

This is a "toolbox" of processes and tools that will be essential for the design of instruction within a distance education program. A brief reflective analysis of the application of each tool or process is included.

Carolyn's Recommended WBT Toolbox

This toolbox is put together based on the Khan's readings, web research and personal experience. The tool categories are organized into the following topics:

- Networking Infrastructure
- Site/Interface Design
- Courseware Delivery System
- Organization & Planning Strategies
- Communication Tools
- Research Tools – Resource links & informative sites for latest technology, best practices, etc

NETWORK INFRASTRUCTURE (Khan, p.272-273)	Bandwidth Criteria – Instructors must utilize technology to enhance or facilitate learning process by selecting the best bandwidth strategy of data delivery. Learning (attention, motivation and comprehension) can be inhibited when there is a slow download of courseware content.		
	Tool	Function	Analysis
	1. Pre-distribution Strategies	Course information is distributed in the form of printed materials, CD-ROMS/DVDs, and audio/video tapes, prior to the start of classes. Works best in hybrid courses.	Advantage - Avoid having to deal with delay in bandwidth issues Disadvantage – Difficult to change course material in the midst of classes Lots of prep time needed to prepare material
	2. Parsing Strategies	Utilizes or present only data that is needed for instruction.	Data is broken down to smaller pieces that can help meet instructional goals for particular courses and can be a cost saver. Extraneous data is removed.
	3. Choreographic Strategies	Deals with the order in which training is delivered – Example in live streaming techniques (video/visuals) while learners are reading text, image/video data is loaded at the same time.	Delays of bandwidth may not be noticeable while learner is preoccupied with reading text.

Target audience analysis for all types of learners (including ADA requirements) and content development must be taken into consideration during the web page design process. Along with design, copyright issues must also be taken into consideration.

Design Resources:

Horton & Lynch <http://www.webstyleguide.com/site/index.html>

Mundi Designs - <http://www.mundidesign.com/presentation/index2.html>

Website Accessibility Information - <http://www.w3.org/TR/WAI-WEBCONTENT/>

Copyright Resources:

Copyright & Ethical Issues in Design <http://www.copyrightlaws.com/>

Copyrights Explained <http://www.cruising.org.uk/copyright2.htm>

Copyright Permission Form

http://usfweb.usf.edu/usfgc/gc_pp/genadm/Fm105.htm

<http://www.edu-cyberpg.com/Technology/permissionform.html>

Tool	Function	Analysis
Site plan (organizational framework of a site) and storyboarding	A blueprint that helps with content arrangement before the actual design takes place. Storyboarding helps with brainstorming of site plans and page layouts.	A well plan site spells out good organization. This will give the audience clarity and experience, thus avoid confusion
Design learner objectives	Begin with course objectives and lesson outline	Audience will know what to expect from the course (Conrad, 2000)
Page consistencies, information placement (example – navigation systems)	Use of page layout grid, colors, type and navigation systems must look the same on every page	Consistencies help the audience quickly adapt to course navigation & information (Lynch & Horton, 2002)
File size Considerations	Determine the size of data type to be used on the site	Slower connections inhibiting the transfer of content which will result in learner frustrations
Visual Design Criteria	Design application on web page layout – such as color application, use of fonts, and backgrounds. (See Horton & Lynch for detailed info)	Good use of organized visuals can enhance the learning process. Learners will not be distracted with obtrusive use of colors or font types
Interactivity elements	Very important part of WBT. Learners will be interacting and engaging with content to enhance learning process.	Great for tracking learner progress and performance

COURSEWARE DELIVERY SYSTEM

There are many types of course management tools available to help enhance WBT. A comparative analysis of the what each courseware tool offers can be viewed from the following sites

- <http://www.edutools.info/>
- <http://www.marshall.edu/it/cit/webct/compare/comparison.html>

