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ARCHAEOLOGISTS AS EARLY ADOPTERS AND CRITICAL REMEDIATORS @ UC BERKELEY'S MACTIA

Ruth Tringham, University of California, Berkeley

Presented at the session "Capacity Building or Community Making? Training and Transitions in Digital Archaeology" at the Society for American Archaeology Annual Meeting, Albuquerque, New Mexico, April 11, 2019



The UC Berkeley Multimedia Authoring Center for Teaching in Anthropology (MACTiA) was established in January 1998, as a result of Meg Conkey's retention negotiations and her enthusiasm and support of my ambition to share with students the excitement and empowerment of multimedia authoring. The teaching methods and pedagogical philosophy that became the MACTiA's well-known characteristics did not start with its establishment in 1998. They were the culmination of several paths coming together during the late 1980s and early 1990s in the UC Berkeley Dept. of Anthropology, especially its vibrant group of feminist archaeologists led by Meg Conkey.

[click](#)

Although I had been practicing inquiry-based learning all my teaching career, this really took off when Meg and I started teaching together at the end of the 1980s, fostering group research projects and panels.

In some ways I could be called an early adopter of digital technology, [click](#) starting in 1984 with my Apple Macintosh, loving its visuals and mouse haptics. [click](#) My research and teaching at the time focused on the archaeology of architecture and narratives. As the software and hardware developed for documenting and imagining prehistoric houses, my enthusiasm and skills rushed to keep up. [click](#) Only one undergraduate, Michael Ashley, volunteered to go on this journey with me. [click](#) He created the Chimera Project for his Senior Thesis (1994). [click](#) Thanks to Rosemary Joyce, I joined the Hypermedia bandwagon to create the Chimera Web. I wanted very much to share the exciting possibilities of linking different stories and data together, but had no access to a teaching lab based in the Apple Mac. However, during the early 1990s there was increasing university support for early adopters of digital technology for teaching. 1.48

MACTIA 1998 - THE BEGINNING



Our experience of inquiry based learning and the Chimera Web research was transformed into the establishment of the Class of 1960 MACTiA in Spring 1998.

At this point we have to remember that World Wide web browsing was only 5 years old. Most Internet access was hard-wired, no wifi. Desktop computers (especially Macs) and laptops were expensive and not accessible for most students. Most importantly, students in the social sciences and humanities had almost no experience of computers beyond quantitative methods, and especially not with the kind of software we intended to teach in the MACTiA. In other words, for most, this would be a challenging experience.

These conditions would change rapidly and to an extraordinary degree in the period between 1998 and 2011; for archaeologists in the field, this same period was also transformational from born analog to born digital documentation and recording.

MACTIA CHANGING THEMES

Year	Multimedia Authoring	K-12	Large Class	Digital Heritage	Media Literacy
1999	Architecture				
2000	Landscape Arch Mesoamerica	Expedition program	Poetics Time & Place		
2003	Europe prehist African prehist	Expedition program	Introductory Archaeology		
2005	Opovo website	Expedition program	Introductory Archaeology	digital cultural heritage	2-semester Archaeology Film
2008		Expedition program	Introductory Archaeology	digital cultural heritage	2-semester Archaeology Film
2010	New Media				2-semester Archaeology Film
2011				digital cultural heritage	
2015				digital cultural heritage	

During the period of its existence (1998-2011) the program transformed itself enormously not only in response to changing hardware and software, but also as our own interests and experience in research, pedagogy and community building grew, along with our changing (and diverse) viewpoints of what “digital education” meant in practice.

