



# *General Services Administration*

## *Section 508 and E-Learning*

# *E-Learning, Multi-Media*

Over the past decade, the Internet has brought learning "online" and offers many advantages:

- ✓ Convenience,
- ✓ Available at any time of the day,
- ✓ Course can be accessed almost anywhere
- ✓ Consistent Training
- ✓ Reduces Overhead like Travel Expenses



# *E-Learning, Success Indicators*

Indications or key measures of training effectiveness:

- ✓ Actual learning
- ✓ Learning rate
- ✓ Consistency
- ✓ Retention

All of these dramatically improve with improving levels of interactivity.

# *E-Learning Technologies*

Synchronous and asynchronous communication and collaboration tools such as:

- ✓ E-mail
- ✓ Listservs
- ✓ Bulletin boards
- ✓ Whiteboards
- ✓ Chat rooms
- ✓ Videoconferencing
- ✓ Teleconferencing

# *E-Learning Technologies*

## **Interactive environments:**

- ✓ Simulations
- ✓ Immersive experiences
- ✓ Games

## **Testing and evaluation tools:**

- ✓ Self-assessment
- ✓ Fill in the blank testing
- ✓ Multiple-choice testing.

# *E-Learning Technologies*

Today, online content is varied and can include:

- ✓ Text on a website
- ✓ Digital audio
- ✓ Digital video
- ✓ Animated images
- ✓ Virtual reality environments

This content can be created in a variety of ways, utilizing a variety of authoring tools.

# *Exclusion from E-Learning*

People with disabilities may be inadvertently excluded if Section 508 compliance is not incorporated into products and technologies.

Risks to the Agency?

- ✓ Promotions
- ✓ Mandatory Agency Training
- ✓ Job Performance
- ✓ Equal and Equivalent



# *E-Learning Problems*

The more interactive e-learning experience is, the greater the effectiveness and efficiency.

Highly interactive and engaging web enabled learning may not meet applicable 508 standards.

Possible conflict between robust, interactive web enabled training courses and 508 compliance.

# ***E-Learning Problems***

## **Help and Installation**

**LMS or Launch works but not content**

**Content works but can't launch course**

**AT Conflicts**

# *Assistive Technologies*

## **Visual disabilities**

- ✓ Screen readers
- ✓ Braille displays
- ✓ Voice recognition
- ✓ Magnification

## **Hearing disabilities**

- ✓ Require visual representation of auditory information

# *What 508 Standards Apply?*

- ✓ **Software** 1194.21 *Software Applications & Operating Systems*
- ✓ **Web** - 1194.22 *Web-based Intranet and Internet Information and Applications*
- ✓ **Multi-Media** - 1194.24 (c, d, and e) *Video and multimedia products*

# *E-Learning Components*

- ✓ Learning Management Systems (LMS)
- ✓ Content
- ✓ Engine
- ✓ Launching the Course

# *E-Learning Components*

## **LMS** Section 508 Standards

- ✓ **Software** *1194.21 Software Applications & Operating Systems*
- ✓ **Web** - *1194.22 Web-based Intranet and Internet Information and Applications*

# *E-Learning Components*

## **Content** Section 508 Standards

- ✓ **Software** *1194.21 Software Applications & Operating Systems*
- ✓ **Web** - *1194.22 Web-based Intranet and Internet Information and Applications*
- ✓ **Multi-Media** – *1194.24 Video and multimedia products*

# *E-Learning Components*

## **Engine** Section 508 Standards

✓ **Software** *1194.21 Software Applications & Operating Systems*

✓ **Web** - *1194.22 Web-based Intranet and Internet Information and Applications*

# *E-Learning Components*

## **Launching the Courses** Section 508 Standards

- ✓ **Software** *1194.21 Software Applications & Operating Systems*
- ✓ **Web** - *1194.22 Web-based Intranet and Internet Information and Applications*

# *Take (or Launch) the Class*

## **With LMS**

- ✓ Internet or Intranet
- ✓ CD or DVD

## **Without LMS**

- ✓ CD or DVD
- ✓ Internet or Intranet
- ✓ FTP

# *Six Steps in E-Learning Procurement*

- ✓ Determine E-Learning needs
- ✓ Market research to identify products that meet those needs
- ✓ Determine applicable 508 categories and standards. Determine applicable exceptions.
- ✓ Market research to determine compliance
- ✓ Documentation with Procurement Request
- ✓ Award contract.

# ***E-Learning Procurement***

**Source: US Access Board**

Most important step for agencies - Fully describe all of the training requirements.

Include objective measures of learning effectiveness and be sure they are justifiable based upon agency needs.

Once the agency has identified its needs, then the relevant Section 508 standards are taken into consideration.

