Development Issues in WBT

Common Lesson Structures

Pick From Common Lesson Structures

The main founder of a course is its general goal(s). These goals can demarcate the course into small pieces or modules. Each of them consists of activities, presentations, events, examples, or etc. All sub-pieces have their own goals, too. However, these goals are the ways of reaching to general goal.

As designers, we have some alternative lesson structures which have been stemming from Computer Based Training and Web Based Training's previous courses and literature. It is an endless process that WBT developers are in charge of attempting to develop more effective and efficient models than the former ones.

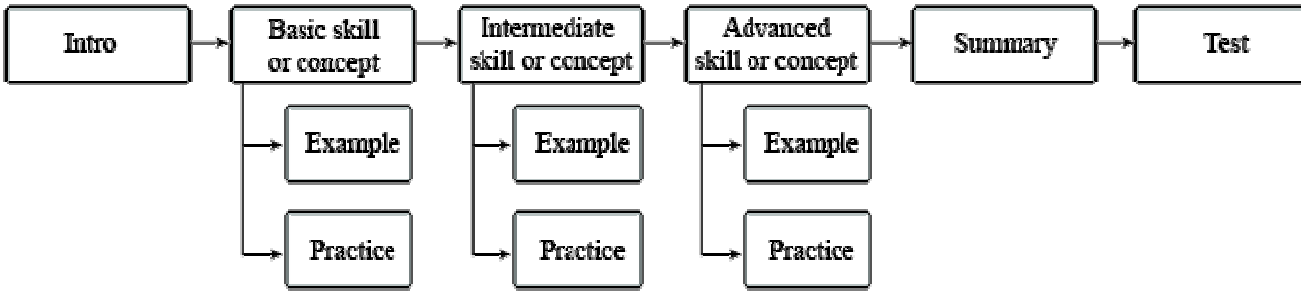
If you want to develop a WBT environment, you should know these common lesson structures. You do not have to develop your applications based on purely one model. Selection of the models completely depends on your decisions. However, you cannot make these decisions without any fundamental. For instance, you can use learner needs, subject matter expert opinion, or results of an empirical study from the literature. In other words, if you select one or combination of lesson structures, you should have your rationale about each step while you select structure.

The common lesson structures could be classified as the followings (Horton, 2001):

- Classical Tutorials,
- Activity-Centered Lessons,
- Learner-Customized Tutorials,
- Knowledge-Paced Tutorials,
- Exploratory Tutorials,
- Generated Lessons.

Classic tutorials

It is the most used types of structures in the filed of WBT. The general architecture of classical tutorials is presented in the following figure.



In the classic tutorial, the learners start with an introduction to the lesson and then proceed through a series of pages teaching progressively more advanced skills or concepts. At the end of the sequence, learners encounter a summary or review of the concepts and a test or other activity to measure whether they accomplished the objectives of the lesson.

For each skill or concept taught, the learner has the opportunity to see an example of it in action or to practice applying it. These examples and practice pages are optional.

When to use the classical tutorials

If you want to create completely safe and reliable WBT environment, you can use classical tutorial. It is familiar to learner, especially conventional learners.

If your users are not familiar to web technologies, you can use this structure because classical tutorial cannot allow learner to loose in interface. Everything carries on a structured way. Learners just follow instructions and do activities to learn new information.

In highly hierarchical subjects, it is also useful method.

Tips and Guidelines

You should be careful about two topics when you use classical tutorial that even seems the simplest structure to manage. They are;

• You should not try to teach everything in a lesson,
• You should always support lessons with practice sessions otherwise learner information cannot be transferred.

Activity-Centered Lessons

Without any activity, lessons on the web are not produced effective results. Activities can be a part of a course or a course itself. The general architecture of activity-centered lessons is shown in the following.

The activity-centered lesson is built on a single, primary activity. After a brief introduction, the learner prepares for the activity. The Preparation page provides any necessary knowledge or motivation not provided by the activity itself. After the activity, the learner encounters the Summary page, which recaps and articulates what the learner should have gotten out of the activity. Finally, the learner takes a test to verify mastery.

When to use the activity-centered lessons

If you use activity centered lesson in complex concepts, emotional subjects, subjects which are best to taught with active participation of learners, you should use activity-centered lessons.

Tips and Guidelines

The quality of activity is the main concern of this structure. It should be tested in a pilot situation before applying it into actual lesson. It should be challenging so learners can spend more effort on activity. In fact, in classical tutorial, the required effort is supported default by environment, whereas in activity centered lesson, there is no kind of default effort. Therefore, learner should close this discrepancy by spending more effort than classical tutorial environment.

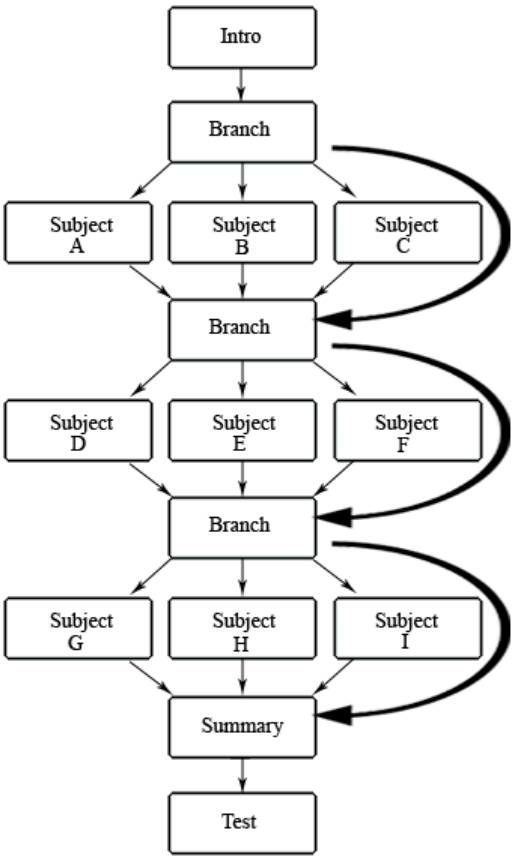
Preparation of activity is so critical point that a small mistake may cause unintended learning outcomes. Horton (2001) provided a checklist for these similar types of activities. Designers should set;

• Goals of the activity,
• How this activity fits into the course,
• What learners must know before beginning the activity,

• Instructions for performing the activity,
• Links to needed information, software, or other resources.

