

Creating an Educational Website: Guidelines for Technology Leaders©

Gerald D. Bailey
College of Education
Bluemont Hall 303
College of Education
Kansas State University
Manhattan, Kansas 66506
(913) 432-5847
(913) 532-73.04 - Fax
jbailey@coe.educ.ksu.edu
<http://www.educ.ksu.edu/go/bailey>

Randy Bagby
Blue Valley School District USD 384
One Ram Way - Box 98
Randolph, KS 66554
(913) 293-5256
(913) 293-56.07 - Fax
rbagby@kansas.net

1. Define Purpose and Audience

Ask the Question: "What do we want to accomplish in this Website?"

Find your unique Website niche.

Don't duplicate what someone else has done unless you have something different to offer. Find a reason for building a Website that goes beyond your own interests. Don't build a Website for your own self-gratification.

Have a definite purpose for building a Website.

As of April 1997, there are 150 million web pages now in existence and we can expect a billion Web pages by 2000. Keep in mind that "substance is more important than the glitter." We don't need more electronic chalk in cyberspace.

Identify your audience(s).

Are they local, state, national, and/or international? Speak to them directly. Find out what they want and need. Find out what will keep them coming back and using your site.

Define the purposes for various Websites.

Purposes include, but are not restricted to the following themes:

- a. Communication and Public Relations,
- b. Sharing Curriculum Resources,
- c. Sharing Student Products
- d. Providing and Facilitating Professional Development, and
- e. Sharing Student Interests/Products.

The following categories can be used to identify educational Websites:

- a. Personal Home page,
- b. District Website,
- c. Building Website,
- d. Professional Organization,
- e. Educational Jumpsite,
- f. Curriculum Website,
- g. Staff Development Website,
- h. Student Home Pages.

"Where does ours fit?" "Is our Website something different than the categories listed above?" Ask other questions: "what is our "big picture" purpose?" Not just "here we are, take a look," but "what do we offer?" what do we contribute? and how can we interact?"

Frame Website construction in the context of information literacy. That is, the creation of Website is the highest form of information literacy, and without the foundational steps of information literacy, the Website is merely *an* electronic missile ready to explode or land without impact.

Information Literacy can be defined as identifying, accessing, applying, and creating information. Specific steps are (a) identifying the right question(s), (b) organizing your search, (c) selecting the appropriate search tools (e.g. search engines), (d) analyzing the resources (sites), (e) analyzing, sorting, sifting information, and (f) generating a product or creating new information. Thus, Website construction is one of the highest forms of information literacy, or it can be an orphan of information looking for a question that someone needs to answer.

Creating Websites involves more than creating text and Information Literacy (IL) involves more than absorbing text. IL is comprised of text, audio, video, and graphics. When combined, they become new forms of information to be learned and mastered for communication purposes. Websites are more than text with enticing “eye candy” made up of flashy graphics, blurbs of video, and sound bites.

Interestingly, we don’t have a verb like “read” (e.g., to read a book) that embraces all of these media in the communication process. As verbs, “watch” or “hear” do not embrace the total communication process that occurs in some of our very best Websites. The verbs absorb, occupy, consume, and engulf are all applicable for describing the interaction between Website information with users. In the near future, we will interact with Websites that incorporate various media in very unique formats.

2. Select and Analyze Educational Website Formats As a Method of Preplanning Your Websites

Find sites that interest you and study them. Ask the following questions: “What do they want to accomplish with their Website?” Avoid selecting sites that merely get your attention with “eye candy.” Take the time to consume the information that the site has to offer. Ask the question, “what does this site contribute in terms of information, functional worth, interaction with consumers, and to our purpose?”

Ask: “Does the site link me to other useful information?” “Does the site include a mechanism for informing me of how often it is updated?” “Does it provide the best information?” “Do the graphics represent the information?” “Is it curriculum-based, staff development based, public relations-based, etc.,?”

Benchmarking Your Website

What Websites can be used as a standard for our Website? Remember, there are a variety of Websites--other than district or building Websites. Benchmarking can be defined as studying and ranking sites using the highest possible standards--using the very best.

Benchmark your Website against school Websites, but consider other Websites as models. They include: (a) Informational Websites, (b) Personal Websites, (c) Advocacy Websites, (d) News Websites, and (e) Business/Marketing Websites. Benchmark your Website against the very best that you can find. Don’t benchmark your Website against educational-related Websites exclusively.

