COLUMBIA CNMTL
CENTER FOR NEW MEDIA TEACHING AND LEARNING

For more information about CCNMTL services, projects, tools and technologies, please contact us at 212 854-9058 or ccnmtl@columbia.edu.

DEDICATED TO THE PURPOSEFUL USE OF TECHNOLOGY IN EDUCATION

ABOUT US

The Columbia Center for New Media Teaching and Learning (CCNMTL) was founded in 1999 as a University-wide initiative with a mission to enhance teaching and learning through the purposeful use of new media. In partnership with faculty, we provide support for a range of efforts from constructing course Web sites to developing more advanced projects. CCNMTL is committed to remaining a leader in the field of new media teaching and learning, engaging with our faculty partners in the reinvention of education for the digital age.

Services

Our service philosophy is to provide the most supportive environment possible for faculty who invest their time and energy in utilizing new media technologies for their courses. Our Educational Technologists have extensive pedagogical training and are ideally suited to offer advice and direction for faculty who wish to discover and develop best practices in the educational uses of new media.

These efforts include support for CourseWorks, the University-wide course management system that provides students with online access to course information and content, including selections from Columbia's Digital Library Collection as well as wikis, discussion boards and survey tools. CCNMTL offers a variety of workshops for instructors who wish to master CourseWorks or incorporate multimedia resources into their courses. A current list of workshops is available at http://ccnmtl.columbia.edu/events/workshops.

Project Development

CCNMTL projects are defined as more extensive efforts in which we attempt to create flexible tools and engaging study environments that faculty can shape to fit their particular pedagogical goals. CCNMTL projects start with a project proposal from faculty. Our proposal form is available at http://ccnmtl.columbia.edu/our_services/overview/for_instructors.html

All CCNMTL projects focus on overlapping areas of innovation to support student inquiry and improve students' understanding. Our projects include visualization and modeling tools, real-time data collection tools, data-sharing programs, annotation tools, media archives, training environments, simulations, and multimedia study environments. Projects emphasize collaboration, interaction, and activities that develop research skills and promote better communication among faculty and students.

Strategic Initiatives

Since its inception, CCNMTL has gained valuable insight and experience by developing hundreds of projects and working with more than 3,500 faculty to advance the purposeful use of technology in education. We now combine this experience with current breakthroughs in digital communication technologies to extend the scope and reach of our work. CCNMTL's strategic initiatives focus on the integration of digital technologies and media in education with full cognizance of the world's problems and promise.

Design Research

Design Research is the underlying philosophy of our efforts, supporting the exploration, development and application of digital technologies to enhance education at the University. Through an iterative cycle of research, development and assessment, CCNMTL and its faculty partners experiment with innovative uses of technology within university courses and generate advanced knowledge in the field of new media teaching and learning.

Partnerships

CCNMTL is a part of the University's Information Services Division, which also includes the University Libraries and the Center for Digital Research and Scholarship. CCNMTL forms strategic partnerships with departments, institutes, and other centers both on campus and beyond in order to leverage expertise in diverse fields, and we have garnered awards and grants for many of our projects.

Throughout the year, CCNMTL brings leaders in educational technology to campus for events including the University Seminar in New Media Teaching and New Media in Education conference.

HTTP://CCNMTL.COLUMBIA.EDU

The Columbia Center for New Media Teaching and Learning has locations in 204 Butler Library, 535 West 114th Street, Mail Code: 1130, New York, NY 10027 and at the Health Sciences campus in the State Armory at 216 Ft. Washington Avenue, 2nd Fl., New York, NY 10032.

Our facilities are open Monday through Friday from 9:00 A.M.-5:00 P.M., and can be reached at 212.854.9058.

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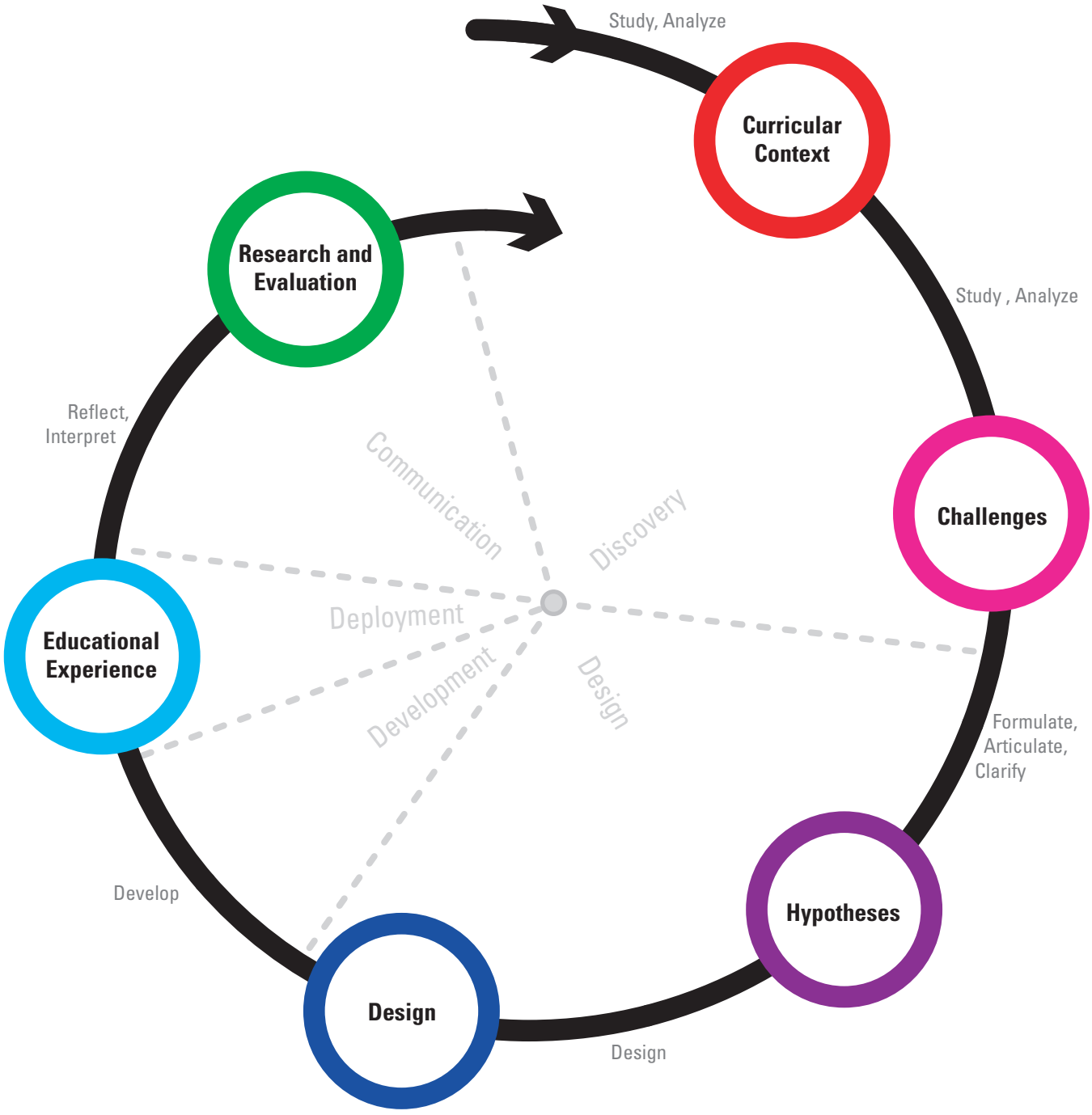
DESIGN RESEARCH PROCESS