Learner-Customized Tutorials

In this lesson structure, learners are free to control their learning path. They can branch whatever direction. Each learner can shape his/her learning experiences based on needs. The general architecture of learner-customized lessons is shown in the following figure .



Applied from Horton, W. (2000). Chapter 5: Organizing learning sequences. Designing Web-Based

Like many other lesson structures, the learner-customized one begins with an Introduction page and ends with a Summary and Test. The roles of these pages are the same as in other structures.

Between the beginning and end, the structure alternates Branch pages and regular content pages. The Branch page determines which set of content pages the learner sees. The Branch page may present the learner with a list of paths to choose from, or it may test the user and automatically branch based on the results. Or the learner may skip the content pages altogether. After completing a set of content pages, the learner may branch again. This pattern of branching to a subset of the available content continues to the end of the lesson.

When to use the learner-customized lessons

If learners' individual differences and needs are indispensable impact on training effectiveness, this structure can fulfill your demands. Due to regarding individual differences and needs, the result of this structure may be more efficient and effective than previous structures. On the other hand, at the end of the training, you would not obtain similar types outcomes. Therefore, it is hard to test these kinds of outcomes with a common assessment and evaluation technique. It could be supported by adaptive testing tools.

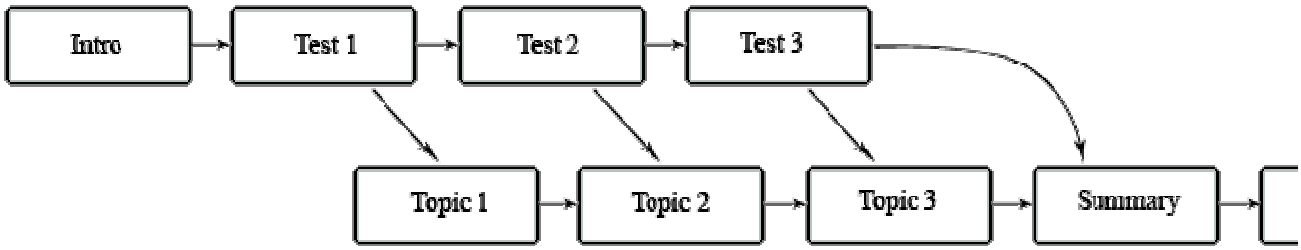
Tips and Guidelines

It is so important that determining learner-customized structures otherwise you cannot control learning outcomes. Designers should express what they except from learners. To make clear expectations, you can;
• Clarify expectations: Designers should set expectations from learners so learners can know what they customize,
• Explain branching scheme: Tell learner how this system customize and based on which criteria, learners lesson is structured,

• Test and refine learners' learning.

Knowledge-Paced Tutorials

Learners can skip some parts of the lesson based n their prior knowledge. They can start tutorial their threshold knowledge level and finish it till the end of the lesson. The architecture of knowledge-paced tutorials are presented in the following.



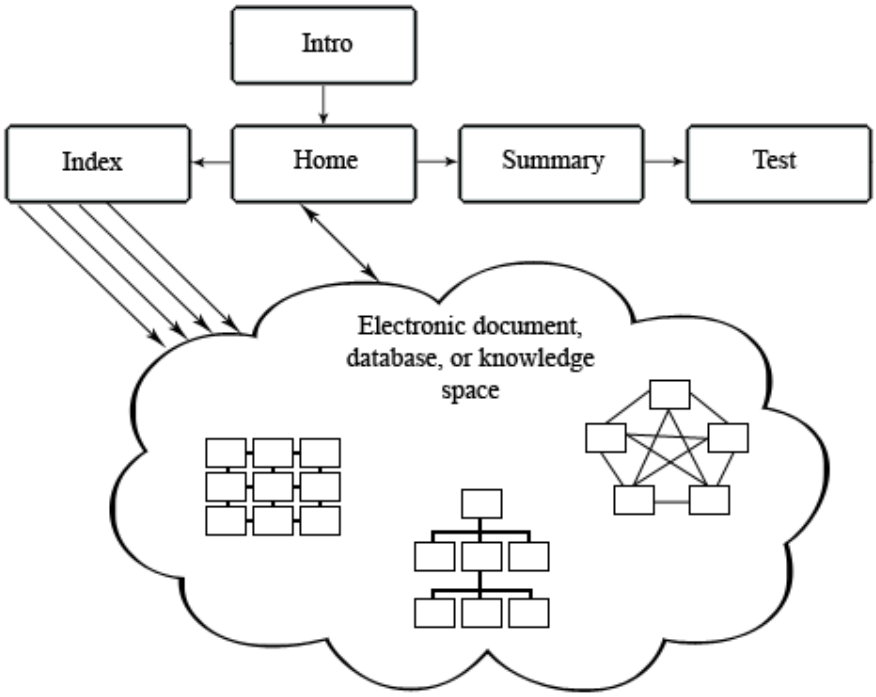
The knowledge-paced tutorial lets learners skip over the content topics on knowledge or skills they already possess. After an introduction, the learner begins a gauntlet of tests. The tests are progressively more difficult. That is, each one tests more advanced levels of knowledge or skills than those before. Learners continue down the test series until they fail to pass a test. At that point, they are directed into a parallel sequence of content topics. Thus each learner enters the sequence at the upper limit of his or her abilities. At the end of the content sequence, learners encounter a brief summary and a test on the entire content of the lesson.

