

PAMELA REDMOND
MARCH 14, 2008

In 1998, as the Internet was bursting into the mainstream of instruction, I asked the question of how we might use technology to support and potentially augment the new teacher mentoring process. Through a small grant from the Oracle foundation, I began working with a group of teacher mentors near Belmont, CA. They were provided with laptop computers, dial-up Internet access, and email accounts along with a variety of technology tools. Our goal was to support these local BTSA partners in their work of mentoring and guiding new teachers.

We explored the use of web-cams for virtual observations and conferencing, built an online community using the FirstClass product, constructed a website of resources and links for new teachers, and set up email communication. As the project evolved, we discovered two desires that the new teachers repeatedly expressed: 1) opportunity to observe other teachers teaching and 2) ability to observe their mentor teach their own students and then co-reflect on this instruction.

The findings from this project challenged my basic notions about the content, context, and delivery of both new teacher and mentor training and I began to envision where and how technology could be used to reach more teachers in need without sacrificing quality. Ertmer (1999) suggests that a strong vision for how technology can be used to augment the new teacher support programs is the first step in overcoming barriers to technology use. Modeling, reflection, collaboration and envisioning are required for second order, intrinsic change to occur.

In 2001, I received a Preparing Tomorrow's Teachers to Use Technology grant from the U.S. Department of Education to develop subject-matter content and pedagogy materials to support under-prepared teachers in the classroom. At that time, California had approximately 54,000 teachers-of-record who were either uncredentialed or were teaching out of field. A survey of the "pre-intern" and intern programs supporting them revealed that there was a dearth of support available for math and science teachers. I embarked upon the development of 9 video cases: 6 in science that have a secondary focus on English Learner strategies; 3 in Math with a secondary focus on special needs student strategies.

The result of this work can be found at <http://teachinginterchange.org/vcs.html>
Pertinent to our upcoming discussion on Multimedia Representations of Teaching, there were many critical decisions I had to make while designing these video cases. The primary dilemma presented in each of them was how did each teacher address the learning needs of their student population while teaching math and science content to middle and high school students. A major barrier we also had to address was the fact that most members of the intended audience would not have the luxury of a mentor/support provider/advisor to guide them. Without a mentor, who would help them to deconstruct the teaching practices or point out key pedagogical issues and choices? It is well-known among teacher educators, that new teachers and teacher candidates often are unable to

find key “teaching moments” during classroom observations; they cannot deconstruct the classroom activities and interactions without support.

This led to decisions about:

- Presentation of Key Perspectives
- Ancillary Materials
- Video Characteristics
- Case Discussion Facilitation
- Tools for Online Discussion

Ancillary Materials: What Should be Included? (Perry 2000, Talley 2001)

- Relevant contextual information
- Text transcripts
- Professional literature
- Questions for reflection
- Lesson Plans
- Web Links
- Goals & Outcomes
- Student Work Examples
- Online Portfolios
- Storyline/Scenario
- State and national standards

Key Perspectives: Who is it important to include?

- Teacher
- ,Students
- Experts/scholars
- Parents
- Analysis/Interpretation
- Administrators

Video Characteristics

- Student/Teacher interaction and dialog
- Authentic footage – continuous, chunked or edited?
- Problem/dilemmas
- Complexity
- Multiple teacher behaviors including ineffective practice
- Models of exemplary teaching
- Prompts / stopping points for reflection
- Student behavior and misconduct

This left us with many decisions:

- Authentic footage or edited footage
- Show problems and dilemmas or exemplary practice
- Shoot the video with best possible sound and lighting or through the lens of the classroom observer; i.e. “guerilla” style

- What is the sequence of presenting the “case”
- How does one deconstruct the teaching practice yet retain the integrity of the “observation:
- How do we present the material in a way that allows professionals to feel that they are not back in the University classroom?
- How do you check for understanding and potential transfer to the learner’s own teaching practice?

I look forward to our meeting and hearing how others have dealt with these dilemmas of video case production.

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MAGDALENE LAMPERT
THURSDAY, MARCH 13, 2008

My attraction to multimedia representations of teaching began in the 1980's when many of the people who came to watch me teach a fifth grade mathematics lesson seem to be puzzled by the same two questions. Actually, they were not questions, they were assumptions. I start here because of the issues that those assumptions continue to raise for the production and use of multimedia representations of teaching. The first assumption was that my students had to be "special" because they saw them speaking to one another in relatively civil ways about ideas. The second assumption was that I was not responsible for covering the curriculum, because my students and I would spend so much time solving and analyzing a single mathematics problem. Neither of these assumptions was correct, but they were ways for the people who saw a single lesson in my classroom to make sense of what they were seeing. This led me to wonder if it was possible to use multimedia records to challenge these assumptions. As a teacher, I knew that I had worked long and hard, and deliberately, to build the kind of classroom culture that people were seeing, beginning on the first day of school and attending to it every minute all along the way. I also knew that I paid considerable attention to what I was supposed to be covering in fifth grade, and could explain how the problems we were working on served to cover the required curriculum across the year, given the wide diversity of ability among the students in my class.

My wondering about how to represent these "over time" aspects of my teaching intersected with the availability of new technologies--technologies that I perceived to have the potential to represent the complexities of teaching as I saw it from the inside. In the "Mathematics and Hypermedia Teaching" (MATH) Project, funded by the National Science Foundation from 1989 until 1995, Deborah Ball and I collected daily records to document teaching and learning in our elementary mathematics classrooms. We catalogued those records and we experimented with how to make them available to people who wanted to understand the teaching we were doing. One piece of that project that remained undone, though we spent a lot of time thinking and talking about it, was building something that we called "The Investigator's Working Environment" (IWE). We envisioned a multimedia environment in which teachers, intending teachers, and researchers could investigate questions about teaching and learning using what we had collected to document teacher and student work across the year, and teacher educators could build "packages" of multimedia materials for use in courses. Some of that work has been done in projects that followed on what we did. But the question of how to use multimedia representations to understand the work of teaching as it extends across the entire year still remains.

My current questions about multimedia representations of teaching come from a different approach to their use. I have been studying and designing teacher education/professional development programs that purport to help novices to learn teaching in, from, and for practice; i.e. to learn to do teaching, rather than just to analyze it. What role do multimedia records of novice practice have in this endeavor? In particular, what are the

practical and pedagogical problems associated with collecting multimedia records of novices' efforts to enact the instructional activities that they are taught how to do, cataloguing those records, making them available in a timely manner to both novices and their instructors, and most importantly, figuring out what novices and their instructors ought to be doing with those records to further the learning of teaching?

RAYMOND PECHEONE

WEDNESDAY, MARCH 12, 2008

I have been thinking about the use of multi-media representations of teaching for about two decades serving in a director(s) capacity for the following teacher assessment projects: (1) the first assessment development lab for the NBPTS in English language arts (2) implemented the first statewide induction program that included both mentorship for new teachers as well as the use of subject specific portfolios in Connecticut to grant a professional license to teach and (3) initiated the design and development of the Performance Assessment for California Teachers (PACT) which is an alternative performance assessment to initially license prospective teachers in California- 31 California universities are currently members of PACT.

To serve as an exemplar of this body of work I will briefly identify the data sources (records of practice) we use to assess teaching in the PACT program. The PACT portfolio assessments (“Teaching Events”) use multiple sources of data (teacher plans, teacher assignments, student work samples, video clips of teaching and personal reflections and commentaries) that are organized around five categories of teaching (planning, instruction, assessment, academic language and reflection). The PACT assessments build on efforts by the National Board and the Interstate New Teacher Assessment and Support Consortium (INTASC), which developed performance assessments for use with expert and beginning teachers. Like these earlier assessments, the focus of the PACT assessments is on candidates’ application of subject-specific pedagogical knowledge which has been found by research to be associated with successful teaching (Bransford, Brown, & Cocking, 1999; Darling-Hammond, 1998; Fennema et al., 1996; Grossman, 1990; Porter, 1988; Shulman, 1987). What distinguishes the PACT assessments from the NBPTS assessments is that the Teaching Event tasks are more integrated (focusing on a unified learning segment-one week of instruction), is designed to measure teacher performance at the pre-service level, and has no “assessment center” components. However, one distinguishing feature of the PACT assessment system is the use of customized course-embedded signature assessments (ESA) to support judgments of teacher competence. These embedded assessments could include case studies of individual students, curriculum analyses or unit plans, analyses of student work, and observations of student teaching. The purpose of the ESAs is to provide formative feedback to the prospective teacher and teacher educators as well as to provide multiple sources of data to better inform the licensure decision.

In over two decades of work I have come to believe in the importance (centrality) of these authentic representations of teaching as the power source needed to build and capture new knowledge around teaching, learning and cognition. Through the evaluation of these portfolio submissions we have seen multi-layered representations of teaching that are situated in practice as evidenced by a range of data sources: video representations, teacher assignments, student work samples as well as teacher thinking about their practice (commentaries/reflection). These representations of teaching clearly evoke multiple perspectives of teaching but what is most illuminating is the use of these multiple data sources to arrive at defensible decisions about teacher competence. These records of practice are complex and nuanced and are by no means straightforward or easy

to analyze but they have one persistent feature which is they privilege the use of multiple sources of information to evaluate teaching. From my perspective this is the generative stuff ('right stuff') needed to study teaching and learning.

What these experience suggests to me is that we need technologies that will enable collaborative dialogue and inquiry into teaching that is nimble enough to allow for the interrogation of multiple representations of authentic teaching (i.e., video, student and teacher work samples, reflections/commentaries) in real time including ready access to a library of "practice" to support judgments about teaching and learning. In this regard I have become excited by the potential of two web based technology platforms that have been developed. First, Roy Pea has developed a process called "Diver" which provides the users the capability to precisely select, manage and integrate video records ("dives") to foster rich discussions of teaching. Second, Anne Lieberman work with teachers to capture their practice as part of the "Carnegie Academy of the Scholarship of Teaching and Learning (CASTLE)" project is rooted in the mission to "go public with teaching" through the development of electronic teacher "cases" of practice (presented in their own words). What excites me regarding this work is the possibility to marry (integrate) these technologies to enable easy manipulation of multiple records of practice beyond "video technologies" and empower users to individually construct and co-construct understandings of teaching based on using authentic and varied "sources of evidence." Finally we need research on the use of media to study how these examinations of teaching supports teacher development and learning as well as builds new knowledge and understandings around teaching.

ROY PEA

FRIDAY, MARCH 7, 2008

I've had a strong interest in the power of multimedia representations for learning and teaching since I started studying child language development and mother-infant interaction in homes with other researchers at Oxford in Bruner's group in the mid-1970's. While the video technologies have changed tremendously from the Sony Portapak tape reels and cameras of those days, the social practices for developing scientific knowledge or 'generative gems' from the wisdom of practice from video records have not evolved apace.

Substantial insights about learning, teaching, and distributed cognition, among other human activities, have been built up from careful, time-demanding multi-disciplinary analyses of video-recordings of human activities in their social and material contexts using such practices as interaction analysis (e.g., Jordan & Henderson, 1995 provide an excellent history and synthesis of the state of the art at that time; a detailed compendium providing synoptic views of the uses of video in research from diverse theoretical perspectives is available in Goldman, Pea, Barron & Derry, 2007). I've also found exciting the Carnegie work in surrounding teachers with the support to create multimedia records of their teaching that others might learn from, and with each new iteration, the opening up of the models for how teachers can engage in this novel practice are providing important flexibilities that are lessons for all of us.

Nothing in either the empirical work of scientists studying video or in the practices of researchers, teacher developers, or companies producing video for learning by teachers suggests this is easy or straightforward. Everyone quickly becomes aware how much they could use the help of others, and how many different "lenses" for viewing records of practice they might productively use. To use a phrase Louis Gomez coined with his Bellcore colleagues years ago, video provides great "conversational props" - but establishing the generative structures and functions for those conversations is a great design challenge.

What these observations suggest to me is the importance of catalyzing the collaborative practices of analyzing and creating multimedia records of teaching, and of the importance of partnerships (and affiliated respectful struggles) among representatives of different disciplines of inquiry to make the highest quality work in this space. This is one reason I am drawn to the idea of consortia, networks, and other assemblies of interest and expertise, as a way to advance the field(s) concerned with MRTs.