In this chart I have identified 5 major themes, round which I have built the rest of this presentation:

- 1) Multimedia Authoring: the “flagship” theme of the MACTiA
- 2) Taking Multimedia to the Community for 6th graders that focused on Digital Storytelling, from 1999 to 2008.
- 3) Scaling up to Large Classes 2000-2008 culminating in the Intro to Archaeology series. This gave the MACTiA much visibility in the teaching circles of the university (as well as the SAA).
- 4) Cultural Heritage in a Digital World expanding from the latter 2005-2011
- 5) During the same period I developed the Media Literacy series: year-long courses focusing on films about and by archaeologists

EUROPE THROUGH FILEMAKER

MOSAIC: SITE DETAIL
Database: Digital Sources for Archaeology in Southeast Europe and Anatolia

Contributors | Schedule | Assignments | Messages | Mosaic | Websites | Reviews | Contributions | Announce | References | Help

Kas

Period: Aegean Bronze Age
Time BP: 1300 BC
Type: shipwreck
Investigation Method: Underwater Excavation
Location: Southern Turkey
Principal Investigator: George Bass
Investigation History:
Date Added: 01/27/2003
Last Modified: 03/24/2003

go to overall map (opens in web browser)

Kas : Cultural Heritage: Social Memory: The African Connection by Svat Ouzman
Not everyone gets to rescue a Queen's property from the ocean floor. And an African queen at that.

Kas : Exchange: Discovery: Diving Beneath the Surface of the Uluburun Shipwreck by Ona Johnson

Kas : Exchange: Trade: Uluburun: What kind of sea trade? by Michael Binder

CONTRIBUTIONS
CLICK HERE TO HIDE THIS WINDOW

Kas : Cultural Heritage: Discovery: Treasure Hunting, Archaeology or Party on the Mediterranean?

Contributed by Sara Gonzalez

The Institute of Nautical Archaeology (INA) based at Texas A&M University, in collaboration with Turkey's Museum of Underwater Archaeology at Bodrum, knew that finding ancient shipwrecks in the Mediterranean would come out of cooperation with local sponge divers. The amount of time that these divers spent on the sea's floor during one summer alone would take an archaeologist over two years to survey. Keeping this in mind Dan Frey, the president of the INA, held informal meetings with sponge divers and solicited among them images of copper ingots whose presence on the sea floor often indicates the existence of an ancient shipwreck. In instituting this cooperation with sponge divers, they imagined that they would find countless wrecks, but nothing could prepare them for what two sponge divers would lead them to.

Component Options
IMPORT Media
UPDATE All Components
NEW Text Component
Component Inventor (based on Contribution layout)

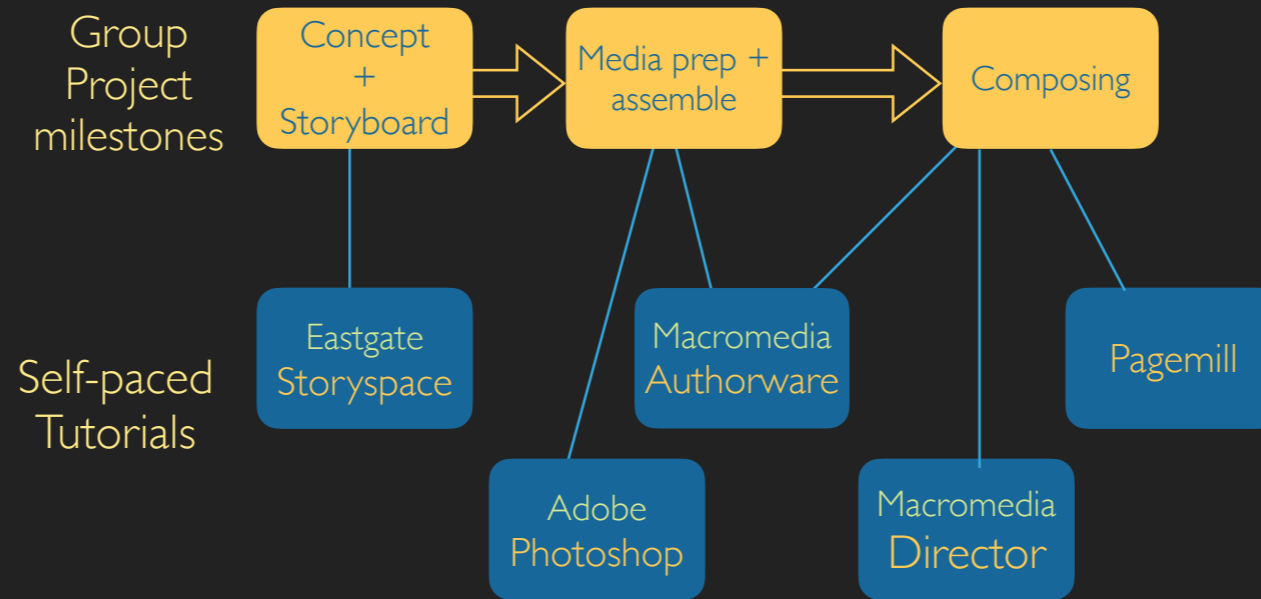
Total Text Components: 1 / 1
Total Media Components: 25 / 5
Total Components: 26 / 6
Extra

