

# WHAT IS TECHNE?

Mark Amerika



ART + RESEARCH

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Mark Amerika

*The Techne Lab, University of Colorado*  
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The Techne Lab, University of Colorado, Boulder  
Boulder, Colorado  
[art.colorado.edu](http://art.colorado.edu)

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**WHAT IS TECHNE?**



## INTRODUCTION

TECHNE is a practice-based digital arts research initiative founded by Professor Mark Amerika, at the University of Colorado at Boulder in November 2002. The TECHNE initiative develops innovative approaches to the invention of new forms of knowledge generally considered to be both artistic and scholarly. The invention of these new forms of knowledge are oftentimes manifested as digital art projects distributed over the Internet and come into being as a result of TECHNE participants interacting with emerging and converging new media technologies that are becoming more easily accessible to the public at large.

The evolving forms of digital art being investigated through the TECHNE initiative attempt to bring value-added meaning to a democratic society at once operating in a free market economy of goods, services, information and ideas. Faculty, students and research associates affiliated with TECHNE utilize both highly specialized and easily accessible hardware and software consumer applications to push the boundaries of artistic, scholarly, and scientific inquiry into areas not yet discovered.

A significant transition is underway in the culture of information. Information is now being artistically designed to transmit a more visually stimulating, interactive, and immersive experience that will port the User (consumer, reader,

viewer, etc.) into a highly manipulated, digital environment that is changing so fast it requires a focused, practice-based research agenda to even begin learning the new kinds of investigative tools and conceptual frameworks required to properly analyze digital art as an emergent phenomena in the new media economy.

## OBJECTIVE

The objective of this brief study is to develop an introduction to the conceptual framework for the TECHNE initiative and to generally outline some of the preliminary investigations already underway. These preliminary investigations are not the end-all be-all of the TECHNE initiative but rather serve as a conceptual marker pointing to the wider framework we wish to concern ourselves with. Only after having built a coherent conceptual framework can we even begin to successfully launch the research initiative in its proper context.

The choice of research subjects, defining the questions that need to be asked, and enabling the development of methods as well as metaphors to properly address the issues that need to be analyzed within a "digital arts" conceptual framework, are all part of the TECHNE initiative as it looks toward future investigations and anticipates research results.

Setting a practice-based research agenda in the digital arts is a complex, intuitive process that depends on developing reliable methods of judging what the most valuable lines of inquiry are. The advent of the Internet as both a research and development tool and globally distributed network of digital art, has created great opportunities for artists and scholars to potentially evolve alternative lines of inquiry that

will have critical ramifications in our culture, particularly in areas that investigate the way we compose, publish, exhibit, distribute and network these emerging forms of knowledge in a technologically-driven consumer culture. With this in mind, we think the following conceptual framework should :

1. Create a set of parameters that enable us to both develop a long-term vision of the initiative as well as produce highly visible near-term results;
2. Provide enough flexibility so that we may invent progressive models of both digital arts practice and online publication/exhibition that highlight the ways in which the arts are now becoming more integrated into the information economy;
3. Anticipate the utilization of cross-media platforms to embed our research findings in and in so doing change the way artistic and scholarly work is communicated and assessed in the field.

## CONCEPTUAL FRAMEWORK AND PRELIMINARY INVESTIGATIONS

### *1. The Internet as Art Medium and Publication/Exhibition Context*

By approaching the Internet as both a compositional and publication/exhibition medium, artist researchers in the TECHNE initiative are positioning themselves to conduct a network of digital art practices linked to other institutions who are similarly positioning themselves and their research agendas in various locations around the world. One of the main goals of TECHNE as an ongoing R&D platform focused on demonstrating the value of a practice-based research initiative is to have considerable influence on the way such initiatives and their findings are perceived and communicated as new forms of knowledge. It is generally assumed that these new forms of knowledge, packaged as interactive digital art, will alter the way we socially interact with each other as well as educate ourselves to perform in this dynamic, computer-mediated environment. The Internet is first and foremost a globally distributed network that enables various nodal points an opportunity to bring wider visibility to successful research discoveries made at various intervals throughout the creative process. These discoveries can be immediately published/exhibited on the Internet and under the right conditions, can attract a network of external

links that will give the research work a more significant place in the attention-economy.