# *E-Learning Procurement*

Source: USPTO

1. Determine the agency's e-learning needs or requirements.

It is important to remember that the agency's needs drive the procurement, not Section 508 standards

# *E-Learning Procurement*

Source: USPTO

2. Through market research, determine which vendors or products meets the agencies needs.

# *E-Learning Procurement*

Source: USPTO

3. Based on the agencies needs, determine which Section 508 technical categories and standards apply.

Identify standards that might not be applicable and/or exempt due to exceptions such as back office or fundamental alterations. Check with the Section 508 Coordinator on exceptions.

# *E-Learning Procurement*

Source: USPTO

4. Through market research, determine how the vendors or products meet the applicable Section 508 standards.

When doing market research, consider information on vendor web sites, VPATs, and the Government's Section 508 web site ([www.section508.gov](http://www.section508.gov)).

# *E-Learning Procurement*

Source: USPTO

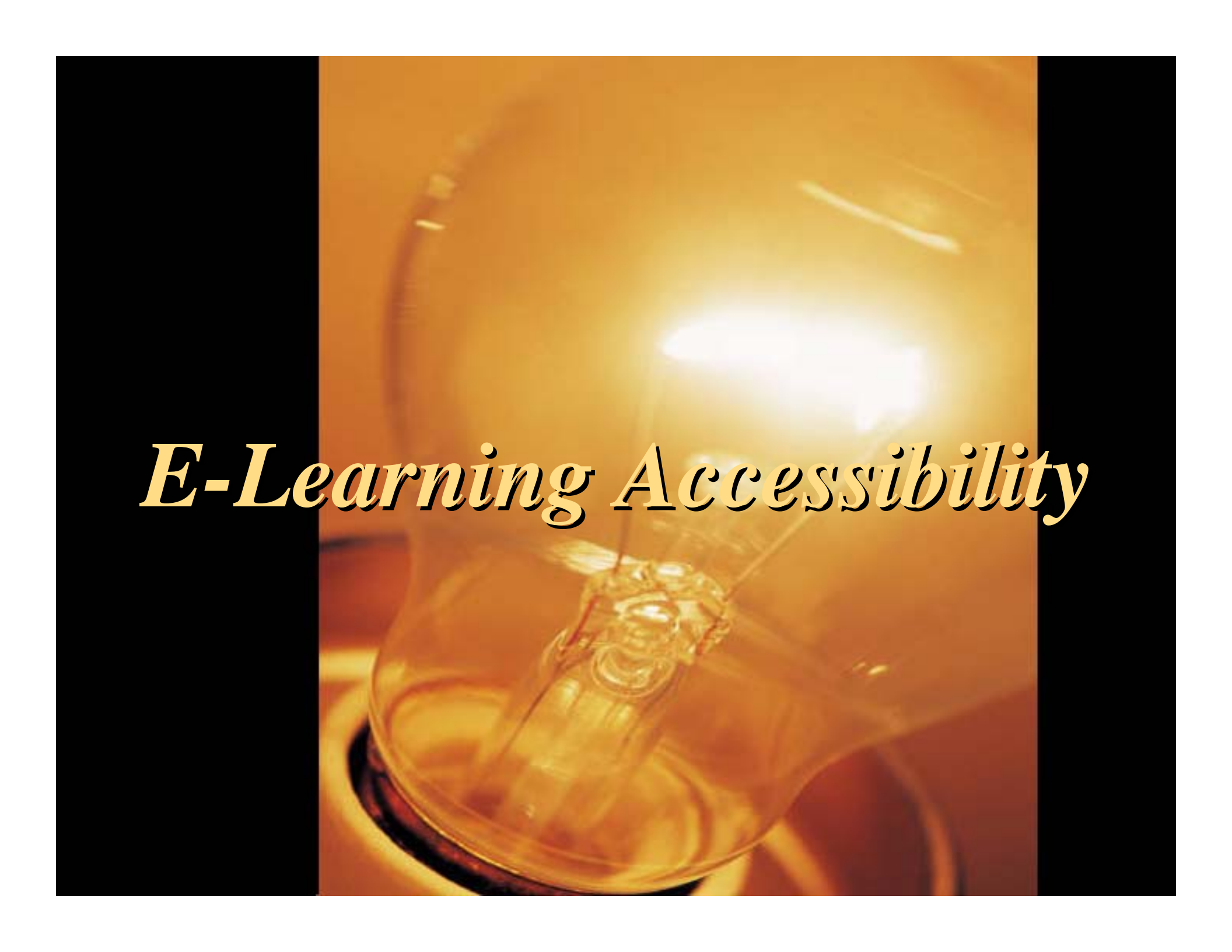
5. Include all Section 508 documentation with purchase request. Include:
  - ✓ Agency's needs/requirements
  - ✓ Sole source documentation, if applicable
  - ✓ Justification for exceptions
  - ✓ Market research
  - ✓ Vendor's response to 508 compliance
  - ✓ Conclusion on most compliant vendor, if applicable

# *E-Learning Procurement*

Source: USPTO

6. Award procurement request.

Be flexible. Proposal evaluation may yield additional information that could require reconsideration of the need and/or an exception.