01 - STANDARD 02 - TEXT HEAVY 03 - MEDIA HEAVY 04 - MEDIA

The Multimedia Authoring courses were regular curriculum courses that we taught through multimedia authoring: Archaeology of Architecture, Mayan Archaeology, African Archaeology, Landscape Archaeology, European Archaeology.

The students (predominantly from Anthropology) had no prior experience of either multimedia authoring or the archaeological content, but they courageously embarked on group projects combined with self-paced software tutorials. Most complex was European prehistory, in which Michael Ashley was GSI, flexing his muscles with Filemaker and getting the students to contribute to a real-time database.

MULTIMEDIA AUTHORIZING: ARCHAEOLOGICAL CONTENT COURSES



The aim of the MACTiA classes was to focus on a lower technology than the more complex 3DVR modelling; to fill the gap in authoring with digital technology that went beyond producing simulacra of analogs, but used the technology in inventive ways for the benefit of constructing the past through archaeology. I only regret that we didn't add animation and more about gamification to the coursework

The path to creating the student group projects in the Multimedia Authoring courses was laid out as production steps to be completed during the semester: storyboarding, media preparation (text, sound, video, images), composition (navigation, juxtaposition). Although the priority of effort was always on the content of their projects, we did coach them in software through self-paced tutorials in the MACTiA.

click The aim of the MACTiA classes was to focus on a lower level technology than, for example, the complex 3D VR modelling of the more specialized teaching labs at UC Berkeley and other campuses. Our aim was to fill the gap in authoring with digital technology that went beyond producing simulacra of analogs, but used the media and software in creative remediations and re-contextualizations for the benefit of constructing the past through archaeology. I only regret that we didn't add animation and more about gamification to the coursework

SCALING OUT TO THE COMMUNITY AND K-12



Expedition after-school program at
Roosevelt Middle School, Oakland
1999-2008

Scaling out to the community was an opportunity provided by our participation for 10 years in a middle school after-school program called Expedition in Oakland that had a Mac lab. Upper division undergraduates (many from MACTiA courses) learned pedagogy and mentored 6th graders in Digital Storytelling using iMovie.

THE MACTIA MODEL FOR DIGITAL EDUCATION

- Cumulative skill-building.
- Intensive coaching in which instructors are mediators not transmitters of information.
- Inter-generational and peer-to-peer guiding and coaching.
- Experience of real-world practice: team production; production roles; deadlines (sequence of milestones), contribution to real research
- Focus on high-quality depth of content rather than a finished sellable hi-tech product.
- Re-use and re-contextualization of data is done with a critical and ethical awareness of authorship and IP recognition.
- The process is as important as the finished product, but they also need to experience the empowerment of a completed project.

Many of the principles of our pre-digital inquiry-based learning as well as pedagogical philosophies of Freire and others were transferred to our MACTiA digital education model but with additions:

- Cumulative skill-building
- Intensive coaching in which instructors are mediators not transmitters of information.
- inter-generational and peer-to-peer guiding and coaching.
- Students experience real-world practice: including team production; role responsibilities, deadlines with a sequence of milestones, and contribution to real research
- A focus on high-quality depth of content rather than a finished sellable hi-tech product.
- The Re-use and re-contextualization of data is done with a critical and ethical awareness of authorship and IP recognition.
- The process is as important as the finished product, but they also need to experience the empowerment of a completed project.

