Developing a Lecture for the Web

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This presentation was prepared for a faculty development program for the School of Health and Rehabilitation Sciences (SHRS). SHRS has recently implemented a SuperCourse lecture series, and faculty and graduate students are invited to develop ‘web lectures’ based on a variety of health and rehabilitation related topics. For further information, visit the SHRS SuperCourse web site.

I am an instructional designer for the Center for Instructional Development & Distance Education. I frequently consult with faculty and conduct workshops throughout the University on issues related to course design, teaching and learning.

Would you like to download this entire lecture on one file in order to read it?

- www.pitt.edu/~washburn/shrslecture.pdf

You may download this lecture.

Why web lectures? Where's the active learning?

- **Well designed web lectures can:**
  - Provide an orientation and structure for further learning
  - Provide up to date information
  - Provide a summary of different sources

As a delivery tool, the lecture has received criticism lately as falling short of actively involving the learner. In typical lectures, students begin losing attention after the first ten minutes. The information flows from the instructor to the students, with students frequently writing verbatim what was just heard from the instructor or displayed on the chalkboard. Consequently, lectures have been criticized for proliferating lower level cognitive tasks that entail memorizing information. How, you might ask, does preparing a lecture for the web involve any differences in attention and learning?

The goals of an in-class lecture may be very different from a web lecture. A web lecture can be viewed as an extraction of a class lecture. It can provide an overview of the structure of an upcoming class, prefacing the face-to-face presentation. An instructor can easily ask students to review a web lecture and construct one question that warrants classroom discussion. Or, the lecture can be assigned as a prologue to a class followed by a pre-test on class material, giving the instructor diagnostic information about areas that need clarified or explained further. Because web lectures are easily scanned for key points, they can give students a glimpse of topics that they may want to research further. Web lectures can also provide current information in an abbreviated form prior to journal publication.

What makes a lecture well designed?

- **Organized**
- **Engaging**
- **Accessible**
- **Usable**

A well designed web lecture is more than a brochure of a class lecture, published in the form of a PowerPoint presentation. A good lecture is organized around specific learning objectives and engages learners by asking them to predict outcomes, formulate ideas, or confront general beliefs. Good lectures are designed in ways that encourage memory indexing and minimize distraction.

When lectures are published online, it is important that users be able to access the information easily. Learners should be able to scan the material in ways that maximize usability, while gaining additional access to comprehensive information as needed.

Can I just publish my class notes?

- **Easy reading - Abbreviated**
- **Easy to navigate when viewing the outline**
- **But…**
  "I use them as notes to teach my class. Will students really learn from these slides?"
- **But…**
  "We have Eastern and Western European business students. They pay for web access by the minute."

While it is true that a PowerPoint presentation is easy to read and the outline makes navigation easy, most instructors use PowerPoint as a scaffold for in-class note taking. This may be an excellent use of the web lecture. However, instructors rarely design their notes as stand-alone products. They rationalize that they will be "filling in the blanks" in class, or they use the notes as a reference for their own lecture material. Notes that are prepared from this perspective can appear disjointed to a reader who is unfamiliar with either the author or the topic.

We also need to consider the availability of the web to our potential audience. In the case of SHRS, web lectures are intended as public offerings. We cannot assume that everyone enjoys convenient and inexpensive web access. Therefore, in order to extend the advantage of online materials, information needs to be available in forms easily downloaded.

Use This Lecture To Help You:

- **Plan the organization of your own web lectures**
- **Design your lecture to maximize access and usability to your information**

This “web lecture” is prepared as a tool to help you plan your own web lecture. You will discover that in many respects, designing a web lecture is built upon the same principles that encompass good lectures regardless of the delivery mode. However, there are unique aspects to web learning that apply primarily to the online environment.

1. Determine your objectives

- **What would you like the learner to be able to *do* following your lecture?**
  - Think in '*behavioral*' terms:
    "identify the primary symptoms…"
    "evaluate past treatment approaches..."
  - Avoid vague concepts like "*understand*" and "*know*"

Think about what you hope to accomplish with your lecture. What would you expect the learner to be able to do after he or she has read through all of your slides? Sometimes it helps to complete this sentence, concentrating on a verb that indicates an observable behavior.