CCNMTL is a unique service enterprise that both creates new tools for teaching and learning and researches their implementation. Design Research is the underlying philosophy of our efforts, supporting the exploration, development and application of digital technologies to enhance education at the University.

Through an iterative cycle of research, development and assessment, CCNMTL and its faculty partners experiment with innovative uses of technology and generate advanced knowledge in the field of new media teaching and learning.



COLUMBIA CNMTL
CENTER FOR NEW MEDIA TEACHING AND LEARNING

http://ccnmtl.columbia.edu/strategic

STRATEGIC INITIATIVES

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Global Learning

The Global Learning initiative mobilizes the power of emerging network technologies to expand the collaborative efforts of the world's educational community. Global Learning projects take advantage of the distributed locales of its participants, leveraging diverse on-the-ground expertise in order to create common understandings, skills, and professional practices that address the prevailing dilemmas of the global community. Learn more about Global Learning at http://ccnmtl.columbia.edu/strategic

Global Learning partner, Jeffrey Sachs, and CCNMTL assistant director of strategic initiatives, Jennifer Spiegler, discuss the Gloabl Classroom project.

The Triangle Initiative

The Triangle initiative creates digital tools and capacities that simultaneously serve the intersecting interests of education, research, and the larger community. By creating new economies of development, the positive effects of research and education are magnified in the interest of communities in need. Learn more about the Triangle Initiative at http://ccnmtl.columbia.edu/triangle

Triangle Initiative partner, Susan Witte, and CCNMTL educational technolgoist, Jessica Rowe, collaborate on Project Connect.

Digital Bridges

CCNMTL's Digital Bridges initiative works in partnership with Columbia faculty and librarians to bring students into exemplary engagements with digital collections. Digital Bridges learning environments promote active, hands-on use of digitized materials from Columbia University Libraries collections, audio and video resources at Columbia and beyond, digital libraries and databases, public educational resources, and faculty- and student-generated content. Learn more about Digital Bridges at http://ccnmtl.columbia.edu/digitalbridges

http://ccnmtl.columbia.edu/strategic

For more information about CCNMTL strategic initiatives, please contact:

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TRIANGLE INITIATIVE
digital tools for education, research, and community

COLUMBIA CNMTL

http://ccnmtl.columbia.edu/triangle/

The Triangle Initiative: Digital Tools for Education, Research, and Community

"The revolution in digital technology has exacerbated the differences among people... The challenge of the future is to leverage more in the interest of the many with little and to create the conditions for a greater democratization of human possibilities that the explosive technology movements of our time make possible, always remembering that the technology does not dictate its use, but we, its inventors."

- Frank Moretti, executive director, CCNMTL

What is the Triangle Initiative?

The Columbia Center for New Media Teaching and Learning launched the Triangle Initiative in 2006 to explore ways that new media can be used to advance the intersecting interests of research, education and the community, with the objective of addressing critical social or cultural needs. Current Triangle Initiative projects under development address social justice and health disparities both locally and globally.

The Triangle Initiative takes advantage of the modular nature of digital media. It has the flexibility to serve multiple users in multiple contexts. For instance, video developed for an evidence-based health intervention that is the object of research can find utility in a social work classroom. In another example, research engaged by law students constitutes content for a web-based tool for public defenders.

The Triangle Initiative has been well received by the Columbia community and has received over one million dollars in support from the University. Additionally, Triangle Initiative projects have received grant funding through faculty partnerships from the Centers for Disease Control and the National Institute of Mental Health.

Where Does a Triangle Initiative Project Start?

Triangle Initiative projects must address substantive needs in each of three areas — research, education, and service to the community — but may begin in any one of the three. For instance, Multimedia Connect, the flagship Triangle Initiative project, began with a need for social work researchers to disseminate a proven HIV prevention program more broadly. Another project, the 4Cs Calculator, started with a need identified by New York's chief judge to solve social justice issues latent within New York state's legal system. A new project, under development, will start as a curriculum with community and research aspects.

