

New-Media Art Education and Its Discontents

Trebor Scholz

A crisis has emerged in new-media arts education. Despite the widespread emergence of new-media arts programs and strong student interest throughout North American universities as well as in Finland, Singapore, Thailand, China, Germany, and Australia, surprisingly little public debate about the goals, structure, and topical orientation of these programs is taking place. The issues include the demands of undergraduate students for vocational training, the isolation of new-media art in the university lab, the lack of advanced debate about new-media artwork, the introduction of Open Source Software in the classroom, the meaningful use of theory, and the media-specific structure of most departments. Beyond questions of technical instruction, an additional concern is the challenge of keeping up with the significant technological advances in a number of fields.

The topic of (online) collaboration may appear only marginally relevant to academics, but with cell phones, e-mail, multiplayer online games, mailing lists, Weblogs, and wikis, our everyday lives are increasingly enmeshed with technology. Acknowledging that access to technology is partial and generally limited to people in societies that benefit from the globalization of the information order, it is urgent that we examine the ways in which we collaborate through technological channels.

Free Cooperation: Networks, Art, and Collaboration, an April 2004 conference at the Department of Media Study at the State University of New York at Buffalo, reflected on new educational models in new-media education and the negotiation of the ground rules for collaboration. Some one hundred and fifty artists and academics gathered in Buffalo to discuss anti-universities, the notion of free cooperation, radio experiments, collaborative performance projects, distributed authorship, self-organized educational initiatives, collaborations between artists and scientists, peer-to-peer porn, networked virtual reality, collaboration in the Open Source Software movement, and participatory networked art. Many of these topics were discussed on a preparatory online forum, and selected postings were included in a free conference publication.

Organized by Amsterdam-based media critic Geert Lovink and me, the Free Cooperation conference examined critical issues in new-media education and proposed ways to overcome its current crisis.¹ I intend to do the same in this essay.

We invited to the conference the Bremen-based media critic Christoph Spehr, who coined the term “free cooperation” in his essay “Gleicher als andere” (More Equal than Others).² Most of Spehr’s writings have not been translated into English, so the conference was an opportunity to introduce his ideas into Anglophone media discourse.³ Spehr’s writings refer to 1960s sci-fi movies to think about contemporary cooperation, insisting on the option of refusal and the right of withdrawal from cooperation, as well as negotiation and renegotiation with corporate or state monsters. How can these ideas of independence, equality, and freedom be useful for alternative networks of learning in or outside the university?

On Collaboration

For media artists, collaboration and consultation are inevitable, as technology-based artwork requires deepening levels of specialization to bring together technological and conceptual components. In business contexts, “groupware” has become increasingly important. Recent versions of proprietary software, such as Macromedia’s Dreamweaver, focus on the development of file sharing and the issue of permissions in coauthoring. Networked collaborators are alerted to changes other team members have made to a document and can decide if they choose to overwrite them or merge their contribution. How can Spehr’s notions of free cooperation, developed in social-democratic Germany, become more relevant to the United States, with its iron grip of student loans and corporate credit reports? Here there is no social safety net for those living the politics of

refusal and independence.

There are encouraging examples. In the United States, the Critical Mass and Reclaim the Streets movements present promising cooperative group models. During the antiwar protests of 2003, hundreds of cyclists in San Francisco blocked major urban intersections and highways as part of a Critical Mass initiative. This effort began with a leafleting campaign advertising times and dates of the actions, yet the actions took place without any central leadership. In a similar vein, Reclaim the Streets uses a decentralized model to reclaim the public sphere.

Other examples of decentralized community-organizing efforts include broadcasting free radio, graffiti, and street parties. The Green movement exemplifies a type of temporary alliance that chooses no one particular subject position (e.g., class, gender, race) in pursuit of a shared goal.⁴ Paper Tiger TV, founded in 1981, presents a consequential model of collaboration to create and distribute collectively produced, activist video works that critique the media. And the New York City-based chamber orchestra Orpheus works without a conductor, rotating all artistic and administrative functions among the musicians. These are examples of horizontal, leaderless social structures.

In the context of situations of learning, a wireless tool developed at the University of California at San Diego is promising: ActiveClass employs wireless technology in an attempt to encourage classroom participation, via Personal Data Assistants and wireless-enabled laptop computers, from students who might otherwise not participate. ActiveClass permits students to silently ask questions, share responses, and provide other types of feedback. The results are compiled and then broadcast to all the students and the teacher, facilitating verbal discussion.⁵

What Is Free Cooperation?

