



LearningLink Programming Standards

January 06, 2011

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Introduction

LearningLink is the Department of Labor's portal for the delivery of Web-based Training programs and the enterprise system of record for recording training completion.

LearningLink supports business and management processes by providing agencies, staff, and customers with single-site access for the management, delivery, and development of learning and knowledge. This document provides programming standards that should be followed (e.g. conforming to Shared Content Object Reference Model (SCORM) version 1.2, meeting Section 508 accessibility standards, etc.) to ensure your web-based training course/program is compatible with LearningLink. In addition, the appendices provide supplemental information on question recommendations, media types, recommended user instructions, recommended body text standards and SCORM data model calls supported by Plateau.

1.0 Programming Standards

1.1.1 General

The following standards should be used during programming:

- Write comments for the code when appropriate and possible
- Program courseware to conform to SCORM 1.2 standards whenever possible to facilitate reuse of course objects and interoperability within LearningLink. The use of SCORM 2004 should be coordinated with OWPI prior to course development.
- Program courseware to conform to Section 508 accessibility standards.
- Program course content to be self-contained. Course Sharable Content Objects (SCOs) may not rely on server-side scripting to function

1.1.2 Scripting and Authoring Tools

LearningLink WBT can be created using native Web scripting technologies. They include:

- HTML
- JavaScript
- XML
- DHTML
- CSS

In addition to native Web scripting technologies, authoring tools such as Adobe Flash may be used.

Use of native Web scripting tools, along with common proprietary tools, allows for maximum client usability as well as flexibility when editing and updating content.

In the course, the vendor must credit the office responsible for creating the course.

1.2 SCORM 1.2 Standards

LearningLink content is required to conform to the Shared Content Object Reference Model (SCORM) version 1.2. Courseware SCORM packages will be loaded into the learning management system (LearningLink), a branded implementation of Plateau (v. 5.8). The vendor shall provide copies of the ADL SCORM Conformance Test Suite (v. 1.2.7) logs in PDF or HTML format at the time of delivery. The test suite can be

downloaded free of charge from ADL's website (<http://www.adlnet.gov>). SCORM packages to be loaded to the LearningLink environment shall be delivered to the LearningLink administration team in standard zipped (PIF) format. Vendors shall make these packages available on CD or via an FTP site owned by the vendor (preferred method).

1.2.1 *Manifest*

The course package must contain a properly formatted SCORM 1.2 manifest with the following elements:

- Identifier. An identifier that is unique to the manifest that associates a resource to an organizational item (for example, a lesson) defined earlier in the manifest.
- Type. The type of the resource. Currently, this specification defines only the "Web content" type.
- SCORM Type. Specify either SCO or Asset.
- HREF. Specify a reference to the "entry point" of a resource. Fully qualified external URLs are permitted.

1.2.2 *SCORM 1.2 API Communication*

To successfully pass the ADL SCORM Conformance Test Suite (V. 1.2.7) the course must contain an application programming interface (API) that can communicate with the LearningLink LMS. The following core API calls to the LMS must be included to enable proper tracking of the Learner's session. A complete list of data elements within each API call are included in Appendix F: SCORM Data Model Calls Supported by Plateau.

- LMSInitialize(). Called when the Learner loads the course from the LMS.
- LMSFinish(). Called when the Learner exits the course and returns to the LMS. Must account for both direct exiting (Learner presses a dedicated exit link or button) as well as indirect exiting (Learner closes course window).
- LMSGetValue(). Called when the course requests a stored value from the LMS, such as when retrieving the last page visited (bookmark).
- LMSSetValue(). Called when the course sends a value from the course to the LMS, such as the current page (bookmark).
- LMSCommit(). Called to commit sent data to the server. Depending on client and server bandwidth, LMSCommit() should be called after each LMSSetValue() for

high-bandwidth connections. Otherwise, LMSCommit() should be called upon when the Learner exits the course, just before LMSFinish().