Multimedia Connect

Professors Nabila El-Bassel and Susan Witte, senior researchers of the Social Intervention Group (SIG) at the Columbia University School of Social Work, developed Project Connect, an AIDS intervention based on cognitive theory. CCNMTL joined the SIG researchers to develop Multimedia Connect, which seeks to make the intervention accessible to a wider population by providing a media-rich environment for community health service providers. By doing so, the CCNMTL/SIG team anticipates an exponential increase in the number of people who can benefit from this intervention. Specific learning objects from the tool are now deployed in School of Social Work classrooms, and CCNMTL has begun to explore the application of the Multimedia Connect approach to other preventable or controllable conditions such as diabetes.

4Cs Calculator

The 4Cs Calculator helps legal practitioners quickly and easily compare the collateral consequences of criminal charges across of variety of doctrinal areas. The 4Cs Calculator serves multiple purposes: faculty can build case studies around it, lawyers can better counsel their clients, judges can assure appropriate sentencing, and public policy researchers can use it as a lens through which to examine the matrix of the New York State legal system. Judge Judith Kaye, Chief Justice of the New York Court of Appeals, the state's highest court, supports the development of this tool, which she sees as a valuable social justice initiative.

For more information about the Triangle Initiative, please contact:

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http://ccnmtl.columbia.edu/triangle/

TRIANGLE INITIATIVE: MULTIMEDIA CONNECT

About the Triangle Initiative

The Triangle Initiative is a strategic effort of the Columbia Center for New Media Teaching and Learning (CCNMTL), creating digital tools and capacities to serve the intersecting interests of education, research and communities. Multimedia Connect is the first Triangle Initiative project.

Overview

CCNMTL is teaming up with researchers from the School of Social Work to construct a multimedia environment that builds on the effectiveness of a proven HIV-prevention program. The Web-based system — which generates high-quality research data — has the potential to increase dramatically the number of people around the world who can benefit from the program and provides social work students with new Web-based tools and training videos.

Background

Nabila El-Bassel, Susan Witte, and Louisa Gilbert, senior researchers of the Social Intervention Group (SIG) at the Columbia University School of Social Work, developed and tested Project Connect, the first couples-based, HIV-prevention intervention funded by the National Institute of Mental Health (NIMH). Once SIG proved the effectiveness of Connect's six-session program, however, they found two substantial barriers to wide dissemination: implementation required a box-load of peripheral materials and the skills of an advanced clinician. When they met CCNMTL in 2005, the SIG researchers had been working on Connect and several related projects for eight years and were looking for ways to both enhance and streamline their intervention.

Getting to Work

Engaging in CCNMTL's Design Research methodology, which follows an iterative path of Discovery, Design, Development, Implementation, and Evaluation, the CCNMTL/SIG team embarked on an extended Discovery phase. SIG learned about the range of possibilities digital media could support while CCNMTL become conversant with the content, process, and theoretical underpinnings of the intervention as well as the materials that accompanied each session: videos, anatomical models, condoms and other prophylactics, and charts.

From the very beginning, the team imagined how to use digital technology to replace and enhance Connect's physical objects and extend their impact. At the same time, they also began to envision how facilitator training might be improved, how what was developed might be repurposed for use in Columbia's Social Work courses, and how to capture data for future research.

CCNMTL's Web-based application - with games, videos and other interactive features - helps facilitators guide couples through a six-session HIV prevention program.

CCNMTL produced original video vignettes with actors modeling communications skills that couples learn and practice in each of the program's six sessions.

The Shaping of Multimedia Connect

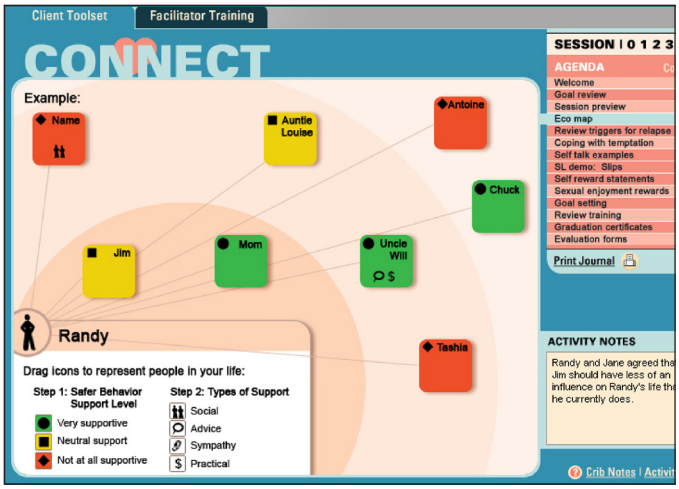
Dubbing the new project Multimedia Connect, CCNMTL asked a set of questions during the Design and Development phases:

1. **How can we help the participants better internalize what they need to institute healthier sex practices in their relationships?** CCNMTL designed an interface that is visually rich, dynamic, and engaging. The team created digital ver-

*For more information please visit http://ccnmtl.columbia.edu or call us at 212-854-9058

sions of many of the paper-based activities to create a more satisfying experience.