We already collaborate in person or in networks. From cross-cultural to cross-disciplinary to cross-professional exchanges, cooperation is a fact of life. Looking beyond the focus on internal group dynamics (and the relationships between individuals), the Free Cooperation conference asked what really happens when many collaborate. Conference participants with as much as twenty years of experience in this area said that collaborations, instead of immediately focusing on the project goals, should start with the building of trust and the testing of values and interests for compatibility. Social attitudes including trust, mutual respect, tolerance, and shared values make it easier for people to work together on a project. With trust, true communication can take place. In free cooperation, everyone stands to benefit, and anyone can leave at any time. If there are disagreements, the cooperation must remain workable. There is no ideal cooperation; there always is compromise.

Online and off, there is the risk of involuntary altruism caused by freeloaders in the collective process. Whose labor becomes invisible and whose steps to the front? Issues of how to credit collaborators are more developed in theater, dance, architecture, music, and film: each person receives credit for an individual contribution. Some members of the Open Source movement suggest a tit-for-tat strategy based on exchanges of effort. One gives a bit of software code and then receives some.⁶ Comparably, jazz musicians and dancers who improvise study the moves of the others and take turns leading. At best, collaborations can playfully spark off one another, with a “third body” resulting from a chorus.⁷ The free development of each individual is the condition for the free development of all (Marx/Engels), although commonly, self-sacrifice and the absence of personal gain, rather than freedom, are associated with collaborative work.

The logic of the art world and that of technology-based art are opposed to each other. The art world focuses on the romanticized idea of an author who creates an art object that can be distributed by many institutions. Technology-based art is variable, often ephemeral, discursive, concept-based, and existent in many copies; it is collaboratively authored and can be distributed online.⁸ Many artists have taken on the

Internet as a context for their work, de-emphasizing individual authorship and seeking an apparatus that goes beyond distribution and extends communication. Early projects of collaborative authorship include Robert Adrian X's *Die Welt in 24 Stunden* (1983), Douglas Davis's *The World's First Collaborative Sentence* (1994), and the project *Epreuves d'écritures*, part of the 1985 exhibition *Les Immatrieux* conceived by Jean-Francois Lyotard. In spite of these examples and the interest of artists, most art institutions are neither interested in nor supportive of free cooperation.

The Conference

People love conferences. They are venues where you can reflect, rethink, meet future collaborators, debate ideas and artworks, party intensely, get inspired or provoked, learn, make new friends, and then occasionally carry on the debate in the sauna. They allow people who can't otherwise meet to spend a few days together (away from their obligations) and zoom in on ideas. For practitioners whose geographic location or financial situation makes access to these venues impossible, technologies such as video conferencing and Access Grid allow remote participation.⁹

Lovink and I suggest in a recent essay that the ritualized academic structure of panels and the essentially noncommunicative form of the keynote speech feed into the celebrity system, reinforcing hegemonic paradigms that get in the way of genuine dialogue and of hearing diverse, emerging voices. "Some will read this criticism as an attack on the scientific community as a whole. But we disagree. Academics are not a species in danger of extinction, and it is time to get out of the defensive mode. Panelism is part of the dark side of 'academism' and needs to be addressed, exactly because it is spilling over to other contexts such as the arts, culture, new media, and even activism."¹⁰

Increasingly, formats of the sciences are unnecessarily imposed on the arts, driven by the business logic of many universities that will acknowledge an art project as fundable if it affirms scientific formats of research. Left to their own devices, artists would not likely have come up with these formats. I am not suggesting that artists cannot speak for themselves or should not be involved in practices embracing theory and production, or arts and sciences. But in our essay, Lovink and I do question "the forced adaptation of scientific formats and argue that it is high time to start public awareness, openly talk about it, and label the occurring tendency by its proper names: paperism and panelism."

In the ideal setting, participants read each other's papers or presentations before they arrive at the venue. At the actual event, presenters offer short summations of their work and focus on discussion. Specific software could make it easier for participants to find each other more easily (i.e., recognize the person you want to meet in large conference crowds). This technology is still too expensive for media arts conferences, but business contexts already have similar location-aware networks: nametags contain information that makes the person locatable in a close-proximity area network. This is a possible application for the WiFi.Bedouin.¹¹

The Free Cooperation conference took place on a university campus and in an academic community, but the atmosphere was theatrical. We designed the conference scenario after the dramaturgical structure of a Brechtian play. A big concentration of energy (talk show, debate-intensive sessions) was planned for the first day and again toward the end of the second. For example, a talk show in which participants impersonated sci-fi filmmakers, scientists, and "flexible personalities" also featured musical intermezzos by Tony Conrad on the phonarmonica.¹² Remote guests commented via Internet Relay Chat. We also set up a talkathon (one room, two speakers, eight people in the audience at a time), a few dialogues, a video conference, a weekend conference game (about games), streamed net-radio debates, brainstorming sessions, film screenings, a small exhibition, several workshops, a turntablist collaboration, and one monologue. There were no keynote speakers and no panels. Participants were explicitly asked to avoid the delivery of long lectures in order to encourage a more dialogical format, but the

mantra of “no lectures, no panels” took a long time to sink in. All rooms were organized with circular seating.