I've also argued that here is a fundamental need for the learning sciences (including studies of teaching)—like genomics, environmental sciences, and other science disciplines— to build a cumulative knowledge base from primary data records for use by many research groups (Pea, 1999, 2006). We work in far too isolated a manner today. In our DIVER project, we've created a web browser platform and software services to support groups in selecting and annotating specific moments of video, mashing them together, and having video conversations about what we call these 'dives' into videorecords. We've also developed a desktop version of DIVER affiliated with uses of a

high-resolution panoramic video camera and software that enable 'virtual videography' after events have transpired where infinitely many movies (and affiliated interpretations) can be crafted through the video event space.

In terms of technologies to support this collective enterprise, we can sketch out as a group many productive directions that have been developed, and how they are making complementary contributions. Some of these are open and others are commercial offerings, with tradeoffs that will be important to discuss. We learned a great deal from developing the Teachscape platform and web-based video cases of teaching and learning since the first designs I contributed to in its founding years from 1999-2001. Mark Atkinson and Louis Gomez provide a good account of some of those lessons in their statements. At the same time, careful ethnographic and experimental studies of teacher learning alone and in groups of different designs from such resources as these and other approaches to video cases are still too rare. We don't know enough about how MRTs work when they work and why. In the text comprehension research field, we have extensive accounts of how to analyze and represent text structure, depth of text processing, reader comprehension strategies and the like - but in what we might call the video comprehension field, we have very minimal research foundations, particularly relating to the complex and emergent practices of multimedia records of teaching.

In the MRT tool world, there is no existing solution design space that our field has together crafted, nor the flexibility that the present generation of modular technologies (Web 2.0, AJAX, etc.) makes possible to customize a technological workbench for a specific set of needs - for researchers, for teacher educators, or for teachers themselves. We have a central need for the flexible socio-technical infrastructures that will enable open digital video collaboratories for doing the work ahead.

One of the components of such socio-technical infrastructure that we will need to work hard to develop is a common language for what we are referring to as we characterize the properties of MRTs - both as they are intended in their crafting by authors and in how they are experienced by their users (when these parties are different), and for what dimensions of critical appraisal we are utilizing to assess their values (and their limitations). Otherwise our researchers, educators, and media makers will talk past one another in that place of parallel play and egocentric speech that Vygotsky creates such images of in his book on Thought and Language - whereas we should be multimediating a shared understanding and repertoire of productive cultural practices using MRTs to advance teacher learning, and the success of all the children in their charge.

- Roy Pea, Stanford University

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RANDY BASS

FRIDAY, MARCH 7, 2008

I think the world of MRT's is about to expand very quickly in ways that will both advance and unsettle the excellent experimental work that has been done over the past ten years. My orientation to MRT's primarily has been through higher education although I have had exposure to (and admired) K-12 multimedia case studies and case teaching. As with the rest of this community, I have been attracted to MRT's as a way to capture the complexity and multidimensionality of teaching. Teaching and learning are such intensely situated phenomena, that it seems almost impossible to imagine their representation for study and knowledge-building without using multimedia as a critical tool. I think this is especially true the more we learn about the role of intermediate thinking processes, emotional intelligence, and the complicated nature of intellectual development.

Within higher education, the potential for the use of MRT's has barely been tapped, especially in the realm of the scholarship of teaching and learning. And in particular I have observed over the years a singular tension in MRT's between the impulse to empower regular disciplinary faculty to engage in the documentation of their practice (and student) learning, on the one hand, and the difficulty of making MRT's that are visually and aurally accessible, intellectually compelling, and educationally persuasive, on the other. The look and feel of a teacher-built site often seems amateurish in ways that overshadow the insight and "wisdom of practice" embodied in the site itself. An unintended consequence of the scholarship of teaching and learning movement has been, in the name of professionalization of practice, to turn teachers into amateur videographers and site designers. This irony will be boosted exponentially in the next couple of years by the explosion of grassroots video (digital video, YouTube) and other online tools that facilitate the manipulation and annotation of video, such as <http://viddler.com>. We are in the era of the "amateur upload," which will supercharge the world of MRT's in all kinds of ways over the next few years.

Beyond Parallel Play: From my perspective, a core issue for a vision of MRT's is to think of them not merely as tools with which to author and publish representations of practice (and for others to study) but tools whose functionality makes them spaces for thinking, discovery, and invention. Both a challenge and an opportunity is expanding our conception of MRT's in light of the growing capacity to upload, annotate, tag, and remix information in all kinds of ways. All of these growing features of the so-called interactive Web make it newly possible to imagine MRT's that are spaces designed for what I call fluid group inquiry. That is, how might we see MRT's not merely as rich representations of practice (or a gallery of same), but shifting, growing, changing databases of multimedia objects, uploaded by teacher scholars, with various kinds of "tags" that would track their relationships to people, contexts, and ideas. Fluid group inquiry spaces should increasingly have the ability to juxtapose pieces of evidence, artifacts, and reflections in all kinds of new ways. It should be possible in such spaces to "mash up" (i.e. create spontaneous collections of evidence in new ways based on the harvest of particular kinds of embedded data) that would reveal new insights; these mash-ups would themselves be new artifacts, available for others to consider and build on. Fluid group inquiry spaces

would be a version of MRT's where teachers could make, in other words, one big old multimedia mess, but use tagging, searching, sorting, and annotation tools to create many meaningful narratives out of the messiness.

Thinking of MRT's as fluid developmental spaces (and not merely publishing spaces) has its parallel in what is happening with student electronic portfolios, as they expand to be more than vehicles for students to make samples of finished work public; these next generation of portfolio spaces promise to be more dynamic formative spaces for students to represent their identity and their own learning processes. The next generation of electronic portfolios will themselves be a whole new world of the "amateur upload," making use of video, audio, even virtual reality environments like Second Life. It is very important that we imagine MRT's in ways that help us skate to where that puck is headed.

DAVID WALD

THURSDAY, MARCH 6, 2008

As a newcomer to the world of MRT I am reluctant to say too much, but here goes. For the last 20 or so years I have produced non-fiction television: news magazine stories, documentary programs and documentary series. Reading through the statements of the other participants I am very curious to see how my experience conceiving, producing, editing and writing programming is relevant to creating MRTs. At first glance the two uses of media seem quite different. And yet, one of the most fundamental lessons I have learned in producing television, that story is key, would seem to have a place here too.

Human beings are natural story-tellers and listeners. In television everything else is secondary: shooting, editing, writing, music...all are in service of the story. A story pulls together the facts, figures, and other information and makes it real. As it was described to me at one news organization, "hook 'em with a good story and they might accidentally learn something."

Certainly there are situations when storytelling is less relevant. For example, one MRT statement suggests a future in which there could be cameras in every classroom, constantly recording. Teachers would have the opportunity to watch themselves later, like a football team reviewing the day's game. In this case, simply documenting reality, in real time, is enough to provide a powerful teaching tool, allowing teachers to carefully examine what went right, and wrong, and to modify their techniques accordingly.

But there are other applications in which I imagine story telling techniques could prove very helpful. One example would be a program whose purpose is to examine methods of teaching in which engaging viewers is necessary. In the same way that an episode of Project Runway shows a group of hopeful designers fulfilling a common task and being judged on their accomplishments, a group of teachers would be given the same teaching assignment, filmed in a class as they performed it (with multiple cameras), and then evaluated on their performances. The final, edited, segment would consist of the most relevant events. The teachers would be interviewed about what they were thinking, and judges would speak about the effectiveness of their teaching, pointing out what was successful and offering suggestions about what could have been done differently. In the end a teacher would be voted out. (Just kidding.)

Whether 'Project Classroom' would ever become a reality or not, I am looking forward to learning more about MRTs, exploring how they will/can be used, and bringing a different perspective to the table.

GILA BEN HAR

THURSDAY, MARCH 6, 2008

As director of the Center for Educational Technology, Israel's leading body in the field of ICT based education, there are two principle goals that I perceive in terms of integrating technology in teaching practice:

- To provide teachers with environments, tools and content that will assist them in integrating technology in a way that will promote classroom teaching processes.
- To provide students with ICT based tools, environments and content that will allow them to learn in a manner that is up-to-date and relevant to their lives in the 21st century.

One of my key tasks, then, is to ensure this aspect of teachers' training. The traditional mode of professional development for teachers in Israel usually requires them to attend face-to-face in-service training sessions, generally after school hours, and often at locations some distance from where they live (this is particularly true of teachers living in the periphery areas). The teachers, who in any case are exhausted from their regular workload, often perceive these meetings as an extra burden, one that does not actually contribute to their work. As a response, we have now enlisted technology to allow teachers to learn at home, from leading specialists, by means of distance learning courses that combine synchronous and asynchronous communications technologies. These courses offer teachers a quality encounter with the top specialists in Israel, and encourage fruitful, multicultural dialogue with colleagues in other towns and, indeed, in other population sectors.

This is where I see the importance of implementing MRT in professional development for teachers. In my opinion, this is one of the most successful methods for teachers' professional development, in terms of the integration of technology into the routine of teaching, learning and assessment in schools. From this perspective, the medium is also the message.

In practical terms, I hope to establish a "bank" or database of lectures by specialists, reflecting three levels of integrating technology in teaching practice:

- At the first level – a distance learning course that includes a videotaped lecture by a specialist, presenting the principles for integrating technology within a specific discipline;
- At the second level – lectures that will include video or MRT clips of authentic teaching situations in the classroom; these will serve as a starting point for discussion of approaches, methods and models for integrating technology into teaching practice on the practical level, and be a basis for the teacher's personal study of his/her own teaching methods;
- At the third level – the MRT will record examples of teaching with web-based activities – for example, conducting scientific experiments using computer simulations, classroom discussion of a play shown on a SMART Board, lessons on the credibility of information found in database searches, and so on.

Thus we will achieve authenticity in these learning situations, allowing course participants to discuss the learning and teaching processes taking place, and at the same time, the integration of multimedia in their own classroom teaching and learning processes.

I would expect that this collection will be structured on metadata that will allow smart topic-based searches. The software for running the courses should be based on social networks and Web 2.0 tools that will allow maximal cooperation among members of the teacher community to ensure optimal learning.

I am looking forward to take part in this exciting convention and to learn more from all of you about the innovative technologies and methodologies in this area.

BOB MONTGOMERY

WEDNESDAY, MARCH 5, 2008

When I think back to how I was trained as a teacher in the late 80's, I recall the powerful experience of being videotaped by my mentor and of viewing myself for the first time in utter fascination and mild horror. There is nothing quite like seeing on screen your tennis stroke,

the inside of your mouth, or your classroom practice revealed. I still have that darn video. Did this ever catch on as a significant tool for teacher training?

Twenty years have passed since being trained as a teacher, and I now find myself in a lead role with the WestEd Interactive team, managing web projects that consistently involve multimedia representations of educational practices - not primarily for the sake of teacher preparation - but for the dissemination of promising pedagogies. One interesting challenge we face is how, when and to what degree to put the production of DRTs (loosely defined) in the hands of teachers.

One example of how we've attempted a teacher-driven production process is in the Envision Schools Project Exchange. The Project Exchange and its related Design Studio are online tools to support the sharing of great projects across the Envision network and beyond in a format that makes each project compelling, accessible, and replicable. Each project consists of video interview with a lead teacher, digital representations of student work, labeling by standards, outcomes, and keywords, and modular presentations of all project activities and major assessments including downloadable handouts. Although the tool is still relatively new, we have seen meaningful reflection as teachers enter existing projects into the Project Exchange and create new ones in the Design Studio. The tool will be used eventually to deliver the project to students. A sample project is here:
http://www.envisionprojects.org/cs/envision/view/env_p/30

In our Doing What Works project (funded by the US Department of Education) we present research-based promising practices using a wide variety multimedia strategies. One specific way we've chosen to represent teacher practices is a slideshow that combines photos of the classroom with audio accompaniment. Here's an example of a slideshow of how a sixth-grade math teacher praises students and corrects misunderstandings using prescriptive, informational feedback in a math class:
http://dwwsandbox.littleplanetlearning.com/see/see_slideshow.cfm?fID=411&PA_ID=8&T_ID=18&P_ID=35&cID=18

We are intrigued by the merits (cost and user experience) of pairing still imagery with audio as compared to video treatments.