When you benchmark your prospective Website against other Websites, keep the following types or styles of Websites:

a. **Informational Websites.** An informational Website is one whose purpose is to present factual information. Examples would be dictionaries, directories, statistical data, presentations of research, etc. See Library of Congress at

<http://lcweb.loc.gov/homepage/>

The URL's frequently end with an **.edu** or **.gov** extension.

b. **Personal Website or Home Page.** A personal Home Page is one published by an individual who may **or may not be** affiliated with a larger institution. The URL addresses of the page may have a variety of extensions (e.g. , **.com** or **.edu**) An example:

<http://www.educ.ksu.edu/Faculty/BaileyGerald/html/baileyhp.html>

c. **Advocacy Website.** An advocacy Website is one sponsored by an organization attempting to influence public opinion. The URL address of the page frequently ends in **.org** (organization). For example: American Civil Liberties Union

<http://www.aclu.org/>

d. **News Website.** News Website is one with a primary purpose of providing extremely current information. Examples include USA Today, CNN, etc. See CNN Interactive at

<http://www.cnn.com.US/>

e. **Business/Marketing Website.** A business marketing Website is one sponsored by a commercial enterprise (usually it is a page trying to promote or sell products). The URL address of the page frequently includes the **.com** (commercial) extension. Examples include Coca Cola, Apple, IBM, Adobe, Claris, etc. See Apple at

<http://www.apple.com/>

3. Plan Your Website

The most attractive Website might be the most ineffective. The difficulty is that technologies are continually emerging. Limitations today may not be a consideration in the future. There are some constants (for now anyway) that are not effected by emerging technologies.

Artistic Intuitiveness

Provide a sense of the "unexpected." Keep them guessing what's going to happen next. Think in terms of a performance - much is expected, but what keeps the audience engaged is the unexpected. How many books have you ignored because of a poor title? How much music do you hear in a department store that you don't notice? Don't let your Website be mere "elevator music."

Relationships

It's a matter of design and a balance between design and information (content). With interactive technologies the site must engage the visitor into a relationship. Simply passing someone on the street offers nothing. If someone introduces themselves to you a relationship has been established, but is short lived without more content. At first, the relationship may only include knowing who each other is and where you met. The design of the Website is crucial if you want the relationship to get to the content. An effective Website makes a personal connection with the visitor. Your Website is fragile in the relationship. If you don't offer something, "click" and your gone.

Teaming

Use a team approach to building a Website. Technical skills, tech support skills, and content expertise are three major areas of team competencies. Support each other and learn from each other in the Website construction process. Teaming is a critical process in technology-based teams and technology leadership. Plan both content and structure of the Website.

The Plan

Plan how big a web site you want, and plan in advance what each page contains, and how all of the pages will link together.

- a. Content
 - aa. What information are you trying to convey?
 - bb. What is the central theme of the Website?
 - cc. What do you want people to do with your Website material?
 - dd. What are your expectations of visitors? (i.e., interact).
- b. Structure:
 - aa. text

What text is most important to convey?
 - bb. audio (sound)

What sound(s) will buttress the text message? *Will the audio communicate a another separate, but equally important message?*
 - cc. video

What video will buttress the text message?
Will the video communicate another separate but equally important message?
 - dd. graphics

What graphics will buttress the text message?
Will the graphics communicate another separate but equally important message?
 - ee. animation

What animation will buttress the text message? *Will the animation communicate*

another separate but equally important message?

How will you determine or find copyright free resources for your Website? (See "Keeping it Legal: Questions Arising out of Web Site Management" by Jamie McKenzie

<http://www.pacificrim.net/~mckenzie/jun96/legal.html>

Additional Resources include:

Bellingham Board Policy on Copyright

<http://www.bham.wednet.edu/policies.htm>

Ethics on the Net

<http://199.233.193.1/cybereng/ethics/>

Copyright links

<http://199.233.193.1/Sealab.html#copy>

NY Times article

<http://199.233.193.1/cybereng/nyt/ethics.htm>

Gather all the information before you begin construction. In this manner, you will help you stay organized during construction. Collecting the information is often the most time consuming aspect of constructing a Website. Identify sources of your information, and assemble it as text, graphic, video and sound files.

4. Construct Your Website

General Guidelines

Think about your Website as that--a Website. A Website has a homepage (first page or site map) and many web pages (information) contained and connected to other Websites. Your Website organization and planning should follow that line of development.