2. **How can we better support the communication and listening skills component that is part of the essential core in all six sessions?** The CCNMTL/SIG team added a palette of video vignettes of people using speaker/listener skills addressing the specific topic of each session. These are designed to model the technique and to provide the facilitator with a more flexible set of examples that can be used as necessary.
3. **Is there a way to provide participants with take-home materials that serve both as useful tools and more active memorials of their contract with one another as well as the successful completion of the intervention?** Facilitators can print out customized booklets for participants that include information covered in sessions as well as the couple's specific notes and commitments.
4. **How can we broaden the base of facilitators so that a community-based health worker with some basic training could implement Connect?** Multimedia Connect tackles the difficult challenges of facilitator training and preparation in a variety of ways. First, the sessions are organized within the computer environment as a roadmap that is used both to train facilitators and perform the intervention itself. This allows the training to be more consistently delivered to a broader base of community health workers who will then use the same environment in their actual delivery of the intervention. Providing such a scaffold should relieve the facilitator from the anxieties related to managing the sequence of events in the intervention and, simultaneously, gives both the facilitator and the participants a consistent and stable set of media objects and utilities that accompany them through the experience. In addition, the computer environment includes extensive resources on general knowledge and practice skills as well as "how-to" instructions for each session.
5. **How can we enhance data collection so that the delivery and dissemination processes can be evaluated and improved?** The Web-based system is designed to capture a wealth of use-data from the sessions that will inform future research and refinements of the intervention and its dissemination.
6. **Will elements of the project be useful for students in Columbia classes?** Many of the elements of Multimedia Connect, including goal setting exercises, communications training videos, and an interactive psychoeducational myth/fact game are appropriate for and will be used in Social Work courses. An interactive social support network mapping tool (pictured here) developed for the intervention has been introduced to masters-level candidates. Students surveyed felt that use of the tool helped them better understand the clinical technique of social support network mapping. Digital tools such as the Social Support Network Map help to close the gap between preparation of students in the classroom and practice in the field.



Mapping Tool: Participants create visual representations of their social support networks by plotting the people in their lives on an interactive map. The mapping tool is also used in Social Work courses.

Results to Date

Multimedia Connect is currently in the Development phase. An initial two-session beta test was completed during the summer of 2006, demonstrating a strong proof of its concept and execution. Now a unified Web-based environment that addresses the needs of couples, facilitators, and facilitator trainers replaces the box of physical objects and the hefty paper-based intervention and training materials. The SIG team anticipates that the intervention will be able to be executed more consistently and more effectively. In 2007, SIG, in collaboration with CCNMTL, received major funding to develop and test the project from the National Institute of Mental Health and the Centers for Disease Control. NIMH funding will test whether disseminating the intervention using a Web-based system leads to more frequent adoption of Connect, when compared with traditional paper-based and conventional training protocols. As the CCNMTL/SIG team proceeds with its design research, the team foresees the possibility of adapting the language and cultural attributes of Multimedia Connect as part of a global solution for the prevention of HIV transmission.

If you are interested in discussing the Triangle Initiative, please contact:

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http://maap.columbia.edu

FEATURED PROJECT : MAPPING THE AFRICAN AMERICAN PAST

Mapping the African American Past (MAAP) is a public Web site created to enhance the appreciation and study of significant sites and moments in the history of African Americans in New York from the early 17th-century through the recent past. The Web site is a geographic learning environment, enabling students, teachers, and visitors to browse a multitude of locations in New York and read encyclopedic profiles of historical people and events associated with these locations. The site is further enhanced by selected video clips, digitized photographs, documents, and maps from Columbia University libraries and other archives, and commentary from Columbia faculty and other specialists.

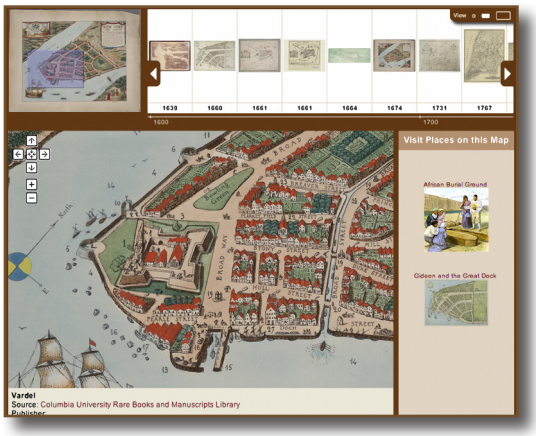
Using New York City maps that date back to 1632, the site allows users to zoom-in on streets and historical sites as they once were, and as they are today. In addition to maps, the site features a library containing portraits of prominent African Americans and photographs of historical landmarks. MAAP also offers a podcast for users to listen to descriptions of all 52 locations as they visit them. For smartphone users, a MAAP portal is available for access to podcast episodes on demand.

Complementing the site's rich resources, project partners at Columbia University's Teachers College have devised model lessons for the instructors' resource section of the MAAP Web site, offering educators across New York State strategies for incorporating the project's multimedia material into various curricula. Teachers College graduate students are using MAAP to practice effective curriculum-building in a multimedia environment.

"African American history is a required component of the New York State social studies curriculum in 4th, 8th, and 11th grades. As every teacher knows, however, it takes provision of good curriculum materials to make such requirements reality in many classrooms. MAAP answers that need. The MAAP project assists teachers at all levels in introducing this content through stories about building community, resisting slavery, and contributing to New York City's development," said Margaret Crocco, professor of social studies and education and William Gaudelli, associate professor of social studies and education, project partners from Teachers College.

Mapping the African American Past was developed by the Columbia Center for New Media Teaching and Learning (CCNMTL) in partnership with Columbia University's Teachers College and Creative Curriculum Initiatives and funded with generous support of the JPMorgan Chase Foundation.

MAAP offers students rich information about African American history in New York City.



Students discover significant locations by exploring historic maps.

Featured historic site: African Burial Ground

Then: For most of the 1700s, and maybe earlier, Africans and their descendents kept their own burial ground north of the city and its wall.

Now: A current view of the African Burial Ground Memorial located at Duane and Elk Streets.