"The learner will…."

Establishing your objectives ahead of time helps you focus and plan the lecture, increasing the likelihood that your intended learning outcomes will be accomplished.

Compare the following introductions to a lecture:

1. Today, we are going to talk about the different approaches to treating chronic ear infections.

2. Given a case history involving chronic ear infections, you will compare and contrast treatment approaches to determine the likelihood of success.

Can you see how the second introduction, based on the objective to compare and contrast, is more specific in its expectations for the learner? This particular objective sets up an inherent framework for the body of your lecture by investigating similarities and differences of treatments within the context of a case.

2. Determine the content and concepts needed

- **“Contrast the different treatment approaches to ear infections in childhood.”**
- **“Develop a plan that uses positive reinforcement.”**
- **“Analyze a web site and determine whether it meets usability criteria.”**

The most common approach taken by instructors when planning a lecture is to concentrate on the content that they feel is important to know. Content is important, and best remembered when organized in a manner that the student sees as relevant. However, a more useful teaching tool is to identify the concepts needed to meet your objectives. When students learn concepts, they are able to apply those concepts to different situations.

Consider the concept of “positive reinforcement.” Reinforcement can be defined by the following principle:

If a behavior is reinforced, it will likely increase.

This principle is developed from the theory of behaviorism. The students’ understanding the general rule of reinforcement allows them to more easily take this a step further when learning the concepts of positive and negative reinforcement.

When you focus your content on objectives, and draw your content from theories, principles, or concepts, your students will be able to generalize those concepts to other areas of content as well.

3. Prepare an outline

- **What are your major points?**
- **How will you organize material?**

Outlines have two purposes.

1. They serve as a planning tool for you in organizing your lecture.

2. They serve as a structure that can be communicated to the learners to let them know what to expect.

As you develop your outline, you will find that there are many different ways of organizing your lecture.

Types of Organization

- **Problem - Solution**
- **Chronological**
- **Cause > Effect**
- **Spatial**
- **Concept to Application**
- **Theory to Evidence**

Presenting the objectives of the lecture and giving students an idea of the approach that you are going to take allows them to organize the material better in their own minds. Students tend to learn more easily when they see how new information is organized and structured. This general organization can be demonstrated verbally, in an outline, or in some other manner that lets learners know what to expect.

Your lecture can be organized around different schemes:

Problem-Solution - Begins by presenting a problem, explaining its significance, and then offering a solution.

Chronological - Lists events as they naturally occur.

Cause > Effect - Begins by describing some type of event, the cause of the event, and the effects.

Spatial - Discusses things as they occur in space.

Concept to Application - Describes a concept and then illustrates how that concept can be applied to different situations.

Theory to Evidence - Presents a theory, and then the supporting evidence towards that theory.

Often, the scheme can be determined by the context of the information that you are presenting.

What kind of support will you provide?

- **Examples**
- **Comparisons**
- **Analogies/Metaphors**

Supporting information for your lectures should be drawn from examples, comparisons, and analogies or metaphors that your students already know.

Each reader of the web lecture comes to the computer with his or her own unique set of knowledge and experiences. Unlike the classroom, you will not have the opportunity to clarify misconceptions or answer questions. Therefore, it is particularly important that your supporting material be clear and serve as a tool for further understanding of the points that you are trying to make.

When teaching a concept, present examples as well as invalid examples, explaining why criteria is or is not met.

Comparisons and analogies should take the new information in the lecture and compare it to information already known by the learner.

Remember that the web is a global enterprise, and sensitivity is essential to common cultural interpretations.