JOHN ITTELSON

WEDNESDAY, MARCH 5, 2008

I have recently become the Director of Instructional Technology for the new K20 Educational Collaborative...the goal of the project is to involve high schools, community colleges and four year institutions in all working too improve high school students ability to be successful in college. The goal of the Collaborative is to share resources across the many segments that are involved in the educational preparation of students.

One of my current interests is in how education can take advantage of one specific new technology—inexpensive digital cameras, that capture video and audio and have built-in software for editing on a computer. It allows a teacher or mentor to immediately share the content and discuss it.

We are looking at how to use this in pre service teacher education programs, both for feedback and instruction. In addition, the videos can be used to meet the CA Teaching Performance Assessment Task 4.

Task 4: Academic Lesson Design, Implementation, and Reflection after Instruction
This culminating task requires that teacher candidates design and implement an academic lesson and then reflect on the process. Candidates submit information on a class, two focus students, the classroom environment, an instructional plan, and adaptations to the plan for the focus students. A 20-minute videotape of the planned lesson is submitted along with evidence of student learning. After teacher candidates analyze the lesson and the student learning, they reflect on the total process.

Some of the most recent work our team has been doing is in capturing classroom interactions with video and in working with teachers and mentors. While working on a PT3 grant a number of years ago, we started taping classroom interactions to provide additional content, beyond the PBS videos that were part of our curriculum. We did a Project called “Portraits of Teaching” that used a multi-camera shoot. The pieces were then edited into short vignettes for use in the training.

Although we were pleased with the outcomes, we were often surprised that the student teachers did not come away from viewing a given interaction with the same conclusions. The interaction about the videos was obviously delayed by the editing process.

In our newest project, we are working with the Center for Digital Learning of the Butte County Office of Education. We have created a player that allows teachers to not only view, but to also comment on specific parts of the video. We are calling it, “MY POINT OF VIEW”.

<http://mypovonline.org/>

There are other tools like “yourview” <http://www.yourview.tv/>

We have a site called “my teaching video” that is listed in the “Sharing Tools” section.

<http://myteachingvideo.com/>

It allows a teacher to capture the class, upload it to a common website, add a transcript, comment on specific events, share those comments with a mentor and receive feedback. Like PageMaker before and blogs today—everyone can become a publisher. Now low cost digital technology and web 2.0 are doing the same thing with video. They allow teachers to bring a powerful tool to the teaching and learning process.

Video events captured by amateurs, such as the “Rodney King beating” are changing the way news is reported and even the way Police Departments do business.

This same technology, when used in the classroom, has the potential to influence students and bring lessons alive, which in the past often seemed irrelevant.

With this technology available it is not surprising that the National Boards for Teacher Certification, the NSF and States—from California to Connecticut—are beginning to rely on video to both improve the way teachers teach as well as to evaluate their teaching.

As we all know, we are not all “born” teachers—but with this technology it is more possible to now improve the way most teachers teach.

PAM GROSSMAN

TUESDAY, MARCH 4, 2008

Given my work in teacher education and professional development, I am most interested in the use of multimedia records of practice to support teacher learning. Such records offer the possibility for both novice and experienced teachers to learn from the practice of others through investigations of classroom teaching and explorations of student work. At the same time, they are simply another example of the array of representations of practice that are used in professional education, including narrative cases and stories of practice told by practitioner. What is of particular interest to me is how we begin to map the work of teaching and investigate the features of representations that are most useful in helping others learn to teach.

Video records of teaching strike me as particularly useful, both in their ability to capture the multiple and overlapping interactions that occur in classrooms; such interactions are often difficult to capture in narrative cases. In our work on the teaching of practice (see our article to appear in *Teachers College Record*), we talk about the value of being able to pause a representation or approximation of practice and replay it. Learning to listen carefully to student thinking is hard work; student comments are often partial, fleeting, and obscure. The ability to watch the same class discussion several times in order to focus on the flow of content and the nature of participation offers a view of practice that is virtually impossible to capture in real time.

My website in the insideteaching.org collection, published by the Quest project at CFAT, documents my use of Yvonne Divans Hutchinson's website in my teacher education class. Over time, I have begun to supplement this website with videos of some of my graduates. They provide "near peer" examples of discussion that are much closer to what my students are likely to be able to do in their first year of teaching. But we know very little about how novice or experienced teacher actually learn from these websites. Does it matter if the contexts portrayed in the websites match the contexts in which teachers teach or if teachers are at similar developmental levels? How do we convey both the particularities of teaching as well as the more general principles through multimedia materials? How do we begin to layer and overlap such materials to develop a richer understanding of core practices? And while we're at it, how do we identify the core practices of teaching--within and across subject matters--that are worth documenting.

My fear is that multimedia records will go the way of other innovations in teacher education, including micro-teaching, case methods, portfolios, etc. Such methods were all the rage for awhile, but most were under-developed theoretically, used idiosyncratically and superficially, and discarded rapidly in favor of the next new thing.

JOHN MERROW

MONDAY, MARCH 3, 2008

I have read through the statements of many of the participants with great interest and am looking forward to the weekend.

However I shuddered when I read several references to "minimally edited" representations of teaching. Just as "easy writing makes cursed hard reading," so too does minimal editing make for difficult viewing.

I feel strongly that media representations of teaching must be highly produced with superb audio (television is radio with pictures, after all). In the end, this will be much cheaper---on a per repeated use basis--than any other approach.

Most of the media representations of teaching that I have seen have been minimally edited and shot with one stationary camera. Perhaps this is done for reasons of cost or because of the fear that a cameraman moving around the classroom will be disruptive. Other supposed media representations of teaching have not represented teaching at all but consist of an adult looking into the camera and talking at the viewer.

One writer on the website calls exemplary lessons "rare birds." While that may be accurate, it makes it all the more important that those lessons be captured on tape, edited to guide viewers, and layered with the commentary of the teacher in question.

Should media representations of teaching be a 'buffet' for 'just in time' use? Absolutely! Those are the teachable moments for teachers.

Regarding point of view, one writer referred to the importance of having what he called "teacher perspective video." I agree that the produced video should at various times show the audience what the teacher is looking at (shot from behind the teacher), but the CRUCIAL teacher perspective will be AUDIO, the teacher's reflections on what happened, what she was trying to do, and so on.

I would add that they should also be

1. short--no more than 10 minutes
2. fun to watch
3. both thought- and discussion-provoking
4. tightly focused on a specific activity, whether it is managing a classroom discussion, finding the area of an irregularly-shaped four-sided figure, or handling conflict. The goal is to spotlight an outstanding technique, not an individual teacher.

The best media representations of teaching will provoke this response in the minds of the audience: "I could do that!"

RICKI GOLDMAN

MONDAY, MARCH 3, 2008

In 1971, Ivan Illich wrote that “[m]ost learning is ... the result of unhampered participation in a meaningful setting” (1971, p. 44).

Since we have been asked to write about our vision of the most important ways that multimedia records of teaching (MRTs) can contribute to the improvement of education in the coming decade, I decided to return to Illich because his books have continued to guide me to become a better learner, teacher, researcher, colleague, video ethnographer, designer of video analysis “tools for conviviality” (1973), and most importantly, a better person. Illich reminds me to be my best self.

I remember, as if it were yesterday, the rainy Vancouver day in 1972 when I received the marked-up, yet unpublished manuscript that Illich was passing to friends of friends of friends to read and send back with commentary. He created the term “learning webs”—which he called “networks” to reference services to educational objects, skill exchanges for learners, peer matching, and reference services to educators—and, in the act of passing his manuscript to readers using the tools available at the time, was 1) engaging others in issues, 2) sharing knowledge, and 3) providing access to resources. Indeed, he proposed these three principles as the basis for a good educational system (p. 78). And, indeed, we are using these same principles right now by adding our ideas to this website to build “public knowledge,” as our colleague John Willinsky (2005) might say.

Thank you, Lee and friends, for asking me to be part of this online learning web.

My interest in video technologies went hand-in-hand with my involvement with Illich’s theories. In the ferment and excitement of the 1970s, many young people took up video cameras to lay the foundations for an alternative to public broadcasting media. The idea behind my video portraits of people interviewed on the street and in what we called “encounter groups” was for people to reflect on their own thinking, and in many cases to view and discuss themselves in social settings. Years later, while conducting my doctoral studies at MIT, I was able to return to Illich and my early filmmaking experiences to focus on how to create a multimedia platform using computers and laserdisc technologies, which I called Learning Constellations (1989), to enable readers and viewers to video, annotate, cluster, create keyword tags, and search through databases of digital video to, as Illich would say, use “convivial tools” to access, engage, and share a video archive that was shot at the Hennigan School for research on learning and teaching.

What I learned over these years using and designing multimedia and trying to adhere to Illich’s principles is that learning and teaching is about the relationship we form with each other within a culture, a society, and our world when we access and ensure access to resources that allow knowledge to be continually constructed by learners of any age, gender, race, socio-economic background, or geographical location. Moreover, we learning and teaching are not separate or isolated endeavors, but rather partners within the same process. This includes whenever we “teach” ourselves (or learn) or others something new through engagement with the natural and created world around us.

What an enormous challenge we face, now that we have the potential to not only use multimedia but also to be interconnected through emerging technologies to the extent that resources and access allows. We can no longer think of the future of learning and teaching within one country. To solve urgent global, ecological, and political problems, we are compelled to engage in issues, share knowledge, and provide access to learning resources globally. And we now have tools for not only connecting with each other, but also recording and keeping records of the growth of these learning cultures so that we can continually see (and read), interpret, and make meaning of what worked and what did not, under what circumstances and within which cultural, national, or ethnic perspective. Moreover, we can not only share our own and other's perspectives—what I have often referred to as the Points of View-ing theory—but we can now layer these cultural “webs of signification,” (Geertz, 1973; quoting Max Weber) with our tools to build conclusions and meanings that include all stakeholders. For research purposes, sharing perspectives on issues is the basis of reaching configurational validity (Goldman-Segall, 1995); for educational purposes sharing perspectives on content with multimedia records of teaching and learning is one good route to more vivid and valued “pedagogical content knowledge” (Shulman, 1986).

My vision for MRTs is to use them to create a historical record of the growth of convivial educational communities where teachers and learners engage with each other and within their local and global communities in collaborative investigation to address issues that are or will become meaningful to them. In my own research practice, I was very fortunate to have worked with teachers, school administrators, and students at the Bayside Middle School from 1992-1995 on a project I initiated called The Global Forest. For two years we collaboratively investigated an endangered rainforest called Clayoquot Sound on the west coast of Vancouver Island. Since I have previously written about it in *Points of Viewing Children's Thinking: A Digital Ethnographer's Journey*, I'll simply add that when learners, teachers, and researchers work collaboratively to investigate a topic such as an endangered rainforest from every curricular area, share the experience of visiting logging sites and rainforests, and also use advanced video technologies to record, edit, and share these records using multimedia, a learning culture is created and archived. The visual records of the growth of cultures of teaching and learning and the written documents that describe them make possible the spawning of other cultures, much as we see occurring in social networking environments. This is the future of MRT, and for what we could call MRLs—“multimedia records of learning.”

I envision this kind of future education culture as a collaborative constructionist environment where teachers and students are research partners, building knowledge together by accessing curricular content and technological resources to reach new insights, new methods, new tools, and new solutions. In this setting, all forms of visual, aural, and intertextual records become layered and searchable archives of knowledge created, shared, and reused in much the same way that Illich's manuscript was marked up and sent from reader to reader. Except better. These media forms (including text) can be interwoven and used in ways none of us can yet predict. Moreover, the databank of ethnographic accounts of what was happening when the camera was on—although not

“the Truth,” because they are always being constructed from a cameraperson’s point of view—can become records that others use to make new meanings from their experiences, interpretations, and conclusions.