For more information please visit http://maap.columbia.edu/ or email ccnmtl-maap@columbia.edu

COLUMBIA CNMTL
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http://ccnmtl.columbia.edu/projects/vital

FEATURED PROJECT: VIDEO INTERACTIONS FOR TEACHING AND LEARNING

Video Interactions for Teaching and Learning (VITAL) is a Web-based learning environment that enables students to view, analyze, and communicate ideas with video. Originally created to help students practice their observation and interpretation skills in developmental psychology courses at Teachers College, VITAL is currently deployed in a wide range of courses and disciplines across Columbia University, from the School of Social Work, where it is used for clinical training, to the School of the Arts, where it is used by courses in dance and film.

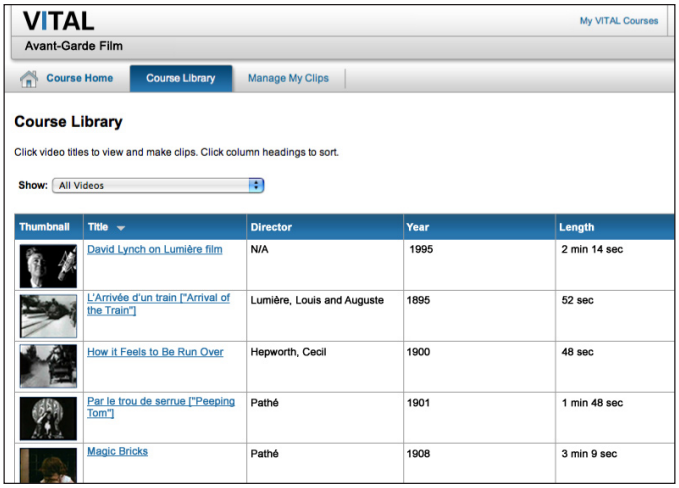
VITAL began as a partnership between CCNMTL and Herbert P. Ginsburg, Professor of Psychology and Education for his "Development of Mathematical Thinking" course at Teachers College, Columbia University in Spring 2003. Students who use VITAL learn to master close viewing skills and articulate their ideas with both text and video, utilizing multimedia for active expression rather than passive reception. "VITAL helps students move from unsupported ideology to ideas based on evidence, and develop habits of mind including looking, asking, interpreting, and critical thinking," notes Ginsburg.

Professors find that VITAL exercises encourage students to spend time with course material before class meetings. "It provides more classroom time for discussion and lecture and provides a window into their critical thinking about practice, and enhances my ability to evaluate their learning," says Professor Susan Witte, Associate Director of the School of Social Work's Social Intervention Group.

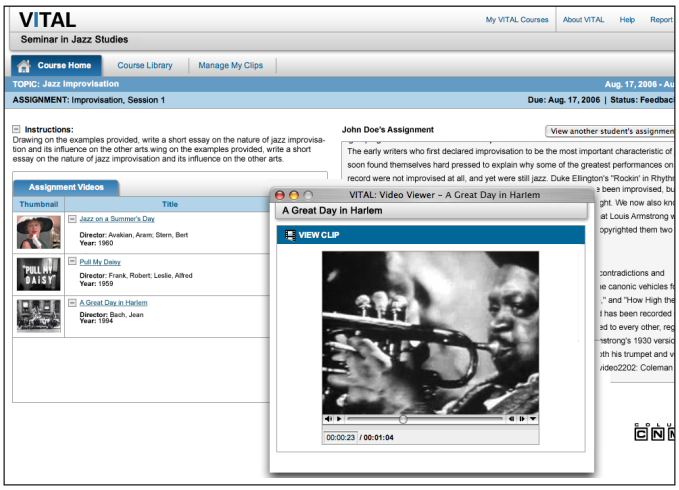
VITAL features tools that enable students to edit, annotate, and store clips that they select from a course's video library. Students then use these clips as multimedia citations in essays that are published within the VITAL environment for review and critique by the professor and classmates. Students must establish a meaningful context for the cited videos, much as they do when citing books or journal articles.

"Clipping videos forces students to really link the readings with what they are seeing in the videos, to better link theory and practice," says Professor Susan Oppenheim, Associate Director of Field Education at the School of Social Work, "which is something that can only be done with the technology. It really makes for a deeper, more connected and more sophisticated clinical training experience."

VITAL also offers a guided lesson template that allows professors to create linear, question-by-question exercises. These lessons mimic real-time events in which students must make an interpretation or decision based on limited information. After answering a question, students might read an expert's commentary, encouraging them to reflect and refine their thinking.



Students clip and add comments to videos in the digital library.



Clips are incorporated into multimedia essays within the workspace.

CCNMTL is committed to working with faculty partners to make VITAL an effective pedagogical tool that enhances both teaching and learning for each course. For more information or to view a demonstration, please contact us at ccnmtl@columbia.edu.

VITAL is currently used in courses across disciplines:

- Teachers College
- School of Social Work
- School of the Arts
- College of Dental Medicine
- Oral History Research Office
- Foreign Languages

Development of the VITAL project is supported by a grant from the National Science Foundation.

For more information please visit http://ccnmtl.columbia.edu or call us at 212-854-9058

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http://havel.columbia.edu

FEATURED PROJECT: HAVEL AT COLUMBIA

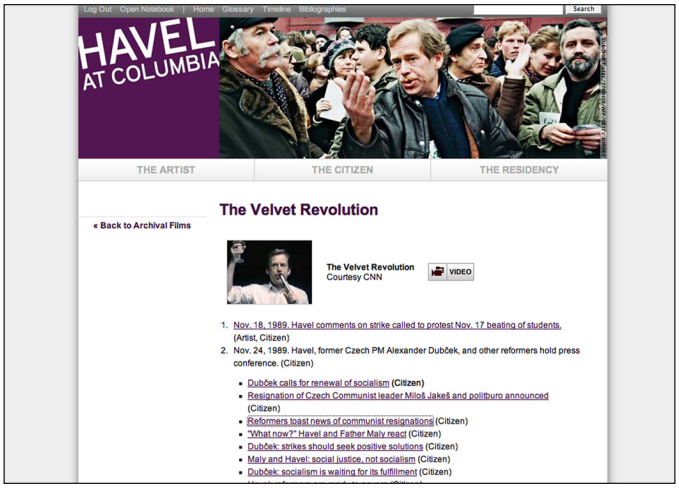
The Columbia Center for New Media Teaching and Learning, in partnership with the Columbia University Arts Initiative, released the *Havel at Columbia* site, a resource to support former Czech President Václav Havel's seven-week residency on campus during the Fall 2006 semester.