1.3 508 Accessibility Standards and Best Practices

All Web-based Training deployed on Learning Link must be in compliance with Section 508 of the Rehabilitation Act of 1998 (Section 508). DOL Course Owners must require vendors to complete a VPAT (Voluntary Product Accessibility Template) to certify Section 508 compliance before DOL procures or uses the product. Course Owners are responsible for Section 508 testing and evaluation against the vendor's VPAT prior to acceptance. This includes evaluating the 508 compliance of Web-based Training courses provided from other Federal Agencies. Course Owners will be asked for their 508 testing and evaluation results to ensure 508 compliance prior to their course being deployed on LearningLink. Please contact the Department of Labor's Section 508 Coordinator in OASAM/OCIO for additional guidance on Section 508 evaluation and acceptance testing horan.jennifer@dol.gov V 202-693-4441 TTY 202-693-8064

1.3.1 Standards

The current 508 Standards are found on the U.S. Access Board's website <http://www.access-board.gov/sec508/standards.htm>

Department of Labor's DLMS 9 Chapter 600 "IT Accessibility Management" supports Section 508 compliance at DOL.

To comply with DOL 508 standards, the developer must test whether the content and functionality of a Web-based Training can be delivered to users with the following types of disabilities:

- Motor impaired. The user is unable to use the mouse and must navigate and interact with the course using only the keyboard.
- Vision impaired. The user is blind or has visual impairment or color blindness.
- Hearing impaired. The user is deaf or hard of hearing.

To address each of these types of disabilities, the developer must include the following:

- Keyboard navigation must be supported. To enable access to users who employ alternate input devices, all course navigation controls must be functional using the keyboard alone.
- Text Alternatives must be provided for all visual elements and interaction. To enable visually impaired users to access course content, the course must include a text alternative for all relevant visual content including still pictures, animations,

and interactions. This text alternative must be readable by a screen reader such as JAWS.

- Synchronized closed captioning for video must be provided. To enable hearing impaired users to access dialogue, narration, music, or other relevant audio content, the course must provide the user with a control option to display synchronized closed captioning text.
- Audio must not auto launch. Auto launch interferes with an assistive technology end user's ability to navigate the course page, especially if they are new to the course and have yet to locate links and buttons to pause the audio or lower the volume.
- Many employees at DOL use 800x600 screen resolution settings to meet their accommodation needs. All courses must be usable when displayed in 800x 600. Buttons, controls and scroll bars must not be "lost" off the visible screen when 800x600 resolution is employed.
- All Flash products must be accessible. Please refer to the VHA's free course on creating accessible Flash as a resource if your course is Flash-based.
<http://www.ehealth.va.gov/508/flash/index.asp>

1.3.2 *Best Practices for Accessibility*

There are some best practices to incorporate either to be in compliance with Section 508 or to avoid unnecessary work by creating two versions of text content, one for the person without disabilities and one for the person with disabilities. Some examples follow.

Inclusive Language

Some users may not be able to click areas of the screen. Therefore, all-inclusive language should be used throughout the courseware.

- Use select rather than click.
Example: Select Next to continue.
Example: Select OK.

Some assistive technology does not work well with references to buttons and some other elements. Therefore, an alternative to these words should be used through the courseware.

- Use option rather than button or other elements.

Example: Select the Save option.

Example: From the File menu, select the Save option.

OR

Use the element name without mentioning what the element is.

Example: Select Save.

Example: From the File menu,

Tests, quizzes, and other types of interaction pose special challenges for users with disabilities. If an equivalent experience is not possible or would be inappropriate, a text alternative can be provided. For example, a drag-and-drop matching interaction could not be accessible to a blind person because it relies on the user's ability to identify objects on screen and coordinate their movement towards a specific target on the screen with a mouse. An alternative for this type of interaction would be to describe the interaction in a way that would be understandable to a blind person without the drag-and-drop functionality but retaining the instructional content.

Text alternatives for matching, sorting, or sequencing interactions must be written to be understandable to visually impaired users that will be using a screen reader tool such as JAWS.

Example:

The following is a text alternative to the sorting exercise on this screen for visually impaired users.

Listen to the following phrases and decide whether they are or are not a Credit Processing Step.

First phrase. Reviewing a credit bureau report.

Is this phrase one of the steps in the Credit Process. Yes or no?

The correct answer is Yes. Reviewing a credit bureau report is part of gathering and verifying information.

Appendix A: Glossary

Term	Definition
Bookmark	The bookmark marks the last screen on which the student worked before exiting the system. Bookmark information is passed transparently from the courseware to a management system database for storage when a student exits the training before completing course. Student bookmark information is retrieved from the management server when a student re-enters the course. Procedures for integrating this feature with the LMS database are provided in the SOW Addendum.
Courseware	Courseware refers to the WBT and all supplemental materials. It includes the necessary auxiliary materials and any special applications, programs, or other software necessary to present instruction.
Government-Furnished Information (GFI)	Any information provided by the government to support WBT development. This information includes documents, specifically instructional materials in print or data format, supplied to the contractor/developer before and during the execution of the contract.
Interactivity	A process by which the computer presents instruction and responds individually to each student's input.
Storyboard	A deliverable that visually describes media content placed in every screen in the course. Storyboards display the content and detail to the flow and interactivity of each screen. They describe in detail all images, animation, movie segments, sound, text, and navigational paths.
Web-based Training (WBT)	A group of predominantly interactive, training and training support products delivered over the Worldwide Web. WBT products include instructional software and software management tools used in support of instructional programs.

