

Outlining, Diagramming, & Storyboarding

Or How to Create Great Educational Web Sites

Presenting information on the Internet often seems straightforward—and probably is for the simplest sites. But great sites that both educate and inspire require considerable planning. The authors of this month's feature reveal the essential steps needed to transform simple information into a dynamic and enticing Web presence.

By Gerald D. Bailey and Marie Blythe

Creating an effective educational Web site is an exciting process, but teaching teachers and students how to do it is not as easy as many people believe. To create a good Web site, three basic conditions must be satisfied. The designer must (1) thoroughly understand the information that will be conveyed, (2) be skilled in organizing that information, and (3) adhere to the principles of good design. Quite frequently, these three elements—message, organization, and packaging—are not well balanced. As one novice said, “Too many Web sites look good without *being* good.”

For our purposes here, “looking good” means that the Web site offers a dazzling array of text, sound, graphics, and video. Unfortunately, too many sites stop at this point and focus on “bells and whistles” rather than message. “Being good while looking good” means that a site has substance, organization, and integrity in its information as well as bells and whistles. In other words, it balances content and delivery. More than likely, its designer has followed the three key steps we present here: outlining, diagramming, and storyboarding.

Two Assumptions

We make two critical assumptions about the creation of an educational Web site: (1) Its purpose is to present information, and (2) it will serve a specific audience.

Assumption 1. For teaching and learning, an educational Web site results from the process of “information literacy.” In other words, such a Web site is created with something more than a self-serving purpose—that is, it must present new information. We'll define information literacy here as a process of assembling information that did not exist before by (1) identifying the right question, (2) organizing a search, (3) selecting the appropriate search tool, (4) questioning information sources, (5) analyzing and synthesizing information, (6) creating new information (i.e., the Web site or a multimedia product), and (7) testing the information and identifying new questions. (For more information on information literacy and examples of the Web-site structures described here, check out the online supplement at <http://www.iste.org>.)

Serious, arduous, and painstaking

thought is required. Educational Web sites are the product of learning, not an activity that substitutes for learning. They are the vehicle by which information-literate people convey knowledge to others.

Assumption 2. There are many types of Web sites, including those dedicated to advocacy, business and marketing, news, reference, and personal interest. These are important and valuable, but they do not necessarily result from the process of information literacy identified previously. Depending on its purpose, each will differ in the type, organization, and packaging of information it presents.

Educational Web sites also must serve their own purpose, audience, and outcome—and the best and most effective of these are tied closely to the process of information literacy.

The process of creating an effective educational Web site has three separate but related steps: outlining, diagramming, and storyboarding.

Outlining

Organizing information for publication on a Web site is essential. Beginning Web-site creators,

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answer these key questions in journal

however, frequently forget about Step 1 in the entire process: making a basic content outline of their information.

An effective outline will summarize the information they have found by using headings and subheadings (see Figure 1), and it should answer five basic questions:

1. What main concepts will be found at the Web site?
2. What is a logical order for the information?
3. What are the main and secondary ideas and themes?
4. What does the user or reader need to know?
5. What would be good but not critical for the reader to know?

As Web site designers assemble their information, they can correlate various Web elements such as sounds, video, text, and graphics with content.

Some designers find the traditional content outline too sequential or linear and instead want to promote a freer flow of ideas. Inspiration Software by Engaging Minds may be more useful to these designers; the program is designed to stimulate the mindmapping process and thus generate major concepts and related ideas (see Figure 2).

Diagramming

As the content outline of the Web site unfolds, one main question arises: What kind of organization best suits this information?

This is Step 2 in the process: diagramming the Web site to develop the larger "picture." Five subordinate questions need to be answered:

1. What is the main question that the Web site will answer—and where should this information be placed?
2. What is the purpose of the Web site—and where should this information be placed?
3. Who is the intended audience (teachers, administrators, parents,

Outline

- A. Martin Luther King: The Man
- a. point/information 1
 - b. point/information 2
 - c. point/information 3
 1. minor-related point/information
 2. minor-related point/information

Links

Audio

Video

Graphics

- B. Civil Rights: The Movement
- a. point/information 1
 - b. point/information 2
 - c. point/information 3

Links

Audio

Video

Graphics

- C. Martin Luther King: The Legacy
- a. point/information 1
 - b. point/information 2
 1. minor-related point/information
 2. minor-related point/information
 - c. point/information 3

Links

Audio

Video

Graphics

- D. America and the Civil Rights Movement
- a. point/information 1
 - b. point/information 2
 - c. point/information 3
 - d. point/information 4
 - e. point/information 5
 1. minor-related point/information
 2. minor-related point/information

Links

Audio

Video

Graphics

Figure 1. Content outline for creating educational Web

this is my design scheme

students, community leaders, etc.) and what are its needs—and where should this information be placed?

