

Apps/Projects	Description	Educational Value	Current Implementation/impact	Potential Value/Impact
TEAL	TEAL merges lecture, recitations, and hands-on laboratory experience into a technologically and collaboratively rich active learning environment. http://web.mit.edu/edtech/casestudies/teal.html	<ul style="list-style-type: none"> • Create an active learning environment • Move away from passive lecture format • Incorporate hands-on experiments • Enhance conceptual understanding • Enhance problem-solving ability 	<ul style="list-style-type: none"> • 8.01 Classical Mechanics (Physics) • 8.02 Electricity and Magnetism (Physics) iCampus TEAL Project Report	<ul style="list-style-type: none"> • Creating a more cost effective TEAL model (e.g. Virtual TEAL) • Possible use at other MIT departments
Virtual TEAL	Virtual TEAL provides remote access to lab equipment and educational materials in a virtual 3D environment, including 3D visualizations. http://keep.mit.edu/toolkit/html/snapshot.php?id=69312224415422	<ul style="list-style-type: none"> • Increase student experiences abroad and collaboration at a distance 	<ul style="list-style-type: none"> • A prototype has been built using Sun's Wonderland. 	<ul style="list-style-type: none"> • Offering 8.01T, 8.02T, and other TEAL-based physics courses online
iLab	Online laboratories - real laboratories accessed through the Internet. http://keep.mit.edu/toolkit/html/snapshot.php?id=7439009069874	<ul style="list-style-type: none"> • Enrich science and engineering education by greatly expanding the range of experiments that the students are exposed to in the course of their education 	<ul style="list-style-type: none"> • Over the past five years, iLab has become a standard part of upper level course 6 subjects and is now part of the introductory sequence. MIT iLabs in microelectronics, chemical engineering, and polymer crystallization, structural engineering, signal processing, etc. as case studies. U.S., 	<ul style="list-style-type: none"> • Offering lab courses online • Creating worldwide communities of scholars and researchers created around labs sharing educational content • Order of magnitude more lab experiences • More lab time to users/researchers

			Australia, China, India, Africa: iLabs Consortium •	<ul style="list-style-type: none"> • More sophisticated labs available • Communities of scholars created around iLabs Sharing educational & research content •
Mathlets	<p>Visualizations for teaching and learning differential equations</p> <p>http://math.mit.edu/mathlets/ http://oeit.mit.edu/gallery/projects/mathlets</p>	<ul style="list-style-type: none"> • Promote deep understanding and transfer of mathematical concepts • Can be used both for lecture demonstrations and homework assignments 	<ul style="list-style-type: none"> • 18.03 Differential Equations (Mathematics) • 8.07 Electromagnetism II (Physics) • 16.90 Computational Methods in Aerospace Engineering (AeroAstro) <p>http://keep.mit.edu/toolkit/html/snapshot.php?id=74823297909296</p>	<ul style="list-style-type: none"> • Possible use at other MIT departments • Creating more educational activities and support resources around Mathlets and problem sets
STAR	<p>Software Tools for Academics and Researchers (STAR) is a suite of research and visualization tools created at OEIT to enhance learning for MIT students and others.</p> <p>http://keep.mit.edu/toolkit/html/snapshot.php?id=3585435276465</p>	<ul style="list-style-type: none"> • Expose students to discovery aspect of research and to the processes of doing research • Bridge the divide between the research laboratory and the classroom using interactive technology 	<ul style="list-style-type: none"> • 7.012 Introductory Biology • 7.03 Genetics • The total number worldwide, estimated at 1,500–1,800 in 2009 (1,000 of whom are MIT students), has increased to almost 6,000. 	<ul style="list-style-type: none"> • Integrating STAR-enabled learning activities into online courses • Creating online communities of users (instructors and students) to share and build on their experiences in using the STAR Tools
NB	<p>NB is an annotation tool developed by the Haystack Group at CSAIL. Students and</p>	<ul style="list-style-type: none"> • Enable instructors and students to asynchronously interact with text in various contexts of 	<ul style="list-style-type: none"> • NB has been used in classes at MIT since February 2009. • Sandbox is being provided 	<ul style="list-style-type: none"> • Allow better use of OCW materials • Creating collaborative

	Faculty can use NB to annotate arbitrary PDF files online, in a collaborative fashion. http://nb.csail.mit.edu/	teaching and learning	for demo/test use.	learning activities taking advantage of the features of NB
Spoken Media Browser	SMB increases the effectiveness of web-based lecture media by improving the search and discoverability of relevant media segments and enabling users to create rich media notebooks in which they interact with media segments in educationally relevant ways. http://oeit.mit.edu/spokenmedia/	<ul style="list-style-type: none"> • Increase the effectiveness of web-based lecture media by improving the search and discoverability of relevant media segments and enabling users to create rich media notebooks 	<ul style="list-style-type: none"> • Providing automatic lecture transcription, video player with a video-linked transcript (and other interactive features), and transcript editor. • Several videos have been processed and made available via SMB. 	<ul style="list-style-type: none"> • Enhance the use of OCW lecture videos and other educational videos at MIT (Personalization; deeper learning; leveraging across courses)
Video Services	The Video Services Portal covers a range of topics, including: <ul style="list-style-type: none"> • Incorporating video in an MIT website • Purchasing or renting video equipment • Making videos accessible using subtitles and transcripts • Uploading videos to MIT Tech TV, YouTube, or other sites http://web.mit.edu/teachtech/video-overview/index.html	<ul style="list-style-type: none"> • Deliver distance education via recorded lecture videos (with possible integration of lecture slides and annotations) and video conferencing 		
Mastering Physics (CyberTutor)	CyberTutor is an online interactive personal tutor. It presents students with multi-part	<ul style="list-style-type: none"> • Promote mastery, personalized self-learning • Enable a large number of 	<ul style="list-style-type: none"> • 8.01X Physics I • Used by over 2,000 students in college and AP high 	<ul style="list-style-type: none"> • Transform OCW course materials into mastery, self-learnable online

	<p>problems that can require free-response answers such as analytic, numerical, or fill in the blank answers. It offers hints and simpler sub-problems on request, and spontaneous responses to incorrect answers of all types.</p> <p>http://rlewebserver.mit.edu/media/pr145/13.pdf</p>	<p>students to learn online</p>	<p>school classes (2000-2003)</p> <ul style="list-style-type: none"> • Commercialized by Pearson <p>http://relate.mit.edu/relassess.pdf</p> <p>http://tech.mit.edu/V120/N42/42class.42n.html</p>	<p>courses</p>
Math CI	<p>The Math-CI Space is an online community where instructors of communication-intensive courses in mathematics can share materials and actively discuss teaching ideas.</p> <p>http://oeit.mit.edu/gallery/projects/mit-math-ci-space</p>	<ul style="list-style-type: none"> • Promote pedagogical knowledge sharing • Engage and support a community of instructors of communication-intensive courses • Facilitate archiving course materials and the gleaning of "good practices" for these courses 	<ul style="list-style-type: none"> • Being used by the entire Math Department 	<ul style="list-style-type: none"> • Possible use at other MIT departments and beyond (w/ ongoing NSF-funded effort to develop a more generic system)