Let me propose a fictional case for what could happen in the classroom. A group of teacher/s and young people learn about acceleration by creating a range of objects falling to the ground from high places. In good design experiment practice and problem-based learning, the teachers and learners are engaged in a common activity. During this project, teachers provide and sometimes hold back their professional know-how, content background, and methods of group investigation to think more deeply, as a group, about mathematical and physical behaviors. Teachers and students use the resources available to them, including online wikipedia-type information sources; they build their own wikis or other shared learning environments or, perhaps, design physical structures out of available materials; and, they do what researchers do—ask questions within a community of practice. From time to time, a person in the group who seems to have a handle on the problem may explain it to others, hold a seminar, give a lecture, and propose exercises for others. In some situations, this person may become the designated “teacher.” But the future teacher I am talking about would see herself or himself as the person who can create a convivial learning environment and be responsible for everyone’s learning, including her or his own. This person would be involved in a discovery of what happens in the acceleration project as well as what makes her or his teaching better by delving, (Roy Pea would say) “diving” (2007), into multimedia databanks to understand how acceleration or any other topic was taught in different, perhaps better, ways.

In short, I believe that with the spread of multimedia records of teaching and learning (MRTLs), will change dramatically over the next twenty years. The use of One Laptop Per Child, first conceived of by Seymour Papert in *Mindstorms* (1980) and now actualized by Nicholas Negroponte’s commitment to get the laptops made and distributed, engages students and teachers as learning and research partners, teaching each other about computing and about issues meaningful to them. While we have yet to see longitudinal studies about the impact of this approach, there are, within related constructionist learning environments, perhaps hundreds of examples in formal and informal learning settings around the world, doing what Dewey and Montessori proposed many years ago—learning by doing. Are we ready for the next step that our MRTs may help us to create? Will teaching be thought of as shared learning, shared teaching, and shared researching?

The nightmare we face is that governments around the world will shut down open, interactive, and convivial shared online spaces before we have the opportunity to create the kinds of international learning webs that will enable us to collaboratively work together on serious problems facing our planet in the coming decades.

A nightmare for MRTs is that a few people could abuse the privacy of the teachers and learners being videotaped. Another kind of nightmare would be to use our multimedia records to set standards for teaching and learning based on prerecorded standardized video commercial-like excerpts or “trailers,” rather than using the records as

opportunities to collaboratively explore and grow our cultures together.

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ANN LIEBERMAN

MONDAY, MARCH 3, 2008

I have been a co-director of the CASTL (Carnegie Academy of The Scholarship of Teaching and Learning), where we involved teachers, the Quest Project where we involved teacher educators using teacher practice teaching pre-service students, and the NOYCE project where we documented a professional development project that had been going for over 6 years. We documented the developer and then 4 teachers in grades K-5 showing how they use the writing process in their classrooms.

We have learned a great deal about what appears to make a good site for users. We have moved our work from showing single teachers to showing several teachers on the same site (which you can look at at the same time). And interesting enough, we find that the NOYCE site has great appeal to organizations and networks that feel like collaboration and "going public with teaching" are part of their mission. This needs more discussion and understanding.

I have been interested in networks, collaborations, coalitions and consortiums for many years and find that they are an important foundation for teachers who will be the ultimate users of our multi-media work. It is complicated by the time factor for teachers, but also by who teachers will listen to, and the approach the media takes to teachers' learning. So, I guess you could say that my interests are not only with the multi-media, but with a deeper understanding of the audience and how they are to be nurtured and developed to use the work that many of you are doing.

Also, we are at a point where we need to do research on the use of media, what teachers get out of our sites; and how they incorporate what they learn into their practice.

HERB GINSBURG

WEDNESDAY, FEBRUARY 27, 2008

We use video to help prospective teachers learn to think about children and their own teaching. Our technology, Video Interactions for Thinking and Learning (VITAL) allows education students to examine videos illustrating key aspects of children's mathematical thinking and the teaching of early mathematics, and to embed selected segments of the videos into their written work. We pose questions that require the students to analyze the videos, citing evidence for assertions and also linking them to the psychological and educational literature required for the course. Our goal is to promote learning in which students make meaningful connections among different areas of their experience—what they see, what they assert, and what they read. The hope is that that this kind of rich, critical analysis of children and teaching will transfer to and form a sound basis for classroom practice. VITAL is intended to enrich teachers' minds.

FREDERICK ERICKSON

SATURDAY, FEBRUARY 23, 2008

Video clips: As compelling illustration and/or as projective test stimuli.

In my current work building a multimedia website that shows the teaching of science with young children my colleagues and I keep revisiting three main worries: (1) how to present minimally edited video footage in video clips in such ways as to "teach" website users who are experienced teachers (or novice teachers) how to see in the clips the substantive "points" that we as developers see in them, (2) how to integrate with the video clips "scaffolding" material in the written text-based portions of the website so that video supports insights to be gained from written text and vice versa, and (3) how to design the whole website to discourage superficial "tourist" visits by users and encourage deeper, more thorough, and more respectful visiting and revisiting as if one were an ethnographer.

Each of these three worries connects with my previous experience in showing minimally edited video clips of teaching practice to live audiences over the years--in professional development workshops for teachers, at academic society meetings of scholars, and in university classes with undergraduate and graduate students. In those showings I had two big advantages. First, I could stop the clip, or replay it, and do the equivalent of voice-over commentary so as to "scaffold" the viewing by the audience. Second, during the real time course of the showing and during my uttering of commentary I could watch for facial reactions and elicit spoken comments from the audience that enabled me to judge whether the audience was "getting it," from my point of view, or whether I needed to re-play the clip and provide additional commentary. (Often I would be pointing at the video screen and saying such things as "See how Mary reacts to what the teacher is saying!") In other words, in those presentations the audience saw the video clip together with me as a presenter, never just by itself. In a website we can't overtly direct each user's viewing and provide framing in real time. We can't "teach" the clips in firsthand interaction with clip viewers, as one can do in presentations to live audiences. I think that puts our clips at a disadvantage, pedagogically.

Worry #1. At first viewing, an unedited video clip of approximately two minutes duration, consisting of a continuous camera "take" or two, in which the camera moves relatively little, is a very different stimulus for a viewer from that of a piece of edited documentary film. In the latter, through editing, various "cues" are provided that communicate the framing perspectives the editor wants to reinforce (whether lightly or heavy-handedly). In other words, implicit cues to the substantive point of the video strip are built in through editing within the strip itself. This is also true for what we see in art cinema and on broadcast television--lots of camera editing and subsequent bench editing to underscore the "point" of the clip--and today's viewers have become accustomed to relying on such cues, intuitively, as they watch audiovisual footage. In minimally edited footage, however, few of those cues are present. There is the overall visual frame--where the camera is pointed. And there is the boundary of when the clip starts and when it ends. But otherwise the clip, albeit rich in potential information, is a relatively reticent and enigmatic visual "text" as it is experienced phenomenologically by the

viewer. In other words, in the eye of the beholder the video clip upon first viewing can function more as a projective test stimulus than as a clear window on the world of pedagogical practice. As learners we all bring our prior experience to the site of new learning; thus for viewers of video clips there are no immaculate perceptions.

Viewers can and do "read into" their initial viewings all sorts of things. Their noticings are based on their ontological assumptions (mostly implicit) concerning teaching practice--taken for granted assumptions of what learners, subject matter, classroom participation structures, and learning are "really" about. If some kids can be seen to be making noise or moving while the teacher is talking does that mean the teacher has no "control"? (And must "control" precede "learning"? And is teacher talk the primary means by which "learning" is encouraged? For elaboration, see my comments in Erickson 2007a .) Moreover, do users know how to see and make sense of evidence of student understanding/learning in snippets of student talk, or in quick scans of student written work or in other ways students have of displaying their understanding? In other words, how adept is the website user at seeing real time evidence of students' thinking--"proximal formative assessment" of student understanding and learning? (See Erickson 2007b.) If the viewer is not already adept at such assessment, even though we as website developers think that our video clip shows evidence of student understanding or misunderstanding, the first time viewer may not "get it" about what we intend the tape to illustrate. How can we present video clips in a website in such ways as to "teach" the viewer how to see such things in the clip? It is my sense that not a lot of thinking has gone into this as we have begun to develop websites that claim to illustrate concretely the "realities" of teaching and learning practice. Rather, there has been a tendency to believe that the video clip "shows" quite directly and obviously what the person who selected it as a representational display thinks it shows.

Worry #2. The connections that we see as a developer between the "scaffolding" written text put into the website and what we think the video clips illustrate may well not be obvious to users of the website. I may think that the authoring of written text is seamlessly integrated with what the video clips show, substantively, but that may not be the case with all viewers. And, as noted above, when somebody visits a website I get no real time feedback from that user as he or she watches the clips and visit the various sites of written text within the website. "Distance learning" could easily become "Distance misconstruing" in the eyes of the beholder but I as a developer can't learn from that and make mid-course corrections in the website's "teaching" approaches, in real time.

Worry #3. My experience as an ethnographer and micro-analyst of minimally edited video is that one should not take things at first glance, or at first hearing. As a viewer one should not assume that one knows right away what is going on in a video clip; what things mean from the points of view of those one is observing. For the professional scholarly analyst, such interpretive shooting from the hip is a "no-no" in trying to make sense of somebody else's lifeworld of daily practice. Rather, one should entertain a stance of phenomenological skepticism while viewing. But classroom teachers, as practical social actors, must shoot from the hip interpretively, in the real time conduct of their teaching, and they must believe their own interpretive judgments as they are seeing

or hearing what students are doing. In other words, armchair watching of practice, entertaining reflective distance about one's own first impressions, is not a habit of mind with which experienced teachers are accustomed as viewers. A website can encourage much deeper reflection on "virtual practice" than that which is usual in the midst of actual practice. But that more "distanced" reflective stance toward viewing can seem alien (or trivial) to a seasoned practitioner. Moreover, many teachers are not accustomed to reading a lot about details of pedagogical practice--there is not a common professional language of practice, and so the potential relevance of the written material in the website may not be obvious to the viewer, at first viewing. This means that there are tremendous pressures for website users to skim the content of the website as a fleeting tourist rather than digging more deeply, savoring the content more fully as a committed excavator/ethnographer. And in addition, the user can navigate non-linearly from site to site around the entire website. In a documentary film the editor selects each successive strip of audiovisual recording that the viewer gets to see and, as discussed above, through that selection builds in framing cues to guide the viewer's interpretations from moment to moment during viewing. In an ethnographic written report the author does the same with the narrative vignettes and interview quotes that are strung together, each piece of detailed descriptive content usually being framed by foreshadowing and aftershadowing commentary. Yet the user of a website user can whizz around in it, from one location to the next, at whatever depth of attention and reflection he or she wishes. Yikes!

One way to deal with this is to present very short video clips in the video, containing close-ups and other visual cues to frame what the videographer wants the viewer to "see" in the clip. But that makes it look as if teaching/learning interaction mainly consists of short chain-like sequences of "moves" by teacher and students. And keeping the written content "short and snappy" can also engage a user's attention, but at the cost of sacrificing analytic depth in the interest of maximizing surface attractiveness. These are all tradeoffs that worry me. And the worries interact--worry #1 is exacerbated by worries #2 and #3. I have been told that in the Chinese writing system the character for "danger" and "opportunity" is one and the same. But as website developers trying to illustrate the complexities of teaching practice for viewers at a distance, not wanting to lead viewers by the nose through the website but concerned about the problems entailed in viewers' skimming within the site, how much "opportunity" are we up for?

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DESIREE POINTER MACE

THURSDAY, FEBRUARY 21, 2008

I am a teacher. I used to teach children; now I teach college students. But when you say you're a teacher, people may completely misapprehend your passions, your motives, your daily routines, your workload, your relationships with your students... it goes on. As many have said, teaching evaporates. It's hard to share outside of the moment. Our mutual work addresses that problem in powerful ways.

Our convening at Carnegie is a homecoming for me-- as several of you know I got my start working with multimedia representations of teaching and learning at the Carnegie Foundation, in 1998. At the time, I was finishing my doctoral work at UC Berkeley and coordinating the technology strand of the elementary teacher credential program there. When I arrived at Carnegie, Lee had just given Tom Hatch the mission (should he choose to accept it) of helping invent the Knowledge Media Lab. Library, laboratory and museum, was the charge, and I was given the task of helping to imagine how the work generated by the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) fellows might build on emerging multimedia technologies.

Over the next several years, our efforts in this area grew exponentially. We worked with fellows in the CASTL Projects (Higher Ed. and K-12/Teacher Ed), the Goldman-Carnegie Quest Project for Signature Pedagogies in Teacher Education, and the Noyce Carnegie Professional Development in Literacy Project.

