



visible knowledge project

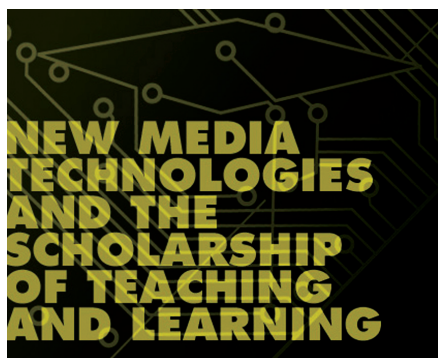
a collaborative investigation of learning, inquiry, and technology



## The Difference that Inquiry Makes:

A Collaborative Case Study of Technology and Learning,  
from the Visible Knowledge Project.

Edited By Randy Bass & Bret Eynon



**"The Difference that Inquiry Makes: A Collaborative Case Study of Technology and Learning, from the Visible Knowledge Project,"** *edited by Randy Bass and Bret Eynon*

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#### **Center for New Designs in Learning and Scholarship (CNDLS)**

3520 Prospect St. NW, # 314  
Washington, DC 20057  
<http://cndls.georgetown.edu>

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## *Multimedia in the Classroom at USC: A Ten Year Perspective*

*Mark E. Kann, University of Southern California*

### **From The Difference that Inquiry Makes: A Collaborative Case Study on Technology and Learning, from the Visible Knowledge Project<sup>1</sup>, edited by Randy Bass and Bret Eynon**

In 1998, Elizabeth Daley, Executive Director of the University of Southern California (USC) Annenberg Center for Communication and Dean of the School of Cinematic Arts, created the New Literacy Project. Its goal was to explore how professors across the disciplines could encourage their students to use multimedia technology as means to engage in research and communicate their findings. Initially, four professors from the social sciences and humanities plus several graduate students participated in a four-week summer training session where they learned to use basic hardware and software and discussed ways to integrate multimedia scholarship into their classes. I was one of the four professors.

That fall, I taught an honors course called "Change and the Future," which examined the ideas and trends that constituted modernity in the West. I lectured twice a week and had my TAs introduce students to visual literacy and train them in basic software, such as PhotoShop and Pagemill, in discussion sections (on their own, the TAs and some students worked with sound and film editing applications too). I devised a group multimedia assignment, which consisted of a scenario and question that I had previously used for an essay, thereby allowing me to compare past students' written work to current students' multimedia projects.

The TAs and I graded the projects by applying the same criteria that I used on written essays: clarity, coherence, and cogency. That worked fairly well. For example, an image passed the clarity test if its function was readily discernible to the viewer; a series of hyperlinks passed the coherence test if they contributed to the main theme of the project; and a movie clip passed the cogency test if it added insight to the analysis. We also made several changes. We decided to treat technical problems, such

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<sup>1</sup> About VKP: In all, more than seventy faculty from twenty-two institutions participated in the Visible Knowledge Project over five years. Participating campuses included five research universities (Vanderbilt University, the University of Alabama, Georgetown University, the University of Southern California, Washington State University, and the Massachusetts Institute of Technology), four comprehensive public universities (Pennsylvania's Millersville University, California State University (CSU)--Monterey Bay, CSU Sacramento, Ohio's Youngstown State University, and participants from several four-year colleges in the City University of New York system, including City College, Lehman, and Baruch), and three community colleges (two from CUNY--Borough of Manhattan Community College and LaGuardia Community College, and California's Cerritos College). In addition to campus-based teams, a number of independent scholars participated from a half dozen other institutions, such as Arizona State and Lehigh University. The project began in June 2000 and concluded in October 2005. We engaged in several methods for online collaboration to supplement our annual institutes, including an adaptation of the digital poster-tool created by Knowledge Media Lab (Carnegie Foundation), asynchronous discussion, and web-conferencing. The VKP galleries and archives (<https://digitalcommons.georgetown.edu/blogs/vkp/>) provide a wealth of background information, including lists of participants, regular newsletters, and reports and essays by participants, as well as a number of related resources and meta-analyses.

as non-functioning hyperlinks, in the same way that we treated spelling errors—distractions but not serious flaws. More important, we added a new criterion: compatibility. Here the issue was whether students used new media in ways that were compatible with the message they sought to convey.