As an artist, thinker, essayist, human rights leader and political leader, Václav Havel is one of the most significant cultural and political figures of our time. On December 29, 1989 he was elected president of a united and democratic Czechoslovakia. His residency at Columbia was his first extended stay in New York since stepping down from office in early 2003. While he was on campus, the University community paid tribute to his life and ideas with a number of lectures, symposia, screenings, and panel discussions.

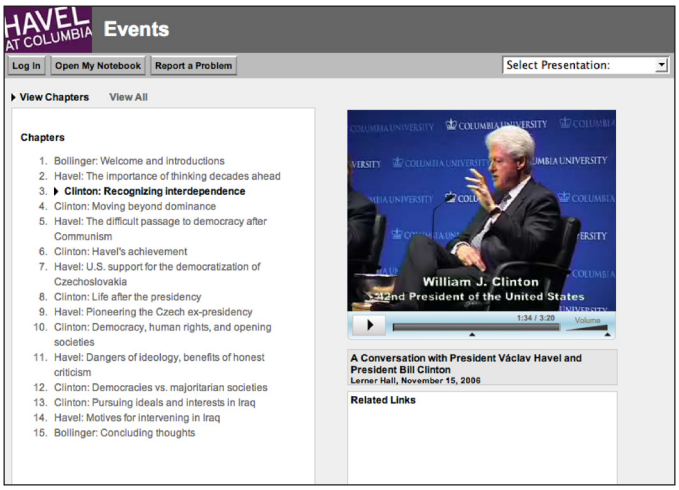
The *Havel at Columbia* site contains a wide range of teaching and learning materials for classroom study of Havel's life and art, growing throughout the semester as events and materials were added. The multimedia resource features video interviews with scholars, artists, and political figures contributing their insights on Václav Havel's legacy as an artist and political leader, including Dean Lisa Anderson from the School of International and Public Affairs, former President George H. W. Bush, Edward Albee, Milos Forman, Lou Reed, and George Soros. A timeline of events, an image glossary with photographs and primary documents, and archival footage from television and films provide historical context for the Velvet Revolution and Havel's presidency, making the site a rich educational resource beyond his campus residency. The site features video recordings of the many lectures, performances, and presentations that took place throughout the residency. These are available to view online and downloadable as podcasts.

Courses that used the *Havel at Columbia* site during the Fall '06 semester included "History, Literature, Film and Dissent in Eastern European Culture," an undergraduate seminar by Brad Abrams and Christopher Harwood and a multidisciplinary course at Barnard co-taught by Cathy Nepomnyashchy with theater lecturer Amy Trompetter that included a study and performance of Havel's play *The Beggar's Opera*. Anne Bogart focused on the political theater of Clifford Odets and Havel in her graduate MFA course "Directing III." In addition, Literature Humanities students studied Havel's play *The Garden Party,* Havel delivered a lecture to the Core Curriculum's Contemporary Civilization course, for which students read his essay "Dear Dr. Husák."

To allow instructors to create a more customized experience of the site for their courses, CCNMTL introduced a new feature called the Havel Notebook. Any Columbia University faculty member or student with a UNI can log in to organize their own resources from the site by saving and annotating text, images, and links to a personalized page, or "notebook." Developed in coordination with faculty partners from the Harriman Institute, School of the Arts, and Barnard College, these notebooks can be shared with others, making them especially useful for classes that are using the *Havel at Columbia* site as a resource.



The site contains archival news video from the Velvet Revolution.



Users can navigate through the videos by selecting specific chapters.

> *"The Havel Web site is a terrific clearinghouse for all the materials. The interviews are fascinating, and will continue to be a valuable resource. The real bonus is all of the documentary and filmed materials that surrounded all of the aspects of Havel's career."*
> — Bradley Abrams, Associate Director, Harriman Institute, and Associate Professor, History Department

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http://www.brownfieldaction.org/

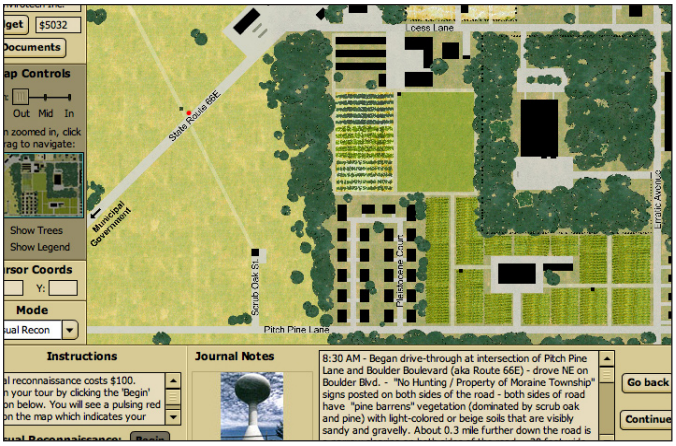
FEATURED PROJECT: BROWNFIELD ACTION 3.0

Brownfield Action is an interactive, Web-based simulation that combines scientific expertise, constructivist educational philosophy, and multimedia to advance the teaching of environmental science. In this simulation, students form geotechnical consulting companies, conduct environmental site assessment investigations, and work collaboratively to explore and solve problems in environmental forensics.