To this effect, we are positioning ourselves to take a leadership role as one of the first practice-based research initiatives at the state university level to reinvent arts education. TECHNE utilizes various new media technologies to create a more collaborative learning environment for students hoping to transfer their creative and critical skills-set into the new media economy. These students, looking to participate in a highly technologized, social process of self-motivated personal discovery and artistic invention, are now realizing that the creative process involves both online networking and real-time group collaboration.

TECHNE is being set up as a model unit to help students and other artist-researchers achieve these goals.

## *2. What Is TECHNE?*

The name TECHNE comes from the Greek use of the term *techne* to mean both art and technology, especially as it relates to practice and application ("to make or do"). TECHNE enables its faculty, students and research associates to utilize both highly specialized and easily accessible hardware and software applications to further demonstrate the value of building more interactive, digital art projects while critically analyzing their place in the world. Research projects are varied and investigate many contemporary subjects whose cultural implications bring to light the growing interdependency between the arts and sciences. The current environment of rapidly developing new media technologies enables committed researchers in both the arts and sciences to facilitate the discovery of new forms of knowledge.

Subjects explored in recent and current investigations in the TECHNE initiative include web publishing, digital narrative, PDA art, wireless networking, interactive cinema, artist

ebooks, JAVA applet art, digital animation, telepresence, dynamic hypertext language, biotechnology art, online games, motion picture graphics, Internet radio and virtual concert performance, digital video installation, data visualization, surveillance technology, online art and the exhibition context, parapsychological and paranormal uses of telecommunications technology, GUI art, 3-D Multi-User Environments, the history of multi-media art in relation to both computer science and art practice, generative art, programming or code art, database aesthetics, and practice-based research as creative process.

Many of the digital art projects being researched at TECHNE require a team of student producers whose creative and critical skill-sets vary. By giving the students an opportunity to both share their creative and critical strengths in a collaborative work environment while simultaneously enabling them to learn new skills from their peer network, TECHNE breaks away from the "individual artist as genius" model generally associated with art and creative writing programs and focuses more on practice-based research and development skills that are more easily transferred to the rapidly transforming job market in both the high-tech industry and academia. Whereas TECHNE is not a graphic design factory that spews out scores of entry level computer design workers as a way to meet industry needs, the initiative does recognize that technically-proficient students with exceptional creative talent and critical decision making skills are likely to be more competitive once they graduate from our program. With this in mind, many of the creative research projects initiated at TECHNE are loosely tied to a collaborative, process-based learning (PBL) model that requires rigorous intellectual activity among the participants. Some recent examples of PBL projects investigated at TECHNE include:

:: how to create a multi-linear digital narrative that incorporates various media into its interactive structure (motion graphics, sound, text, advanced scripting languages, etc.)

:: how to exhibit multiple works of Internet art in an online environment as well as create an educational context that focuses on the creative, theoretical, and historical relevance of the curated art works by showing how they can be related to and/or differentiated from other, more traditional media such as painting, film, or novel writing

:: how to innovatively implement new media publishing and distribution technologies that challenge older economic models of print production with particular emphasis on reconfiguring our notion of the terms "writing" and "reading" as they relate to recent developments in such areas as portable Ebook readers, PDA readers, HTML, XML, PDF, Flash, Open Ebook Standard, and mp3 audio books

:: how to create customized user interfaces and back-end database programs that are focused on issues such as site navigation and program functionality in relation to the digital art work as both a new form of visual art as well as a near-future model of network distributed, interactive, "edu-tainment"