My hope and intuition was that the students' multimedia scholarship would produce more insightful analyses than conventional written essays. However, I could not provide much guidance about how multimedia scholarship could be used to produce more insightful analyses, ultimately, because I did not know myself. Students had to use trial and error to figure out the advantages of multimedia scholarship for their own projects. They did a terrific job. When the TAs and I examined their projects, we were able to identify four ways in which the students' multimedia projects added academic value to their analyses.

First, multimedia scholarship invited students to *prioritize* and *dramatize* their main points by highlighting text, incorporating eye-catching images, or employing engaging video clips. This contrasted to conventional papers where students often buried their main point in the middle of a paragraph or expected it to emerge miraculously from the text. Some student priorities were dramatically surprising. My scenario focused on a spoiled rich kid wanting to build a polluting chemical factory in the middle of a low-income Latino community. In the past, students always assumed that the spoiled rich kid was white; and they conceived the key issue to be a conflict either between whites and minorities, or between profits and people's health. However, one of my multimedia groups downloaded a striking image of Denzel Washington and used it to portray the rich kid as an African American. The group reconceived the key issue to be an interracial conflict between blacks and Latinos. The Denzel Washington image kept the project focused on that interracial conflict.

Second, multimedia scholarship invited students to assume *multiple perspectives* by using hyperlinks. Most past student essays examined the pros and cons of building a chemical factory by producing a laundry list of pro-development arguments (e.g., good for the economy, jobs, tax revenues) versus pro-environment arguments (e.g., bad for workers' health, nearby residents' health). Now, one multimedia group developed an innovative class analysis by using hyperlinks. One link was a gateway to the arguments of pro-growth business people; another link led to the "not in my backyard" perspectives of middle-class professionals; yet another link opened to the conflicted views of working-class Latinos who needed jobs but were concerned with health issues. While students might have done the same class analysis in a traditional essay, the fact is that they had not done so until their use of new media prompted them to experiment with multiple perspectives.

Third, multimedia scholarship encouraged students to *layer their analyses*. Students were able to explore an issue in depth by employing hypertext links to break it down into major components, then analyze major components by using links to break them down into subcomponents, and so forth. One of my multimedia groups centered their project on the hypothetical political campaigns of two people running for city council. One candidate supported a zoning variance that would allow the chemical factory to be built; the other candidate resisted the factory by opposing the zoning variance. The viewer could click on the picture of each candidate to get his or her position statement on several relevant issues; the viewer could then click on any position statement to get the candidate's in-depth analysis of that particular issue; next, the viewer could click on the candidate's in-depth analysis to explore his or her criticism of the opponent's analysis. This group developed the analytical depth that is so often missing from student essays.

Fourth, multimedia scholarship urged students to experiment with *interactive analysis*. Students were able to use new media to demonstrate how making one choice likely results in one set of outcomes and subsequent options whereas making a different choice likely results in a different set of outcomes and subsequent options. In effect, viewers could click on any of the choices, outcomes, or options to create their own analytical adventures. Several of my multimedia groups tried to develop interactive projects but, alas, they did so with little sophistication or success. Still, they happened on something important. Public policy analysis and political choice generally follow an interactive logic whereby today's analyses and choices shape tomorrow's outcomes and options. The TAs and I could imagine how multimedia scholarship could help students to become more thoughtful in confronting the indeterminacy of public decision-making.

Having gleaned from student projects the added academic value of multimedia scholarship, I was able to build didactic models of multimedia scholarship for the next group of students. I received two small grants during the summer of 1999 to develop four multimedia presentations that would simultaneously communicate course content and model multimedia scholarship. That fall, I taught the same honors course to a new group of students. This time, I modeled the advantages of multimedia scholarship prior to giving students their group assignment. I began with a multimedia presentation on revolution, which prioritized and dramatized the theme that "revolutions are founded on promises that produce problems." My next multimedia presentation offered four competing perspectives on democracy. A bit later, I gave an interactive lecture on the post-Civil War struggle for racial equality, providing students options that might take them to Booker T. Washington, W.E.B. DuBois, the Ku Klux Klan, nineteenth-century African-American music, modern protest poetry, or film clips illustrating continuing race issues. My final multimedia presentation on Sigmund Freud modeled a layered analysis of the human psyche to demonstrate the limits of human progress. Looking back, my technological prowess and design capabilities were quite limited. But that was okay. Part of the message that I wanted to convey to students was that their challenge was not to develop sophisticated computer skills; it was to employ new media to enhance their research, analysis, and communication effectiveness.