Large conferences are opportunities for students to create their own networks and relationships that may become fruitful in the future. Encounters with other students, artist friends, or cultural critics may turn out to be more significant than regimented course work. Generally, faculty members stay in a particular institution, but students leave. It is essential for them to make links not only where they study but also internationally.

The Logic of the University?

I studied in Dresden, London, and New York City and have taught undergraduate and graduate students in several research institutions, including the Bauhaus, the University of Arizona, Tucson, and currently the State University of New York at Buffalo. The organization of a session on new-media education was inspired by a debate that developed in October 2003, when I posted some thoughts and observations about new-media arts education on the mailing list <nettime>.13 I received many responses, via the Rhizome mailing list, the collaborative Weblog Discordia, and dozens of e-mails.14 The responses ranged from enthusiastic support to uneasiness. The text was predominantly concerned with boredom, apathy, and anti-intellectualism in American undergraduate new-media classrooms, the role of the teacher, and issues of teaching beyond “just-in-time-knowledge.” Reading these responses helped me realize that there were significant differences between individuals who have the actual experience of the here-and-now-ness of teaching in the classroom and others who approach teaching with the there-and-then-ness of ideas they did not get a chance to test-drive with students. Part of this essay reflects on this debate.

Universities throughout the United States increasingly are restructured to fit the imperatives of corporate business logic. In his book *The University in Ruins*, Bill Readings elaborates on the replacement of culture by the discourse of excellence as the university’s response to the campus riots in 1968.15 Undergraduate students may conceive of themselves as consumers who conveniently make a down payment on education and, with next to no effort (like shopping), graduate into the good life. It would, however, be elitist to blame students for the system that socialized them and now puts a tremendous weight on them. Undergraduates in the United States are under severe pressure to find a job after graduation. This urgency is both self-imposed and sustained by peers and parents. It is the task of the faculty to outline clearly what the interests of the department are and where the education provided will get the students professionally. Amy Alexander, a media artist who teaches at the University of California at San Diego, points out that “Unemployment payments and food stamps don’t go very far; neither do paychecks from WalMart. . . . Once you work full-time, for a while, you’ll realize how amazingly unfulfilling jobs are, and that you’ll want an engagement with culture outside of your employment.”16 Students in new-media art programs in the United States rarely hold the hopes for employment that their counterparts in European universities have held, especially since the 1980s. The aspiration then was to belong to the 1 to 2 percent of graduates who could make a living with their work in the art market.17 In the United States, especially for young technologists, a sustaining art market does not exist, and substantial grants are basically unavailable. It is for this reason that new-media art has flourished in Europe to a greater extent.

Increasing bureaucratic demands in many universities diminish the time artist-educators have to actively engage with contemporary cultural production and discourse. The high rate of technological change is an additional challenge. A great deal has been written about the contemporary university as a for-profit knowledge factory, but few alternatives or counterexamples have been offered.18 New-media art departments worldwide experience widespread disagreement between undergraduate students and faculty members. Students rarely aspire to become artists and focus on acquiring vocational skills for their work in “the industry.” They challenge the relevance of media

archaeology, theory, and political context as concerns of an unfashionable past. But to which industry do they refer? In reality, there is no one stable new-media industry, and the skill sets required for the field are constantly shifting. A fixed identity of the artist may once have been possible for filmmakers, for example, but it is hard to imagine one for the young new-media artist. Job opportunities drift from the VJ turntable and virtual reality lab to the local nonprofit organization and the theater stage. In her essay in the anthology *Steal This University*, Ana Marie Cox talks of the corporate desire for “just-in-time-knowledge”—that is, skills necessary for the job at hand, rather than basic, broader skills. As an example, she cites Real Time Interactive Simulation, a higher-education institution licensed by the state of Washington and run by the Nintendo Corporation: “Students take no humanities or social science courses whatsoever. That’s because those things are superfluous for the needs of the Nintendo Corporation.”¹⁹ Novelty is a fickle intellectual companion.

Most faculty members desire to educate students instead of preparing them for the technological Taylorism in an HTML factory. Independent thinking and challenging courses are more likely to provide enduring intellectual resources than the teaching of “just-in-time-knowledge” and common software applications. What will students fall back to if their first job choice does not come through right away?

