interfaces of 3d modeling software. But, I consider these to be *successful* failures, learning moments that are as much a part of getting a college education as is any accolade of scholastic achievement.

Other important moments in my undergraduate experience came from statements from professors. As one of the many hopeful sophomores beginning the process of applying for study at The Center for Digital Art and Experimental Media (DXARTS), an autonomous degree-granting program at the University of Washington that offers research-oriented BFA and PhD studies in New Media art, I attended a class that serves as the initial course in a two-quarter long application process. The course consisted of various lectures on the history of New Media art, critical theory and project-based lab meetings. One lecture, given by Shawn Brixey, co-founder and former Director of DXARTS, contained a statement that resonates with me to this day. Brixey was speaking about his motivations for becoming an educator, and he expressed his desire to be in the “atmosphere of the perpetual learner.” At that point, I had given little thought to what I might do with a BFA in New Media art; like most of my classmates, I was narrowly focused on the application process and acutely aware that of the dozens that would apply, only 12-15 would be accepted. At the end of an arduous two-quarter application cycle, I was accepted into DXARTS and was able to think about the future a bit.

Brixey became a mentor to me and changed the way I thought about art education. I had always assumed that most artists became educators as a way to pay the bills, get health insurance or buy time until they attained the freedom and financial resources that art stardom brings. As my time at DXARTS continued, it became apparent that Brixey (and many other artists) choose to be educators. This choice is not made as a substitute for an art career, but as a vital component of a larger practice that included all of the qualities that one would expect from a successful artist. While still an undergraduate at DXARTS, I decided to pursue an MFA and a career as an artist/educator.

As a graduate student nearing the completion of my first year in the Electronic Visualization/New Media

Arts MFA program at the University of Illinois at Chicago, I am at the apex of my last two years as a student in higher education. From this vantage point, I feel that I have a great deal of insight into both learning and teaching within the disciplines of New Media/computational art, and concepts of art pedagogy in the context of this discipline is at the center of much of my research at this stage of my MFA. In the previous section, I addressed the question of why one would want to work as an educator. One of the main questions beyond this is, in the context of New Media/computational art, what are the benefits to working as an art educator in higher education? Does the traditional model of studio arts MFA work for this media? In the last century, there has been a marked transition from artists pursuing studies primarily in art schools to artists turning to universities for an art education. As early as 1963, Allan Kaprow noted this change in an article for *Art Journal*:

*For one thing, as many educators have observed, the signs are unmistakable that the professional art school and the private class are both on the wane, and that the university art department is taking their duties over rapidly. (Put in another way, the professional art schools in adding required humanities courses, are becoming much like the academic schools.) American art has achieved status and it is impossible on the campus to ignore it or its creators. For another, we find increasingly that artists today are well-educated and that the classic antagonisms between professor and creator are not really as strong as they were years ago. Then lastly, universities are quite obviously able to pay more and offer more security to an artist than any art school or private class ever could.<sup>i</sup>*

Almost 50 years after this article was published, we can see that Kaprow's observation was very accurate, indeed. Taking it as a given that universities are the greatest force (in sheer numbers) in current art education, what additional benefits beyond job security does the university setting offer? One benefit, which is of great importance in New Media/computational art, is the presence of research capital in the form of funding and facilities. Although many New Media/computational art projects utilize what have become very inexpensive, democratized components (e.g. micro controllers, personal computers), others require a team of researchers and appropriate technology to accomplish. One example of this can be found in the work of George Legrady, professor of Interactive Media and Director of the Experimental Visualization Lab in the Media Arts & Technology (MAT) doctoral program at the University of California Santa Barbara (UCSB). Citing the increase in scale and technological complexity of his projects over the past 20 years, Legrady advocates this type of team-based, research oriented art production:

*Implicit in such collaborative situations is the understanding that no individual can have all the necessary knowledge to fully realize a project. The collaborative approach leads to new insights and unexpected results as the work evolves; the challenge is to maintain the integrity of the original concept. Given the flexibility of such a situation, the artwork becomes a research opportunity for the participants as they explore how their knowledge and approaches can synthesize with those of the other contributors.<sup>ii</sup>*

In other words, working in the university setting not only provides the artist/educator financial security, but can have a direct impact on the media they use to realize their work, and on its scale and impact.