4. What is the nature of the content (i.e., technical or conversational, complex or simple) and how will this influence the Web site's organization?
5. What are the natural connections between and among the concepts?

~~Three Major Designs~~ Web sites can be diagrammed as linear, hierarchical, or nonlinear.

1. Linear Web sites are sequential and designed like books (see Figure 3). They are excellent for presenting a series of steps or tracking a process from start to finish. This simple

design keeps users moving in a predetermined sequence, usually with clickable buttons that allow them to select their direction of travel: for example, "Next Page," "Previous Page," and "Back to Home Page."

2. Hierarchical (or tree-design) Web-site design uses a single home page as a table of contents for other pages at the site. In other words, it offers users more than one path and allows them to jump or branch from one point to other points in a site with the click of a mouse (see Figure 4). A hierarchical structure also can link one home page to different Web pages with related information, thus allowing people to

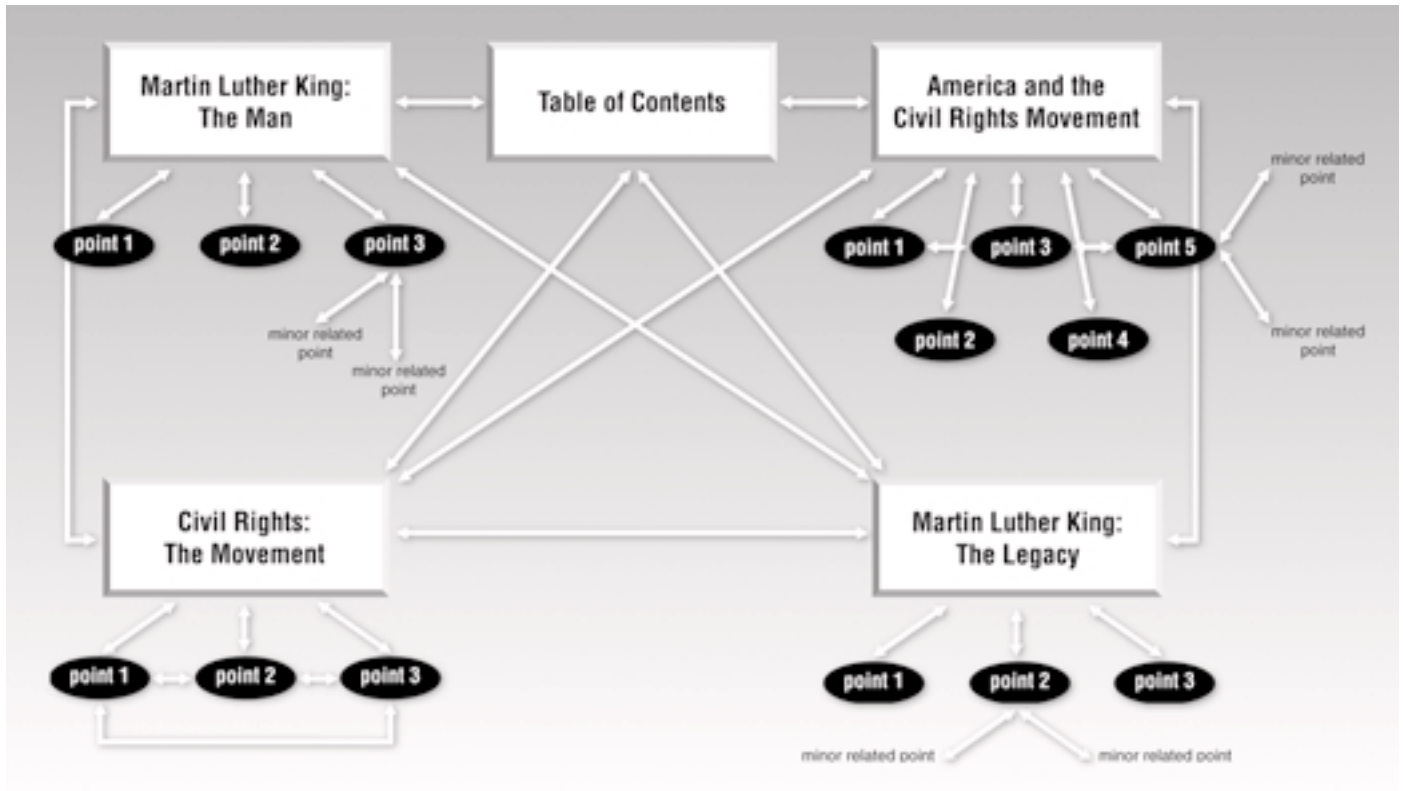


Figure 2. Mindmapping-style diagram.