A consumer approach to education nurtures anti-intellectualism, which manifests itself in neglecting assignments, complaining about workloads, or condemning intellectual debate as boring or irrelevant. Bill Readings describes undergraduate students in North America as having a widespread sense of being “parked” at the university—taking courses, acquiring credits, waiting to graduate. “In a sense this is their reaction to the fact that nothing in their education encourages them to think of themselves as the heroes of the story of liberal education . . .”²⁰

The Future of Critical New-Media Arts Education: Suggestions for the Morning After

I am a media artist teaching within the system of a research university, and my suggestions for solutions come from this difficult, in-between place. The rhetoric of resistance to the corporatization of the university rarely leads to concrete proposals. We need ways in which we can escape the business logic of the “university of excellence” (Readings), a construct that is fundamentally at odds with responsible education. What is the professional future of a student graduating from a new-media arts program in the post-dotbomb era? What are innovative structures for new-media arts education? In the post-welfare state, what are examples of self-organized educational projects that respond to the soaring cost of education? Has the time come when we can replace all proprietary software with Open Source or free software applications? Which tools can we easily use to network student groups, departments, and universities? How can we introduce wireless technologies for teaching? How can theory and production be brought together in a meaningful way? Faced with technophobia, hyped techno-optimism, and Futurist discourses of progress that make us blind to the clumsy reality of computers, how do we think about and live with technology? Which topics are urgent and which readings are relevant and lasting? I want to turn to a number of concrete proposals for a critical new-media education, some of which are drawn from models already at work.

Theme-Based Rather Than Media-Based

Rather than developing traditional media-oriented departments, universities could develop theme-based work groups (departments) around issues such as cooperative technologies, media art and politics, or the knowledge commons. Team-based research could enable cross-disciplinarity beyond the set boundaries of even the most progressive

media-based departments. As much as is feasible, teams would use and teach Open Source Software. The theme-based structure is applied in universities such as the Design Academy Eindhoven (Netherlands), where each theme-based group works with an organization or a company. All involved in the learning and teaching process should follow the logic of educational responsibility and accountability, which is often at odds with the logic of accounting. We need to allow for less efficiency, more play, and more experimentation. Learning and teaching should take place in a way that questions knowledge through authority. More attention should be paid to the building of friendships, relationships among peers, and interpersonal skills. Ergonomic chairs and healthy food (rare to find on U.S. campuses) would also contribute to a good learning environment. Participants should be motivated for self-learning and self-directed time, open to collaboration and collective research. Working from the Freie Klasse (free class) model of the Berlin University of the Arts, participants should organize courses in which they teach each other, write their own curriculum, and invite speakers of their choice. Within the context of the theme-based department, students should have the autonomy to decide what and how they want to learn; self-reflexivity would be encouraged, and no grades given. Exchanges with local tech-businesses are enabled in creative ways. A thoughtful attempt to involve students in local manufacturing facilities is the HowStuffIsMade project.²¹ In this model, students produce photo essays about the creation of products and get involved with local businesses.

Students should learn that the conquistadors of new-media art don't only produce in New York, Buffalo, Berlin, and London, but also in Riga, Singapore, and Delhi. International student exchanges based on personal contacts rather than long administrative battles would allow for this understanding. Networked international events of like-minded departments and colleagues are useful in achieving this opening of horizons as well. Locally, the university is a confederation of people of different ages, classes, genders, sexualities, and ethnicities. Yet the benches of new-media arts classrooms in the United States are often filled with young, Caucasian males. One reason is that most teachers are themselves white and male. I believe that, for the most part, it will be minority teachers who attract minority students. Focused recruitment in high schools is another possible approach to end this imbalance.

Do-It-Yourself-Education

In the Paris of 1968 a student uprising led to a general strike and the occupation of universities and libraries. At the same time George Maciunas designed Fluxus charts that argued for an experimental educational laboratory, student-run seminars, and an optional non-degree program for independent study. Today, in the context of state budget cuts, self-organized do-it-yourself educational projects such as the Commune des Arts, the Freie Klasse, and the School for Missing Studies offer inspiring approaches. The Munich-based art historian, journalist, and artist Stefan Römer describes the Commune des Arts as nonhierarchical, self-organized by participants with a commitment to social engagement, with no curriculum or formal instruction, and with no emphasis on the production of objects.²² The base budget is covered by the German state, and participants raise money for projects in collaboration with museums, libraries, universities, and agencies.