:: how to theoretically articulate, via both visual design skills and critical language skills, a justification for making work available online while taking into consideration the ease with which data becomes part of an open source networking environment that challenges standard notions of copyright and intellectual property

:: how to experiment with the Internet as a live and online open-platform performance space for creative expression and action investigating the interrelationships between digital design literacy, multi-media narrative, performance theory, and information architecture in the context of a global webcast

:: how to critically assess the new forms of knowledge being developed for the new media environment and how to begin developing robust, highly flexible, collaborative web sites that communicate our critical research findings to the Internet audience, particularly our national and international

peer institutions whose evolving research agendas may complement our own

### *3. Art / Technology / Pedagogy*

"The term 'intelligence amplification' seems applicable to our goal of augmenting the human intellect in that the entity to be produced will exhibit more of what can be called intelligence than an unaided human could; we will have amplified the intelligence of the human by organizing his intellectual capabilities into higher levels of synergistic structuring."

Douglas Engelbart, "Augmenting Human Intellect: A Conceptual Framework"

Augmenting the human intellect and its capacity to invent new forms of knowledge requires a more technologically sophisticated experiential learning environment. Part of the reason for launching the TECHNE initiative within the Department of Fine Arts at CU is to provide this technologically sophisticated learning environment for both Graduate and Undergraduate Fine Arts students so that they can participate in a computer-supported, collaborative work space that prioritizes group networking and peer evaluation as a major part of the creative process.

Creating breakthrough digital art, design and performance requires a new approach to pedagogy and TECHNE is already applying these new process-based learning methods to its curriculum. Our aim is

- :: to create a practice-based research initiative that augments the human intellect by providing faculty, students, and research associates with a customized learning environment equipped with the latest new media technologies

- :: to prioritize the use of these new media technologies as tools to assist us in the invention of new forms of knowledge manifested as digital art

- :: to use this customized learning environment to create innovative approaches to pedagogy

- :: to facilitate the development of a "best practices" model for digital arts research and development within a higher education context

The TECHNE learning environment is partly facilitated by the ongoing development of an experimental digital arts lab that enables us to integrate the latest new media technology into the curriculum while foregrounding the use of easily accessible consumer hardware and software applications.

Our primary aim in building this technologically sophisticated creative lab space is to create a state-of-the-art R&D digital arts lab that will help us fulfill our research goals mentioned above as well as enable our students to begin developing a digital arts practice that will serve them well in all of their future pursuits, whether they be artistic, academic, commercial or non-profit.

## ADDENDUM, 2016

I.

In 2002, when I first published the above words, I imagined the document "What is TECHNE?" to serve as kind of a white paper that would introduce a new digital art lab I was starting inside the fine arts department of a Tier-1 research university. When I first started composing the document, I turned to an engineer, Douglas Engelbart, for pointers on how best to begin developing the conceptual framework for what would, over time, become a series of investigations into what we now refer to as *practice-based research* or *research-creation*. I had previously met Engelbart as a graduate student at Brown University where, in 1995, I was invited to attend an event at the nearby Massachusetts Institute of Technology celebrating the fiftieth anniversary of the publication of Vannevar Bush's *Atlantic Monthly* essay, "As We May Think." It was there in Cambridge that Engelbart told me how Bush's essay greatly influenced his early investigations into augmented intelligence and I too felt obliged to let Engelbart know about the central role Bush's essay had played in my own graduate research at the time, particularly the expanded forms of hypertext writing and publishing that were starting to evolve on the World Wide Web.