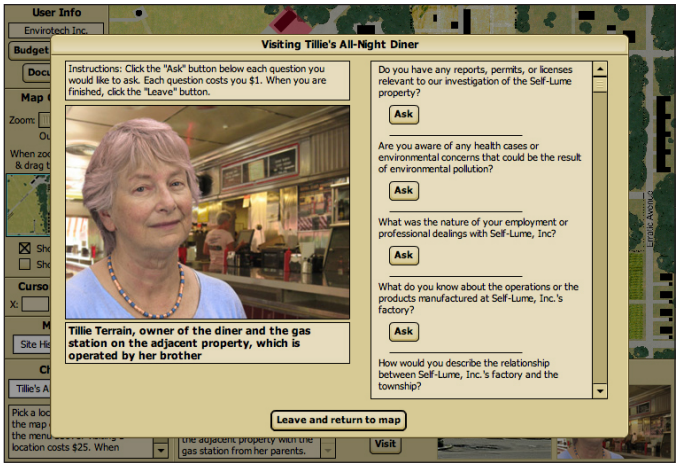
Used as a central component of Dr. Peter Bower's Introduction to Environmental Science course at Barnard College, Brownfield Action has established itself as a highly successful pedagogical model for teaching environmental science. This model, whereby interdisciplinary scientific and social information is integrated within a digital learning environment, encourages students to construct their own knowledge as they learn by doing. This approach improves the depth and coherence of students' understanding of the course material.

Brownfield Action models the physical evidence and historical background of a suspected contamination event. Students assume the role of environmental consulting firms with a fixed budget to accumulate evidence about the condition of a parcel of land and report on the feasibility of commercial construction. Through the integration of maps, documents, videos, and an extensive network of scientific data, students engage with a virtual town of residents, business owners, and local government officials as well as a suite of geological testing tools in the simulation. Like real-world environmental consultants, students must develop and apply expertise from a wide range of fields, including environmental science and engineering as well as journalism, medicine, public health, law, civics, economics, and business management. Students thus gain an unprecedented appreciation of the complexity, ambiguity, and risk involved in environmental crises.

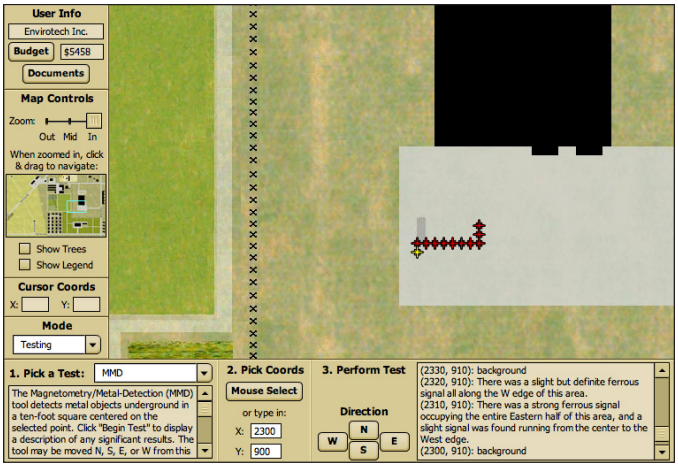
First developed as a CD-ROM in 1999 by Dr. Peter Bower and CCNMTL, Brownfield Action has been nationally recognized by the Association of American Colleges and Universities and was featured as a model curriculum at the Association's SENCER Institute (Science Education for New Civic Engagements and Responsibilities). Brownfield Action has since been expanded for use in upper level hydrology and environmental site assessment courses at other colleges and universities. Through a grant from the National Science Foundation, improvements to the technological infrastructure of Brownfield Action now makes broad dissemination possible.



Brownfield Action is an interactive, Web-based, environmental science simulation.



Students visit and interview over forty characters in the virtual town.



A suite of scientific tools is available for assessing the geological features of the town and test for groundwater contamination.

For more information please visit http://ccnmtl.columbia.edu
or call us at 212-854-9058

COLUMBIA CNMTL
CENTER FOR NEW MEDIA TEACHING AND LEARNING

http://virtechs.ccnmtl.columbia.edu/

FEATURED PROJECT: VIRTECHS - VIRTUAL TECHNIQUES IN DENTISTRY

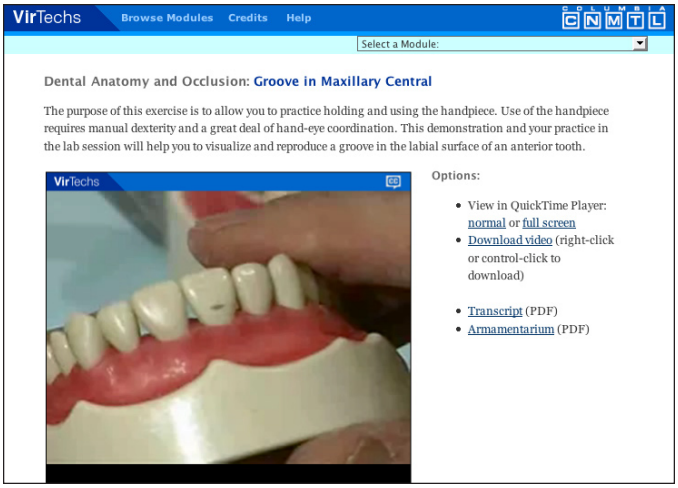
CCNMTL and the College of Dental Medicine have collaborated to create Virtual Techniques in Dentistry (VirTechs). This interactive Web-based dental laboratory manual provides students with access to detailed instruction on procedures and treatments. The VirTechs collection includes video demonstrations, instructions, and supplementary materials to support learning of dental procedures. These demonstrations support the preclinical and clinical curricula, but residents also find the videos to be a useful review resource. Currently, there are videos in the following subjects: Dental Anatomy and Occlusion, Pediatrics, Endodontics, and Operative Dentistry.