4. Produce the lecture

- **Introduction**
- **Body**
- **Conclusion**

Trainers in industry as well as courses in public speaking maintain a few rules that are essential to any type of speaking engagement:

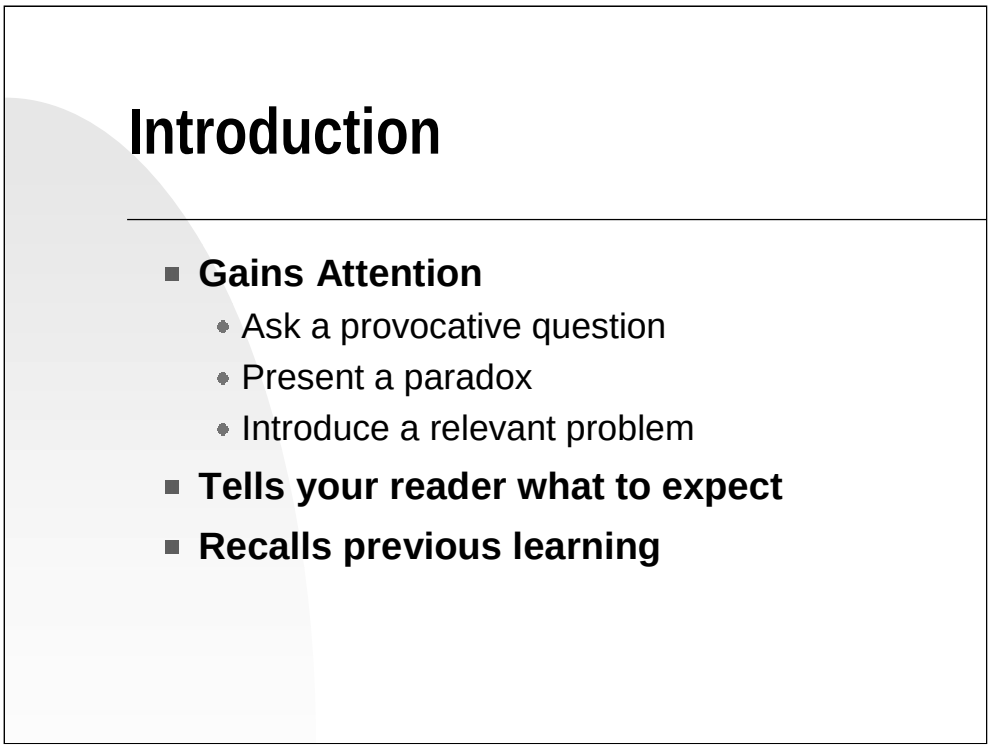
Tell them what you are going to tell them.

Tell them what you want to tell them.

Tell them what you told them.

This is prudent advice based on research, regardless of the topic or audience.

Each lesson should have an identifiable introduction, a body and a summary of the information presented in the lecture. These three components fulfill different purposes in the learning process.



The introduction serves three purposes. First, you want to gain attention in order for your learners to continue reading your web lecture. How many times have you picked up a new book, examining the back cover, jacket, and first few pages? If it didn't interest you, you probably put it back on the shelf and kept shopping. The introduction grabs your reader's attention and interest. This can be accomplished in many ways: by asking a provocative question, presenting an intriguing scenario, or posing a common problem. A powerful introduction includes a description about the relevance of the lecture. It explains to readers why the lecture will be meaningful to them.

Second, when you tell students what to expect, they learn more. Although some instructors might argue that they feel uncomfortable making it too easy for students, setting expectations has nothing to do with the difficulty of the lesson. Imagine reading through a series of journal articles without the advantage of the abstract. The introduction prepares students for the experience yet to come, and it provides the initial mechanism toward understanding the material.

Finally, when you begin by calling up knowledge that students already know, you establish a connection between old learning and the new. Have you ever tried learning something foreign to anything you knew or experienced? You were either confused or automatically attempted to construct a relationship between this new information and something already familiar to you. The introduction helps bridge the gap between old knowledge and new.