Engelbart, whose *Mother of All Demos* still influences my practice today, wrote his “Augmenting Human Intelligence: A Conceptual Framework” report in 1962. This report summarized Engelbart’s attempt to design a research program focused on technologically enhanced intelligence and highlighted how important it would be for me as an intermedia artist to develop a conceptual framework for practice-based research methodologies. My goal from the outset was to create an innovative platform for new forms of digital artwork and technologically enhanced pedagogy to thrive in. Early on, then, I envisioned TECHNE as a hybrid lab, one that would prioritize the development of new forms of art and writing that would be transmitted via computer networks but that would also bring the “network condition” back into the lab’s physical space, where we would research emerging forms of digital art as we rethought the URL/IRL binary via in-house exhibitions and live performances. Among other things, during the first few years of the lab’s existence, we were continually challenging ourselves to invent a vocabulary that would serve two purposes: 1) to investigate what it means to be an artist-researcher who not only makes things for hybrid exhibitions and performances but also focuses on articulating and/or documenting their creative process for a variety of academic, literary, and artistic publications; and 2) to provide the operational context for all of the lab’s participants to strategically position our collaborative research as an interventionist practice that challenges traditional academic, scientific, and scholarly methods and outputs. We have never been particularly interested in what passes for a “best practices” model of standardizing what it means to be an artist-researcher or academic technician. Our approach has always been much more intuitive and open to change as part of a more complex make-it-up-as-you-go-along structured improvisation. A quote from the artist-poet Vito Accornci captures the flavor of our collaborative lab mindset:

*[[]f I specialized in a medium, then I would be fixing a ground for myself, a ground I would have to be digging myself out of, constantly, as one medium was substituted for another—so, then instead of turning toward “ground” I would shift my attention and turn to “instrument,” I would focus on myself as the instrument that acted on whatever ground was available.*

II.

Constructing an interventionist research agenda was never an issue for me since it's the sacred duty of the avant-garde artist to disrupt what commerce and so-called “best practices” have gone out of their way to make commonplace. The goal of the TECHNE lab has been to explode paradigms (though not gratuitously) by embracing modes of production and documentation that reveal new discoveries.. One thing my research with Gregory Ulmer at the University of Florida taught me was to approach my own artistic practice in relation to what he now terms *heuretics*, an alternative branch of logic that investigates the relationship between the art of discovery and process-based inquiries into the creation of new works of art. “As an ‘experimental’ humanities,” Ulmer writes, “heuretics appropriates the history of the avant-garde as a liberal arts mode of research and experimentation.” In this regard, it could be said that finding the connections between Ulmer's experimental mode of avant-garde humanities research and Engelbart's inquiries into augmented intelligence became a central focus of the TECHNE lab's purview at its inception.

Now, some fourteen years later, as I write this addendum, I turn to another figure, this time the artist, writer, and publisher Dick Higgins, whose early use of the concept of *intermedia* (first introduced by Samuel Taylor Coleridge) acknowledged the emergence of art forms that emphasize the dialectic *between* different media. For Higgins, as well as for most of the artist-researchers in TECHNE, intermedia art

is transmitted in more flexible exhibition, publication, and performance contexts that enable the work to, by nature of the media it puts to use, determine its own form according to its specific needs. Similar to what I am doing here, Higgins wrote a 1981 addendum to his original 1965 essay "Intermedia" and, again as I am now doing now, looked back at what he thought he was trying to convey in the original 1965 essay on intermedia, reflecting on how much things have changed in the sixteen years since it was first published.

Whereas the computer scientist Engelbart showed me how to develop a conceptual framework that would help me delineate the objective of my study as well as what the TECHNE lab's preliminary investigations would entail, Higgins and other avant-garde artists have always influenced my attempts to model an alternative form of research-creation that intuitively taps into the "collective creative unconscious" as a reservoir of source material where artists can collaboratively explore the adjacent possible. The history of avant-garde art and writing, and the artists whose fluid and hybridized practices have embraced a kind of digital intermediality, are still informing current developments in the lab as we ask ourselves, "What is TECHNE?"