This time around, I provided more direction when assigning group projects. I gave students another scenario and question to analyze but I now required them to provide a four-part response. One part of their project had to prioritize and dramatize their main theme. A second part was to examine the issue from multiple perspectives. A third part had to employ a layered analysis and the fourth part had to include an interactive analysis. The result was a trade-off. The students' use of new media and their analyses were more sophisticated than their immediate predecessors but, alas, their work was also more predictable. Since that 1999 class, I have experimented with different ways to incorporate multimedia scholarship into small and large political science classes but nowhere has the added academic value been so clear to me as in those first two efforts.

Between 1998 and 2003, the New Literacy Project was absorbed into the Institute for Multimedia Literacy (IML). Approximately forty faculty members from all parts of the university participated in IML multimedia training programs and then experimented with integrating multimedia scholarship into their classrooms.<sup>2</sup> IML periodically gathered together all participating faculty to share and compare experiences. We agreed on many things. We agreed that teaching and doing multimedia scholarship was extremely time-consuming for faculty, TAs, and students. We agreed that we experienced a

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<sup>2</sup>Viet Nguyen, whose essay "How Do We Tell Stories?" also appears in this issue, was one of the participating faculty members.



tension between devoting class time to course content and devoting class time to training students in basic computer skills. Most important, we agreed that the time and tensions were tolerable because multimedia scholarship did in fact add academic value to our classrooms. However, we learned from our discussions that multimedia scholarship added academic value to our classrooms in very different ways. We also learned that we all had trouble explaining to each other exactly how multimedia scholarship added academic value to our classrooms. The diversity of our experiences and the difficulty of communicating them made our occasional get-togethers interesting and challenging.

The difficulty of identifying, articulating and communicating core academic advantages of multimedia scholarship became a problem in 2003. That was when IML decided to develop a university-wide Honors Program in Multimedia Scholarship. I was part of the team, headed by IML director Stephanie Barish, which designed the honors program and ushered it through the curriculum review process. For the first time, we had to agree among ourselves and then explain to “outsiders” (professors who had not been trained in multimedia scholarship or who had not incorporated it into their classrooms) what multimedia scholarship is or might be, and how it would add academic value to the undergraduate curriculum.

We proposed a four-year program that included two basic courses in the theory and practice of new media during the freshman year, one general education class employing multimedia scholarship in the sophomore year, an upper-division class in the student’s major (or cognate) field allowing the use of multimedia scholarship in the junior year, and a capstone, two-course sequence in which the student does a major multimedia project in his/her major discipline in the senior year. Our fundamental idea was that all students in the program would be exposed to the same core concepts and skills, after which the students, with faculty guidance, would explore ways to employ those concepts and skills in their own disciplines. Our expectation was that our undergraduate multimedia scholars would pioneer the possibilities for integrating multimedia scholarship into disciplines throughout the university.

The honors program proposal underwent an extraordinary review process, encountered significant opposition, suffered several crises, generated last-minute meetings of key players, demanded repeated negotiations, compromises, and revisions, and, finally, received a positive recommendation from the University’s undergraduate curriculum committee. Normally, a curriculum committee recommendation would be followed by pro forma sign-off from the provost—but not in this case. The provost decided to approve the program for one year only. He was not yet convinced this was an “academic” program and he made it clear that long-term approval was contingent on persuading him that this would be a program that added substantial and measurable academic value to undergraduate education at USC.

Elizabeth Daley asked me to chair the program’s new Faculty Steering Committee, which first convened in the spring 2004 semester. The committee’s primary task was to determine how the Honors Program in Multimedia Scholarship would add academic value to students’ education, articulate desired academic outcomes, and develop a means to assess the degree to which those outcomes are achieved. After some discussion, our initial act was to survey the forty faculty who had participated in IML training and multimedia teaching since 1998. We posed two questions. First, how did multimedia scholarship add academic value to your classes? Second, what specific outcomes did you expect for students?

We received responses from less than half of the faculty. Based on several informal conversations, I suspect that the non-responses were mostly a function of the fact that participating faculty, who believed that multimedia scholarship did add academic value to their classes, had yet to satisfy themselves regarding precisely what that value was, how it was added, or how to express and communicate it. Interestingly, none of those who did respond answered the question about expected outcomes. Here, I suspect that liberal arts faculty tend to be more comfortable with abstract goals such as "critical thinking" than with the concrete skills and measurable outcomes that are often emphasized by professional schools and their accrediting bodies. That said, I was able to discern several general themes from faculty member responses to the question about added academic value.