Similarly, in the Freie Klasse movement active in Vienna and Berlin, students are responsible for both content and collective organizational structures. The curriculum is based on artistic practice, reflection on the ability to act politically, and intensive study in contemporary art history and theory. The self-organizational pattern prepares these students for a future that demands they be self-motivated, discursive media artists and organizers. Participants learn to evaluate their own work and gain self-confidence. An assembly of Freie Klasse students decides about admissions. The danger, to which several European critics point, is that student-motivated, self-organized courses are seen by institutions as a way to decrease funding and delegate responsibility.

The School of Missing Studies provides a flexible educational platform for international study and exchange on cultural issues related to the urban environment in cities marked by or currently undergoing political, social, and cultural transition. The school provides productive research and project opportunities for young professionals in architecture and art who are struggling with what is missing in their studies with regard to processes of local urban change.

Approaching Technology

The educational initiatives mentioned above exemplify that new-media arts curriculum must be concept-driven rather than media-defined. In a time when the idea of craft skills is giving way to computer literacy, networking, and organizational skills, we should not focus on teaching technical skills alone. The cybertriumphalism that leads to “an exclusive emphasis on software programs is extremely problematic, as it leaves out the history of the tools we use, the politics of these very machines and the all permeating social context” says Amy Alexander in the e-mail cited above. I advocate for an educational project that rejects both technophobia and technophilia. New-media cultures should be examined as part of our culture; they should be understood in a social context. This idea connects to the tradition of Black Mountain College, with its core idea that education should be consistent inside and outside of the classroom. In his most recent book, *My First Recession*, Geert Lovink discusses Simon Penny’s argument for a transition from a technical to a cultural agenda. This approach acknowledges that cultural practices drive technical developments.²³

The Sydney-based media philosopher Anna Munster argues that the notion that art can be defined according to the medium through which it is realized stands firmly within the discourse of modernism. She refers to Clement Greenberg, who argued that what was unique to a particular art coincided with what was unique about the medium it deployed. “The concentration on technology per se, whether it features as part of the content the development of a kind of digital style or the emphasis on computational processes, thus draws so much of this cutting-edge digital artwork back within the discourse of modernism. The machines are not reducible to a set of technical parameters nor can the digital be considered solely in terms of the formal qualities. The content and ideas expressed through digital art should be addressed over and above the technology that supports them.”²⁴

The Knowledge Commons and Tools for Cooperative Learning

Over the last few years the term “tool” has become widely used in academia to refer to these software applications. Currently, there is an explosive growth of a variety of new Web-based tools for collaborative cultural practices. How do contemporary forms of cultural production make use of newly available collaborative applications to subvert corporate models of forced cooperation and foster self-organized, independent modes of cultural production and dissemination? Collaboration means working together to achieve goals that we could not achieve as individuals. Cooperation suggests that people assist each other.

While the cost for education is rising, independent networks and online environments provide free parallel projects. Students devise learning situations that escape rigidities and inadequacies. Over the past few years, technologies such as Web cams (for example, Polycom or Isight), Ichat, Internet Relay Chat, instant messaging, and video streaming became widely used in teaching. Natalie Jeremijenko, an artist, engineer, and faculty member of the University of California at San Diego, states in an e-mail interview that it is “the main challenge to teach the use of Web-based resources, not for convenience, but for restructuring of participation, and for engaging students in the primary role of the academy: to produce, underwrite and validate the information commons.”²⁵

The software designer and media theorist Warren Sack, of the University of

California at Santa Cruz, says in an e-mail interview that in the last year, since the advent of Apple's iSight, he has begun to invite colleagues from the East Coast and Europe to "attend" end-of-the-semester critiques. This has worked surprisingly well: students get one-on-one or two-on-one critiques with the virtual visitors via two-way Web cam. For Sack, iSight is the first Web cam that "works well enough to support this kind of extended, distributed dialogue."²⁶ He thinks it would be interesting to extend this practice so that all those across the country (and beyond) teaching these kinds of classes might become regular visitors to each other's studios.

Online businesses such as Friendster or LinkedIn offer many-to-many communications systems (multiparticipant virtual worlds) and forums for interaction, which are already used by students outside of the classroom. Such electronic environments are new pedagogical spaces that can further educational goals. In the book *Smart Mobs*, Howard Rheingold advances the idea that many-to-many venues are not only a new form of communication but a potential revolution in social organization based on "communities of shared interest."²⁷ Free textbooks, for example, are available online at Wikibooks, and many complimentary texts can be found at the Gutenberg Web site, Gutenberg.org. MIT OpenCourseWare is a free and open educational resource for faculty, students, and self-learners around the world.²⁸ The project Opentheory applies ideas of free software to the development of texts as users of the site improve on the text submissions of others.²⁹ Wikiversity facilitates learning through the Wiki real-time logging format.³⁰ A Wiki is a type of server application that allows people to create and edit Web-page content using Web browsers. The Web-based and open submission encyclopedia Wikipedia will eventually become more comprehensive than traditional encyclopedias. Despite the fact that these tools were welcomed with hyped enthusiasm and are fairly easy to use, many still find it too much of a burden to give them a try.