SCALING UP MACTIA COURSES FOR LARGER NUMBERS: POETICS OF TIME AND PLACE

the “production team” approach: use of storyboarding, scripts, researchers, director (a techno-scientific webwork of practice, or actor-networks “simultaneously real, like nature, narrated, like discourse, and collective, like society” (Latour 1993 *We have never been modern*))

The Production Team

Researcher
Writer
Asset manager
Interface designer
Artist
Animator
Interactivity producer
Post-production



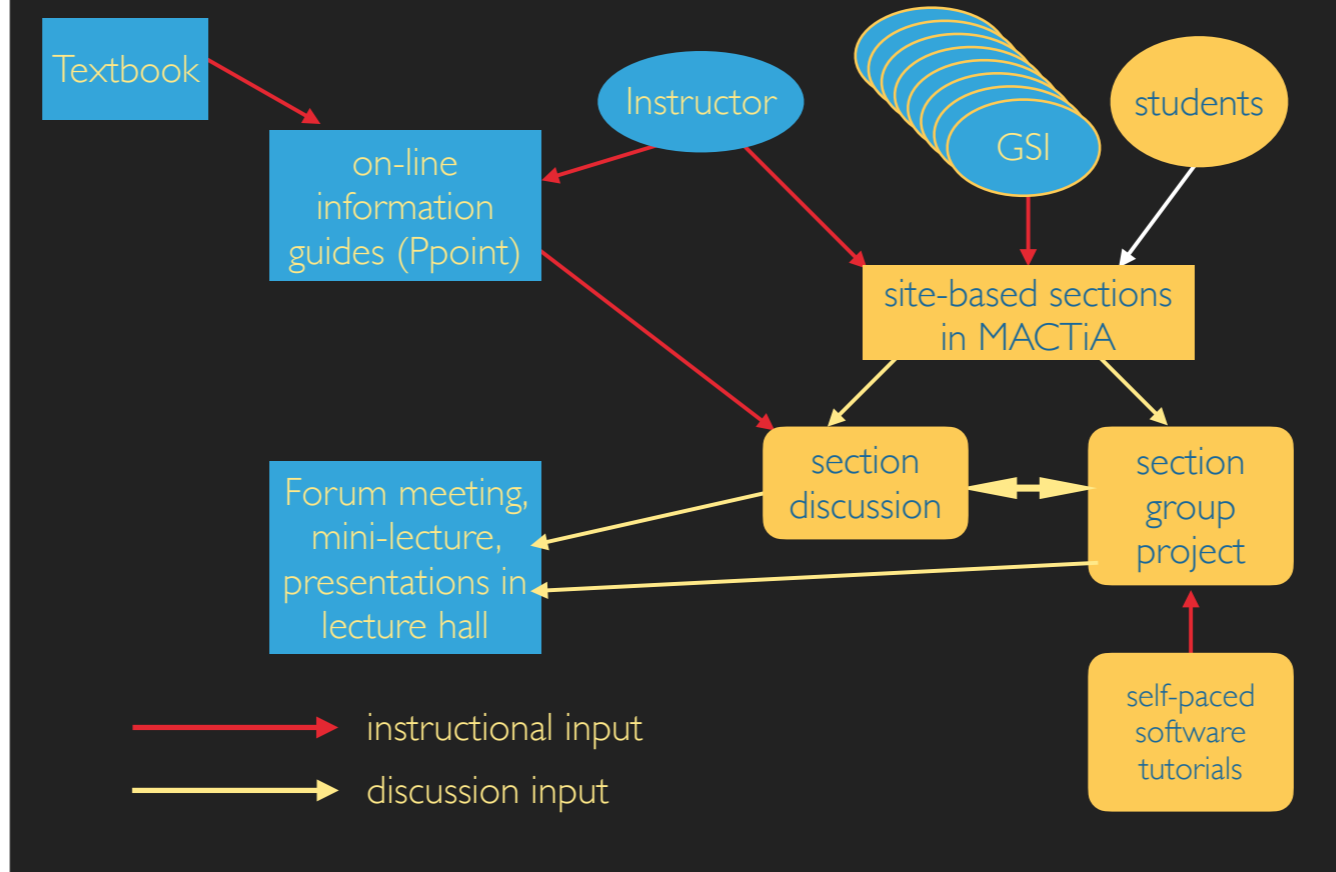
Jeanne Lopiparo and Michael Ashley the architects of team-production in LSI20