Feature

connect many different ideas quickly. The structure can be confusing, however, to people who do not keep track of where they have been, are now, or may be going.

3. Nonlinear or branch-design Web-site design allows users to jump—that is, branch—from a central home page and along a series of linked pages; sometimes they can jump to another branch (see Figure 5). Most designers have trouble designing branched Web sites. The trick is making sure that users do not get lost.

Here are two ways to learn more about diagramming Web sites:

1. Conduct a search on a topic of interest and diagram several of the Web sites that are found. Determine whether they have linear, tree, or branch designs, and whether their developers followed the rules of effective Web-site design described in this article.
2. Identify both well-designed and poorly diagrammed Web sites. Which designs promote easy navigation?

exploring activity.

Storyboarding

Storyboarding is Step 3 in the Web-site design process. In essence, it is the detailed planning of information that will be placed on each Web page, including type (text, audio, video, and graphics) and style (typeface, color, spatial arrangement, and so on) (see Figure 6). The story-board is designed to present a clear and detailed page-by-page image of the information that will be delivered.

The storyboarding process should bring specific answers to these eight questions:

1. What links should be on each Web page?
2. What kind of clip art or graphic items should be on each page? How



Figure 3. Linear-design Web site diagram.

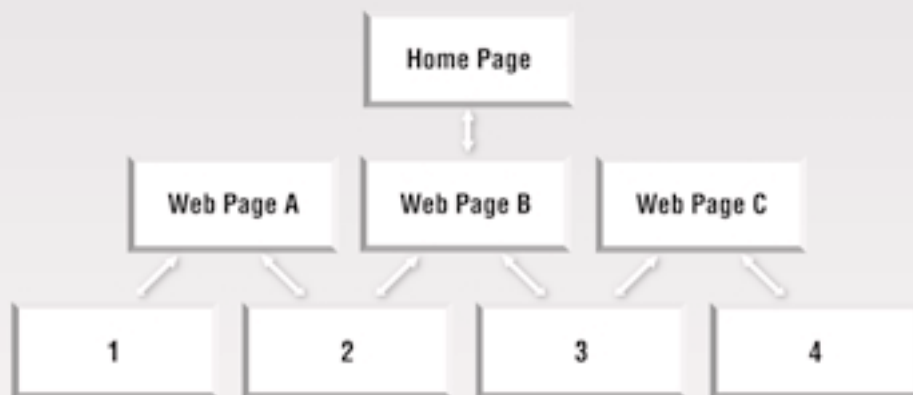


Figure 4. Tree-design Web site diagram

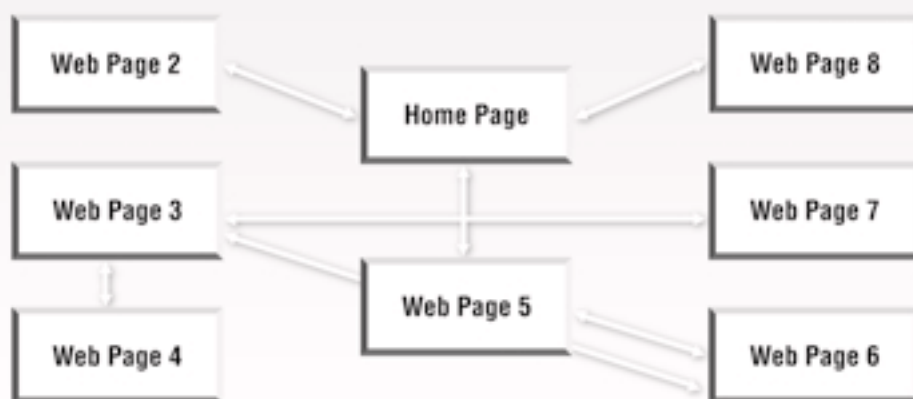


Figure 5. Branch-design Web site diagram.

do these images relate to the message being conveyed?

