

New Media and Education

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ABSTRACT

New Media has no definition. That makes the successful teaching of New Media near impossible. In an attempt to identify its key concepts, this paper reduces New Media to a few basic tenets. Then, it outlines an undergraduate through PhD curriculum for use in all media, and specifies some places for New Media inclusion.

1. What is New Media?

1.1 Background

In Lev Manovich's 2001 book The Language of New Media, he compares New Media to early cinema. Early cinema was a moving image with sound and text – a multi-medium. His argument is that New Media is a combination of multi-medium into one form. What made media *new* was his *language* argument, or the principles of the New Media:

1. Numerical Representation
2. Modularity
3. Automation
4. Variability
5. Transcoding

Manovich updates his view on New Media in the article “New Media from Borges to HTML” that prefaced the 2003 book The New Media Reader. In the article he makes eight propositions for New Media:

1. New Media versus Cyberculture
2. New Media as Computer Technology Used as Distribution Platform
3. New Media as Digital Data Controlled by Software
4. New Media as the Mix Between Existing Cultural Conventions and the Conventions of Software
5. New Media as the Aesthetics that Accompanies the Early Stage of Every New Modern Media and Communication Technology

6. New Media as Faster Execution of Algorithms Previously Executed Manually or through Other Technologies
7. New Media as the encoding of Modernist Avant-Garde; New Media as MetaMedia
8. New Media as Parallel Articulation of Similar Ideas in Post-WWII Art and Modern Computing

In the 2004 book, New Philosophy for New Media, Mark Hansen takes a post-modern philosophical approach to New Media. First, he begins by discounting Manovich's principles of New Media. Then, Hansen likens New Media to specifically the interactive image. He builds an argument for New Media being an extended phenomenological concept of embodiment technesis. Though part of his introductory groundwork, Hansen does give some indication to the binary or numeric representation of New Media.

Mark Tribe's book New Media Art (2007) gives potentially the most current interpretation. He states that New Media is a mixture of Media Art along with Art and Technology. He defends his position by saying, “...we use the term New Media art to describe projects that make use of emerging media technologies and are concerned with the with cultural, political and aesthetic possibilities of these tools.”

These references show that there is no agreed upon definition of New Media. Furthermore, it demonstrates how difficult it is to teach New Media. When there is no framework or canon of reference, creation, exhibition, and critique of *New Media* is more like anarchy or oligarchy than democracy or meritocracy.

Many of the principles, propositions, philosophies, or combined definitions of New Media are flawed. The principles of Modularity, Automation, and Transcoding are Industrial Age

or World War II age terminologies. Manovich's first proposition is a partial oxymoron, and his principles two through six as well as number eight are not novel to New Media. Hansen takes a narrow view of art with his embodied technesis theory. While it does begin to counter the Cartesian dualism, his swatch of selected artists is very limited, thus limiting his ability to define. Tribe's selection of artists is better, although he appears to show, rather than tell, that which is New Media. Additionally, political art is still political art regardless of the media that is used. Some artist selections are political artists who are not New Media artists. The curatorial choice in aesthetics represents a particular New York City aesthetic and Tribe's bias.

1.2 The Tenets

This paper proposes only three basic tenets of New Media.

1. Common Numerical Representation
2. Old Media
3. Network

1.2.1 Bit by Bit

Everything is a bit, 1 or 0, of data. Text, image, sound – everything is universally represented, stored, modified, and combined numerically. The distinction between different media evaporates. This implies that the data is open for subjective representation. Images can be heard and audio seen. Earlier we said that transcoding is not novel enough for New Media, so what are we getting at with the common representation?

Manovich's proposition of metamedia begins to describe this situation. All media becomes meta when its individual distinctions are not required for processing or use. Take for instance, a real-time simulation. The compositing engine of a computer *sees* all media as binary data. The computer's only concern is *how* to put sets of data together. This means that the artist has to externalize their vision into a process of management over visual, text, and audio. The format of the media becomes meta, because the content becomes uniformly binary and displayed on a single output format – the pixel.

Is it possible that this metamedia is a precursor for post-media? What would a full evolution of New Media into a period of art with post-media be? When mathematics can represent all media, will we be at the end of art? Computer scientists have already created *art* filters: Seurat, Van Gogh, and Chuck Close; and they have created rendering techniques that replicate art styles or the hyper-realism of photography. How long before an algorithm is created to generate data – media – that inherently has meaning or artistic intent? Does Jim Campbell's *The End* represent the onset of post-media?