We gave a great deal of thought to what goes into a multimedia representation of teaching. In my years spent teaching elementary school in Oakland and San Francisco, I'd learned well that teaching is inherently multilayered and multivocal. Our multimedia representations of teaching and learning strived to honor that layeredness and complexity. Many of the websites include a diverse array of artifacts: Video clips of teaching, learning, and reflecting on teaching and learning; examples of student work; class materials; narratives about teachers' professional journeys and context; and an attempt to look back and look forward from any given teaching moment. This is not something we claim to have done expertly, but we have been able to follow these examples as they have been used for teacher learning in preservice and professional development contexts.

For many years, the MRTs were like classrooms-- separate, pertaining to a single practitioner. When we collaborated with the Noyce Foundation and their Every Child a Reader and Writer Program, we were able to shift this focus to an emphasis on practices, looking across multiple classrooms to see how similar practices were enacted in different contexts, as well as how each of these teachers' practice connected to a professional development series in the teaching of personal narrative writing.

All of these MRTs are assembled at InsideTeaching.org, a "living archive" that we hope will continue to grow with additional examples from allied initiatives. InsideTeaching

allows audiences to search for MRTs by subject area, grade level, and practitioner name. It is a small collection, but my hope is that some archive of MRTs could appropriate some of the folksonomic tagging protocols of Flickr and Deli.cio.us so that a co-created network of connections between the cases could emerge.

As a new generation of students grows up with their entire lives chronicled on Facebook and Twitter, I wonder about how our MRTs can keep up with that constant-update mentality. I worry about how much time it takes to develop literacies around the use of these MRTs so that others in teacher education can integrate them effectively. But mostly, I'm inspired by the potential of these examples to move teaching practice from margin to center (to borrow a phrase from bell hooks) in conversations about education: research, reform, and reconceiving practice.

After many years of "talking the talk" in leading efforts to integrate these MRTs into environments of teacher learning, I now have the opportunity to use them myself in my own teacher education classes. I have posted my syllabi here on my faculty website; interested folks can see how I draw upon various sites for different purposes in a foundations course, a subject area (social studies) and a senior research seminar.

I'm looking forward to our conversations next month!

http://faculty.alverno.edu/pointedh/Site/Scholarship_of_Teaching_Podcast/Entries/2008/2/20_Letter_to_the_Participants_at_the_Carnegie_Foundation_Convening_on_Multimedia_Representations_of_Teaching_and_Learning.html

JUDY SHULMAN

WEDNESDAY, FEBRUARY 20, 2008

I am a new comer to the world of multi-media. My interest draws from twenty years of working with teachers to write problem-focused narrative cases using the structure of business cases and publishing them in thematic casebooks. These cases are accompanied with "teaching notes" (guides to the analysis of the accounts) and often classroom artifacts and commentaries by scholars and other teachers. The cases, which represent a kind of collaborative "teacher research," are used by teacher educators and practitioners to discuss dilemmas of practice as well as by policymakers who can see these dilemmas from the perspective of the teacher. Research and experience suggests that teacher-authors can benefit from the process of creating their case, and teachers who participate in case discussions gain insights into their teaching and make better judgments when they meet these dilemmas in their own practice. The cases do not, however, provide a vision of what good teaching looks like. This became clear when Lee Shulman and I collaborated on a classroom reform effort that failed because the teachers did not have enough models of "that kind of teaching."

This experience was the catalyst to my desire to develop cases that might showcase "visions of the possible." When the Carnegie QUEST project began, I developed a virtual case using the KEEP tool off an excellent seventh grade history teacher, Elizabeth Sharkey, who integrated Jewish studies into her curriculum and challenged her students' Jewish identity in her classroom, a rare occurrence for a general studies teacher in this context. The case, which documents a week-long unit, includes video clips of Elizabeth's teaching and interviews about her goals and rationale of her unit; narrative analyses of her teaching, what she learned from the development process, and a brief auto-biography; narrative and video student reflections about what they learned from the unit; and classroom artifacts. (To view the website, click on tinyurl.com/eh5t9 to go directly to the case, or insideteaching.org, the Carnegie collection of multi records of practice.) The case is quite complex and has multiple lenses and entry points through which to analyze, which became clear after field-testing it with several groups of Jewish and general educators. So I developed a teaching note that guides potential users through the case because I wanted to illuminate the variety of ways that I learned it could be studied.

I see this case and others like it as extraordinary tools for teacher education and professional development, for the multiple reasons that participants in this conference have already described in their statements. But I also have several questions, some of which are included below:

How much is "enough" to include in a case? The materials in my case take about an hour to examine carefully. As an experienced teacher educator, I like to create rich cases "of many things" and can see a variety of uses for it; one might even design a curriculum around it, using different readings for each theme (e.g., how to plan units which have consistent goals, instructional activities and multiple strategies of assessment; how to challenge student identity; how to create an ethos of inquiry in which students are both motivated to produce good work and safe enough to teach one another; how to integrate general and Jewish Studies at day schools, etc.) But is this too much for one case?

Should the cases be more focused on one aspect of teaching so it's easier to use? It appears that the Carnegie cases that are used most often have a more specific focus. How does/should one use such cases constructively? My colleagues and I spent years giving numerous seminars in a variety of educational settings on how to develop and use narrative cases constructively. My hunch is that an extensive professional development effort is even more necessary for virtual cases, if they are to be used appropriately and provide value added to current practice. In our studies, we have seen dynamic case discussions where no learning occurs; we call these "opinion swaps." We have also seen case discussions that were harmful (e.g., participant stereotypes before a discussion were strengthened instead of diminished after the discussion). Are there initiatives that provide the needed professional development to folks who teach practitioners, especially to those new to the world of MRTs?

What about quality control and the time it takes to examine each case? Even within the Carnegie collection there are quality variations. How does one know which ones to focus on? Should there be some quality control for posting cases? If yes, who will provide it? The Carnegie collection includes not only websites of teachers' practice but also of how teacher educators use sample sites so as to provide visions of how these cases can be used productively. These are terrific sites, but they also take time to examine.

What about the cost and resources involved in creating good virtual cases? Given some purposes, might narrative accounts be more useful? They are cheaper to develop and, have proven to be valuable professional development tools under the "right" conditions (e.g., high quality case and discussion facilitator). I raise this question because I have heard some people indiscriminately dismiss narrative in favor of multi-media. My experience suggests this is faulty.

These are not new questions. Many of the participants in this conference have already begun to address some of them, as is clear from many of their statements. I just raise the questions to provide a perspective of a novice, new to the world of MRTs.

CHERYL RICHARDSON

TUESDAY, FEBRUARY 19, 2008

MRTs can contribute to the improvement of teaching in various ways. What excites me most are their ability to travel, connect different educators with similar needs, and improve practice virtually anywhere. I see a particular need that could be met in developing nations. UN Millennium goals call for universal primary (and soon, secondary) schooling. But many nations' abilities to educate rapidly increasing numbers of school-age children have surpassed their abilities to quickly prepare teachers. MRT's could provide concrete, context-specific models of successful practice that could travel wherever they are requested.

MRTs can connect successful practitioners with those who are learning and those are struggling in productive, substantive ways. As the work of the Quest project showed, novice teachers can learn directly from as well as glean unexpected knowledge and practices from the multimedia representations of experienced teachers. Not only did novices (and other viewers) borrow obvious lesson plans, they learned from bulletin boards in the background and took hints from videotaped, background conversations that were not highlighted. It is because MRTs are multi-sensory, fairly complete views of teaching that can embrace several versions of successful practice, that they hold special promise for connecting experienced educators with others.

That said, capturing, sharing, and exchanging MRTs for global use (or even local use) would not be easy. In order for this to yield expected benefits, we must develop explicit, adaptable frameworks for creating portable forms and learning from MRTs, and accessible technologies must travel with them. The frameworks should include instructions on capturing practice, connecting practice to curriculum, and reflecting on what is captured. The technologies need to enable all teachers to capture their practice, to find relevant practices, to comment and re-cycle what they learn.

The ease with which a teacher can do this is key. I thus fear the demise of this genre when the tools reside only with researchers and experts and the frameworks become too specific. Teachers and faculty thus should be guided on how to develop a compact, MRT that is

- * specific
- * context rich
- * reflective
- * focused on student learning
- * connected to a larger framework (curriculum mandate or professional imperative).

How teachers and faculty find these items and learn from them remains challenging. Again, frameworks for learning and adapting need to be made explicit. Inside Teaching offers a step toward creating frameworks for learning from MRTs. The Perspectives portion of the site describes the steps made to help novices learn from the MRTs of experienced teachers. This is a move in the right direction for helping people learn from MRTs. The site does not offer a quick, downloadable shell that someone can adapt, but it

does provide lenses for viewing and learning from MRTs.

GERARD L. HANLEY AND SOREL REISMAN
MONDAY, FEBRUARY 18, 2008

The typical campus culture of teaching insulate faculty from learning exemplary teaching practices from model colleagues in their institution and/or discipline. Furthermore, the exemplary teaching practices are multidimensional and complex to capture for sharing; they must take into consideration the diversity of students' readiness for learning, the differences in the knowledge and skills that defines the discipline, and the differences in the institutional priorities that distinguishes campuses from each other. All these challenges reduce the likelihood of scaling, sustaining, and replicating effective and efficient faculty development for student success.

The demand for effective and efficient faculty development has grown to critical proportions due to the convergence of many factors. Regional accreditation agencies are requiring a culture of evidence for learning outcomes; faculty development is required to design and deploy effective instruction and assessment methods. The explosion in the use of technology to augment and mediate teaching and learning requires faculty to develop skills that their scholarly preparation in graduate school or professional organizations have not or do not support. The demographics of faculty indicate a significant increase in retirements and hires which will enable institutions to transform the teaching-learning culture on their campuses through faculty development interventions.

The CSU and MERLOT has recognized that we need to develop new ways for faculty development centers from a wide range of higher education institutions and online discipline repositories (e.g. MERLOT) to provide the discipline-based examples and the shared resources for faculty to re-use and adapt to implement exemplary teaching practices. The discipline-based examples can be video narratives of faculty and students demonstrating and reflecting on their teaching and learning, capturing the rich, multidimensional nature of education. Integrating MRT's into existing consortium projects will enable sustainability. Some examples of MRT's being implemented by the CSU and MERLOT are:

Light Bridge (<http://lightbridge.sonoma.edu/main/index.html>) focuses on preparing future K-12 teachers by providing a collection of video rich content explaining and showcasing teaching practices in K-12

Voila (Video Oriented Instructional Lesson Authoring System at http://www.cdl.edu/cdl_projects/voila_home) is a web-based authoring application which allows users to create video-oriented presentations using text, images, video, audio, commentary, and supplemental materials, typically focused on K-12 instruction.

MERLOT ELIXR (http://www.seedwike.com/wiki/fipse_elixr/) is capturing exemplary teaching practices in higher education within video-rich online resources

MERLOT Faculty Development Community (<http://facultydevelopment.merlot.org>) provides a diverse collection of over 1,000 online resources to support a variety of faculty development needs.

MERLOT Discipline-Specific Learning Objects (<http://www.merlot.org>) is a ten year old community of instructors, students, librarians and others with an interest in multimedia teaching/learning, who use, develop, research, and participate in a social network of peers with similar interests. The heart of MERLOT is a repository of more than 18,000 online

learning materials that can be integrated into online instruction to provide learners with a rich multimedia learning experience. The strength of the community of more than 56,000 registered participants, growing at a rate of more than 1,200 new members monthly, and the popularity of the website with over 1,000,000 hits in 2007, are testimony to the value that the education community places on their ability to find and incorporate multimedia learning objects into their instructional design activities.

Integral to the success of MERLOT are the efforts of those members to provide many different kinds of authentication of the value and utility of the items in the collection. This is accomplished through various levels of peer review, through their addition of comments, ratings, and even their development of ancillary materials that direct others in best practice use of collection items. The success of MERLOT reflects, not so much the operation of the organization and the collection, but a validation of the utility of the multimedia learning objects by those very instructors who deploy the kinds of instructional strategies that can be captured in video case stories. MERLOT learning objects are the multimedia building blocks of those teachers' multimedia instructional programs. The MERLOT collection is real evidence of the practicality, utility, and even scalability of shareable multimedia learning materials.