A glowing lightbulb is the central focus of the image, set against a warm, golden-orange background. The lightbulb is illuminated from within, creating a bright, hazy glow that fills the frame. The text "E-Learning Accessibility" is written in a bold, italicized, serif font across the middle of the lightbulb. The overall composition is simple and evocative, suggesting ideas, innovation, and enlightenment.

***E-Learning Accessibility***

# *E-Learning Accessibility*

## **Why Design for Accessibility?**

- ✓ Marketing focus shifting from institutions to individual consumers
- ✓ “Share of customer” is replacing “market share”
- ✓ Companies establishing life-long relationships with individual consumers; and
- ✓ Markets of billions evolving into a billion markets of one

# *E-Learning Accessibility*

## **Gain and Maintain Attention:**

- ✓ How effectively do the lessons gain and maintain the attention of the learner?

## **Deliver Content:**

- ✓ How clear is the presentation of content?  
(Concise, focused, logical)
- ✓ How thought-provoking are the questions?
- ✓ Does the learning system engage the learner?

# *E-Learning Accessibility*

## **Provide Meaningful Examples**

- ✓ How useful are the analogies?
- ✓ How useful are the literal examples?
- ✓ How useful are the scenarios?

## **Model Skills**

- ✓ To what degree are skills modeled appropriately?

# *E-Learning Accessibility*

## **Provide Appropriate Practice**

- ✓ How appropriate is the cognitive practice?
- ✓ How appropriate is the hands-on-guided practice?
- ✓ How appropriate is the hands-on-**unguided** practice?

## **Integrated Review**

- ✓ How meaningful is the integrated review?

# *E-Learning Accessibility*

## **Give Meaningful Feedback**

✓ To what degree is there meaningful feedback?

## **Check for Mastery and Remediate**

# *E-Learning Accessibility Tools*

- ✓ Adobe PDF 6.0
- ✓ Macromedia Products
  - Flash
  - Dreamweaver
  - Authorware
- ✓ Microsoft
  - Office – Word, Excel, PowerPoint
  - Front Page
- ✓ Many Others



***E-Learning  
Section 508 Compliance***

A glowing lightbulb with a bright yellow-orange glow, symbolizing an idea or innovation. The lightbulb is the central focus, with its filament visible and a bright light emanating from it. The background is a warm, golden-yellow color, and the entire image is framed by a black border.

*Designing  
Accessible Products*

# *Accessible Products*

## **Tips for Designing Accessible Products for People:**

- ✓ Who are Blind
- ✓ With Low Vision
- ✓ With Color Blindness
- ✓ Hard of Hearing
- ✓ Mobility Impairment

# *E-Learning 508 Compliance*

## **Accessibility vs. Compliance**

- ✓ Product can be compliant and not truly accessible
- ✓ Product can be compliant and accessible, but not usable
- ✓ Accessible is not always compliant

# *E-Learning 508 Compliance*

## *Quick Tips*

- ✓ Are all videos captioned for deaf and hard-of-hearing viewers?
- ✓ Do all videos carry an audio component that describes visual images for blind and low-vision users?
- ✓ Do all software applications offer keyboard equivalents appropriate for users with mobility restrictions or vision impairments?

# *E-Learning 508 Compliance*

## *Quick Tips*

- ✓ Do all images on websites have labels (alt-text) for users who access content with the help of screen reading software?
- ✓ How can blind students access mathematical equations presented as graphics, which cannot be read by screen readers?
- ✓ Are testing protocols flexible enough?

# *E-Learning 508 Compliance*

## *Quick Tips*

- ✓ Are administrative matters such as course listings and course registration accessible?
- ✓ Are all videos captioned for deaf and hard-of-hearing viewers?
- ✓ Do all videos carry an audio component that describes visual images for blind and low-vision users?



*E-Learning Overview*  
*Quick Reference Guide*

# *E-Learning Overview*

- ✓ Equivalent Access vs. Alternative Access
- ✓ Customization Based on User Preference
- ✓ Equivalent Access to Auditory and Visual Content

# *E-Learning Overview*

Accessible Delivery of

- ✓ Presentations
- ✓ Text
- ✓ Audio
- ✓ Images
- ✓ Multimedia

Accessible Interface Navigation



# *Contact Information*

- For information on Section 508:  
[www.section508.gov](http://www.section508.gov)
- General Services Administration
- Helen Chamberlain
- [helen.chamberlain@gsa.gov](mailto:helen.chamberlain@gsa.gov)
- 202-219-2348