When to use the knowledge-paced lessons?

If you have a group with prior knowledge, you can use this lesson structure. Those people are so impatient that they can eager to neglect the part of the lesson which was mastered before. This structure works well if learners' knowledge level is definite otherwise they can be instructed again some topics.

Exploratory Tutorials

In this lesson structure learners can find their own knowledge. All goals are provided and they are directed to reach the goals of lesson in the large electronic information collection. Learners may be supported by some navigation tools to seek desired information more effectively and efficiently. These structures also named as unsequenced tutorials or knowledge landscapes. The common architecture of exploratory tutorials is presented in the following.



Applied from Horton, W. (2000). Chapter 5: Organizing learning sequences. Designing Web-Based Training . Wiley: New York

After a brief introduction, learners proceed to the Home page for exploration. From here learners can foray into the linked document, database, or knowledge space to find answers that accomplish the stated goal. Learners may rely on an Index page to launch them to specific destinations. After accomplishing their goals, learners view and take the lesson test.

When to use the exploratory tutorials?

This structure is suitable for experienced users about web navigation. They do not have to spend additional time for searching activities. If your audiences are not capable enough to search on the web, it is strongly recommended that they should be supported by additional training or handbooks.

Tips and Guidelines

There should be structured instruction system in unstructured tutorial. They could include:

- A concise summary of material, with links to topic covering individual concepts,
- An index that helps learner how to search on the electronic library,
- A test covering all essential topics in the electronic material. Each test item should direct learners to necessary pages.

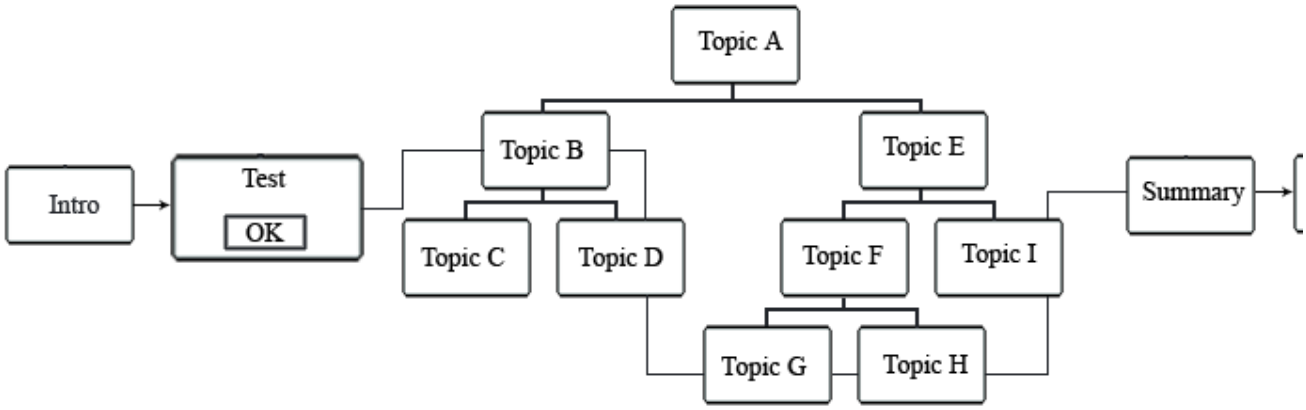
You should support learners with some outside explanations. For example, you can explain how to use electronic material effectively and efficiently, what learners have to do to reach some specified goals, what time frame is, and finally what test includes.

Navigation control system should be useful. Learners cannot suffer due to lack of usability issues in navigation. There should be consistent navigation panel all over the electronic material.

Generated Lessons

In generated lessons, lessons are structured based on some data collected from learners at the beginning. For instance, you can apply a learning style questionnaire and then you can provide

learning environments with respect to learners' learning style. The general architecture of generated lessons is shown in the following figure.



Applied from Horton, W. (2000). Chapter 5: Organizing learning sequences. Designing Web-Based Training . Wiley: New York

When to use the generated lessons?

This structure is useful, as far as individual differences are concerned. If you want to classify people to increase effectiveness of the course, you can use it. It is possible to investigate different desire and needs of different groups on the web learning environment. It is hard to develop and expensive. However, if they are well developed, they reduce the cost of learning.

Building Blocks

Create Building Blocks For Lessons

As you begin constructing lessons, you will find yourself creating some of the same kinds of pages over and over again. These are the pages you use to welcome learners, introduce the lesson, show examples, and get feedback. Such pages deserve special attention and are candidates for standards and templates.

Welcome Page

Welcome is the first sight of your WBT program. In this page, learners can learn what your WBT is about, what this WBT program aims at, why this WBT program and its content are important.

When do we need welcome page?

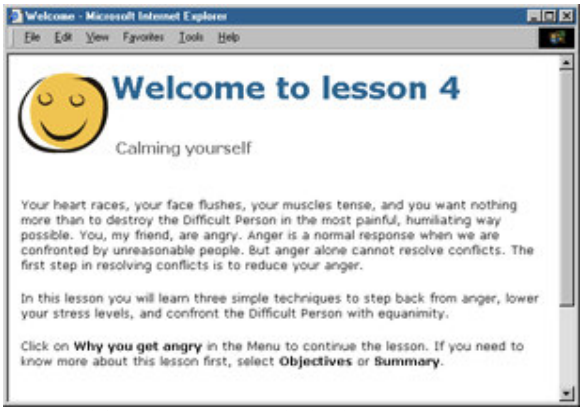
This page usually is used for motivational purposes. It should provide brief introduction about WBT program. It should also encourage learners to dig into WBT program. It feels learner that (s)he select right lesson.