MERLOT, 3-D Virtual Worlds and Second Life: Today we are beginning to explore even newer multimedia learning experiences in virtual worlds such as Second Life. MERLOT, in partnership with the University of Oregon's Center for the Advancement of Technology in Education (CATE), and Sun Microsystems are developing a new infrastructure that will make available to instructors working in 3-D worlds, practices and building blocks for multimedia 3-D instruction, analogous to those that have been developed in our 50 year old 2-D multimedia world. While this pursuit is just getting off the ground, the partners in this project are very excited about the still unimagined potential of this and other similar projects. As multimedia becomes more and more "real," it may one day be difficult to discern any real differences between the face-to-face relationships and world we live in, and the ones we create. Or perhaps in those created face-to-face worlds we will be able to deliver even more effective and cost-effective instruction than we can imagine in our real world.

Strategy Considerations:

To successfully implement and sustain a program for capturing and collecting video case stories, a number of processes should be in place.

Governance process for project decisions and managing partner participation in the project.

Guidelines for developing case story resources.

Strategies for implementing case story resources by faculty development centers (Training and Dissemination plan)

Technology plan

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Guidelines for case story resources: The three main features of the case story resources are:

a case study describing how and why to use an online resource in teaching the disciplinary topic,

a first person video narrative capturing the reflections of the faculty learning to use an exemplary teaching practices and at least 4 student reflections on the experience of learning from the faculty,

the configuration of the online materials and all the associated peer reviews, comments, and learning assignments that are used in teaching the topic.

The guidelines for the case study will be those already in use by MERLOT and are an adaption of Carnegie Foundations KEEP toolkit. The elements of the current case study include rationale, tips for teaching, impact on student learning, reflections on personal value. Guidelines for the video narrative will include: a) interview prompts, b) video shooting, directing, and editing guidelines for producing consistent and high quality videos of faculty and student narratives, c) guidelines for selecting students and faculty for the videos. The third component of the case story resource – configuring the exemplary curriculum for re-use – is guided by the people, organizations and institutions who will re-use the video case stories in their professional development programs. The “Products” section of the MERLOT ELIXR website (http://www.seedwike.com/wiki/fipse_elixr/) provides our current set of tools and guidelines.

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MERLOT has recently established its advocacy for the Creative Commons strategy for sharing its content - <http://taste.merlot.org/acceptableuserpolicy.html> . The issues of copyright and (re)use of other peoples creative works is a critical issue to address with MRTs.

KEVIN MILLER

MONDAY, FEBRUARY 18, 2008

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LOUIS GOMEZ

SUNDAY, FEBRUARY 17, 2008

There is lots to be excited about when one considers the possibility that multi-media representations of teaching (MRTs) might become wide-spread tools that are part of everyday work in the teaching profession. Like with almost any technical advance, with a big “upside” comes the possibility that we will use these tools in suboptimal ways or maybe just in silly ones.

Teaching, first and foremost, is social. It is most importantly a set of social practices comprised of routines that people use for a highly specialized set of communicative purposes. So, it is a fair question to ask, “Why have any confidence that MRTs might change things, for the better, in any important way?”. That said, I think there are three reasons that we can be hopeful about the impact of widespread use of MRTs in teaching. First, MRTs offer persistent representations of teaching that can be revisited. Second, in addition to being persistent, MRTs can be annotated. Third, multiple MRTs can be connected into conceptually meaningful collections.

Since teaching is largely talk, it is ephemeral. Of course there can be notes about what transpired in teaching episodes, but the essential reality of teaching occurs in the moment. MRTs allow persistent representations of teaching that can be revisited on multiple occasions. This persistence, in, and of itself, can be valuable. However, persistence can be misused in a number of ways. On the one hand, we run the risk of using MRTs essentially as playback, rather than discovering novel ways to use MRTs that go beyond rewinding an experience. Another playback-like risk of MRTs is to treat teaching simply as performance rather than an interaction whose primary focus is learning. That is, we run the risk of looking at the performance-act rather than trying to understand if, and how, learning is taking place. Along with persistent representations must come meaningful ways to highlight and analyze.

When various forms of annotation are added to MRT representations, they may become more valuable than, just, presentation objects. The ability to annotate makes it possible for individuals, and groups of individuals, to comment on teaching and to share their commentary both in the moment and over time. In this way, MRTs become a kind of history-enriched digital object whose communicative history is available to a professional community. Bringing persistence and annotation together may start to allow professional teachers to gain real value from MRTs. However, even these capabilities are not without their risk of folly. One can easily imagine applications that reduce teaching to checklist annotation rather than meaningful reflection, much as classroom walk-throughs, in some school districts today, are being implemented in ways that are shadows of their original conception.

Perhaps the biggest potential benefit of MRTs is that there will be digital library collections of them. We can only hope that there will standards for the creation of MRTs – both technical standards for their creation and pedagogical standards for their membership in collections. When that happens, it should be possible for local communities of professional teachers, national communities and even international

communities to share their practice. In that world, teachers may be able to create new social arrangements for their profession that determine how to share MRTs of practice and with whom, under what rules. We can only hope that, as we evolve to that place, we resist the tendency among commercial actors to create proprietary representations of teaching, and local and national actors will resist creating barriers that will prevent professional teachers from sharing their practice.

In my view, the real value of MRTs is that they will become a thing that exists, in between. They will become conversational props that teachers can use to talk about their work in ways that they cannot talk about their work, now. The vision that makes the most sense to me is that distance will matter less to teachers as they exercise their practice and that teachers, and those who support them, will see value in creating persistent representations of practice that can be annotated and shared widely. While there are surely risks, that as a field we will do silly things with this capability, the opportunity is well worth pursuing.

TORU IYOSHI

FRIDAY, FEBRUARY 15, 2008

Many of us have been passionately working on MRT and related fields because, too often, invisible knowledge of effective practice (and of turning ineffective one into effective one) remains in isolated and closed domains, rarely shared across classrooms and various other boundaries. While I am excited about what we all have accomplished both individually and collectively, my fear for the future of this important work is that what we believe “now visible knowledge and practice” will still remain in isolated and closed domains, unused, thus it will not contribute to substantial educational improvement on a large scale.

So what are the problems and obstacles? What do we need to consider and further delve into? I think MRT is still in its infant stage, and it needs to be a lot more meaningful, easy, engaging, fun, and rewarding to create and use MRT.

One of the most important accomplishments we have made at the Carnegie Knowledge Media Lab through our work on the KEEP Toolkit (<http://www.cfkeep.org>) is that we, indeed, have made the intellectual process of creating MRT engaging and fun (this is what many educators we have worked with have told us). We have also learned that this process can be supported by technology in a way that minimizes technical complexity and maximizes teachers’ cognitive ability to select, organize, reflect on, and “contextualize” various processes, outcomes, and evidence of teaching and learning, as well as effectively represent their pedagogical experience and knowledge.

Yet, what we have been able to unpack and make visible by taking advantage of technology is just the tip of the iceberg. For example, as we know, videotaping classroom practice does make teaching and learning “visible,” but it still takes certain expertise, experience, and “points of view” to make the visible understandable and useful. So, we also have to think about how technology could help teachers gain the necessary skills and knowledge (ideally in a “just-in-time” fashion) in doing this work more successfully.

We also know that there are so many aspects of teaching and learning that a video camera cannot capture. The good news is that there are emerging tools and methods for information visualization, data mining, and knowledge management available to us. These tools and methods enable us to create much richer representations of teaching and learning, which could be easy to understand and use for all teachers, faculty, teacher educators, and faculty developers.

In order to promote effective use of MRT, I think there are at least two distinctive approaches. The first one I would call the “course menu” (or supply-push) style, which is to embed MRT in carefully designed instructional sequences and activities for teachers to learn particular skills and practical know-how most efficiently. Another approach may be called the “buffet” (or demand-pull) style, which is for an individual teacher or a group of teachers to explore a MRT knowledge-base/repository to find an optimal solution to resolve a particular challenge(s) in a local context.

While much more work needs to be done to continue to advance the first approach, I imagine, for the next ten years, the second approach has a lot of potential to contribute to the sustainable future of MRT given the exponential growth of Web 2.0, “open and remix” culture, social and semantic networking, as proven by the success of Wikipedia, YouTube, iTunes, Amazon.com, Facebook, MySpace, etc. over the past several years.

TOM HATCH

FRIDAY, FEBRUARY 15, 2008

The promise of multimedia representations of teaching lies both in the potential to highlight aspects of teaching often unseen or misunderstood and the possibility for fostering broader public discussions of what productive and powerful teaching for diverse students might look like. In part, that promise grows out of the fact that many aspects of teaching can be represented in digital form which allows viewers to pursue sustained and collaborative explorations of teaching from many perspectives over time. Yet we have a long way to go to figure out what the implications are for representing teaching using different kinds of artifacts – through videos of teaching alone, combinations of videos, artifacts, and reflections, etc. – or in different forms or “genres” – cases, stories, dilemmas, reports etc.. But whatever form the representations take, part of the promise also lies in the possibility of producing multiple representations of practice that can help to break down broad and simplistic generalizations about teaching and foster an understanding of what teaching in different contexts, in different subjects, with different students may entail.

Thus, in addition to facilitating the in-depth examination of representations of teaching in one classroom, the explosion of digital media also means that we can also develop networks of representations that enable people to look across several different examples of teaching in their own communities or linked to their concerns and interests. Rather than a repository for “best practices” to be implemented across contexts, constantly growing and shifting networks of representations can be used to study the teaching and learning in going on in different contexts and to explore how it can be improved. One can imagine for example, teacher educators both engaging their students in examinations of exemplary practice from around the country (or around the world) at the same time that those novice teachers collaboratively explore representations of teaching in the communities where they are most likely to end up working; novice teachers could also examine representations of practice at different points in a teacher’s career to develop their understanding of the steps they may have to take in developing their own practice. Similarly, in addition to getting information from websites disseminating test score data, one can imagine parents having opportunities to see and explore rich examples of the kinds of teaching going on in their own schools as well as other schools in their community or around the country.

One central problem for the development and use of representations of teaching lies in the challenge of portraying teaching as it often occurs – unpredictable, sometimes inspiring, sometimes dull, working for some but not for others – while protecting and respecting the rights and values of those involved. This challenge is exacerbated by the many different values and assumptions about what “good teaching” should look like as well as by the barrage of representations and other influences that equate good teaching with entertaining teaching. But in my nightmares, MRT’s are simply used within the constraints and limitations of current approaches to teacher education and professional development. Of course, success of MRT’s might be measured by the number of people who use them and the extent to which their use can be brought “to scale.” At the same time, user tests and efforts to adapt MRT’s for that purpose – and to meet the immediate

needs and concerns of teachers, teacher educators, administrators, and policymakers – may also limit the power of MRT’s to spur improvements and innovations in the current system.

In work with colleagues at the Carnegie Foundation for the Advancement of Teaching and the Quest Project, and now at the National Center for Restructuring Education Schools and Teaching (NCREST), I have developed a variety of multimedia websites that document teaching in a variety of contexts, grade levels and subject areas. A digital exhibition of this work, along with an extended discussion in the exhibition “catalog” and in commentaries from invited reviewers can be seen through Teachers College Record where it was published (<http://www.tcrecord.org/makingteachingpublic/>). In terms of new directions for this work, while these “websites of practice” explore different ways of representing teaching, for the most part, the unit of analysis remains one class or one unit in the work of one teacher, and many questions remain about how to connect these separate sites into networks of practice. In order to address some of these issues, in collaboration with Pam Grossman, I am developing a digital exhibition that focuses on the use of group discussion in the work of both veteran and novice teachers in several High School English classrooms as well as in a teacher education course. I am also exploring the development of exhibitions that document teaching across classrooms in a particularly successful school and among teachers identified as “effective” through “value-added” measures or through the production of exemplary student work. Ultimately, I believe that an exhibition exploring the work, conditions, and contexts of powerful teaching from a number of countries in the developing world would also prove extremely useful in challenging common conceptions of what good teaching looks like and what it takes to carry it out.