1.2.2 Olde Tyme

New Media reuses the conventions of Old Media: TV, film, radio, telephone, and print. Even the computer operating system is an iconography of an office that has files, folders, and trashcans. On websites we find shopping carts, picture albums, radio streams, and telephone services.

It is clear that the New Media platform is one that has consumed most Old Media forms. New Media conventions are remixed Old Media conventions. The remixing also spans Old Media content. The remixing of content and conventions is how New Media attempts to generate meaning. New Media becomes a presentation of remixed Old Media.

1.2.3 Network

Networking in New Media has two major components. The first is the ability for consumer level mass communication. The second is that the Internet is a mass database of collective consciousness.

The ability to send or receive media has been greatly facilitated with the Internet. We are able to be tele-present at meetings, conferences, or with family. Web cameras allow us to have 'distance seeing' powers. Conceptually speaking, we can mentally *be* at any networked location through our local portal.

The Internet is the largest database. Before the concept of *search* or *google* was infused into modern day language, how did we ever find anything? It is impossible for any human to

navigate the Internet without the help of computers that index the data and provide a mediation to peek at that data.

The Internet is a place of public and private information. It shows trends in collective thought or interest. The number of searches for New Media has been steadily decreasing from the time that Google started tracking the trend in 2004.* In terms of collective consciousness it appears as though New Media might be coming to an end. It also lists the number one city for searching New Media - New York City.

If we combine the two networking components, communication and the collective database, we create the hive-mind. Anyone, anywhere, can connect to, and then contribute or research, the collective for information. Envisioning the Borg from Star Trek is likely to be a little extreme; although we do need to consider how much personal information or individuality is lost.

1.3 The Pieces Don't Make the Whole

The downturn in searches for New Media should be a disconcerting thought. New Media hasn't really established itself as a valid artistic practice. This is particularly relevant to its reliance on Old Media. In terms of the three stages that any emerging media undergoes:

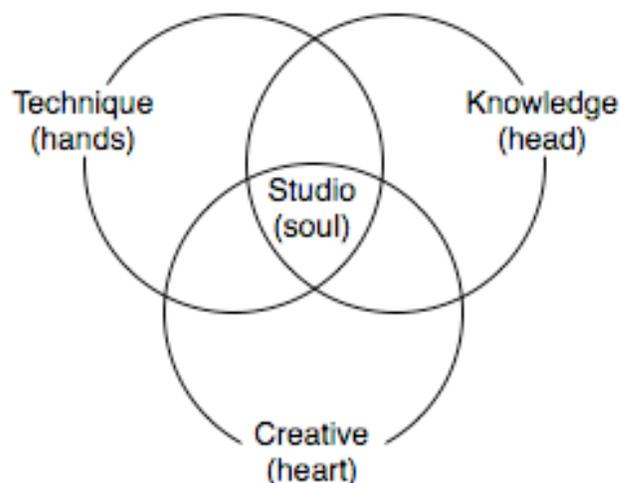
1. Do anything
2. Replicate previous media
3. Do something new

New Media appears to be perpetually stuck in stage two. This does not mean that New Media was a fad and has nothing new to offer. It means that New Media is at a point of transition and needs to mature enough to begin stage three. This is where a better education for New Media is needed. Indeed, progressing from stage two to stage three would eliminate one of my New Media tenets, so now is time to replace it.

2. New Education

I've experienced, taught, surveyed, created, and meditated on how art curriculums should be developed. While these are my opinionated observations, I believe that the following model has the potential of developing outstanding artists.

There should be three primary areas of course work: Technique, Knowledge, and Creativity. These three are then focused into a student's studio practice. Technical and spiritual terminologies are listed to assist in understanding their combination.



Three areas of learning that comprise an artist's studio practice.

Technique (hands) : painting, printing, sculpting, drawing, music, writing, acting, computer applications, programming, etc.

Knowledge (head) : history, philosophy, science, humanities

Creativity (heart) : unique problem solving, conceptualizing, inventing, entrepreneurship, ingenuity, spirituality.

Studio practice (soul) : The mental and physical space where students synthesize the three bases in the production of their artwork. It is the core of a working artist.

Most art programs are too heavy on the Technique portion. This results in an industry and commercial labor force. Knowledge is often found in art schools within a larger university that require a university science and humanities core.