Angkor Wat

Ancestral Monuments

These same principles were sustained when we scaled up to teach larger numbers starting in 2000. Poetics of Time and Place with 150 students, regular lectures plus sections (production teams) that were taught in the MACTiA. Jeanne Lopiparo and Michael Ashley were the architects of developing the structure of the multimedia authoring team projects, in which each student took on a production role, mirroring real life situations, and a sequence of production Milestones to keep the projects moving.

MAKING A BIG CLASS SEEM SMALL: INTRODUCTION TO ARCHAEOLOGY



Building on this course format from 2000 and with my own Mellon summer workshop support, I designed a MACTiA version of the large (200+ students) Introduction to Archaeology course in which the aim was to make the large course seem an intimate experience. [click](#) I created a series of weekly guidelines accessed online by students [click](#) Each GSI and I built our section inquiry project around our own site-focused research materials. [click](#) The online guides were discussed in sections from the point of view of the section site. [click](#) The whole class then assembled to learn more, and discuss in a forum. [click](#) Alongside this the section group project was developed with roles, milestones etc. and eventually shown to the class and [click](#) software tutorials went at an individual pace.

CULTURAL HERITAGE IN A DIGITAL AGE

MACTIA



STAKEHOLDERS



Large Class:
website

REPRESENTATION
& DOCUMENTATION



GLOBAL
LANDSCAPES



LS127: Cultural
Heritage. The
Stonehenge section

The Cultural Heritage in a Digital Age series of MACTiA courses grew out of the large course format but was also a response to our growing interest in cultural heritage and issues of documenting heritage sites for the long-term, not just of physical heritage, but also the curation of its digital record. By the time we taught the 2015 version of this class (Meg and I were dragged out of retirement) the MACTiA had been dismantled.

STUDENT AND FACULTY REVIEWS OF MACTIA COURSES 2004

Challenges

- One semester is not enough time; two semesters are needed to integrate content, multimedia authoring practice, and software training.
- Inequality in student computers, modems and experience
- Hard to be playful and think of multiple interpretations when you come to the material for the first time

Upside:

- Students find the enterprise challenging but it is also productive and empowering
- They have a chance to do much more than passively read books, or browse the web and play its games
- They find that their work in these courses has lasting significance as the barrier between learning and research is disassembled
- They participate in the collaborative virtual practice of archaeology
- They are proud of their multimedia modules
- The experience is an unforgettable one in their time at Berkeley

In 2004 we carried out a serious review of the MACTiA courses.

Challenges

- One semester is not enough time; two semesters are needed to integrate content, multimedia authoring practice, and software training.
- There is still an inequality in student computers, access to Internet, and experience
- It is hard to be playful and think of multiple interpretations when you come to the material for the first time

[click](#)

On the Upside:

- • They find the enterprise challenging but it is also productive and empowering
- • They have a chance to do much more than passively read books, or browse the web and play its games
- • They find that their work in these courses has lasting significance as the barrier between learning and research is disassembled
- • They participate in the collaborative virtual practice of archaeology
- • They are proud of their multimedia modules
- • The experience is an unforgettable one in their time at Berkeley

One challenge that did not change while the MACTiA was active is that in the Dept. of Anthropology, academic products that were based in digital technology were valued far less as criteria of academic productivity than analog products, and that included courses. Perhaps that is changing now as we approach 2020, but I am afraid it is what sadly prevented many graduate students from “wasting their time” with MACTiA coursework that would not, in their eyes, further their careers. Those graduate students who did participate have gone on to reap the benefits of their experience.