The respondents emphasized that multimedia scholarship requires students to become adept in the use of new media "tools" (e.g., images, sounds, interactivity, etc.) for purposes of self-expression, analysis, and communication. Multimedia language has become conventional in a world connected by the Internet. It is a vernacular for today's students, but it is a vernacular that students "pick up" rather than systematically learn, practice, and use in self-conscious, effective ways. Accordingly, students who are trained in the use of new media tools are likely to be more knowledgeable and skillful with this language. They will be better able to read and produce images as well as to communicate ideas. In particular, they will be able to express, understand, and appreciate those facets of knowledge that are more accessible by way of imagery and sound than text: emotional and aesthetic sensibilities, intercultural knowledge, and nonlinear concepts and themes.

Faculty also suggested that "multimedia" is itself an important focus for academic study. It invites students to examine questions such as: What are the main trends in the theory, history, practice, and practical application of multimedia? How have various media interacted? How have they been influenced by cultural codes that give them meaning? How have they affected peoples' perceptions of the world? What is the relationship between the arts (visual, verbal, aural) and entertainment? How have images been manufactured and manipulated? How do visual and auditory media produce and reproduce the world? What are the possibilities and limits of technology for fostering learning? Some professors feel that "multimedia" is an appropriate research topic as well as a means to investigate and communicate meanings across disciplines.

Respondents emphasized the importance of multimedia scholarship for enhancing students' analytical skills. Several faculty members emphasized the utility of new media for investigating multiple perspectives on issues, facilitating interactive understanding, and addressing issues involving contingency and ephemera. In a sense, they see multimedia scholarship as an entry to non-verbal, nonlinear interpretations and explanations in a post-modern world. Other professors suggested that multimedia scholarship encourages students to sort, categorize, and organize information into usable databases with effective interfaces; it invites them to detect, determine, and test meanings and trends embedded in complex or voluminous data by developing visual representations (such as maps, charts, and graphs) of those data; and it challenges students to think critically by requiring them to develop and draw on new kinds of evidence to support their analyses and reinterpretations of the world.

Some participating faculty felt that employing new media promises to develop students' capacity for active learning and creative scholarship. Multimedia authorship demands that students not simply receive meanings but also participate in the construction of meanings. They must shift elements of understanding and recombine them to create new meanings and effective designs. Multimedia



authorship is generally a collaborative endeavor that challenges students to discuss, negotiate, and strike academic compromises with their peers; it thereby initiates students into the communal nature of academic scholarship. Multimedia authorship also focuses students on making good choices rather than on producing right answers. It thereby provides them some room for experimentation, serendipity, discovery, and creativity. And because the application of new media to many text-based disciplines is quite rare, students who do multimedia scholarship have an opportunity to pioneer research and communication in a number of academic arenas.

Finally, the faculty agreed that multimedia scholarship promises to strengthen students' ability to communicate their research and findings to other people. Students' multimedia scholarship is likely to be presented not only to their professors but also to other students and, often times, to friends, relatives, and other interested parties by way of CDs, DVDs or the Web. Accordingly, young multimedia scholars must confront the challenge of devising effective ways to express and transmit their message to multiple audiences with different degrees of knowledge and interest. One professor suggested that the prospect of addressing multiple audiences would encourage students to experiment with modes of interactivity and online communication not simply to present their scholarship but to engage their audiences in that scholarship.

Here, then, was a family of answers to the question, "How does multimedia scholarship add academic value to students' education?" Unfortunately, these answers were not easily reconstituted as distinct program goals or as measurable outcomes. With the guidance of Elizabeth Daley, Stephanie Barish, and IML's incoming director, Anne Balsamo, the Faculty Steering Committee discussed possible program objectives, academic components, and assessment techniques, and gradually developed a consensus on the following recommendations.

The overall objectives of the program are based on the premise that new media technology and scholarship must be integrated if students are to become "scholars and creators of new meanings." Our primary goal is for students to "use the languages of the new media in the production of scholarly knowledge." To this end, they are to engage in "collaborative, interdisciplinary, critical and creative" scholarship that is theoretical, project-based, and "multi-perspectival." If the program is to meet our highest standards for success, the students' multimedia scholarship will add academic value not only to students' knowledge but also to research in disparate disciplines.