Body

- **Includes the content/concepts supporting the purpose of the lecture**
- **Provides opportunities for practice and interaction**
  - Base the interaction on your objectives
  - Let readers guess answers to questions
  - Present a scenario and ask for a probable outcome

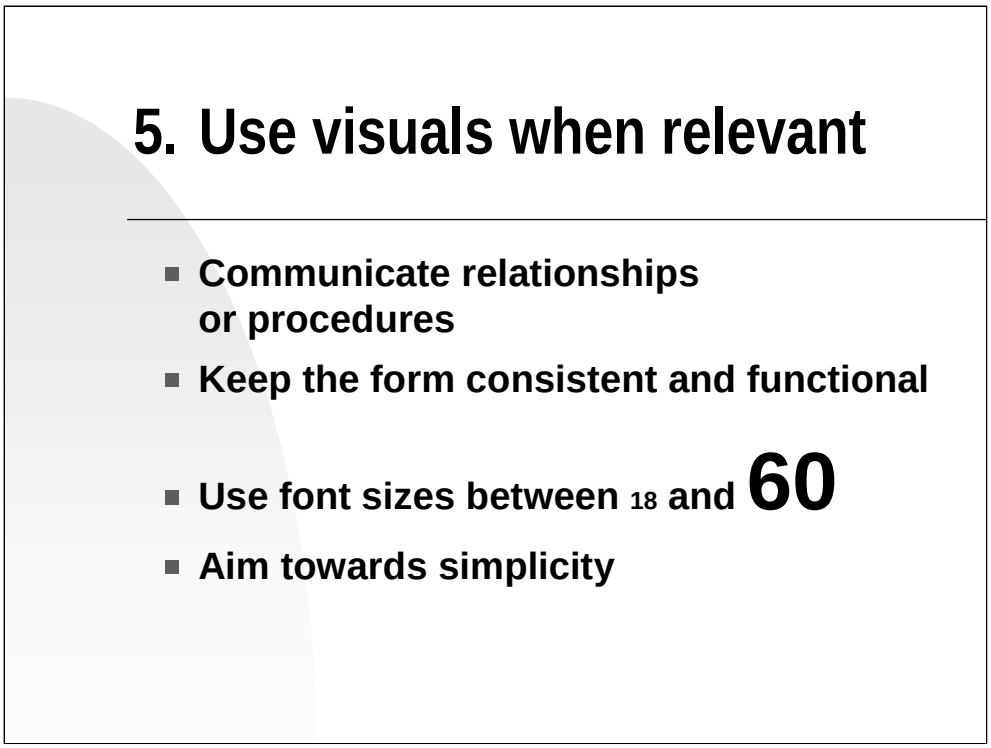
In the body of your lecture, present your few major points supported by examples as well as periodic summaries of the concepts and information just discussed.

You also have the option of presenting opportunities for practice in the form of study questions or introductory queries. Allow readers to guess responses, and provide the correct answers as one means of feedback. These strategies engage the learner in ways that move beyond scanning or reading passively a series of slides. Even when this is accomplished in a linear process through PowerPoint, techniques such as these also instill in the learner a sense of control and self-pacing, which are traits that are important when designing computer-based learning.

Summary

- **Concludes with a recap of the major points**

The summary can be used to tie concepts or thoughts together, to resolve issues introduced earlier, and to review or summarize the major points and relevance of the lecture.



Using visuals and clip art in PowerPoint can be very tempting. There are two questions that should be addressed if you decide to use a picture or graphic.

How does it help the learner understand the material in a way that is clearer than text alone? Relevance, detail and clarity can affect the perception and comprehension of graphic information. If a student cannot easily read or see something, or does not understand its relationship to the other information presented, then the graphic risks becoming a distraction.

What effect, if any, does the visual have on downloading and printing? In this regard, you may want to check with the webmaster for advice in preparing your image in a way that is compact and ensures accessibility.

One effective use of graphics demonstrates relationships such as those between concepts, or those between steps in a procedure.

Well designed visuals can also have a motivational effect on the learner. Graphics and images involve different processing by the brain, providing variety and relief to a presentation that is strictly textual.

Another good design feature maintains a consistent form throughout your slides. Use a similar style throughout your outlines, so that readers do not have to re-orient themselves each time they come to a new heading.