RESPONSES: LONG INTENSIVE SUMMER CLASSES

ARCHAEOLOGY AND THE MEDIA

THIS SUMMER 2006 LEARN THROUGH CRITIQUE AND PRACTICE HOW THE MEDIA
CREATE THE SAN FRANCISCO BAY AREA PAST
A UC Berkeley Summer Sessions course held in the Presidio of San Francisco



Students will learn to critically analyze how mass media (film, television, Internet, computer games) affect the way in which we view and approach the past. To become fully media literate, students will create a collaborative short digital movie using iMovie, focusing on the history and resources of the SF Presidio.

Digital Documentation and Representation of Cultural Heritage

THIS SUMMER 2008 LEARN, PLAN AND CREATE THE PUBLIC INTERPRETATION OF THE SAN FRANCISCO BAY AREA PAST
A UC Berkeley Summer Sessions residential course held in the Presidio of San Francisco



A 4-unit residential field and studio course held as part of the UC Berkeley Summer Sessions. The course is limited to 12 participants. Cultural Heritage and other related topics will be covered. Participants will have the option of staying at the SF Presidio. There are no prerequisites for the course, although a basic understanding of digital technology is assumed. The course will focus on the design, field trial, and documentation of cultural heritage places. [More about the course](#)



Çatalhöyük, Turkey

San Francisco Presidio

Summer Session 2007 at UC Berkeley, Dept of Anthropology

May 21-June 29, 2007 Anthropology 136e

Digital Documentation and Representation in Archaeology: Managing Cultural Heritage

Instructors: Professor Ruth Tringham and Dr. Michael Ashley



Fort Winfield Scott, San Francisco Presidio

4 units, 6 week course May 21-June 29, Tuesdays and Thursdays 9-12, 1-4. Instruction in the Multimedia Authoring Center (MACTIA/West) of the San Francisco Presidio Archaeology Lab. A \$50 lab fee is charged to support the heavy use of the MACTIA facilities.

No prerequisites. This course satisfies the methods requirement for the Anthropology major at UC Berkeley. Log onto UC Berkeley Summer Sessions for registration information: <http://summer.berkeley.edu>

Fort Winfield Scott: the focus of our course. Students are assessed in the course through participation in a team that will create the site management plan for the historic site of Fort Winfield Scott at the San Francisco Presidio.

The project builds on the research being done earlier in 2007 by UC Berkeley interns working with CyArk (www.archive.cyark.org), and other planners, at a workshop at the 10th Anniversary Symposium of US/ICOMOS (International Council on Monuments and Sites) to be held in April 2007 at the SF Presidio.

Students will work as a single production team to develop and implement a digital documentation project.

There were two responses to this review. Firstly we taught summer field courses at the SF Presidio and Çatalhöyük, for intensive training in the software and hardware of digital documentation and its archiving, and in multimedia authoring of interpretive works.

RESPONSES: TWO-SEMESTER MEDIA LITERACY COURSES

UC Berkeley MACTIA (Multimedia Authoring Center for Teaching in Anthropology) Archaeological Film Database

UC Berkeley MACTIA (Multimedia Authoring Center for Teaching in Anthropology) Archaeological Film Database

Film_ID_no: 0158
Film Title: Mummy, The
Reviewer Name: Jeffrey Newburgh
Current Affiliation:

Films reviewed by this reviewer

Old	?	Mummy, The

Reality Authorship Economic

Director: Stephen Sommers
Producer: Sean Daniel and James Cameron
Writer, s etc: Written by Stephen Sommers
Archaeological consultant:

The 1999 swashbuckling novel *The Mummy*, was written by Rick O'Connell. Sommers was born on May 14, 1955 in Minnesota. He was also trained in the art of film directing. He has directed/produced several films, including *The Mummy* (1999).

The modern *Mummy* films are a continuation of the original. In 1961 she married her first husband, and in 1962 they were both in the film business. Their first story "Interview With the Vampire" was a success. Their second story, *Interview With the Vampire*, was a success. It brought a \$100,000 advance for it. Christopher was born in 1954. He had chaired the first *Interview* was written by Anne Rice. It was entered into a \$17 million budget.

