

Emerging Technologies: Definitions and Applications

Web 2.0 Applications – Tools that are strictly web-based, typically free to the user, support collaboration and interaction, and are responsive to the user.

Low Threshold Applications (LTA) - A Low Threshold Application (LTA) is a teaching/learning application of information technology that is reliable, accessible, easy to learn, non-intimidating and (incrementally) inexpensive. Each LTA has observable positive consequences, and contributes to important long term changes in teaching and/or learning. "... the potential user (teacher or learner) perceives an LTA as NOT challenging, not intimidating, not requiring a lot of additional work or new thinking. LTAs... are also 'low-threshold' in the sense of having low INCREMENTAL costs for purchase, training, support, and maintenance." - Steve Gilbert, TLT Group.

| Technology | Definition | Application: Learner | Application: Instructor | Example | Tool/Resource |
|------------|--|---|--|---|---|
| Audioblogs | Blogs, or weblogs, that are enriched by audio files. | Communicate, illustrate, reflection, journaling, peer critique | Communicate, provide feedback, assess | Spooky Projects - http://todbot.com/blog/spookyarduino/ Edupodder weblog - http://weblog.edupodder.com/ Learning English as a Second Language - http://eslfun.podbean.com/ Learning German - http://learninggerman.mschubertberlin.de/podblog/index.php | Text America - http://www.textamerica.com/ Audio Blogger - http://www.audioblogger.com/ Audio Blog - http://www.audioblog.com/ YackCast - http://www.yackcasting.com/ SkypeCasters - http://www.skypejournal.com/blog/archives/2004/12/skype_podcast_r.php |
| Blogs | A weblog, which is usually referred to as blog, is a type of website where entries are made (as in a journal or diary) and displayed in a reverse chronological order. | Writing, critiquing, sharing, collaborating, providing feedback | Critiquing, presenting, reviewing, assessing, providing feedback, observe work | Intro to Interactive Communication - http://501.halavais.net/ http://btmm0371.blogspot.com/2006/11/video-blog-trial-run.html CyberOne - http://blogs.law.harvard.edu/cyberone/administration/syllabus Edublog 2006 award winners - http://incsub.org/awards/2006/the-edublog-awards-2006-winners/ | Blogger - http://www.blogger.com/home Class Blogmeister - http://classblogmeister.com/ Notemesh - http://www.notemesh.com/ WordPress - http://wordpress.com/ |
| Clickers | Formally known as Personal Response Systems, an audience responds to an instructor's presentation delivered through technology using wireless devices. Their responses are then captured by the presentation device, aggregated and displayed. | Provide feedback, communicate information, reflect | Poll, survey, check for understanding, provide feedback, assess comprehension | HE applications by Chris Johnson - http://cte.asu.edu/wakonse/ENewsletter/studentresponse_idea.htm Wake Forest Writing Assignment - http://imej.wfu.edu/articles/1999/1/07/index.asp | i•clickers - http://www.iclicker.com/ Turning Technologies - http://www.turningtechnologies.com/ |

| Technology | Definition | Application: Learner | Application: Instructor | Example | Tool/Resource |
|--------------------------------------|---|---|---|--|--|
| Collaborative Editing/ Writing Tools | The terms collaborative writing and peer collaboration refer to projects where multiple people create written works together (collaboratively), rather than individually. Some projects are overseen by an editor or editorial team, but many grow without any top-down oversight. | Writing, collaborating, publishing, taking notes, editing | Reviewing, assessing, facilitating, observe work, providing scaffolding | Teaching wiki (ideas for teachers) - http://teachingwiki.org/default.aspx/TeachingWiki/MyHomePage.html New Worlds Project - http://en.wikipedia.org/wiki/New_Worlds_Project | Google Docs- http://docs.google.com Social Text - http://www.socialtext.com/ Group Scribbles - http://groupscribbles.sri.com/ stu.dicio.us - http://stu.dicio.us/ Wizlite - http://wizlite.com/ |
| ePortfolio | ePortfolios are a digital compilation that presents accomplishments, products, experiences, reflections, etc. over a specific period of time and/or experience (e.g., a degree program). | Communicate, demonstrate, reflection, journaling, review materials, peer critique | Provide feedback, check for understanding, assess, review, assign value to student work, advise | Donna Reiss Course Portfolio Assignment - http://www.wordsworth2.net/webfolio/webfolioedu.htm Pre-law - http://academic.udayton.edu/prelaw/ASI_syllabus.doc | ePortfolio Consortium - http://www.eportconsortium.org/ Open Source - http://www.osportfolio.org/ Helen Barrett's Resources - http://electronicportfolios.com/ |
| IM-Type Tools | Instant messaging (IM) is a form of real-time communication between two or more people based on typed text. The text is conveyed via computers connected over a network such as the Internet. | Collect data, exchange data, communicate, collaborate with others | Communicate, provide feedback, counsel, advise, interact with multiple student at one time | ESL - http://innovateonline.info/index.php?view=article&id=170 General applications - http://naweb.unb.ca/proceedings/2003/PartnerFarmer.html | Buddy Space - http://kmi.open.ac.uk/projects/buddyspace/ Gabbly - http://gabbly.com/ Language Exchange - http://www.language-exchanges.org/ My Language Exchange - http://www.mylanguageexchange.com/Search.asp |
| Learning Objects | Learning objects (LOs) are digital resources, uniquely identified and metatagged that can be used to support learning or any digital resource that can be reused to support learning (Wiley) or any entity, digital or non-digital, that may be used for learning, education or training. | Practice, experiment, review material | Lecture, demonstrate, present information | Maricopa Learning eXchange - http://www.mcli.dist.maricopa.edu/mlx | Ariadne - http://www.ariadne-eu.org/ Connexions - http://cnx.org/ Lola - http://www.lolaexchange.org/ Merlot - http://www.merlot.org/ |