We begin to prepare students to meet these objectives by having them master two families of core concepts. One family involves "reading multimedia." It encompasses key theories and debates: modes of analysis that include relationships between text and images, screen dynamics, sound design and composition, as well as frameworks for understanding multimedia applications and interactive experiences. The second family focuses on "writing multimedia." It covers steps in planning multimedia projects, elements of multimedia expression, data compression and file management, design strategies, and the use of basic tools and equipment. Our desired outcome for the first year of the program is student mastery of both families of core concepts, which can be tested in conventional ways by classroom instructors.

How were we to assess students' effectiveness in integrating multimedia scholarship into General Education and into disparate disciplines during the next three years? Past experience tells us that the integration process varies student by student and discipline by discipline. Furthermore, we cannot anticipate ahead of time how students will integrate multimedia scholarship into their various disciplines because we have no experience with well-trained, sophisticated, undergraduate scholars researching and developing major multimedia projects, and we have little experience with

undergraduates producing multimedia projects in many of the academic disciplines. We expect that students will develop new strategies and produce innovative projects. Accordingly, our committee recommended that our students be required to build digital portfolios that will be assessed annually, both by faculty within the honors program and by faculty from the students' disciplines. An effective digital portfolio assessment system will challenge faculty to determine whether and how students added academic value by applying multimedia scholarship to their particular disciplines.

One unique feature of this program is that we faculty expect to learn from the students. Indeed, we must learn from them if the program is to be successful. While faculty provide core training and continual guidance, ultimately, we depend on the students to figure out how to adapt multimedia scholarship to their own fields. We will learn from students' best practices, induce some criteria to define overall excellence, and then apply those criteria to refine our expectations, define desired outcomes, and test the program's general effectiveness. This is a less-than-elegant solution to the challenge of assessment but it is the very same process that each one of us faculty have gone through when we first attempted to integrate multimedia scholarship into our courses. Most of us have recognized that an important added academic value in multimedia scholarship is that faculty and students must interact and engage in mutual learning much more than is typical in most college classrooms. For me, this interaction and mutual learning justifies the extra time commitment involved in teaching multimedia scholarship.

The Faculty Steering Committee of the Honors Program in Multimedia Scholarship presented its recommendations on the program's added academic value, overall objectives, core concepts, desired outcomes, and appropriate assessment techniques to our provost during the Spring 2005 semester. His verbatim response was, "Looks like a great start in assuring this is an academic program."

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The first student cohort completed the Honors Program in Multimedia Scholarship in 2008. That cohort included twenty-seven students from fifteen different majors and seven different schools: Music, Communication, Engineering, Theatre, Education, Dentistry, and Letters, Arts and Sciences. Collaborations between the students, IML instructors, and faculty advisors from the students' disciplines reportedly worked remarkably well. The capstone event was a thesis show in April 2008. The students presented their final projects, discussing and displaying the various ways that they had combined new media and discipline-based scholarship. One long-term measure of the program's overall success will be the extent to which these projects function as viral examples for other students in their disciplines.

The honors program itself functioned as a stimulus to several other curricular innovations. These include new courses, a new graduate degree program, and a pilot program integrating new media into the General Education core. In addition, IML continues to support individual faculty who wish to integrate multimedia projects into their courses. Multimedia scholarship is now recognized as a legitimate part of the USC curriculum. According to Holly Willis, the current program director, the question still remains whether faculty and administrators view new media as "bells and whistles" added on to "real" scholarship or as a genre of scholarship that transforms our modes of argument, composition, expression, and reception.

As for me, my classroom experiments in multimedia scholarship proved to be infectious. In 2005, I decided to open a second front in my research by examining the relationship between democratic political theory and the Internet. This began as a conventional research project. It led to collaboration

with my undergraduates. Next, it pointed me to some online publishing. Then, I produced my own multimedia article for *Vectors: Journal of Culture and Technology*. Working with a graduate student from our animation program, I sought to explore and express the shortcomings of Web-based versions of the theory of deliberative democracy. We developed an interactive model of online deliberation and a simulation of deliberative democracy. Although my research guided the model and simulation, what was most fascinating and fun was the degree to which the demands of our multimedia strategy forced me to rethink several issues and redo some of my research. My fascination and fun were familiar: I had seen it expressed by students presenting their own multimedia projects.