For art students working in media that is specific to a type of research environment, e.g. stereoscopic 3d, universities with appropriate curricula, facilities with specific equipment and educators with experience in this media are necessary. As an artist working in stereoscopic 3d, one of the major factors in my decision to enroll in the Electronic Visualization/New Media Arts MFA program at the University of Illinois at Chicago was the history of the Electronic Visualization Laboratory (EVL), a joint laboratory of the computer science and art and design departments. For almost 40 years, the EVL has been fostering collaborations between artists and scientists. The benefits of artists and scientists working together was described in detail by Daniel J. Sandin, Tom DeFanti, Lou Kauffman and Yvonne Spielmann in their paper, *The Artist and the Scientific Research Environment*:

*In our view, media artists should be supported by sciences because media artists share visualization technology with science; artists are trained in this technology; artists are trained in a range of visual studies; artists know about presentation; and artists are good project organizers. Finally, artists create new media, new ways of working with media. These are the reasons why artists should be supported within the research environment.<sup>iii</sup>*

Sandin, an art professor, and DeFanti, a computer science professor, founded the program in 1973. Since then, the EVL has supported many Electronic Visualization MFA students as research assistants and encouraged them to work alongside the computer science MS/PhDs in a mutually beneficial environment. This situation is fairly unique; an Electronic Visualization graduate student at UIC has the opportunity to learn from art educators who are well-versed in New Media/computational art and to work in a research environment with computer scientists in the space of one MFA program. For me, working as a research assistant in the EVL and taking part in this collaboration is an extremely crucial aspect of my education. It is not the presence of facilities or equipment alone that makes this position or degree program ideal. Working in the environment in which the tools of artistic expression are being made, I can go one step farther than many New Media/computational artists in the production of my work. Rather than simply relying on large companies to develop software environments with which to create, I can develop my own tools with the support of dedicated and experienced faculty in computer science and fine art. The net result of this is not simply the ability to develop unique tools, but also to understand the underlying processes that are at the core of the final work.

A successful artist and educator, Golan Levin, Director of the STUDIO for Creative Inquiry and Associate Professor of Electronic Time-Based Art at Carnegie Mellon University, advocates this type of tool making in his

pedagogical statement:

*In one dystopia, we project ourselves into the digital art school of the near future. The wind howls through the room, whose shelves are empty but for three small cartons: Flash, Photoshop, Director. For today's digital artists — many of whom have eagerly adopted the narrow horizons dictated by this small handful of commercial products — this vision is, I claim, already a near-reality. Popular tools such as these have been both a great boon as well as a great hindrance to the development of interactive media art as a new form. On the one hand, they have radically democratized the production of digital media: today, anyone with a computer can publish and distribute their work on the World Wide Web. These tools, however, also implicitly homogenize the process and products of computer-assisted and computer-based art making. With identical options to work with, our students' art has begun to look and taste the same, and our art courses, as often as not, explore little more than the possibilities that Macromedia and Adobe have found convenient to bundle.<sup>iv</sup>*

The research university, particularly one in which multidisciplinary arts research is taking place, provides an ideal situation to develop curricula that focus on this particular brand of tool building. Levin also argues for the efficacy of using computers in art making:

*To state that computers can offer an unimaginably greater world of possible forms than these products is not techno-optimism; as computers are provably capable of simulating any other machine, it is mathematical fact. My own pedagogy is simply one educator's attempt to reclaim computation as a personal medium of expression. In working to empower the next generation of electronic media artists, I try to give students the confidence to build their own tools and artworks from first principles.<sup>v</sup>*

With the university as the hub of art making and the growing number of students interested in pursuing New Media/computational art (rather than traditional fine arts), the concept of the artist's studio and art pedagogy must be revised to accommodate this change.

The studio of multidisciplinary arts research can take on a variety of forms, as best serves the work and the artists, but it is clear that it is not a forum of purely conceptual practices. The technical and conceptual nature of New Media/computational art is often at odds with many traditional MFA programs, which place a heavy emphasis on Conceptual art, and little emphasis on craft or technique:

*In graduate programs in art, particularly the most successful ones, manual competence no longer plays a central role in judging works or makers. No longer is the criterion, as it was in Matter's academy, the matching of a rendered figure to a figure in the world, to the model on the modeling stand or the plaster cast on the table: the artist need not demonstrate the traditional skills and techniques of representation but instead must possess certain kinds of knowledge and occupy a certain position.<sup>vi</sup>*