3. What text should be on each page? How much will be needed to convey the message? Will other media such as audio, video, or graphics buttress the text message or add information? How can other media convey the information without text?
4. What typefaces, type sizes, and colors should be used? How will these decisions affect most users?
5. Is the text scrollable, transparent, or hidden? Why is the text field important to consider?
6. What kind of buttons (icons, names, etc.) will be on each Web page and

why?

7. What sounds should be added to the page? What is their purpose and value?
8. Should video be included? If so, what is its purpose and value?

Here are several tips to follow when storyboarding.

- Use “stickies” or note cards to position each page in the Web site.
- Place the text for each page on each stickie or card.
- Place graphics on the stickies or cards.
- Draw the navigation tools that will be placed on each Web page.
- Rearrange the stickies or cards

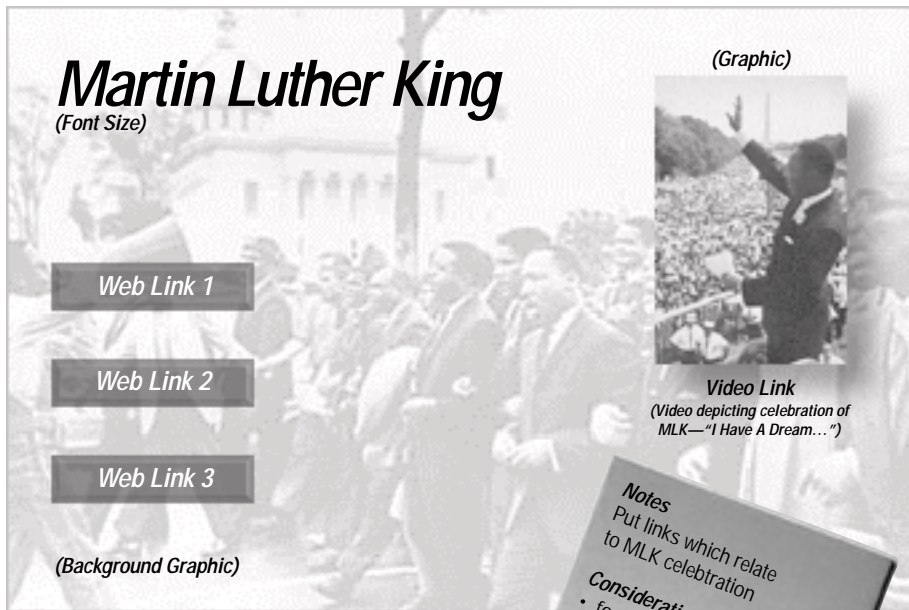


Figure 6. Illustration of storyboard for one Web page.

to determine their most logical placement.

- Have other people review the storyboard.

Storyboarding presents interesting challenges to educators. Organizing the written word is what teachers have best learned to do during their education. Assembling and organizing text with graphics, audio, and video in a cohesive and holistic fashion, however, is a higher level skill that few people have been trained to do, thought about, or experienced.

An equally complex and formidable challenge to the novice is creating information through graphics, audio, and video without text. This is an emerging skill in Web-site design and information literacy that will evolve and be widely discussed in the next few years. Essentially, the challenge is to convey something meaningful in any technology-related medium and to create and present information that does not depend on text. Is another medium more powerful than the common text-based format?

Questions to Consider

Web-site facilitators must anticipate a variety of questions as they work with

people to develop Web sites.

Three sets of questions are commonly asked by people striving to create an effective Web site:

1. Why do I need a content outline, diagram, and storyboard to create a Web site? Which one should I do first? Is there a natural sequence of activities in Web-site planning and creation?
2. How complete must the content outline be before the diagram is considered? Can I create the content outline and the diagram simultaneously?
3. What are the consequences of a poorly designed content outline? What are the signs of a poorly done diagram? What are the signs of a poorly designed storyboard?

Only time and experience will provide answers to these questions.

Conclusion

When they work with novices, technology leaders must be able to show that the complexities involved are more than

just creating a Web site. They should help beginners gauge the balance of *information* with its *presentation* so that one does not overpower the other. Outlining, diagramming, and storyboarding can help. We need a new breed of bold explorers who can blaze the trail for learners who want not only to “look good” but also to be good on the Internet in the 21st century. ■

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Resources

Inspiration is available for both the Mac and Windows platforms; for more information, check the Engaging Minds Web site at <http://www.engagingminds.com/inspiration/descript.html>.