Content of the Welcome Page

Welcoming Title: This title starts with telling learners where they are and representing greeting to them because of they are here. You can use some classical welcome messages, such as "Welcome to …… program", "Are you ready to learn …..", or "A journey starts, would you like to join us to learn …..?".

Graphic Emblem: Use some attractive graphics to gain attention of learners. Moreover, emblem should explain the purpose of WBT program at the first sight. It also promotes curiosity about the WBT program.

What Lesson Offers: The valence of the course should be provided here. It is the most important motivator of the Welcome page. It should be in narrative format and not more than two sentences.



Captured from http://www.designingwbt.com/

Introduction Page

This page presents subject of the lesson and prepares learners to participate it.

When do we need introduction page?

If you need additional explanations, you should use an introduction page. It actually depends on the complexity or expertise of your topic. Often introduction page is used to prepare learners what they will do and learn in the lesson.

Content of the Introduction Course

The overall content of introduction page depends on what the subject is planed to instruct. The following components help you to introduce your course effectively:

Complete Title: This is used to identify lesson clearly. Title is so important because if you are using very clear titles, people can easily understand what your course is about. You should not forget that most of search engines provide title based search. You should use most frequently searched keywords in your course title. There should be a consistency or hierarchy between welcome and introduction page. For instance, in welcome page you just tell learners your title, whereas in introduction page, you can present both title and sub-title of the course.

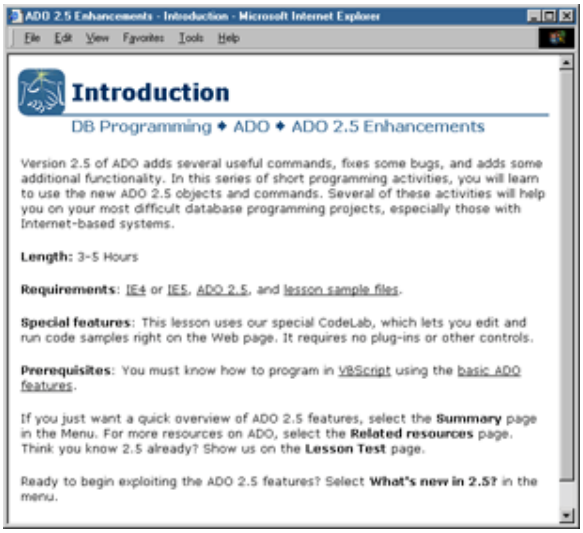
Context: You should explain what is included to this course. Moreover, you should support relations of subjects to other fields. You should show where this course exactly fits. If you use some structures that can be presented in graphical format, you should show it to learners. It helps learner what the path of the course.

Goals: You should tell the learner what they will gain at the end of the lesson. In general, goals are presented with formal objectives. You can also use more user friendly informal objective statements. However, while using goals and objectives, you should not forget that each goal and objective will be an important outcome for learners.

Requirements: If course requires something to participate, they should be mentioned in this page. Moreover, time frame of the course should be expressed.

Preparation: If learners decide to take lesson, you should prepare them for that. Preparation can include:

• Suggested path through lesson,
• List of special features,
• Rules that apply in the lesson,
• Prerequisite knowledge.



Captured from http://www.designingwbt.com/

Contents of the Lesson: Outline of the lesson should be provided so learners can know which topics will be covered in WBT program.

Link more information about lesson: To increase curiosity, some effective phrases can used and then providing reference to some part of the course, such as "for further information, please look at chapter 6". Moreover, if WBT course has other types of pages, such as objective, summary, or test pages, you should give links to them.

Invitation to continue: Page should direct learners to continue WBT course. If it is not obvious, you should use some instructions, such as if you want to start this course, lets click here…".

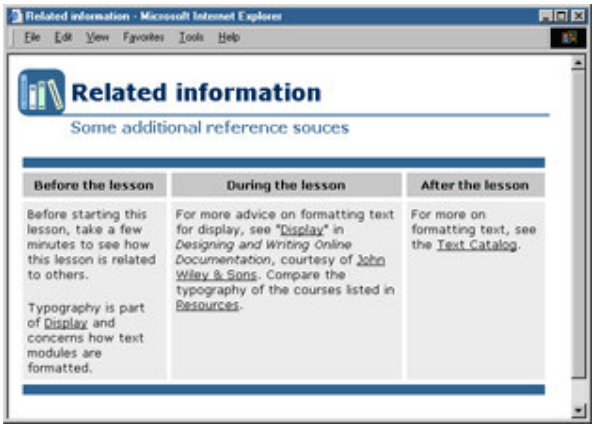
Related Resources Page

Most WBT lessons direct learners to some sources outside of the course. These kinds of pages can organize the sources. It could be used separate or embedded format.

When do we need related resources page?

If you are using sources or references outside of the course, learners can reach them easily You can present them as a whole list or as a demarcated list which can be organized based on topic, sequence, or structure of the lesson. These pages also can fulfill learners' special interest areas simultaneously while they are learning new information.

Contents of Related Resources Page



Captured from http://www.designingwbt.com/

Horton (2001) proposed a general model for related resources page. You can use it, however, you should use other models or your own models. Hence, this page can be reorganized based on topic. Horton uses a format that provided sources based on time of the course. At this format, you can provide resources to improve background information of learners; it is also named as "Before the course resources". Moreover, you can provide sources to support course while it is progressing; it can be labeled as "During the course". Finally, you can also provide additional sources even course is completed; you can named it as after the course. For example, you can use fundamental information about topic in before the course, real-world examples in during the course, and practical applications in after the course parts.

In this course designers used different format. We provide related sources based on topic titles. You can also develop these kinds of your own resources pages.