| Technology | Definition | Application: Learner | Application: Instructor | Example | Tool |
|------------|--|--|---|--|---|
| Mashups | A mashup is a website or Web 2.0 application that uses content from more than one source to create a completely new service. Mapping mashups use online mapping services, such as those offered by Google or Yahoo, to display customized, clickable markers showing points of interest and related information. | Collect information, identifying useful information, organize information, communicate information | Present information, observe student work, assess | Nestoria - http://www.webmashup.com/cgi-bin/jump.cgi?ID=132 Sailtimer - http://www.motionparallax.com/TCDVDs/4versions/SailTimer.html Global incident map - http://www.globalincidentmap.com/home.php Bableplex - http://babelplex.com/googleajaxhp Flickr Sudoku - http://flickrsudoku.com/ | Flickr - http://www.flickr.com/ Air Tight Interactive - http://www.airtightinteractive.com/ Google Earth - http://www.earthblog.com/ |
| Podcasts | Podcasts use audio or video files that can be streamed or downloaded to mobile devices or computers. | Identify useful/valuable information; listen or view; communicate, demonstrate | Lecture, communicate, demonstrate | Berkeley - http://webcast.berkeley.edu/courses/feeds.php | Education Podcast Network - http://epnweb.org/index.php Podcasts - http://www.gizmodo.com/gadgets/portable-media/ipod/podsites-029408.php |
| iTunes U | iTunes U is in the iTunes Store and is devoted entirely to education. Here, students can search thousands of audio and video files from schools across the country. Colleges and universities build their own iTunes U sites. | Faculty post content they create for their classes. Students download what they need, and go. | Present information, observe student work, assess, lecture, demonstrate | Stanford iTunes U: http://itunes.stanford.edu/ Berkeley iTunes U: http://itunes.berkeley.edu/ MIT iTunes U: http://web.mit.edu/itunesu/ Penn State iTunes U: https://itunes.psu.edu/ ASU iTunes U: http://www.asu.edu/itunes/ | iTunes U: http://www.apple.com/education/itunesu/ |
| RSS | Really Simple Syndication (RSS) is a lightweight XML format designed for sharing headlines and other Web content. Think of it as a distributable <i>What's New</i> for your site. | Document, manage and organize information | Manage information | A Quick guide for Educators - http://weblogg-ed.com/wp-content/uploads/2006/05/RSSFAQ4.pdf MIT Opencourseware RSS Feeds - http://ocw.mit.edu/OcwWeb/Global/OCWHELP/rssfeeds.htm | RSS Readers - http://allrss.com/rssreaders.html |

| Technology | Definition | Application: Learner | Application: Instructor | Example | Tool |
|---------------------------------|---|---|--|---|--|
| Social Bookmarking | Social bookmarking (SB) is a web based service, where shared lists of user-created Internet bookmarks are displayed organized through meta tags so that information can be quickly and accurately displayed. Folksonomy is one outcome of SB as users self-determine the meaning of what they know. | Communicate, identify useful/valuable information, search for information | Communicate, present information | Towards a Managed Social Book marking Environment in Higher Education - http://blogs.open.ac.uk/Maths/ajh59/005107.html | Carmun - http://www.carmun.com/ Del.icio.us - http://del.icio.us/ Bubbleshare - http://www.bubbleshare.com/ Folksonomy - http://en.wikipedia.org/wiki/Folksonomy Furl - http://www.furl.net/ |
| Virtual Communities of Practice | Virtual Communities of Practice (VCOP) are technology-mediated communities in which people with shared interest participate in activities around a subject, problem, or event over a period of time as a strategy to draw conclusions, solve problems, learn, and make innovative changes. | Communicate, present, solve problems, practice, rehearse | Facilitate group work, scaffold, model, interact with multiple student at one time, scaffold, mentor, model, lead discussion | CLII (HE educators) – Engineering - https://cop.asme.org/COP_Engineers_CoP The Well - http://www.well.com/ | Edu 2.0- http://www.edu20.org/home Elgg - http://elgg.net/ Opencourse - http://opencourse.org/ Epsilen - http://www.epsilen.com/ Live Journal - http://www.livejournal.com/ |
| Virtual Learning Worlds | Virtual Learning Worlds are a multi-user virtual online environment that is structured for learning, but allows the learner to alter and manipulate elements in the environment, within social and structural organization. | Communicate, demonstrate, present, lead discussion, facilitate group work, collaborate, perform, create | Interact with multiple student at one time, lead discussion, observe student work, model, demonstrate, | Active Worlds - http://www.activeworlds.com/edu/index.asp Virtual-U (HE) - http://www.virtual-u.org/ | Croquet - http://www.opencroquet.org/ Cybertown - http://www.cybertown.com/main_nsfra_mes.html Second Life - http://secondlife.com; http://www.secondlifeinsider.com/ Entropia - http://www.entropiauniverse.com/ The Manor - http://www.madwolfsw.com/ |