Howard Singerman refers to the art education philosophy of Mercedes Matter, which emphasized manual competence in studio settings. The majority of New Media/computational art work is technically demanding, requiring high levels of both craft and technique to achieve. The time frame for this type of work is often longer than for their traditional fine arts counterparts. In stark contrast to the picture Singerman paints, a growing trend in New Media/computational art departments, and what is proving to be a common trait among the most successful of these, is a return to the studio as *atelier*. This studio is a place where experienced instructors

teach in a hands-on manner, demonstrating techniques that have been mastered through repetition and experimentation. The atmosphere is one that requires a high level of conceptual and technical presence in student's work to achieve success in the program. In terms of time, the projects are scaled to either straddle multiple semesters or realistically fit into one. To accommodate the disparity in time frames for New Media/computational art versus traditional art MFAs, universities are implementing three-year MFA programs, as is the case at Carnegie Mellon, and practice-based PhD programs, as is the case with DXARTS.

The New Media/computational art department is not simply a series of computer labs designed to teach media literacy. As more and more New Media/computational artists see their work validated as occupying a proper place amongst the other disciplines in the academic art world, and as greater numbers of students choose to pursue studies in New Media/computational art media, the role of these departments will take on a great deal of significance in terms of their influence on burgeoning art movements. Due to the extremely varied nature of art work and tools, it is clear that there is no one-size-fits-all approach to organizing a New Media/computational art department. What is emerging as one successful model is that of the New Media/computational art department as a multidisciplinary hub in a larger network of entities. It is a central node around which educators and students can make research connections, crossing disciplines and building departmental bridges. An excellent example of the multidisciplinary approach to New Media/computational art education is a course, MAT 56: Visual Design through Algorithms with Explorations in Visual Perception, in the MAT department at UCSB. George Legrady and Jerry Gibson, a computer science professor, teamed up to create a course that would combine their two disciplines, engineering signal processing and media-arts project production. The class was offered concurrently to artists and engineers, with Legrady and Gibson taking turns lecturing on various topics within their respective disciplines. The goal of the course was to bring the sophisticated research of engineers together with the risk-taking, novel approach of artists. The course culminated in a project cycle that was carried out by artist-engineer pairs. The results of these pairings yielded interesting results:

*The past two courses revealed that students approached the projects' planning and development based on worldviews and problem-solving approaches defined according to training in their individual disciplines. Whereas the engineers were interested in technical problem-solving opportunities, one psychology student was interested in visual-perception issues, and the arts students tended to focus on the cultural aspects of media messages. The artists' interests in the difficult-to-measure noise of cultural messages and subtexts stood in contrast to the engineering desire for a purer signal: the collection of reliable and measurable data.<sup>vii</sup>*

Whether the collaboration occurs within the lab, workshop or classroom, the research university provides

a multitude of possibilities for collaboration and cross-pollination in arts research. The student benefits from the experience of a variety of disciplines and learns the value of looking outside of traditional venues to accomplish artwork. The educator working in higher education, is poised to receive the benefits that most major research universities offer, such as facilities and diverse colleagues with which to collaborate. The important role that New Media/computational art students and educators have in this period of paradigm shift is to look outward from their departments, seeking out new inroads with like minded departments, thereby establishing fine arts as a serious avenue of research.

- i Allan Kaprow, *The Effect of Recent Art upon the Teaching of Art*. Art Journal, Vol. 23, No. 2 (Winter, 1963-1964), pp. 136-138
- ii George Legrady, *Perspectives on Collaborative Research and Education in Media Arts*. LEONARDO, Vol. 39, No. 3, (2006), pp. 214–218.
- iii Daniel J. Sandin, Tom DeFanti, Lou Kauffman and Yvonne Spielmann, *The Artist and the Scientific Research Environment*. LEONARDO, Vol. 39, No. 3, (2006), pp. 219–221.
- iv Golan Levin. "Pedagogical Statement." 2003. Golan Levin and Collaborators. April 19, 2010.  
<[http://www.flong.com/texts/essays/statement\\_pedagogy/](http://www.flong.com/texts/essays/statement_pedagogy/)>
- v Levin, "Pedagogical Statement."
- vi Howard Singerman, *Art Subjects: Making Artists in the American University*, (University of California Press, 1999) pp. 173.
- vii Legrady, pp. 217-218