An effective visual presentation is easy on the eyes, aiming toward a simplicity that facilitates reading and comprehension.

How does the Web make delivery different?

- **Users tend to scan or print**
- **Users like to develop a personal relationship with the computer**
- **User's memory is taxed more**
  - Chunk information
  - Minimize or eliminate scrolling
  - Prepare outlines that are easy to navigate

How often do you read a long scrolling page on a computer? Most people scan information that they can digest quickly in order to process the main points. If they want to read, study, and remember more comprehensive information, they will print it out. Therefore, I recommend that you prepare lectures in two forms for both purposes. Slides are easy to scan, and the outline format offers effortless navigation between slides. However, if you intend to supplement your lectures with notes, prepare a version that can be downloaded in its entire form. In this lecture, this was accomplished by converting a word document that contains all of the notes in sequence into an HTML document. This action increases the usability of the lecture.

Have you ever talked to your computer? It is not uncommon. People like to develop a personal relationship with their computers and the online world "out there." When developing your lectures, talk to your audience. Imagine having a conversation with them - anticipate their responses. It minimizes the distance users feel when they read your web materials.

One of the greatest concerns with computer-based learning is the effect on memory. Not only is your perception affected by the parameters of the monitor in front of you, but you need to remember information from the screens that you have read earlier. Chunk your information into meaningful segments and eliminate wordiness. Minimize scrolling, and include a lot of white space so users have an easy time spotting key points or issues.

Hyperlinks

- **Can distract and lose the reader**
- **Should be the only words underlined**
  (Use *italics*, **bold**, or color for emphasis)
- **Can link to a complete text version**
- **Can include a bibliography or reference page**

Depending on how they are used, hyperlinks can be either a useful tool or a prescription for distraction. Anytime you provide links to other sites, you run the risk of losing your audience. If the hyperlinked site is enticing and includes hyperlinks of its own, the learner strays farther and farther from your site.

Users are familiar with the convention of underlined hyperlinks; therefore select a device (e.g., **bold**, *italics*)other than underlining to emphasize important words.

A hyperlink to a full text version of your lecture on a single web site can offer access to a version that can be hard copied. This is a little more work, but increases the usability and accessibility of your lecture to a wider audience.

Also, a hyperlink can used as a link to a webpage of references or a bibliography for further information. This is another feature that users would find helpful at the end of your lecture, particularly if the links are to other websites.

Let's ✓ your understanding #1

- **What is one way to engage the reader within your "lecture?"**
  a. Organize your lecture by topics
  b. Hyperlink to other references
  c. Present situations, ask the reader to predict outcomes
  d. Include clip art to break up the text

Question #1

Answer #1

c. Present situations, ask the reader to predict outcomes

Maintain a logical structure through your organization.

Engage the user by asking them to guess, hypothesize, or predict responses to situations.

Let's ✓ your understanding #2

- **Which is most likely to facilitate transfer of new learning?**
  a. Using **bolded** words for emphasis.
  b. Hyperlinking to a glossary for term definitions
  c. Developing an introduction that recalls previous learning
  d. Teaching concepts supported by examples and non- examples

Question #2

Answer #2

d. Teaching concepts supported by examples and non-examples

Bolding draws attention to important terms or concepts.

Hyperlinking to a glossary can be viewed as a support tool, however navigation back to the slide must be clear.

Recalling old learning is excellent preparation for new learning.

Conclusion

- **Determine your purpose**
- **Plan your organization, content, and supporting materials**
- **Produce the lecture**
- **Proof it, externally review it, convert it, then proof it again**

Remember, web lectures can have different goals than your in-class lectures. Regardless of whether your lectures are presented in class or on the web, they each should be developed around a set of clear objectives.

Plan your lectures before diving into production. Think about the content, organization, and the supporting tools that you will use to strengthen your instruction.

Produce your lectures; then have a few students review them for feedback. When possible, have both anonymous and direct feedback. Ask students for comments on the clarity and relevance of the material. Query them to determine whether your objectives really have been accomplished. When you convert your slides for the web, make sure that they are accessible.

References:

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References

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