



Work closely with the client to create the look and feel of the courses, lessons, and modules

E-Learning Storyboarding and Design

During the Design and Development phases of e-learning projects, Michaels & Associates consultants work closely with the client to create the look and feel of the courses, lessons, and modules (prototype) and to develop the content (storyboard).

A **prototype** is an interactive model of the course (usually grayscale) that contains a sample of the course content and navigation system. This deliverable enables clients to visualize and approve the overall course design layout (such as the placement of text, graphics and buttons) and major structural elements of the course (such as course navigation).

A **storyboard** describes in detail the output for every screen in a course as well as all possibilities for learner input. This deliverable enables clients to visualize and approve the course content, media, and interactions before programming begins.

Storyboarding and Design Tips

Use the following tips to help you design and develop e-learning prototypes and storyboards.

Use clear and logical navigation.

Apply the following principles of screen layout to ensure optimal functionality:

- Place screen objects together in a logical order. For example, in the header area, place the course title, module or lesson title, page or topic title and page numbers on the screen so that the information becomes more specific as the learner reads through the items.
- Use page identifiers such as lesson title, topic title and page numbers so learners know where they are in a course at all times.
- Place buttons where the learner's eye can easily find them and in a place that provides the most real estate for actual course material.
- Give buttons clear symbols or labels to make them easily identifiable.
- Group buttons together based on their function and frequency of use. Place the Quit or Exit button away from the main navigational buttons such as Menu, Back, Replay and Next.

Design screen information for learner control, usability and readability.

Successful e-learning is interactive and easy to use; it also allows learners to be in charge of their own learning.

- Allow learners to control the gradual building of information on a particular screen.
- Enable learners to see the entire screen without the need to use scrollbars.
- Be aware of your target audience and their abilities. Audience members could be uncomfortable with technology or have impairments with sight, hearing, motor skills and/or color-blindness. To solve these issues, keep your design and content simple, easy to use, with high contrasting on-screen text, and provide as many choices as possible with mouse vs. keyboard navigational controls and text vs audio content controls.



Resources

*Interactions
motivate
learners and
enhance
learning.*

- Use interactivity (such as hot spots, rollovers and hyperlinks) to present information. This gives users autonomy in deciding what content to explore and in what order.
- Use progress indicators on a main menu screen for courses with multiple lessons. This enables learners to easily track their status in the course. Note: Use bookmarking features with caution. When re-entering the course, bookmarks jump learners into the middle of training content, potentially disorienting the learners and taking content out of context.

Provide an adequate number of examples.

Relevant examples of learning points, both for demonstration and practice purposes, provide real-life opportunities for learners to acquire workplace skills and expertise.

When designing examples, avoid:

- Overly-complicated examples. Instead, build the example throughout the course so the learner can digest the process.
- Excessive repetition. You risk losing the learner's attention or focus.
- Because learners acquire knowledge at different speeds, allow them the flexibility to determine how many practice examples they need to complete. Advanced learners might "get it" after one example, but beginners might need two or more examples to practice.

Enable learners to interact with course elements.

Interactions motivate learners and enhance learning. To be effective, make the interactions **relevant** and **appropriate** to the instructional purpose.

Guidelines for using interaction:

- When the learner is absorbing new material, keep interaction involving choices or decisions to a minimum.
- Use interaction so learners can "try out" the principle they are learning.
- Provide hints and help options to encourage and support exploratory, interactive, positive learning experiences.
- Don't use an interaction just for the sake of using an interaction. Forcing learners to click or rollover content again and again is redundant and annoying. Provide an extra "nugget" of information or feedback at the end of an interaction to give the interaction purpose.
- The most important content, or any content that will be tested, should not be "hidden" in an optional interaction in case the learner does not interact with the page.
- When designing a test, provide at least one question per learning objective to ensure the student has mastered the material. Keep in mind that a very long test may overwhelm the learner. If a test has more than 10 questions, consider testing intermittently throughout the training, perhaps at the end of each lesson.

Avoid split attention with screen design.

Split attention occurs when a learner has to hold something in working memory while searching for a matching component. It usually occurs whenever two or more sources of information are presented separately on a screen and the learner must mentally integrate them together to make sense out of the material. A classic example is displaying a diagram with supporting text in a different area of the screen.



Resources

Reject linear thinking and abandon linear design.

To avoid split attention, align supporting text with the appropriate graphics. Techniques such as pointers or marquees can be useful in leading the eye to important or supporting information. Consider localization and do not include text in the actual graphic files; instead, make them separate entities that lay over or beside the graphic.

Use multimedia appropriately.

Multimedia resources are most effective when they reflect the needs of the users and the hardware/software available to learners. Ensure that the audience has access to the appropriate technologies required by the multimedia and knowledge of the skills required to operate the course.

Before using multimedia, weigh its benefits against the context of the learning environment and the available resources:

- Insufficient bandwidth and slow downloads may turn a "bells and whistles" online course with large audio and/or video files into tiresomely slow delivery.
- Sound can enhance learning and create exciting interactions, but if the learners access the training in a workplace environment, the use of sound may disturb co-workers.

Other guidelines for using multimedia:

- Ensure that multimedia accommodates slower readers—information that disappears after a short time hinders learning.
- Keep distractions such as fast-paced or looping animations, special effects, sound effects and background audio to a minimum.
- Present the audio narration simultaneously with the graphics or animation for that page.
- Avoid redundant information. The most common type of redundancy is repeating audio narration and visual text exactly. Use effective "mixed mode" instructional formats; present graphics and minimal text combined with supporting information delivered using audio.
- When using audio narration with minimal on-screen text, provide the option for no audio and full screen text for those with hearing impairments or those who want to print the course content.