Summary Page

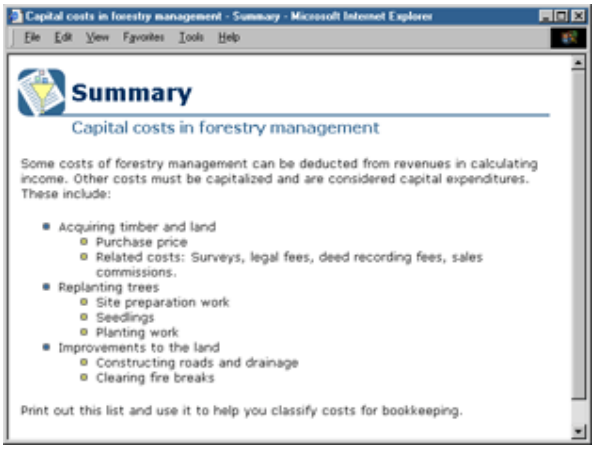
This page recaps the most important points in the lesson. It should be presented in text or graphic format. It is good if they are presenting in different format so one can make choice if (s)he does not understand in presented format before.

When do we need summary page?

It can be useful at the end of each module of lesson. You can have some impatient learners so it could be useful for them. If the bandwidth is low, it is good to use a summary page.

Contents of Summary Page

At this page, you should present condensed form of your topic. You should not describe topic again and again. You should use a language that says learner that you are the center of this course. You should emphasize what should be remembered from the outcomes of this course.



Capturedfrom http://www.designingwbt.com/

You should provide some tips to remember gained knowledge from the course they can be listed as:

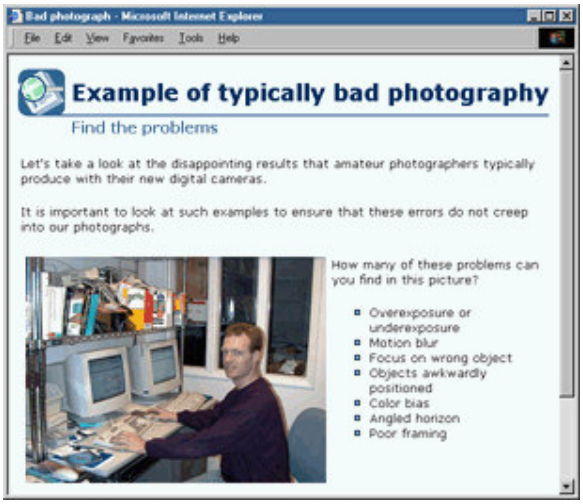
• Instructions to the learner to act,
• Affirmations to begin the day with,
• Mantras for the learner to chant,
• Slogans to print out and thumbtack to cubicle walls,
• Mnemonics to make key point's memorable (Horton, 2001, p. 157).

Featured Example Page

Sometimes you need to give immediate example about a topic so you should use these kinds of pages. They are also named as example page or case study page.

When do we need featured example page?

We generally use it when we need to provide an example about topic suddenly. It should be separate page form the lessons pages so it prevents to become complex your lesson pages. Moreover, learners do not loose themselves in highly loaded pages.



Captured from http://www.designingwbt.com/

Contents of Featured Example Page

You should first introduce, then present, and finally describe the example. You should prepare your pages with respect to those questions:

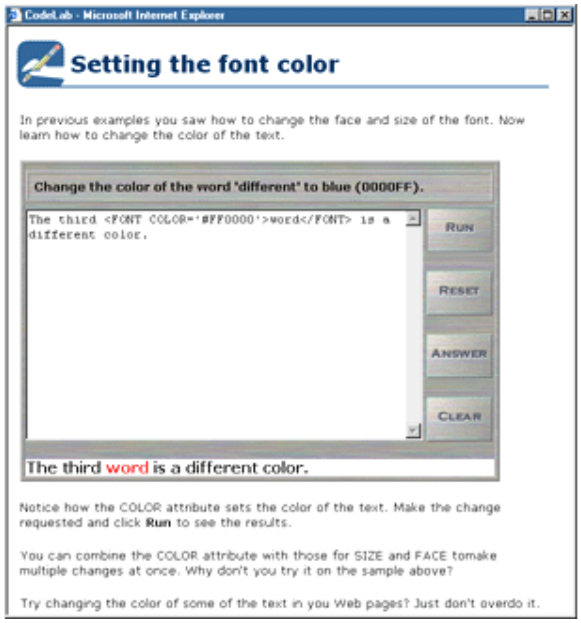
• What does the example show?
• Why is it important?
• How typical is it?
• What should learners notice in the example?
• How can learner learn more from the example about topic?
• What is the relation of the example to the topic of lesson?

Code Sample Page

It is used to run some special scripts on the web browsers. It has a text box that you can enter the scripts or codes and then you can run them on the page.

When do we need code sample page?

You can use them if you need to instruct HTML, JavaScript, PHP, ASP, or XML.



Captured from http://www.designingwbt.com/

Contents of Code Sample Page

These pages should include the following components to work effectively:

• Transition: Its role should be expressed in detail. Therefore, learners can know why we apply those codes.
• Code Sample: Code itself should be presented. It should also be commented to instruct how it can be applied. It should be mentioned as an example.
• Instructions: There should some instructions to execute codes. How users can write code and apply it should be explained in step – by – step procedures.
• What to notice: The similarities and differences of previous example should be mentioned carefully to support learning about coding.
• How to apply it: How the learner can apply what the code sample teaches. It should support transfer also.
• How to try on your own: Learners can use these sample codes without any instructions.

Event Playback Page

These pages can present previously recorded videos, sounds, lectures, audio conferences, or chat sessions.

When do we need event playback page?