Open-content formats introduce a new production paradigm, offering editorial opportunities and a potential for broad participation in the knowledge commons—from collection and recombination to the distribution of knowledge. But these tools succeed best in combination with face-to-face meetings. This necessity is underlined by the research of University of Toronto sociologist Barry Wellman, who shows that apart from online communication, people maintain their geographically diverse social network through the telephone, cars, trains, air travel, face-to-face meetings, and letters.³¹

Open Source and Free Software

Computer-based teaching demands much of the instructor and introduces an overhead of required upgrades, equipment, and technical and administrative support. New-media departments could immediately cut costs while supporting a progressive agenda by switching instruction to Open Source or Free Software. The Linux operating system and free software allow universities to become independent from the dominance of global economic players such as Microsoft and Apple. Open Source refers to the source code of software that can be read on the Internet, modified, and redistributed: it evolves. Free Software consists of several kinds of software that can be legally copied and given free of charge to other users (think of "free speech" rather than "free beer"). Linux is a freely distributed operating system for PCs and a number of other processors. The use of Free Software allows for the education of wider groups of people and allows students to install the software that they use at the university and at home, at no charge. Rather than constantly lagging behind industry standards and paying for updates, students gain a set of skills that they can bring to the businesses that employ them. This, of course, is a difficult negotiation with some students, who may come to the university with expectations to learn proprietary software. In a recent e-mail interview Ralf Homann, an artist and a professor at Bauhaus University in Weimar, stated: "We use software to organize group work, to set up collaborations. We try to use open source software for all applications but it is not always possible. We can't ignore the fact that we educate students for their professional future, and if outside the university there is no professional

application of open source, then we can't teach it inside the university either.”³²

The Uneasy Connection between Theory and Practice

Wouldn't it be wonderful to see a dance piece where in the first half dancers danced, and in the second they would show the audience how to dance?

—Augusto Boal, from *Games for Actors and Non-Actors*

Augusto Boal's exercises for nonactors, such as the “ideological warm-up,” could be used to perform theory in a way that physically engages students' bodies.³³ In the classroom context, this might involve the theatrical reading of articles. Once new-media educators get beyond the certainty of technical instruction, many experience a crisis due to the unbearable lightness of their topical orientation. What should be read in a new-media context that fortunately does not have much of an established canon? To the theorists like Michel Foucault, Paul Virilio, Vannevar Bush, and Jacques Derrida, we can add, for example, the rich collection of perspectives offered in Noah Wardrip-Fruin and Nick Montfort's *New Media Reader*.³⁴

The merging of theory and production is not easy to implement in the classroom. The practice of writing curriculum in this field is quite similar to pursuing an event-based cultural practice. One is prompted to find sources and make connections to other institutions and to peers teaching in the same fields, as well as linkages among discourses in emerging media, film, activism, and pedagogy. Anna Harding, the former director of the curatorial program at Goldsmiths College in London, asks, “What do we hope to teach? What are we unable to teach? Can art be taught? What is the relationship between teaching art and student ‘success?’”³⁵ First and foremost, education in critical new media culture should focus on educating artists.

It is difficult to find faculty members who are conceptually discursive and technically advanced, or artists who have in-depth knowledge of both theory and programming. The use of the knowledge commons and Web-based, open-content tools, which enable the sharing of resources, are steps to an adequate response. Coteaching is another possibility. In any case, teachers need to constantly learn and build on their own technical and theoretical skills.

The Distributed Learning Project

Dedicated new-media arts educators have to work harder than many of their colleagues in other departments due to the fast-paced changes in the field. Instructors spend much time looking for relevant texts, artworks that use specific technologies, and good technical tutorials. They spend days searching the World Wide Web for syllabi and often reinvent the wheel. For these reasons, Tom Leonhardt and I developed the Distributed Learning Project (DLP).³⁶ It is a situated tool for learning communities to create, find, edit, reuse, and share content in new media. The DLP is a Web-based, collaborative, educational project that is accessible all the time for anyone with an Internet connection. It is an experimental network supporting collective research in new media. It links knowledge from the audio sound lab, the nonprofit organization, the new-media art studio, the independent media initiative, the small new-media company, new-media cultural organizations, the design studio, the club scene, and many departments and disciplines within universities internationally.