Course management tools that are currently meet accessibility guidelines

<http://www.techdis.ac.uk/resources/VLE001.html>

Tool	Function	Analysis
Course management tools	Offers (1) administrative functions – student tracking, activities, grading process; (2) Content creation & delivery – example: file management of instructional material, quizzes & exams, surveys for formative and summative evaluation for course feedback; (3) Asynchronous & synchronous form of communication between instructor/students – email, discussion board, whiteboard, chats etc.	Learning curve for both instructors and students can be overwhelming. Time is needed to learn how to work the functions of the Course Management Tool. However, once learned, a robust system is productive in administration process, course delivery and evaluation – a great time and cost saver

ORGANIZATION & PLANNING STRATEGIES (Khan, p321-324)

Utilizing the concept of Project Support Sites (PPS) as a management and organization tool for constructing Web-Based Training can help establish a better teamwork collaboration

Tool	Function	Analysis
Project Support Sites (PPS)	One stop informational resource site where a manager, or WBT team member can access information such as project notes, proposals, design standards, graphics, media, document or any other information pertaining to the development status of an ongoing WBT project. Additional information such as project and task delivery deadlines, meeting times & locations may be included as part of the management features	Excellent communication & team collaboration tool for any WBT Team. Members get to know what is going on within the program. Potential issues can be taken care immediately

Incorporate the right type of communication tools for a WBT environment for enhancing interaction.

Tool	Function	Analysis
Electronic mail	Delivery of course material, assignments and projects, student-instructor feedbacks, and personal concerns	Effective asynchronous communication tool between instructors & learners.
Discussion boards/forums	Asynchronous communication for use of special topic discussion and class participation	Learners and instructor can log in at anytime to participate in the online class at their convenience. Instructor can analyze or assess learner's understanding of course objectives based on Q&A sessions or forums
Synchronous tools such as chat programs (IRC) and phone conferences	Real time communication or chat	Offers solutions where a problem has to be taken care immediately
Intranet networking within corporations	Material distribution on in-house training for employees	Allows personal/private training on content distribution without having to worry about security issues
Informatics	Use of library resources, online databases, and search engines for research	Great resource and application for learners to pursue research material and additional course content

Institutions and organizations offering WBT courses must research and evaluate tools that have been used based on environmental type, teaching strategies, learning styles, and assessment tools for online delivery (Ehrmann, n.d.). Reasons for success or failure based on past experiences must be noted to help prevent future losses of revenue and time investments while selecting the right delivery systems. Many resources to help with WBT challenges are available online. Example:

- ASTD E-Learning (Online Training Development – Strategies, tips etc)
<http://www.learningcircuits.org/>
- Brandon Hall (Info on latest trends, vendors, training methods, best practices, etc)
<http://www.brandon-hall.com/>
- Chronicle of Higher Education (Information on Education systems and current development for higher Ed)
<http://chronicle.com/distance/>
- E-Learning Guild (offers online training sessions; Stats and research site provides info on latest e-learning styles, training methods, and best practices)
<http://www.elearningguild.com/>
- Evaluation Tools (Resource for Project Evaluations Samples in Analysis, Design, Production, Evaluation and Management)
http://mime1.marc.gatech.edu/MM_Tools/
- Industry Standard Archives (Latest Internet & Technology Standards)
<http://www.thestandard.com/>
- Theory & Instructional Design Models
http://carbon.cudenver.edu/~mryder/itc_data/idmodels.html
- W3C.org (Latest information on Web specifications, guidelines, software, and tools)
<http://www.w3c.org/>

References

Conrad, K. & TrainingLinks, (2000). *Instructional design*. Amherst, Massachusetts: HRD Press.

Ehrmann, S.C. (n.d.) *Asking the right question: What does research tell us about technology and higher learning?*

Retrieved October 30, 2004, from

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<http://www.ericfacility.net/ericdigests/ed395214.html>

Khan, B. (2001). *Web-Based training*. Englewood Cliffs, New Jersey: Educational Technology Publications, Inc.

Lynch & Horton. (2002) *Web style guide*. Retrieved October 30, 2004, from

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