Reject linear thinking and abandon linear design.

A highly structured, top down approach to instructional design rarely addresses the needs and preferences of learners. While it is perfectly acceptable to *suggest* a path through a course, it is usually not acceptable to *require* a predetermined path or *demand* the same through disabled choices and buttons. There are rare exceptions to this rule, such as when the content or external circumstances (such as federal regulations) require it.

- Don't force learners to interact with a screen or listen to the entire audio narration for a page, before allowing them to navigate to the next screen. Adults need to learn at their own pace or skip ahead if they already know the material. Forcing control on learners causes problems if using the course for future reference material.
- Allow learners to review course material and retake the final test as many times as they like. Provide a list of areas/lessons for review if any test questions are missed.



Resources

*Be clear
and concise.*

Provide adequate feedback.

After learners attempt any interactive exercise, give immediate and adequate feedback:

- Correct response: Provide an affirmative statement (Yes, Correct, That's right), and further details describing the correct answer. Use this opportunity to reinforce and review the correct answer or solution.
- Incorrect response: Provide a corrective statement (Try again, Not quite, Actually) and further details describing why the answer is incorrect. Use this opportunity to reinforce and review the correct answer or solution. Ideally, hint facilities can be used so the learner has the opportunity to try again and achieve success. For example, after one unsuccessful attempt, display a hint. After a second unsuccessful attempt, the correct result and full feedback response should display.

Use color effectively.

Effective use of color can:

- Clarify or support meaning.
- Make text and images stand out.
- Draw learner attention appropriately.
- Organize, categorize, and differentiate.
- Help learners recall and retrieve information.
- Remember, be aware of color-blind issues and use high contrasting on-screen text.
-

Potential problems with using color:

- Research has shown that color can help decrease cognitive load (which refers to how much your brain can take in at once). Use of colors for differentiation should be kept to a minimum (and never exceed 10).
- Research has also shown that the overuse of color decreases performance on memory/recognition tasks, so use enough white space and be consistent in color use.
- Color is cultural and meanings vary drastically from country to country, so keep your audience in mind.

Use effective fonts and text.

Fonts used in print are not always as effective online. Fonts designed specifically for online use include Tahoma, Verdana and Arial. These fonts were designed for easiest legibility on computer screens.

- Use a sans serif font for online reading.
- Use fonts that are common to the majority of Internet users such as Arial, Helvetica, and Verdana.
- Minimize the number of different fonts and be consistent where/when these fonts are used.
- Use mixed case.
- Use bold sparingly and only for emphasis.
- Use underlining only to identify hyperlinks.
- Use italics sparingly.
- Keep line lengths short.
- Be clear and concise.
- Write to allow learners to easily scan information on the screen. If audio narration is used, bulleted text is best.
- Construct text in complete sentences for easier comprehension.



Resources

- Avoid scrolling text when possible.

Use graphics appropriately.

Graphics and illustrations serve different purposes:

- Decorative: enhance the course when used sparingly, such as for company logos and branding in the interface design or a watermarked image in the background of a test question
- Representational: act as a metaphor for text or audio
- Organizational: provide a roadmap or flow of information
- Explanatory: support and complement the text or audio

Research shows that explanatory images can significantly improve learning (increase recall/transfer by more than 50%). It has also been shown that labeled diagrams are better than using text and illustrations separately.

Construct information on a screen to optimize readability.

Learners in western countries read the screen in a "Z" pattern from left to right, and from top to bottom. Given this pattern of reading, design screen content for western countries using the following guidelines:

- The **top** of the screen should include location information and any critical instructions that can't be missed. This information will immediately fulfill users' need to know where they are and what the screen is about.
- Instructional material should dominate the middle portion of the screen.
- A navigation bar should appear on the **bottom** of the screen.

When designing screen content for audiences outside western countries, take time to research the cultural differences and needs of the learners and design screen content with them in mind. Do not assume that a screen design in one country will work for another.

Michaels & Associates opened for business in 1998, and since then, we've been on a mission: make employees more effective in their jobs and ensure that these jobs are aligned with management directives. Yes, it's a challenge, but we continue to exceed our customers' expectations by offering fully-customized services:

- Training & documentation needs analysis & assessment
- Training design & development
- Training delivery & facilitation
- Technical writing & documentation design & development

Who benefits from these services? Our clients, from small software groups to retail financial giants, know they do. We have worked in the medical, homebuilding, finance, automotive, telecommunications, electronics, software, aerospace and travel industries, just to name a few. Regardless of the "who," our "what" remains constant: the best possible solution at the lowest possible cost. We form a true partnership with our clients so we can get to know their needs and execute their objectives quickly and expertly.

Our consultant family is as unique as our client base. We are composed of people with skills across nearly all tools, techniques, and approaches. Many of us have earned industry recognition, and Michaels & Associates has won Society for Technical Communications (STC) awards for instructional materials, documentation and e-learning. We want to provide the best solutions for our clients, so we pride ourselves in having the best people in the industry on our team.

Learn how Michaels & Associates will help you achieve your goals.

Contact: Sherry Michaels

marketing@docntrain.com

480.614.8440
or 877.617.8440

www.docntrain.com