This easy-to-use tool for teaching and research interconnects knowledge from different departments, disciplines, universities, cultures, and professions to aid new-media arts education. The DLP cohesively links blocks of knowledge from fields of inquiry as diverse as art history (e.g., conceptual art), film, literature, computer science, political science, social science, and cultural theory. The DLP encourages free distribution of research materials. Sharing research saves time and resources and improves teaching. It challenges the way knowledge is created, developed, and distributed to a public. The project enables interauthorship. Rather than the single-author-

to-one-text relationship, collaborative interauthorship appears within groups of researchers, industry professionals, students, media critics, VJs, media artists, musicians, and educators.

The DLP is the first project of the Institute for Distributed Creativity that I founded in May 2004. The research of the iDC focuses on collaboration in media art, technology, and theory, with an emphasis on social contexts. In the spring of 2005 the iDC will start a Web-cam lunchtime speaker series on new-media arts education.³⁷

Educational concepts from the Bauhaus to Paulo Freire's notions of informal, nonhierarchical teaching and proposals for new collaborative models by contemporary media critics like Christoph Spehr should be introduced into the practice of critical new-media arts pedagogy. The *Free Cooperation* conference was one of the venues in which the discussion about education in new-media culture started. We should insist on the university as a framework for critical activity, production of knowledge, negotiation, experiments, failure, and possibilities of refusal, with the expectation that enriching discussions will follow. How can we invent our own future? We need more independent-learning projects that orient themselves on radically new configurations of communities based on sharing and cooperation.

Trebor Scholz is a media artist, writer, educator, and organizer. trebor@thing.net and <http://collectivate.net>.

Notes

1. Free Cooperation: Networks, Art, and Collaboration took place in April 2004 at the Department of Media Study, State University of New York at Buffalo. The conference was organized by Trebor Scholz (New York/Buffalo) and Geert Lovink (Brisbane/Amsterdam), assisted by Dorothee Gestrinch (now at Banff Centre in Alberta), Orkan Telhan (Ankara/Buffalo), Tom Leonhardt (Toronto/Buffalo), Arzu Telhan (Ankara/Buffalo), and many others in the Department of Media Study. For the conference program, see <http://freecooperation.org>.
2. Christoph Spehr, *Gleicher als andere: Eine Grundlegung der freien Kooperation* (Berlin: Karl Dietz Verlag, 2003).
3. Christoph Spehr, Free Cooperation video transcript, available online at http://www.republicart.net/art/concept/altransspehr_en.htm. An essay on the topic will appear in a forthcoming book by Geert Lovink and Trebor Scholz.
4. Ernesto Laclau and Chantal Mouffe, *The Radical Democratic Imaginary* (London: Routledge, 1998).
5. UCSD's ActiveCampus project provides location-based services for educational networks. Available online at <http://activecampus.ucsd.edu/>.
6. The "tit-for-tat strategy" in Open Source development is described in Carliss Y. Baldwin and Kim B. Clark, "The Architecture of Cooperation: Does Code Architecture Mitigate Free Riding in the Open Source Development Model?" a Harvard Business School working paper available online at <http://www.people.hbs.edu/cbaldwin/DR1/descrip.html>.
7. The third body emerges from true collaboration. The notion was developed by Charles Green in *The Third Hand* (Minneapolis: University of Minnesota Press, 2001), 125–38.
8. Lev Manovich "New Media from Borges to HTML," 2002, available online at http://www.nothing.org/netart_101/readings/manovich.htm.
9. The Access Grid is an ensemble of resources including multimedia large-format displays, presentation and interactive environments, and interfaces to support group-to-group interactions across the grid. For more information, see <http://www.accessgrid.org>.
10. Trebor Scholz and Geert Lovink, "ABC's of Conferencing: Experiment, Play, Reflect," in the Fall 2004 issue of *Springerin*; an English version is available online at

<http://conferencing.distributedcreativity.org>.

11. WiFi.Bedouin is a wearable, mobile 802.11b node disconnected from the global Internet.

For further information, see <http://www.techkwondo.com/projects/bedouin/>.

12. Conrad's phonarmonica is an update of Benjamin Franklin's glass armonica, an instrument that spun glass bowls and was played with the fingertips. Conrad's DJ version uses a power drill to spin a stack of 78 RPM records at increasing velocity while they are played by manual contact with a pair of phonograph tone arms.

13. Trebor Scholz, "New Media Education and Its Discontent," 2003, available online at <http://www.mail-archive.com/nettime-1@bbs.thing.net/msg01173.html>.

14. The discussion is available online at

<http://www.discordia.us/scoop/special/eadobbs/index6b2.html?eaid=52>.