MARK ATKINSON

THURSDAY, FEBRUARY 14, 2008

The potential applications for high quality multimedia representations of teaching (so called "MRTs") seem too numerous to list, as so much of teaching and learning involves complex cognitive, social and pedagogical interactions that require more than passing observation to be fully understood. Nonetheless, here goes:

MRTs are critical to the professional practice of "coaching" teachers. If one assumes that no coach (no matter how talented) can effectively model every instructional strategy in every content area at every grade level, then it stands to reason (and it is our experience) that MRTs can scaffold the work of a good coach, making him/her more effective at meeting the needs of more teachers. Put simply, web-based MRTs offer tremendous potential as supporting materials for instructional leaders who struggle to support large numbers of teachers around an array of instructional challenges;

To the degree that one believes that all teacher preparation programs and graduate degree programs in education should focus on the attributes of high quality instruction, MRTs are essential to the mission of teacher preparation and graduate work in education; Teachers themselves, whether new or experienced, desperately need access to MRTs to focus their professional dialogue with their instructional leaders and peers on the complex qualities of effective instruction;

Principals, district administrators and school board members need MRTs to help facilitate a transition of their professional energy, work and conversation from the administrivia of running schools (which seems to preoccupy their lives) to a more focused effort to understand how to promulgate high quality instruction across all classrooms so that all children can learn;

Politicians, policy makers and education journalists need access to MRTs to better understand the policies that will help support high quality instruction.

Parents need access to MRTs to become better consumers of education services, and to better understand how to support their children's learning.

Each of these examples deserves a bit more explanation, but I sincerely believe that MRTs are essential supporting materials to all of the actors that directly and indirectly impact K-12 education.

As to the distinctive features of MRTs, I think they are as follows:

The classroom practice featured in the MRT must be authentic (not staged, rehearsed or coached in advance);

The classroom instructor should be effective (promulgating really awful classroom practice has little value), but not "paradigms of perfection;"

MRTs should include classroom teachers' explanation (preferably in their own voice) of what they were trying to do in the featured lesson; how they panned for the lesson we saw; what key decisions they made in the midst of the lesson that caused them to "change their plan," and what worked or did not;

The MRT should include some link (either through expert commentary or text) to a research base that affirms why the teaching in the MRT reflects strategies "known" to be

(or “believed” to be) effective;

MRTs should include more than one “teaching example” of the same or similar lesson – I believe comparative video analysis is more powerful for learning.

MRTs should provide additional resources that support the “context” for the teaching that the observer is observing. The viewer should know something about the profile of the learners; the curriculum and context for the lesson; how the teacher would assess for learning what she has just taught etc...

MRTs should allow for edited and unedited views of the same practice. Teacher time being the precious commodity that it is requires that the MRT should present edited views of the teaching in the classroom. However should have the opportunity to “get behind the edits” to see what happened when the camera cut away from the scene. The reasons for this are self-evident;

Too many MRT focus solely on the “teaching” and not enough on the “learning” that occurs in the classroom. MRT producers should take a cue from great documentary filmmaking, and insist on longitudinal video capture of classroom instruction. Over long periods of time, the videographer can capture the learning needs of individual students, thus allowing the editor of the video to create scenes where the viewer experiences the classroom instruction from the perspective of the learner, not just the teacher. So for example one could “see” the lesson from three distinct “focus students.” With respect to this point of perspective, new technologies such as “Diver” would allow for multiple perspectives on the same classroom instruction.

We should be sensitive to the misuse of MRTs, but in my experience the risk we face that is greater than misuse is irrelevance. I worry that unless we scaffold instructional leaders with the proper guidance and support to use these powerful learning objects effectively, MRTs will become a quaint sub-culture of the ed reform movement and not a core component of a ubiquitous instructional support system across K-12.

LEANNE SAWYERS

WEDNESDAY, FEBRUARY 13, 2008

Over the past 15 years I have spent countless hours with a video camera on my shoulder capturing records of teaching and learning in K-6 grade classrooms. As a result of this work I have developed very strong right arm muscles, an MO as the “invisible camera lady”, and most of all an incredible respect for teachers who are willing to step out of their comfort zone to allow their practice to be permanently captured and shared with others. During the last five years, in particular, I have been part of a collaborative effort to provide K-3rd grade literacy educators with on-demand access to an extensive database of MRTs and associated resources through the development of a web-based professional development support system (PDS2- see the “Works of Interest” section of the MRT conference website for a link to the PDS2 system). This on-going collaboration includes a research and design team led by Tony Bryk and Louis Gomez, literacy content specialists at OSU and Lesley University, and with Mark Atkinson and his team at Teachscape.

In addition to content development and platform design work, the team creating PDS2 has also worked with diverse cohorts of literacy professional developers, ranging from novice to very experienced, to design and test social practices around the use MRTs to promote and support reflective, evidence-based teaching and learning. Throughout these iterative design activities we have debated a number of questions including: what learning purposes are best served through the use of MRTs; what are the optimal characteristics of MRTs for these purposes; when, how and in what contexts are these MRTs most effective for learners at different developmental stages; and what kind of structures and supports did we need to develop around the use of MRTs to maximize their value as learning tools?

Targeted learning purposes

We undertook this project believing that MRTs can be particularly effective tools for helping:

1) Establish a stance of inquiry and reflective habits of mind by:

Developing learners’ skills as acute observers and analysts of teaching and learning

Providing multiple and varied “vicarious” opportunities to practice evidence-based instructional decision making and problem solving, as well as become more comfortable using the language of critical dialogue

Promoting investigation of multiple perspectives and instructional strategies

2) Develop pedagogical and content knowledge by:

Grounding theory in practice and building a strong working knowledge of the reading and writing process

Increasing awareness of new instructional approaches and motivating teachers to experiment with them

3) Support learning communities by:

Providing opportunities for learning from and with others and breaking out of the norm of teaching in isolation
Developing common language around shared experiences

Decisions about MRT characteristics

Based on these stated learning purposes we have, over time, formulated a set of characteristics we believe the MRTs we select for inclusion in the database should possess. Currently the PDS2 database houses 126 video cases. These cases are built around anchor videos which are un-narrated and minimally edited records of literacy instruction including such components as interactive read alouds, small group guided reading lessons, phonics and word study lessons, and reading and writing workshops. Wherever possible we have tried to capture at least two consecutive days of instruction in classrooms and have also included: videotaped interviews with, or written reflections by, the participating teachers; collections of student work artifacts; snapshots of the physical environment; and basic contextual information. Based on feedback from our initial cohorts of users we have plans to do more longitudinal captures in select classrooms and, when possible, to include more formal and informal student data (such as running records, observational, and formative assessment data). This, we hope, will add more contextual depth to the MRTs as well as help focus the analysis and discussion of the teaching on richer evidence of student behavior, needs, and learning.

Perhaps the key design decision we have made is to include but not limit our selection to records that might be described as exemplars of best practices. Instead we have made an effort to include records that capture authentic, everyday practice in a diverse range of classrooms that include the complexities and commonly encountered problems of classroom practice as they unfold. This decision was guided by the reality that the “exemplary lesson” is such a rare bird that it is seldom sighted or captured, and by our observations that teachers respond to the credibility of the everyday records of practice. The dilemmas they present are “real world” and can be particularly motivating and provocative tools for stimulating analysis, debate, decision making, and reflection. This decision does however challenge a prevailing norm of using video records to model best practices for the purposes of encouraging emulation, and although it may not have induced nightmares it does pose certain risks. What if unquestioning viewers began to adopt what some worried were “problematic” aspects captured in the MRTs, or what if judgmental viewers simply dismissed the practice as sub-par and of no educative value? Our on-going challenge is figuring out how to best assure that the MRTs will be used in a way that supports critical inquiry into teaching and learning while at the same time being respectful to the professionals whose work is represented in them.

Facilitating the use of MRTs

As Lee and others have already pointed out, using MRTs well is difficult and time consuming. Realizing this, and acknowledging that the in-service professional developers and literacy coaches we were designing PDS2 for would come to the task with different levels of expertise, we decided to author additional components for each MRT that we

hoped would help professional developers facilitate their use in the reflective manner we intended. These components include analytic commentary, possible questions for inquiry, suggestions for embedding the use of the MRTs in more structured learning sessions, annotated reference materials, and frequently asked questions.

Creating a case-based professional development curriculum for professional developers

In the process of helping professional developers and literacy coaches plan how they would facilitate MRT case discussions in their own school-based contexts we have learned that these components are helpful but often insufficient scaffolds. We have come to the conclusion that before we can expect professional developers to use MRTs to have a deep impact on teacher development they need to first have more opportunities to engage in skillfully facilitated case discussions as learners. This realization has prompted us to shift our focus away from using PDS2 MRTs for teacher development to concentrating first on using them for the professional development of the professional developers themselves. We are currently developing longitudinal multimedia records of coaching, teaching and learning which we hope to develop into a well specified case-based curriculum for the development of highly effective school-based coaches and teacher educators.

Looming issues

I would echo Barry's concerns about the need to work through quality control, privacy, and intellectual property issues, particularly if we hope to make these resources accessible at scale through some sort of commercialization.

LYNN OLSON

WEDNESDAY, FEBRUARY 13, 2008

MRTs have the potential to make teaching a more public and less isolated practice. An increasing number of schools now use "walkthroughs" to get teachers into each other's classrooms. But there are logistical and practical limits to their use (schedules, the often fly-by nature of such events, the difficulty in observing teaching outside your own building). MRTs can overcome many of these issues by giving teachers and administrators access to a much wider array of classrooms; by allowing them to slow down, back up, pause, and look at certain features of the lesson again; by following work over more than one lesson; and by accompanying the video with other materials that deepen and enrich the conversation. New York City, for example, is planning to create a best practices Web site that can be used by teachers and school leaders districtwide. MRTs may be particularly useful in working with prospective teachers and school leaders, in networking across sites, in ongoing professional development, and in educating the public about how complex a job teaching actually is. They can also help create a common language, a shared orientation, and a more systematic vision of teaching beyond random acts of artistry. There are, of course, potential downsides. Lots and lots of people now have lots and lots of videotaped lessons (including the National Board for Professional Teaching Standards) without a clear idea of how to best use them or what they actually illustrate. Deborah Ball has also expressed the fear that people could get very good at "analyzing" videotape without actually learning how to act or change what they're doing when they teach.

JIM STIGLER
THURSDAY, FEBRUARY 7, 2008
Using MRTs to Improve Education

The potential of audio and video recording as tools for studying and improving classroom teaching has been recognized since the 1960s, when these technologies became more widely available and affordable. It was not until the advent of digital recording in the 1990s, however, that we started to imagine that we could develop large databases of video and other artifacts of practice. The potential of multimedia representations of teaching (MRTs) lies in their ability to represent teaching in a concrete and detailed way; indeed, the difference between more and less effective teaching is most often about the details of implementation, and MRTs provide a means of representing those details. MRTs provide referents for developing a shared vocabulary for describing teaching; a means of communicating about teaching; and objects that support learning to analyze teaching.

Although MRTs have been increasingly used by researchers and teacher educators, I believe that the greatest potential of MRTs to improve education will be realized when teachers themselves begin to use such tools regularly as a means of contributing to, and learning from, an expanding professional knowledge base. Although some improvements in teaching will result from professional development, the most significant and long-lasting improvements will result from developing and sharing knowledge to support sustainable improvements in teaching. This concept is not new, but the move from concept to implementation has proven problematic. To realize the promise of using MRTs as a means of representing and sharing professional knowledge we need to specify, first, what constitutes a shareable piece of knowledge about teaching.

To be shareable, a single “knowledge nugget” should (I hypothesize) include the following:

- A clear and precise statement of an instructional goal (what we want students to learn) to which this piece of knowledge applies;
- A clear statement of what the approach is (be it an instructional strategy, instructional materials, etc.) and – importantly – an explicit theory of action that relates the instructional innovation to student learning;
- A representation of the details of implementation (which may include video, specific instructional materials, student work, etc.), and an attached commentary that links the implementation to the theory of action;
- A means of assessing students’ progress towards the goal (this can be informal, but there must be some way of gauging the effectiveness of the knowledge);
- Assumptions about the context in which the knowledge applies (e.g., within a particular curriculum context, or general instructional approach)

This may not be complete – indeed, I believe that research needs to be done to document the processes by which teachers actually use and learn from such knowledge nuggets, and the contexts in which teachers could actually digest and make use of such knowledge. I

do believe, based on my own experience, however, that attempts to communicate instructional innovations that are missing one of these components may not be effective for improving teaching.