* <<http://www.google.com/trends?q=new+media>>

A few non-university art schools will have these courses; although their depth may not be as sufficient. Creativity is typically something that is assumed in most technique courses. Rarely are strictly creative courses ever offered. Creativity can also be thought of as effort or desire, which is why it carries the spiritual label of heart. Studio has typically been thought of as a place, and not developed specifically as a course. Thesis Advising at the graduate level could be a current equivalent to a Studio course.

Underlying the curriculum is a subtle give and take mentality through the teaching and critique arrangements. As a student starts with the undergraduate curriculum, they take in from everyone around them. At the graduate level they take in a little less, and begin to give back to peers and undergraduates. Finally at the PhD level students take in just a little, but are giving only slightly less than a member of the faculty. Conceptually, students begin by learning through instruction and transition to learning through teaching at the end.

A common thread throughout the curriculum is the ample opportunity for student interaction with colleagues, faculty, and students in different levels of degrees. This mixing will help to build a strong community and flow of ideas.

2.1 For New Media

New Media education should not differ from traditional style art schooling in a wider view of curriculum and concept. As with any art practice, studying with faculty within the area of interest is paramount. Where New Media concerns lie is with a concentration of more technical courses for the Knowledge portion and specific middle and upper level courses for Technique portion. The middle level courses will prepare the students with basic audio, video, image, and web skills. The upper level Technique courses will be software, hardware, and network programming.

A school that focuses only on New Media for undergraduates is missing a large piece of artistic technique training. For example, where I teach no two-dimensional technique is required, nor

painting, nor drawing, nor printmaking. As a direct result, in my 3D animation course, students don't understand perspective, vanishing points, depth cues, positive/negative space.

New Media at Graduate or PhD level is generally more accepted for student focus. At those levels, students should be permitted to use the Media that best fits the conceptual drive of a particular project. This also encourages students to consider their artistic practice around ideas or themes instead of a specific media or tool.

A school that wants to teach a New Media curriculum must commit to the technical support it requires with regular renewal as needed. This includes equipment, network, servers, and personnel.

Realistically, in an existing art curriculum it will take 20 to 30 years for the full turnover of students and faculty to really see the effects of this type of program. Tweaking and technique changes are to be expected.

2.2 Undergraduate

2.2.1 Core

The Undergraduate structure is designed to give students a broad base in technique. The studio idea is introduced in the second year. Students start developing their studio and using it to create artwork. At an undergraduate level, the Studio course consists of the entire class making visits to each student's studio and giving feedback.

It is important that undergraduates understand the need for all three areas: Technique, Knowledge, and Creativity. Even if a student only wants to paint, they are required to take some courses in other media. Additionally, students are encouraged to understand how Knowledge courses connect to themselves on a personal and global scale.

In the third year all students are encouraged to take one or two semesters in a foreign country. This opportunity prepares the student for future professional travel, residencies, and personal networking. It also allows the student an opportunity to reinvent themselves upon arriving

in the host country; and another opportunity to reinvent themselves when returning.

Undergraduate

year	Fall	Spring
1	Technique Technique Knowledge Creative	Technique Technique Knowledge Creative
2	Technique Knowledge Creative Studio	Technique Knowledge Creative Studio
3	Technique Knowledge Creative Studio	Technique Knowledge Creative Studio
4	Technique Knowledge Creative Studio	Technique Knowledge Creative Studio

Chart showing the undergraduate course flow.

2.2.2 Qualifying Reviews

There are qualifying reviews at the end of the second and fourth years. The second year review is a studio visit and critique by a mixed faculty who determine the continuation of the student in the program. The student is expected to show artwork and be prepared to talk about their artwork and direction of interest within the next two years of the program.

The fourth year review is a studio visit and critique by faculty in the student’s concentration who determine the graduation of the student in the program.

2.2.3 Thesis

The culmination of undergraduate work is an exhibited artwork that demonstrates a degree of competency in Technique, Knowledge, and Creativity.

A written thesis at this stage is premature. A more appropriate document would be a well-crafted artist statement and artist resume.

2.3 Graduate

2.3.1 Core

Graduate students are expected to be serious about their education. They should express their interest in learning advanced Technique, Knowledge, and Creativity. A graduate program should not be treated as a residency.