Be cautious about the current rules for Website creation (e.g., "Minimize graphics because this can slow the retrieval process"). This is good advice today, but will it be good advice in a few months or a year when this is no longer a major limitation? We are caught in a time warp. Current limitations and purest forms of information literacy are at odds with each other and this causes inherent contradictions in Website construction guidelines. Minimizing graphics seems like common sense because most Websites tend to be text-dominated because many browsers and computers are unable to handle memory consuming graphics, video, and audio. Rules for constructing Websites today can not and will not be the same rules to follow in the near future.

Many of the current education (learning or instructional) Websites appear to be built around "electronic activities" (e.g., electronic pen pals, telecomputing, games, competition(s)). An example would include Judi Harris's "Content and Intent Shape Function -- Designs for Web-based Education Telecomputing Activities" in Learning

and Leading with Technology, February 1997.

More Websites need to be undertaken in the spirit of “exploration,” “experimentation,” and “entrepreneurialship” with the goal of fostering information literacy. Creating activity-oriented Websites which are not tied to information literacy (even though, they are very sophisticated technology-based learning when compared to teacher-based instruction) will not lead to needed information literate learners of the 21st century.

Many of the “best examples” of education-related Websites are rooted in the old paradigm of specific curriculum outcomes, competencies (i.e., the existing curriculum) while much of the Website construction forms of the future needs to engage students in constructivist learning. Our Websites need to become interactive and Website construction should focus on transformational learning and information literacy--not “electrifying what we have done in the past.” Basic literacy considerations tend to dominate the total curriculum spectrum. In light of what we know about the explosion of information, can we find room in our “bloated curriculum” to integrate information literacy concepts?

You don’t need to be a “technocrat”, “technology buff,” or “wirehead” to build a good Website. Website construction is not totally dependent on knowledge of html (hypertext markup language). While knowledge of html is important, it will become less important and will be replaced with other applications which use language that will be invisible to most Web users and creators.

Specific Guidelines (Not Rules)

Content

- Put as much content towards the top of a hierarchy as is possible.
- Provide useful content on each page seen by our audience.
- Provide value that gets people to add your offering to their bookmark list.
- Provide only necessary text.
- Provide “context” links to satisfy a range of audience needs.
- Provide clues to the dynamic nature of your content.
- Don’t assume that all your readers will use the same browser features and defaults as you do.

Links

- Write about your subject as if there were no links in the text.
- Choose meaningful words or phrases to introduce links.
- Choose an appropriate length for the narrative about the link.
- Create context for a link that you are offering.
- Choose your links so they support your sentence a concept structure.
- Try to match the link text that someone clicks on with the title of the resulting page.
- Highlight text that is different.
- Don’t change text link colors.

Page Length

- Don't make the page longer than the window (presentations that must grab people's attention to be successful).
- Some content must be presented in one screen because the user cannot tell if there's more to be seen below the edge of the window.
- If you need to present short, clearly segmented chunks of information, you should try to keep your pages short so people won't miss things that fall off the end of the page.
- If your pages present text that people will want to read at length, it's permissible to use longer, scrolling pages.
- As a general rule of thumb, try to make the majority of your pages no longer than one-and-a-half screenfuls of text, and you will probably not get into too much trouble.
- For printing or saving, provide a separate link to a complete document.
- Use shorter pages to make your web more maintainable.

Graphics

- Use graphics critical to the information content of your page.
- Limit large images used solely for visual appeal.
- Keep the total size of all images used on a page to less than 30K.
- Use available technology tricks to minimize content access time.
- Avoid message-critical JPEG images if you want the largest possible audience.
- Warn the audience if a link leads to a large graphic.
- Minimize the number of colors being used in a single image.
- If you're going to use many images close together on a page, include alternate text for each image.
- Use images with transparent backgrounds to better integrate your images.
- Don't use graphics referenced from another site.
- Use graphical bullets for a purpose, not because they look "neat."
- Use graphical divider bars sparingly.
- Use a small set of bullets or accent graphics repeatedly, rather than using a large number only once each.
- Be careful to use complementary background images to your message.
- Understand the pitfalls of changing the default text color for a page.
- Preview your images on several hardware and browser combinations.

The two most common file formats for images on the Internet are .gif and .jpg (jpeg). .gif works best for non-photographic, cartoon type images constructed of few colors using wide swatches of color. .jpeg works best for images with higher color counts and heavy patterns (e.g., photographs).

Graphic Resources:

Paintshop Pro

<http://www.jasc.com/psp.html>

Paint Shop Pro techniques and tips page

<http://www.jasc.com/tips.html>

GIF Construction Set by Alchemy Mind Works'

<http://www.mindworkshop.com/alchemy/gifcon.html>

How Many Graphics Should I Use?