There is a clear need for novice dental students to build a framework of basic skills before carrying out surgical procedures on patients. But the difficulties posed in actual demonstration of clinical procedures in class have always been formidable, especially in large class settings where one instructor demonstrates to the entire class. The small size of mouth and dental models makes it challenging to capture clear visuals, so the production team used special photography and videography techniques in order to capture clear close-ups of each procedure.

This multimedia video repository allows for self-paced study and can potentially increase overall student achievement. Demonstrations that can be difficult to follow in a laboratory setting are now available on the Web for ready and repeated access.

VirTechs not only enables students to learn and practice dental procedures at their own pace, it also makes efficient use of faculty time while serving as a useful pedagogical complement to basic skills training. Instructors are able to dedicate more classroom time to discussion and individualized support.

VirTechs introduces new approaches in video technologies to offer a personalized learning experience. Students can view videos online, download the video files to their personal computers, or access the VirTechs video podcast. Text captions and video chapters allow for greater control and self-pacing during study. To supplement the videos, each procedure features an audio transcript, descriptions of the armamentarium – with color pictures of the instruments – and other study guides.



Video demonstrations of procedures are supplemented with transcripts and additonal links to support the preclinical and clinical curricula at the College of Dental Medicine.

The videos are made available on the Web site or as video podcasts that can be downloaded to students' iPods.

To assess the effectiveness of VirTechs, CCNMTL employs both formative and summative evaluation techniques, including usability testing, focus groups, and student and faculty questionnaires. Student evaluation of VirTechs confirmed that the online videos enabled them to pace their learning, thereby promoting greater flexibility and independence.

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or call us at 212-854-9058

COLUMBIA CNMTL
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http://aegd.ccnmtl.columbia.edu

FEATURED PROJECT: PERSONALIZED LIFELONG LEARNING PLAN (PL³P)

Supported by a grant from the Fund for the Improvement of Postsecondary Education, the College of Dental Medicine and the Columbia Center for New Media Teaching and Learning (CCNMTL) have created the Personalized Lifelong Learning Plan (PL³P), a portal for post-graduate dental residents in the Advanced Education and General Dentistry (AEGD) and General Practice Residency (GPR) programs. PL³P provides residents with access to a suite of online tools that promote active learning and reflection, including personal home pages, blogs, and electronic portfolios for their studies and clinical activities.

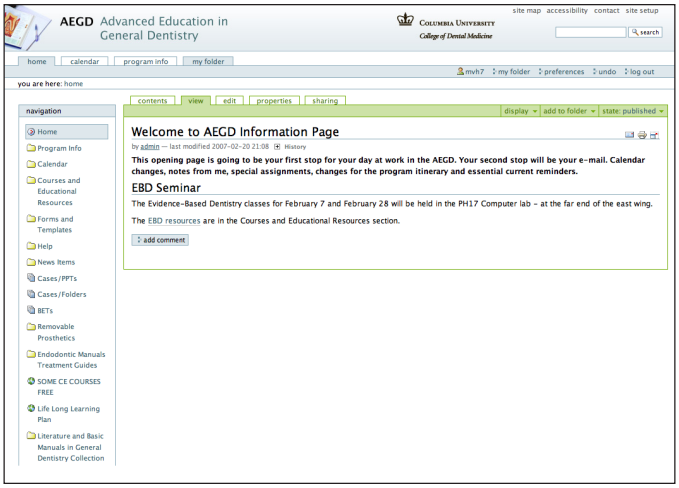
The PL³P approach requires the post-graduate dental resident to take an active role in his own training by developing personalized learning plans to meet his individual needs. Residents chronicle their experience as they advance through the AEGD and GPR programs, creating action plans based on their own priorities and learning objectives. And perhaps most importantly, the site encourages residents to model lifelong learning strategies that can be continued for professional development beyond their formal studies.

For the AEGD and GPR Personalized Lifelong Learning Plan includes the following components:

- **Program Competencies:** The AEGD and GPR competencies are written statements describing the levels of knowledge and skills residents are required to master in order to perform a particular aspect of dental practice.
- **Personal Learning Objectives:** Learning objectives are statements of specific tasks or behaviors that residents should be able to perform after participating in a set of educational activities.
- **Educational Activities:** Residents are required to attend lectures, group discussions, and laboratories, and to participate in supervised patient care, workshops, and online tutorials, as well as to develop Best Evidence Topics to support their clinical cases.
- **Evaluation/Documentation:** Evaluation is a focused, time-dependent process, undertaken to assess whether learning objectives have been accomplished. Documentation is the specific data supporting the evaluation.

The PL³P site encourages reflection and self-assessment. Faculty mentors provide ongoing feedback, guiding residents through a thoughtfully constructed process that challenges them to:

- Examine critical issues related to their clinical services,



- Connect clinical and service experience to course work,
- Enhance the development of professional skills and values,

PL³P was developed using Plone, an open-source content management system that allows multiple users to share different levels of access. The site provides a space that promotes dialogue between residents and faculty mentors, in which discussion and evaluation are supported through a review-based publishing process.

Initially, a resident's assets — clinical cases, Best Evidence Topics, and seminar presentations — are private, but he or she can choose to share them with others at any time. Faculty mentors always have the ability to view and publish any resident's assets. The published work then becomes accessible to all participants, enriching the learning community's online resources.

We are currently monitoring the residents' use of the portfolio in an effort to measure its impact on their attitudes and lifelong learning skills. This data will be used to inform decisions to improve the PL³P approach.

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