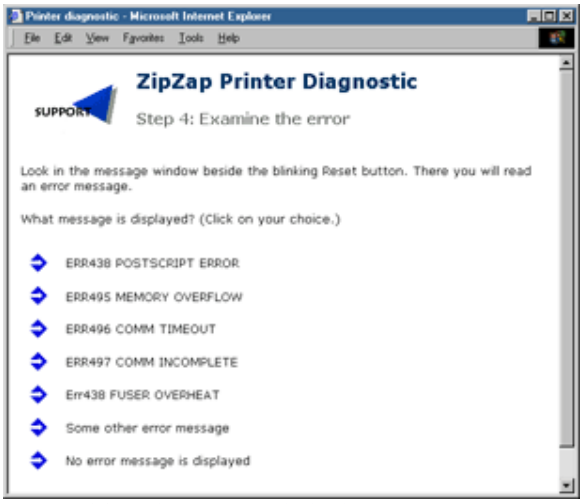
It helps to cover previously recorded events about the topic. It is also useful to bring a guest to your WBT environment. Due to the time constrains some learners cannot participate some events live so with this way you can also presents current or previous events without any time schedule. Events could have rich information so learners can investigate them continuously if they are presenting asynchronously. There are lots of these kinds of sources in media libraries. They also should be used to enrich your lessons.

Contents of Events Playback Page

There should be brief explanation of events so learner can decide to listen it. Some buttons and controlling tools should be embedded into page. The following list would be useful when you want to prepare an events playback page.
• Events title,
• Information about presenter, such as name, title, organization, and etc.,
• Photograph of the presenter,
• There should be two or more chance to watch event, for example, one can watch it from internet or download it in a common file format in order to watch it on his/her computer.
• Transcript: If it is possible, transcript of event should be provided to foster understanding and prevent some pronunciation problems that hinder understanding of non-native speakers.
• Summary: Overall summary of event should be presented to sum up what event attempt to explain. Moreover, the relation of event to topic should also be provided.

Choice Page

A choice page presents some alternatives to learners. It depends on your course structure that was explained the previous chapter that is about picking a common lesson structure. If your lesson structure is based on learner choices, this page should provide enough information to learners.



Captured from http://www.designingwbt.com/

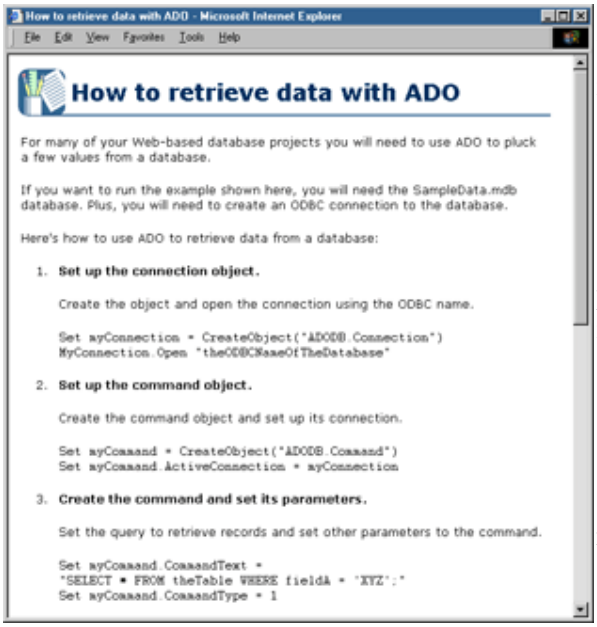
Contents of Choice Page

You can present choices in either a question or an instruction format. To make choices effectively, learner should be provided the following components:
• Title: Learner should be informed that for what they are making a choice.
• Introduction: You should frame a question or support a short explanation of the importance of making this choice.
• Question or instruction: Provide questions or instructions clearly.
• Choices: You should also provide choices as clearly as questions or instructions.

Procedure Page

Procedure pages are the acting paged if you develop a learner-centered lesson. It is the source of instructions about an action that is required to acquire one or more objectives.

When do we procedure page?



Captured from http://www.designingwbt.com/

You can use it when you need to give step – by – step instructions about an activity.

Contents of Procedure Page

You should provide as much as possible things at the same time except for solutions if it is a problem or problematic case. The following things should be included in the procedures page:

- Title,
- Goal,
- Prerequisites,
- Steps,
- Conformation: tell learner how to control their results whether successful or not,
- Troubleshooting: Lead learner if they are in trouble.

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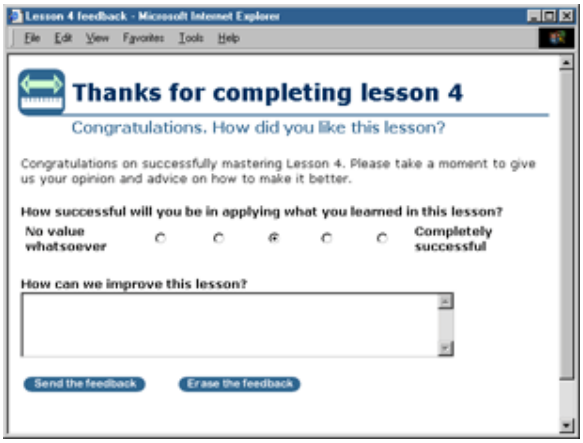
Lesson Feedback Form

It is one of the most important parts of your lesson because these feedbacks can be used for iterative improvement purposes. Therefore, your course will become more and more effective at the end of the each group.

When do we lesson feedback form page?

You should use it at the end of the lesson. You should demand not only feedbacks but also suggestions form the learners. Feedbacks should be small doses. You should consider more common and more critical ones. Some of the feedbacks could be so special that it works jus for a person who mentioned it.