This is a question of aesthetics, but use as many as you need. For now, attention is needed to the aggregate size of the images; download time is the crucial point to be made.

To figure out a page's download time sum up the size of the document and then add the sizes of all the images used (only count an image once if used several times in a document). This total is the aggregate size of the document - the number of bytes that are transferred to a browser for viewing.

Although many users are connected to high speed Internet connections (1.544 megabits/second), most are using a 28,800 bits per second or slower modem. Each byte takes 10 bits to transfer (2,880 bytes per second).

Divide the aggregate size of your document by 2,880 for the number of seconds required to download your page.

Ask how long you would wait for a page to download?

28,800 bytes = 10 seconds,

57,600 bytes = 20 seconds,

172,800 bytes = 1 minute

Advice:

- Think lean with graphics.
- Reduce image colors and avoid dithering to keep sizes small.
- Break large pages into several smaller pages.
- Use audio and multimedia only when necessary.

Image Maps

- Clearly delineate the clickable regions in an image map.
- If possible, Make the clickable regions in an image map look like "buttons."
- Explain image-map ambiguities.
- Provide alternate text links elsewhere on the page for image-map destinations.

This is important in building a Website. Think in terms of structure so that people know where they are going. Anticipate your user's steps by thinking logical (better yet, intuitively) instead of creating an erroneous puzzle.

Navigation

- If you must use graphic navigation buttons, use “redundant” text labels as well.
- Supply alternate text for graphic navigation buttons.
- If appropriate, add a brief table of contents at the top of the page.
- Put a title header on each page.
- Choose the HTML title to reflect the textual page title.
- Choose a title that accurately summarizes the content of the page.
- Provide a search service (if possible)
- Include document and chapter headings on long, multi-part documents.
- Consider duplicating navigational headers at the bottom of your pages.
- Avoid “return to” or “back” buttons and links.
- Avoid using a palette of graphic navigation buttons.

Netiquette

- Don’t insult or flame people.
- Don’t publish copyrighted material without the permission of the owner.
- Don’t publish links to someone else’s pages unless you know that they want that exposure.
- Strive for elegance and clarity.

Select a Website application which is WYSIWYG-oriented (What You See Is What You Get). Claris Home Page is a WYSIWYG application. See [Claris Home Page User’s Guide](#) for more information.

5. Field Test Your Website

- Get 4 to 6 people to review your Website. Ask them specific questions: What is the central theme? What did you like most? least?
 - Test every link.
 - Verify your HTML syntax and construction.
 - Check your spelling.
 - Use grammatically correct sentences.
 - Write for all browsers (if possible).
 - If you use a “blink” feature, have a definite purpose.
 - Put a link leading to a comment mechanism on every page.
 - Respond to people who comment on your pages.
 - Make sure that all the information is organized the way that you planned it.

Avoid rushing to get the job done - be patient.

- Plan on many iterations of the Website and don’t upload until it’s exactly what you want.

- Make sure that your Website is friendly to other browsers. The message “Best if viewed with Netscape 3.0” is OK for Netscape 3.0 users, but yet another frustration to users of other browsers.

- Avoid the notorious “file not found error.”
- Make sure that all your links are current and correct. Since the life of Websites varies--check them often.

- Keep a journal. As your Website grows you will need notes to keep track of all the details of your links, concepts and purpose. This journal will be helpful in constructing future Websites, as it will managing updates.

6. Upload Your Website

- Don't upload a Website before it is ready for action.
- Avoid publishing a single page with links to pages that are under construction. This is annoying and discourages the beginning of a relationship (such as a bookmark).

There are many resources for getting your Website placed on a web server. Many schools have web servers for placing Websites. Some schools have Internet accounts with Internet service providers (ISPs) and it is common for ISPs to allow their customers to place Websites on their servers (check with your ISP for instructions).

7. Maintaining and Promoting the Website

Make sure that your Website is interactive and that it is easy for visitors to give you feedback.

Marketing your Website is closely related to design. As you publish with search engines, etc., use key words that capture your purpose and what you have to offer. Good titles work, but are not always enough to invite someone in. Think about the balance between design and content - words can be as much a part of the design as they are the content.

Don't become complacent with your first Website. Be on the lookout for advancements in WWW developments and be ready to consider other ways of thinking and refining your Website.

Include a "last updated" statement at the end of your Website. This not only offers visitors information about the how current your site is, but is an internal motivator for updating your Website on regular basis.

Plan your updates. A schedule of once per month, etc., will help decrease the tendency to "let it wait" and will aid in organizing the information for the updates.