The Archaeological Film Database was created in August 2005 in association with UC Berkeley Archaeology and the Media courses. Films of all genres are included and subjected to the same criteria of critical analysis of Media Literacy. The films are about the documentation and the interpretation of the products as well as the process of archaeological research. To see the movies that have already been reviewed click on "Media Literacy Reviews" What sets this database apart is that are critical analyses written by archaeologists (including students and avocational enthusiasts) that follow Media Literacy criteria, including analysis of authorship, funding, distribution, sub-texts, and the impact on changing audiences in terms of the construction of the past. The database is aimed at educators and lifelong learners who believe in the mutual interdependence of critical analysis and hands-on practice to increase critical awareness and creative satisfaction from the media sources through which the academic enterprise and popular culture can be merged.

Coming Soon: public users will be able to sign in and write their own Media Literacy Reviews

All of the content in this database is licensed by a Creative Commons 3.0 attribution, non-commercial, share-alike license
Contact: Ruth Tringham (rtringham@berkeley.edu)

Information comes from the Internet Movie Database--<http://imdb.com/name/nm0723351/bio>

One astounding case of irony that I find in the 1999 adaptation of *The Mummy*, starring Brendan Fraser, is that there is virtually no publicized consultation with or mention of any real archaeologists. The director and interviews seemed much more concerned with

The second response was to establish a sequence of two-semester courses in Media Literacy. This was also my response to the increasing media content on the Web through Social Media, YouTube etc.. **click** In these courses critical analysis of media using media literacy criteria (while contributing to our Online Film Database) was integrated with constructive creation of media works by the students themselves.

THE CHALLENGE OF MULTIMEDIA AUTHORING

Our natural inclination for non-linear thinking is suppressed by its difficulty of expression on paper. Through the MACTiA courses we rose to the challenge of breaking the tyranny of text to transform ourselves into digital publishers of non-linear thought.

MACTiA was more than just a teaching space, it was a collaboratory. And that was an important part of their “transformational” experience of being at Berkeley.



And we taught them the social skills of collaborative work that would be needed increasingly in their future lives.

We contributed to the education of a generation of critical-thinking digitally literate authors, who could produce high quality content in non-linear formats that took advantage of but did not forefront the audio-visual and kinetic impact of digital technology.

Education in the humanities and social sciences is traditionally based on learning how to write linear texts. [click](#) Our natural inclination for non-linear thinking is suppressed by its difficulty of expression on paper. Through the MACTiA courses we rose to the challenge of breaking the tyranny of text to transform ourselves into digital publishers of non-linear thought. I say “we” since this was a multi-generational effort involving both undergraduates, graduate students, post-docs, and faculty in a true demonstration of the democratization of technology. [click](#)

We contributed to the education of a generation of critical-thinking digitally literate authors, who could produce high quality content in non-linear formats that took advantage of but did not forefront the audio-visual and kinetic impact of digital technology. At the same time, we taught them as users and remediators not to fear but to enjoy exploring the possibilities of the new technologies. [click](#) And we taught them the social skills of collaborative work that would be needed increasingly in their future lives. The courses that we devised were based in archaeology (our social anthropology colleagues never did join in), but in fact any discipline that is rich in media, and engages with a multiplicity of interpretations and ambiguity can incorporate the principles of the MACTiA pedagogical model.

Many of the problems identified in 2005 had been solved by software and hardware innovations by the time we retired in 2011. As a result, as our 2015 course showed, the physical space - the MACTiA lab - is no longer a requirement for such a model. [click](#) However, it is good to remember that MACTiA was more than just a teaching space, it was a collaboratory, where students and faculty would “hang out” for many hours working on projects together. And that was part of the “transformational” experience of being at Berkeley and being in the MACTiA. Its legacy has been significant, but that is another story.

THANK YOU TO

Meg Conkey my dear colleague, supporter, enabler, and collaborator in the MACTiA enterprise.

Michael Ashley my navigator in the digital world, and the real Early Adopter

The University of California, Berkeley administrators who supported us with funding and technological help throughout the MACTiA's existence

Katherine for bringing together such an interesting group of educators today

All of our collaborators in the MACTiA as students, faculty, and researchers. You made it happen. If any of you are here, now would be the time to identify yourselves