Captured from http://www.designingwbt.com/

Contents of Lesson Feedback Form

It should include the following things:

- Congratulations message because of completing the lesson,
- Invitation to give feedback,
- One point on scale question for rating effectiveness of lessons, moreover, you can also use some previously developed scales,
- A text area for extra comments,
- Buttons to summit feedback.

Learning Sequence

Design an Orderly Organization

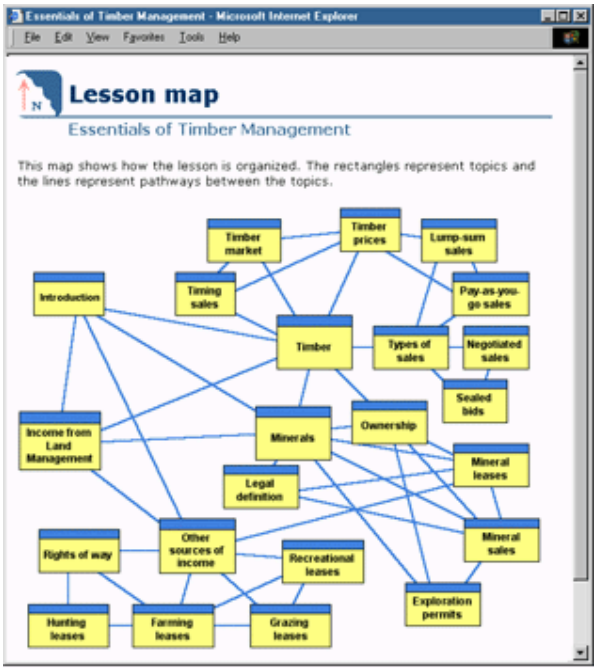
In the course of previous applied ways, we have too many structures. The main problem of web based

learning environments is that they do not work as same as effective previous one. Therefore, in each development procedure, designers analyze context carefully. As a result, common structures almost cannot be used purely. In general, each instructional design process has unique characteristics in themselves. It can be proposed that each design product of e-learning applications is a different model than others. For this reason, design your own learning sequence in WBT is so critical. However, it does not mean that you can follow any ways. There should be some core components to make you job easier while developing a WBT program.

These components are listed as:
• Design an orderly organization,
• Design usable modules,
• Sequence modules,
• Layer modules,
• Integrate foreign modules,
• Make your navigation practical.

Design an orderly organization

First a designer should think about the presentation order of WBT lessons. There are lots of organization techniques. For instance, they can use linear, branching, concept mapping, deductive, inductive, simple to complex, and etc. Based on your structure, you should convert it to a navigation or topic map. With this way learners understand both the general topics and their relationships among themselves. Also, you can stress outside relations that will be used to support foreign modules. In this course, we developed a concept map for each chapter apart from the last chapter. You can see sample concept maps in the following figure.



Here is an example without clear organization. This lesson appears disorganized with no clear learning path and no guidance for selecting paths and topics.
The lesson is not as disorganized as this diagram makes it appear. But the learner cannot know this.
Copied from http://www.designingwbt.com/

Design Reusable Modules

We use the concept of modules by now because modularity is the one of the most important advantages of WBT. There are lots of efforts to improve modularity and to reach standardization.

Designer should develop WBT modules that can be updated after each learner session. It is possible with iterative, incremental, or spiral software development models. Web environment and its tools can be developed based on the updating or upgrading approach.

Learning objects suits the reusable module of WBT well. Learning objects are instructional materials that can be used again and again. Designers should have knowledge about learning objects. Therefore, they can easily produce reusable modules.

Reusability is possible with one way that designers can develop environments that are ready to all possible topics with directions, navigations, animations, activities, videos, sounds, and etc. It is possible with alga-heuristic instructional design models.

Sequence Modules

Ok. Designers can produce reusable modules. Is it enough to present them as a WBT lesson? The answer is definitely "no". Hence, without ant sequence learners cannot reach any point or desired levels that are determined as goals in education.

Sequence can vary that they can be sequence of homework, assignments, web pages, learners' activities, experiences, or so on. The critical questions are stemmed form this point. Who can determine sequence? How can it be shaped? In linear sequencing all steps should be passes by learner. In each step, learners are supported continuously. However, another approach is based on learner choices. Learner are directed based their choices. Again, there are some instructions but they are related to each step. They direct learner how to reach goals of lesson with their choices. In closure, which one is the most effective one? The answer is none of them. Hence, it depends on situation and needs of your learners. However, if you put your sequence in a format, you should consider the following principles to take control of sequence's organization.

- You should use sequences for novice users. They generally want to be directed if they do not feel competent enough to use system. For expert users, more exploratory systems may work better.
- The order of learning events should be set in right order. For example, checking for previous knowledge generally is made before presenting actual content. If you do that in reverse order, it creates a problem. Some universal frames are useful to determine it, such as simple to complex, necessary to unnecessary, facts to applicable knowledge, and other similar formats.
- You should consider standard teaching sequences. For example, Gagné's nine events of instruction can be used in many different educational environments. Designers should care programmed instruction. There kinds of standard sequences can be used as blueprint by designers to derive new sequences.

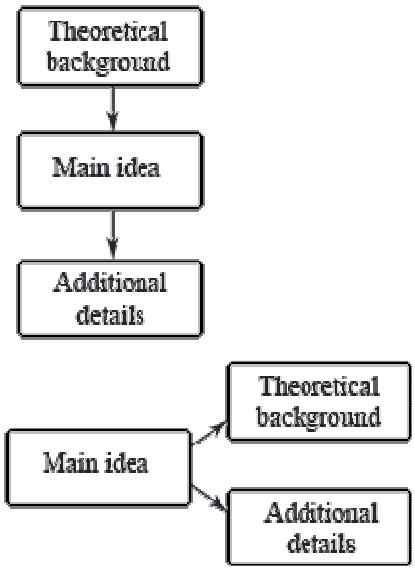
There could be some problems in sequencing. Horton (2001) explained some problems with solutions. That can be listed as:

- Long sequences can be boring. Some learner can loose their motivation.
    - o Sequences should be kept as short as possible. They could be from minimum 5 minutes to maximum 1 hour.
    - o Intervene sequences with some activities
    - o Learner should be aware of where they are in the sequence.
- Some learners may already know the some part of the materials.
    - o Learner should have chance to skip these pages.
    - o Learner can jump to summary and test pages if they want
- Some learners may need only small part of material
    - o Learner can jump to special interested point of the material.