At the turn of the 20th century, just as the TECHNE lab was coming into existence, it became obvious to those of us working in the lab that artistic approaches to the discovery of new forms of knowledge was, out of necessity, going to start having a greater influence on the academic research culture. With the advent of mass connectivity via the Internet, it was now possible to develop a cluster of research investigations into a variety of new subject areas that were beginning to emerge across the arts, sciences, and humanities. For TECHNE, these subject areas were never limited to a particular group of issues but nonetheless tended to focus on the Internet itself as a publication and exhibition medium that would challenge artists, writers, and cultural producers of all stripes to rethink both the intermedia art and writing

projects they would create as well as how they branded themselves in the networked economy.

The idea of branding, or using the tools of the Internet to build one's web presence, was controversial. Our direct appeal to migrate one's practice away from both the insider art world and the mainstream publishing industry, two behemoth cultural sectors whose control over the distribution of art and writing created a kind of market-driven censorship, was a radical approach to contextualizing the fine and literary arts, especially in a higher education context. But we persisted and students who passed through the lab were able to use its resources, both in-house and online, to conduct their own collaborative art-research investigations into emerging forms of net art, multimedia performance art, artist e-books, live audio/visual remixing, and expanded forms of digital (and eventually mobile) cinema. Most were also able to develop their own artistic brands and to transfer their growing expertise into the academic, cultural, and business sectors.

Looking back at the 2002 document itself, I am reminded how much has changed since then, and how it's now becoming a given that the arts too play a crucial role in the larger university research culture. In an era of technological upheaval such as ours, where the modes of thought and the so-called best practices associated with discipline-specific qualitative and quantitative research methodologies are being challenged by new media communication systems as well as unconsciously generated information behaviors more in tune with the creative act, labs like TECHNE are becoming an essential part of university life. In many ways, we exist so that we can discover the practice-based research methodologies *still to be invented*. We can even go so far as to say that TECHNE has always aligned its research mission with a much more active and interventionist approach to using the discoveries made during the making of the artwork to challenge preconceived notions of what it means to

be a digital citizen operating in mobile and network mediated environments.

As Higgins reminds us in his 1981 update, "when one is thinking of the avant-garde of forms and media, one is often thinking of artists who, for whatever reason, question those forms and media." But as Higgins also takes time to note, our notion of what is or can be "'avant-garde' is relative, not absolute." Inside the TECHNE lab, we know that our colleagues in fields such as information science, digital humanities, journalism, media archaeology, and new media studies, are also looking for ways to expand the modes of research-creation. Like us, they are also questioning how best to address the networked conditions we now live under and with.

Having said all of that, there are still some basic questions we have yet to properly find answers to as we attempt to influence the larger academic research culture. For example, what can we say about artistic creation that challenges us to rethink the research and discovery process itself? How are we to document our findings as we engage ourselves in "intermedia laboratories" that question traditional academic outputs? Is an academic paper or chapter in an academic book published by an academic press that uses the tenure-track brownie point system to control an author's copyright the only valuable outcome? Why is a refereed conference paper for a STEM symposium a viable model for one's professional research output while a multi-media performance remixing live web data for hundreds of festival goers is not? What kinds of interventionist research practices and outcomes would challenge traditional academicism while simultaneously sharing discoveries made during the research process? How would these alternative outcomes enable the researcher to reveal to their audience the ways in which their research and creativity co-compose each other as a form of writing, performance, and/or inter-media art?

As luck would have it, both the Department of Art and Art History in the College of Arts and Sciences as well as a new Doctoral Program in Intermedia Art, Writing, and Performance located inside a new College of Media, Communication, and Information at the University of Colorado, Boulder, now support the TECHNE lab. Perhaps Engelbart's notion of augmented intelligence has come full circle, as has Higgins' concept of intermedia, and the best way to practice one's research is *between* the disciplines, *between* the virtual and the material, *between* the intuitive gestures being transmitted from an unconscious potential and the manifestation of an augmented state of mind always in composition.



A R T + R E S E A R C H

Mark Amerika, *What Is Techne?*