| Technology | Definition | Application: Learner | Application: Instructor | Example | Tool |
|---------------|--|--|--|---|--|
| Videocasts | Video downloads through various technologies including portable players, computers, and/or phones. | Communicate, demonstrate, identify useful/valuable information; listen or view; communicate, demonstrate | Lecture, communicate, demonstrate | Captioned Chemistry -Dartmouth_ - http://www.dartmouth.edu/~acskills/videos/video_chemcap.html Captioned Notetaking – Dartmouth http://www.dartmouth.edu/~acskills/videos/video_ntcap.html Teacher Education – INTIME - http://www.intime.uni.edu/about/New_about/overview.html | Crowdabout - http://crowdabout.us/ Expert Village - http://www.expertvillage.com/ iTunes U - http://www.apple.com/education/itunesu/ Ted - http://www.ted.com/index.php/ Videojug - http://www.videojug.com/ |
| Visualization | Representation of abstract ideas or real data to illustrate an/or demonstrate the relationship of pieces of information. | Analyze, communicate, present information; make presentations | Communicate; demonstrate; present information | Dr.Mohamed Taher's Visual Resume_ - http://www.geocities.com/drmtaher//TimelineVisualization.htm Ground Zero Planner – http://www.gothamgazette.com/rebuilding_nyc/groundzeroplanner/# Edward Tufte - theory_ - http://www.edwardtufte.com/tufte/index Public Policy Games - http://www.socialimpactgames.com/modules.php?op=modload&name=News&file=index&catid=13&topic=&allstories=1 | Gapminder - http://tools.google.com/gapminder/ Imagination - http://www.imaginationcubed.com/LaunchPage CubedKartoo - http://www.kartoo.com/_Slide_ - http://www.slide.com/ SlideShare - http://www.slideshare.net/_Viddler_ - http://www.viddler.com/ Vimeo - http://www.vimeo.com/ <i>See Mashups</i> |
| Vlogging | Aa blog that includes video | Communicate, create, demonstrate, organize information | Communicate, demonstrate, present information | Advanced Food Service - http://service.podbean.com/ The Main who was Thursday Project http://www.johnherman.org/theeye/ UN Vlog - http://www.unvlog.org/ | How to Vlog - http://node101.org/ Vlogmap Community - http://tech.groups.yahoo.com/group/videoblogging/ |
| WebCams | A webcam is a real-time camera whose images can be accessed using the Internet instant messaging, or a computer video application. | Communicate, collaborate, practice, rehearse, perform | Communicate, present information, provide feedback to students, counsel, advice, mentor, observe | Geography - http://www.digitalgeography.co.uk/archive/s/2006/10/uses-for-a-webcam/ MSU Viewpoint - http://dev.clear.msu.edu/viewpoint/ | Flash meeting - http://www.flashmeeting.com/ |

| Technology | Definition | Application: Learner | Application: Instructor | Example | Tool |
|------------|--|--------------------------------------|--|---|--|
| Wikis | A wiki is a type of website that allows users to easily add, remove, or otherwise edit and change some available content, sometimes without the need for registration. | Publishing, journaling, taking notes | Reviewing, assessing, providing feedback, observe work | AI on the Web - http://www.mindswap.org/webai/2002/fall/FrontPage.html User Interface - http://vis.berkeley.edu/courses/cs160-fa06/wiki/index.php/Main_Page What can you do with a wiki? http://blog.experiencecurve.com/archives/uncommon-uses-what-can-you-do-with-a-wiki | Teaching Wiki - http://teachingwiki.org/default.aspx/TeachingWiki/MyHomePage.html Wikispaces - http://www.wikispaces.com/ WikiHow - http://www.wikihow.com/ |

References

An Introduction to Learning Objects - <http://www.uwm.edu/Dept/CIE/AOP/learningobjects.html>

Clicker comparisons - <http://elearning.angelo.edu/clickers/compare.htm>

EDUCAUSE Learning Initiative - <http://www.educause.edu/eli>

EDUCAUSE Emerging Practices - <http://www.educause.edu//EmergingPracticesandLearningTechnologies/5673>

EduTools - <http://www.edutools.info/index.jsp?pj=1>

IEEE - <http://www.ieee.org/portal/site>

MIT's Personal Technology - <http://www.technologyreview.com/special/personal/index.aspx>

Podbean - <http://www.podbean.com/podcast-category>

Wikipedia - <http://www.wikipedia.org/>