Layer Modules

Designers can arrange their courses in a layered structure, if they do not use any sequence. It makes presentation of information logical and systematic.

In sequential presentations, we typically start with the background information, proceed to the main idea, and conclude by adding some interesting details.



All learners who proceed down the sequence are exposed to all the same material in exactly the same order. Everybody gets the theoretical background before being exposed to the main idea.

Everybody has to go through the theoretical background to get to the main idea. Learners have few choices.

Layering turns that organization on its side. With a layered presentation, the learner starts with the main idea. The learner may then choose to learn about the theoretical background or to see additional details. These are choices left to the learner. The learner may quit after learning the main idea. Or the learner may pursue one or both of the deeper topics.

Overcome Common Architectural Problems

Some common ways of combining and linking Web pages lead to problems for learners navigating the resulting structures. Let's take a look at these problems and see how to avoid them.

The as-shown-above syndrome
The as-shown-above syndrome is the tendency of designers to assume that everybody takes the course in exactly the sequence the designer intended. You see it in phrases and : instances like these:
► "As shown above" and "As shown below" (Where the items mentioned are not on the current screen.)
► "Earlier you read that..." 182 -4 Organize learning sequences A Designing Web-Based Training
► "By now you have learned how to ..."
► "Repeat the preceding steps" (When the preceding steps have scrolled off the screen.)
► "... will be explained later" (But will the learner be reading later?)
► Abbreviations spelled out only the first time they are used and terms defined only the first time they are used
► Warnings, cautions, notes, and conventions in the beginning of the course
► 'The next step in the process is ...." (Where the learner arrived at this topic directly from a search)
► Links labeled Return to X (when we did not come from X)
The solution is to make no hard assumptions about which path learners will follow. If understanding one idea requires understanding another, state the other idea, or link to it, or at least signal the requirement. Make it easy for learners to find needed information out of sequence. Here's where an index pays for itself. As does a good menu and a search facility.

Integrate Foreign Modules

Sometimes previously prepared materials make your development process easier. Designers can do that linking foreign modules to each others. However, modules prepared by others cannot be suitable your WBT application. You can develop a transition tool to suit foreign modules to your framework. Horton (2001) named this module as “docking module”.

What should include in a docking module

Docking module should have the following things that make it open to foreign modules:

• A special window to display it: If foreign module is in different shape and size, you can arrange a window to display it. You may use frame or separate window. If you put it in a place in your course without hindering consistency, you can use it in your web pages.

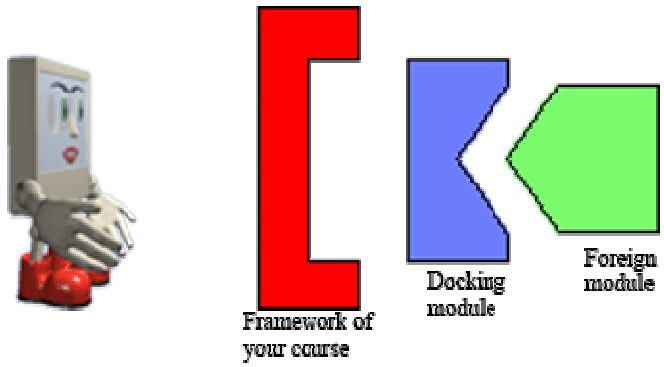
• Introduction: You may need to create a preview, introduction, abstract, overview, or description of the module to tell learners what to make of the foreign module.

• Cautions about it: Let learners know any limitations of the module that are different from those for native modules.

• Aids in accessing the content. Give learners any help they may need in accessing the foreign module and displaying its content. Provide:

a. Instructions on taking the module.
b. A special menu and index linked to its content.
c. Help obtaining any plug-ins or fonts it requires.
d. Glossary to define different terminology used in the module.

Certification test. The foreign module may not provide a test, or its test may not measure what is important to you. Add your own test to measure what learners got from the module.



Make Navigation Practical

Your sequence should be as practical as possible to direct learner in WBT environment without any trouble. Horton (2001) suggested some hints for that:

• Suggest a path: At every point, tell people what to do next. Give them a default action like “To continue”, “click Next”, “You have completed module 7”, and “Pick another module from the table of contents”.

Do not compel learners to take these choices, just suggest them.

• Help learners return from digression: If you let or encourage learners to deviate from a recommended sequence, tell them how to resume. Make clear how to get back to where they left off in the course. And how to get to the login screen directly. At the end of any planned digression, include a button to return the user to the main sequence or most recent menu. Or bookmark the point of digression and let learners resume by pressing a Resume button.

• Put additional readings only at end: Provide links to "more interesting information" only at the end of an activity that requires the learner's full attention. Do not let such links distract the learner from a difficult task.

• Add a few cross-links: For quicker navigation, consider adding a few cross-references between related topics so learners do not have to go up and down the hierarchy to move between related topics.

• Build shortcuts to popular destinations: Ensure that all users can quickly, simply, and reliably find their way from any page to the: home page, page they entered from, table of contents, index, search, and previous page.

• Build for expansion: Design your structure for 20% to 50% growth, or the amount of expansion you would expect within about six months.