Who should create these knowledge nuggets? Although it is interesting to consider the possibility that practitioners themselves would be the main source of knowledge nuggets, I believe that the creation of such nuggets will primarily be done by experts (bearing in mind that some experts may have come from the ranks of practitioners). I say this based on my own experience working with mathematics teachers, where practitioners often are held back by gaps in their subject matter knowledge (of all kinds). In this sense, I believe that development of the knowledge base for education may be more similar to the process described by Douthwaite (2007) to describe the development of the wind turbine in the Netherlands. Like Douthwaite, however, I believe that experts alone will never generate long-lasting improvements in teaching unless there is a system for collecting the detailed feedback and modifications that only practitioners can provide. A knowledge base, in my view, should be the place where ideas are shared, tested, and improved, and where theories linking teaching to learning are evolved.

Similar to teaching, it is the details that matter: Exactly how to generate such a knowledge base, how to organize it, how to store it, and, most importantly, how to build the cultural routines in the teaching profession that will enable teachers to contribute to and learn from such a knowledge base, are the issues that will determine whether MRTs can fulfill their potential.

BARRY FISHMAN

THURSDAY, FEBRUARY 7, 2008

I foresee a future where teachers routinely create MRTs in service of their ongoing professional development, and perhaps the development and pre-service education of others in communities of learners. I view MRTs for this purpose in the same way professional athletes might view “game tape” – as an opportunity to watch and critically reflect on one’s own practice, or to improve one’s “game” by watching others.

I have been examining how teachers might use MRTs for learning primarily through my work on an online professional development tool called Knowledge Networks On the Web (KNOW). The guiding design principle behind KNOW is making community knowledge about practice explicit and easily shared. What makes this possible in KNOW is that the entire system is built around a shared instructional object – curriculum materials. KNOW serves as a direct extension to printed curricula, leveraging experienced teachers’ knowledge and ideas in order to create an ever-expanding resource about how to use those materials effectively. In this way KNOW differs from sites that are focused around instructional ideas or concepts, but require the teacher/user to make a translation from the representation to their own classroom context. Ideally, the users of KNOW share some of the key attributes of a community of practice: shared tasks, common problems, expertise that is distributed across members, and a pathway that allows for movement from novice towards expertise, and back again, depending on the specific nature of the task or challenge at hand. The “stuff” of the community’s work is MRTs, in the form of classroom videos, student work artifacts, and text-based elaborations on the common curriculum materials.

One of the challenges to creating an environment like KNOW is generating the MRT materials. In the beginning, we accomplished this by working with individual teachers with a range of experiences with particular curriculum materials (those developed by the hi-ce group at Michigan for the LeTUS project with Detroit and Chicago). We videotaped teacher lesson enactments, gathered and scanned student work, and recorded teacher reflections about their practice as represented in the videos. Our goal was to create short-form video and have multiple videos for individual lessons or components of lessons, as opposed to lengthy cases about any one teacher’s enactment of the curriculum. The idea was to have multiple representations so that someone who was using the system for inspiration or preparation to teach could find an example to which they could relate, either in terms of the physical characteristics of the classroom or something about the depicted teacher’s approach. In practice this was a resource-intensive challenge for our own team, presenting difficulties in terms of identifying appropriate lessons for recording and coordinating with teachers about when to be present. We fell short of our original goal of having multiple representations for different lessons, and KNOW as it currently exists contains more text-based elaborations on lessons than video-based elaborations (but of course text is one of the media included in MRT). I discussed the limitations inherent in the current realization of KNOW in some depth in a chapter that appeared in the recent *Video Research in the Learning Sciences* volume, edited by Goldman, Pea, Barron, and Derry. Below I present an idea that was at the center of that chapter, and that is one response to the logistical and resource challenges of creating MRTs.

I have always imagined a video capture system that would make it straightforward for teachers to gather video of their own classroom, without requiring the participation of outside videographers or others. The core of the idea is a “TiVo for teaching,” or a system that, like a digital video recorder, is always recording, but leaves it up to the user whether or not to keep what is recorded. This places control of the video in the hands of the teacher, so that if they prefer that a particular classroom session be erased, they need do nothing. However, if a teacher would like to preserve a particular instructional episode for later review or sharing, they need only push one button to save the video for later processing. Saved video could then be reviewed at the teacher’s convenience for editing, or perhaps for sending to remote research or professional development partners who could prepare it for sharing according to some pre-defined set of rules and agreements. Such a system would allow for the rapid building of MRT libraries. A system like this is now possible with the expansion of digital video capture devices, cheap digital storage media, and broadband networks (though such technologies are still rare in most school contexts).

There are multiple potential challenges to such a system. For instance, I think we have a long way to go in terms of helping people “learn how to look,” just as athletes, to return to my opening metaphor, need to develop expertise in watching game tape in order to use it to improve their play or even know what they are looking for. But I think the biggest potential nightmare from a system like this is related to privacy. I recently read an article in EdWeek that highlighted the new problem of students secretly recording in the classroom using their cell phones, and then posting embarrassing or out-of-context video of teachers on YouTube. There are also issues related to student privacy. The thought that video from the classroom could be used either to discipline or shame teachers or students is a strong deterrent to any video recording system. Issues of ownership and control (similar to DRM issues for movies and music) would need to be worked out in detail, with strong technological and social safeguards to control access. But the hard legal, technical, and culture work needed to overcome these challenges is, in my opinion, well worth the effort.

JOHN WILLINSKY

MONDAY, FEBRUARY 4, 2008

Where I possibly come into this question of the MRT's contribution to education is around building ready ways for readers to move between the multimedia representations of teaching and the larger world of education research. The Public Knowledge Project builds systems designed to improve scholarly publishing, and in this process we have developed tools for readily connecting a given research article published in a journal to a host of related materials, including research articles and discussion groups, as well as materials from outside of the academy, including government policies, media reports, instructional materials. So in the case of something like MRTs, it may be worth exploring how these representations of teaching could be connected in a similar way to related materials, rather than presenting each representation on its own, or as an alternative to other ways of representing educational processes or issues. The promise then is for people to be able to move from a MRT that interests them to related materials, to set the teaching represented within a context of closely associated ideas about education from different types of sources. It would be possible, as well, to move from a research study to a relevant MRT

PAT HUTCHINGS

MONDAY, FEBRUARY 4, 2008

What is my vision of how MRTs can contribute to the improvement of education in the next decade? What are their distinctive features and advantages? Nightmares?

My response to these questions reflects the work I've done in the past decade (more actually), much of it with Lee Shulman, to make teaching a more shared, collective, collaborative enterprise. On the one hand, I've been struck by how few habits of exchange exist among teachers. I recall a workshop I conducted on a college campus where participants were asked to bring and share syllabi; most of the room confessed that they had never, ever, looked at anyone else's syllabus, nor shown anyone else their own. On the other hand, there was great excitement about having a chance to talk about their teaching, learn about what others do in the classroom, examine student work together....So, my first answer is that MRTs speak to a felt need among at least some teachers, that they tap into an opportunity.

My second answer (on the "distinctive features" front) is that the promise of MRTs, as a vehicle for sharing and exchange, lies in the fact that they are (in contrast to the many lists of best practices and guiding principles) concrete, embodied, contextual, personally engaging. It's one thing to know that students need to be actively engaged; it's quite another to see what that looks like in a classroom like mine, where students are reading a piece of literature that I also teach.

Nightmares? That may be too strong a word but I've been mulling about the downside of concreteness. My most direct experience with the making and use of MRTs is in Carnegie's program with California community colleges, in which we've worked with faculty to create what we're calling "Windows on Learning." They're packed with good stuff: information about the context, course goals, videos of classroom interactions, materials and step-by-step processes others can borrow and adapt, statements by the teacher about the pedagogical thinking behind the practice, examples of student work and analysis of what it tells us, videotaped think alouds, links to other helpful sites, research literature...But it turns out to be not so easy to engage with all this richness and concreteness, or to extract useful implications, practices, understandings. I do not mean to suggest that the sites are not being used or found useful. We have had numerous reports from the sites' authors about responses they have received from others who have viewed and sites. But it's not easy, not automatically useful.

In the mid-90s Lee Shulman and I were directing a project on the peer review of teaching, one vehicle for which was what we called "course portfolios." At a conference session featuring three folks who were developing prototypes of these portfolios, one of them said, "it's like writing a short story before the genre had been invented." One question for our meeting, I think, is about progress on defining the possible genres for MRTs. Having a clearer sense of this will be helpful both for the design and building of the things and for their reading and use.

ESTHER WOJCICKI

THURSDAY, JANUARY 24, 2008

Multimedia Representations of Teaching can contribute to the improve of education in many ways. It can be used in the following scenarios

SCHOOLS OF EDUCATION Multimedia from my perspective includes video, audio, Powerpoint presentations and supporting documentation. MRT can improve teacher education by providing video examples of excellent teaching so that students can see real live models of what should be done in the classroom. Most teachers don't like to be observed and thus it is really hard for teachers to know what is going on in each others classrooms. Video representations would help young teachers conceptualize effective teaching. No one would like to be the star of a video that shows poor teaching that would not be an option.

INDIVIDUAL TEACHER These same video examples can help the beginning teacher who is trapped alone in the classroom and frequently needs help and support. They can go to the web and find examples that would include video, lesson plans, and case studies that pertain to their subject area or grade level. They can play these over and over which is what it sometimes takes for people to learn something.

PROFESSIONAL DEVELOPMENT School districts could use the material for meaningful professional development for teachers instead of some of the waste-of-time activities planned by administrators

MRT would include:

vetted model curriculum materials aligned to state standards organized by grade and subject matter in trusted networks

social community website (like Facebook, but not Facebook) that would support teachers according to subject matter and grade level in protected environments.

videos of excellence in teaching produced by trusted networks and providers or schools of ed

training videos on the web teaching teachers about technology

improved targeted search using the web (web search should improve using Google custom search)

tools for teachers to collaborate, examine practice and author together

LEE SHULMAN

FRIDAY, JANUARY 11, 2008

When I think of the distinctive features of a comprehensive MRT, I think of Joe Schwab's four commonplaces of education: teacher, student, subject-matter and context. That can be paraphrased as teaching, learning, subject and setting. At its best, an MRT should include

information and/or representations that communicate essential stuff in each of those four categories. An MRT should answer the question Who is teaching What to Whom in what Setting? I would add two more desiderata. What do the interactive processes of teaching and learning look (and sound) like? And What is the purpose of the teaching?

I'll write some comments now about two of these categories, and add additional stuff later.

Teacher: Who is the teacher? What is his or her background? How did they become a teacher and why? What is their conception or vision of teaching? I know that this sort of thing is normally missing in MRTs, but I find that some of the foundation's most popular MRTs, like that of Yvonne Divans Hutchinson and Elizabeth Sharkey include substantial accounts by the teachers of their autobiographies as they relate to the teaching represented on the sites. The reason I think this is important is that really engaging with a site takes time, energy and persistence. They are not "quick reads." Therefore, there has to be something about the teacher whose work is represented that will lead the user to be motivated to get to know this teacher and his work quite well.

Teaching: How does the teaching begin and end? What are the interactions? What is the teacher thinking and feeling? What are the teacher's goals? Is this best represented visually or through prose?

Context: Our colleague Louis Gomez constantly reminds me that rarely communicate enough about the contexts of teaching. They are nested: the class within the school within the district within the community. Although it is normally prose instead of video, including as much about these nested settings is important. Also, there is a curricular setting which accounts for the continuities of instruction over time, what transpired earlier and will happen later.

I have two nightmares, one I learned from Pam Grossman and the other from Judy Shulman. From Pam I learned that teaching well with MRTs is both quite difficult to do well and quite time-consuming. Many teacher educators and professional developers will need to learn to teach with these new tools, much like law professors needed to learn a case-dialogue pedagogy, and will need to have the patience to forego coverage for the greater depth (of certain kinds) that MRTs afford. Will they? Or will MRTs be set aside to tough to learn and too time consuming?

From Judy, I learned that just because one can prepare a multimedia representation doesn't mean that a uni-media one wouldn't be just as good if not better (and far less time-

consuming or difficult to use). So another nightmare is that we will inappropriately try to make everything multimedia and lose the power of old-fashioned prose, narrative accounts of teaching, learning, contexts, purposes, motives, etc.

Lee S. Shulman, President
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