In the graduate model, more curricular time is given for Studio. Half is for course visits. The other half is for individual faculty studio advising. As Studio increases and the other three areas decrease, the graduate student begin to understand that it becomes their responsibility to find the appropriate balance. Additionally, Studio time is used for personal research into the three bases to supplement their needs.

In the following figure, Technique, Knowledge, and Creativity have been abbreviated as T, K, and C respectively. Graduate students will take four of each category at the time of their choosing.

Graduate

year	Fall	Spring
1	T, K, or C T, K, or C Studio Studio	T, K, or C T, K, or C Studio Studio
2	T, K, or C T, K, or C Studio Studio	T, K, or C T, K, or C Studio Studio
3	T, K, or C T, K, or C Studio Studio	T, K, or C T, K, or C Studio Studio

Chart showing the graduate course flow.

Graduate students will be Teaching Assistants. First year graduate students must be paired with faculty. Second and third year graduate students may be paired with faculty or PhD students.

2.3.2 Qualifying Reviews

Graduate students have qualifying reviews to determine their continuation in the program at the end of each year. The students show and discuss their work with the faculty. Students

progressively develop a more complex, thoughtful, and intuitive studio practice. Graduate students are to be exhibiting their work regularly outside of the educational opportunities; and students will build a body of artwork.

Graduate students will also be required to participate with the faculty in undergraduate qualifying reviews. Participation in other graduate reviews is optional.

2.3.3 Thesis

The culmination of graduate studies is an exhibited artwork that demonstrates a mastery of Technique, Knowledge, and Creativity.

A complementary written statement of the conceptual and technical aspects of their artwork will be submitted and defended.

2.4 PhD

2.4.1 Core

First, artist PhD programs should not accept or support students with thesis ideas relating to curation, theory, history, critique, or any non-studio practice endeavor. There are pre-existing degrees for these studies to which they can apply.

PhD students must be self-sufficient, as a majority of the curricular time is for Studio. One-third of the Studio time will be for course visits. Two-thirds of the Studio time will be for two faculty advisors.

PhD		
Year	Fall	Spring
1	T, K, or C Studio Studio Studio	T, K, or C Studio Studio Studio
2	T, K, or C Studio Studio Studio	T, K, or C Studio Studio Studio
3	T, K, or C Studio Studio Studio	T, K, or C Studio Studio Studio

Chart showing the PhD course flow.

Technique, Knowledge, and Creativity are progressively reduced as seen in the graduate

level. The expectation continues that PhD students will use Studio time to for their needs in those areas. Technique, Knowledge, and Creativity courses are still required, two each.

PhD students will teach one course per semester, and may have a teaching assistant from the second or third year graduate students.

2.4.2 Qualifying Reviews

Doctoral students will have qualifying reviews at the end of each year. The first year review is to determine if the basis of the research is worth pursuing.

The second year review is to monitor the progress and set the expectations for the third year review.

The final review is to determine graduation from the program based on the prior year's goals.

Doctoral students will be required to participate with the faculty in undergraduate and graduate qualifying reviews. Participation in other doctoral reviews is optional.

2.4.3 Thesis

The culmination of PhD studies is a significant contribution to a particular artistic field that demonstrates a superior proficiency of Technique, Knowledge, and Creativity.

A traditional research and writing PhD does not correlate directly to artistic inquiry and practice. Artists do not typically utilize that form of expression. Time spent pursuing this direction of advanced artist education is wasteful and unproductive to the quality of studio practice. Instead, students will write a statement of the conceptual and technical aspects of their PhD artwork, and a short exposition explaining how their PhD artwork makes a significant contribution to art.

There is no minimum or maximum word count for these writings. The documents and artwork must be defended as a normal PhD at the final review.

It needs to be understood in the field of Art and accepted by other academic fields that artistic inquiry and studio practice contribute to an

unacknowledged area of knowledge. New standards for should be created and recognized: visual/spatial/conceptual language instead of textual/factual/theoretical.

3. Wrapping it Up

The only commonalities I see in New Media are: common numeric representation, Old Media, and network. It is time for New Media advance from replicating previous media to doing something new. To do this, we need good educational models and expectations for the soon to be New Media practitioners. The outlined curriculum is a step towards dealing with New Media and its relation to other media. Additionally, it describes a start to representing Art to other academic fields of research at the PhD level. As we see the trend of New Media declining, now is the time to

make the change. Otherwise, New Media will devolve into solely computational distribution.

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