15. Bill Readings, *The University in Ruins* (Cambridge, MA: Harvard University Press, 1997).

16. E-mail interview with Amy Alexander, August 2004.

17. See *Education Information Entertainment: New Approaches to Higher Artistic Education*, ed. Ute Meta Bauer (Vienna: Institut für Gegenwartskunst, Akademie der bildenden Künste Wien, 2001).

18. See, for example, Derek Bok, *Universities in the Marketplace: The Commercialization of Higher Education* (Princeton: Princeton University Press, 2003); Sheila Slaughter and Larry L. Leslie, *Academic Capitalism: Politics, Policies, and the Entrepreneurial University* (Baltimore: Johns Hopkins University Press, 1999); Stanley Aronowitz, *The Knowledge Factory: Dismantling the Corporate University and Creating True Higher Learning* (Boston: Beacon Press, 2001); and *Steal This University: The Rise of the Corporate University and the Academic Labor Movement*, ed. Benjamin Johnson, Patrick Kavanagh, and Kevin Mattson (London: Routledge, 2003).

19. Ana Marie Cox, "None of Your Business: The Rise of the University of Phoenix and For-Profit Education—and Why It Will Fail Us All," in *Steal This University*, 15–32.

20. Bill Readings, *The University in Ruins*.

21. HowStuffisMade is an encyclopedia of manufacturing processes and labor conditions involved in the production of contemporary products. The entries are summary, short photo essays produced primarily by students. Available online at

<http://jove.eng.yale.edu/experimentalproduct/HowStuffisMade>.

22. Stefan Römer, "Vendetta the Supermodel Visiting the Commune des Arts," a free cooperation archive available online at <http://molodiez.org/ocs/maillinglist/archive/376.html>.

23. Geert Lovink, *My First Recession: Critical Internet Culture in Transition* (Rotterdam: NAI, 2003).

24. E-mail interview with Anna Munster, August 2004.

25. E-mail interview with Natalie Jeremijenko, August 2004.

26. Interview with Warren Sack by the author, October 2004, available online at http://distributedcreativity.typepad.com/idc/2004/12/interview_with__2.html.

27. Howard Rheingold, *Smart Mobs: The Next Social Revolution* (Cambridge, MA: Perseus, 2002).

28. MIT OpenCourseWare is available online at <http://ocw.mit.edu/index.html>.

29. Information on Opentheory is available online in German at <http://opentheory.org>.

30. Wikiversity is a free, open learning environment and research community. Online courses are created as a form of cooperative and interactive exchange of knowledge. See <http://en.wikibooks.org/wiki/wikiversity>.

31. Barry Wellman and Caroline Haythornthwaite, *The Internet in Everyday Life (The Information Age)* (London: Blackwell, 2002).

32. Interview with Ralf Homann by the author, October 2004, available online at http://distributedcreativity.typepad.com/idc/2004/12/interview_with__1.html.

33. Augusto Boal, *Games for Actors and Non-Actors* (London: Routledge, 2003).
34. Noah Wardrip-Fruin and Nick Montfort, eds., *The New Media Reader* (Cambridge, MA: MIT Press, 2003).
35. Anna Harding, "Artist—Curator—Audience: Relationships and Curating," in *Education Information Entertainment*, 74–81
36. For more on DLP, see <http://dlp.distributedcreativity.org>. For further information on courses in new-media art that I have developed, see <http://critical-netcultures.net>.
37. For further information, see <http://distributedcreativity.org> and <http://blog.distributedcreativity.org>.

Image Captions

Kevin Lim and Penny Seow were among the live-blogging students at the Free Cooperation conference.

Unless otherwise indicated, all images are by Trebor Scholz and are protected by a Creative Commons License.

Entrance to the Free Cooperation conference with conference banner designed by Arzu Ozkal Telhan.

The GuerillaGirlsBroadband at the Free Cooperation conference.

Tony Conrad playing the phonarmonica in "The Bonnie Parker Jr. Show," part of the Free Cooperation conference.

During the Free Cooperation conference, Alex Rivera performed at Soundlab with the group Los Nukis.

Arjen Keesmaat and Dan Vatsky, et al. *Interfacing/Radiotopia/KeyWorx*, 2003. Screen shot from performance at the biennial Dutch Electronic Art Festival (DEAF), Rotterdam, March 1, 2003. Vatsky participated from New York; text was submitted by audience members using mobile phones.

Nora Heilmann and Sher Doruff. *CassisCaput/Helmet Heads*, 2003. Screen shot from dance/new-media performance using public Web cams in Amsterdam, Berlin, Brussels, London, and New York City, June 28, 2003.