Appendix B: Question Recommendations

Question Type/Screen	Placement	Format/Rule	Examples
Multiple Choice/Completion			
Screen Title	Top	SB: Arial, 10pt, Centered Prg: Arial, 18pt, Bold, White, Centered	Practice Knowledge Check – Question #1
User Instructions	Two lines below the screen title	SB: Arial, 10pt, Left Justified Prg: Arial, 14pt, Bold, White, Left Justified Use the term ‘Select’ versus ‘Choose,’ ‘Click,’ or ‘Pick.’	Select the correct response. Based on the image provided, select the reason(s) why the employer is in violation of excavation requirements in Subpart P.
Question	Two lines below the user instructions	SB: Arial, 10pt, Left Justified Prg: Arial, 14pt, Bold, White, Left Justified Use appropriate punctuation.	
Responses	Two lines below the question	SB: Arial, 10pt, Left Justified Prg: Arial, 14pt, Bold, White, Left Justified Each response is preceded by a lowercase a, b, c, or d followed by a period then two blank spaces. If the responses reflect a specific order, then they are preceded by a number and followed by a period and two blank spaces. Do not capitalize the first letter of a response if it begins a question stem. Capitalize the first letter of all other responses (e.g., when the stem is a question). Only use periods after a response if it is a complete sentence or	

		completes a sentence begun in the stem.	
Submit Button	Two lines below the responses	Left Justified	
User Prompt	Bottom	SB: Arial, 10pt, Centered Prg: Arial, 14pt, Bold, Yellow, Centered	Click the SUBMIT button when finished.
Dropdown Lists			
Screen Title	Top	SB: Arial, 10pt, Centered Prg: Arial, 18pt, Bold, White, Centered	Practice Knowledge Check – Question #1
User Instructions	Two lines below the screen title	SB: Arial, 10pt, Left Justified Prg: Arial, 14pt, Bold, White, Left Justified	Using the dropdown lists provided, select the correct soil type for each example. Using the dropdown lists provided, select the best label for each graphic.
Question/Scenario	Two lines below the user instructions	SB: Arial, 10pt, Left Justified Prg: Arial, 14pt, Bold, White, Left Justified Use appropriate punctuation. Do not use dropdown lists as part of a statement/fill in the blank.	
Submit Button	Below responses (2 blank lines separating the two).	Left Justified	
User Prompt	Bottom	SB: Arial, 10pt, Centered Prg: Arial, 14pt, Bold, Yellow, Centered	Click the SUBMIT button when finished.

Knowledge Check Introduction			
Screen Title	Top	SB: Arial, 10pt, Centered Prg: Arial, 18pt, Bold, White, Centered	Knowledge Check Introduction
User Instructions	N/A	N/A	N/A
Screen Text	Two lines below the user instructions	SB: Arial, 10pt, Left Justified Prg: Arial, 14pt, Bold, White, Left Justified	<p>When completing the Knowledge Check, keep the following in mind:</p> <p>The questions are self-paced. You can take as much time as you need to complete each question.</p> <p>There are <insert #> questions in this Knowledge Check. You must obtain 100% to successfully complete the Knowledge Check.</p> <p>After completing all questions, you will receive a Knowledge Check Summary screen. This Screen will display the question with "correct " or "incorrect" beside each question.</p> <p>For each incorrect question, you will first review the lesson screen(s) relevant to the question. Then, you will retake the question. You will continue this process - review material, retake the question - until you have successfully answered all questions.</p>
Submit Button	Two lines below the responses	Left Justified	
User Prompt	Bottom	SB: Arial, 10pt, Centered Prg: Arial, 14pt, Bold, Yellow, Centered	Click the FORWARD button to continue.

Knowledge Check			
Screen Title	Top	SB: Arial, 10pt, Centered Prg: Arial, 18pt, Bold, White, Centered	Knowledge Check – Question # 1
User Instructions	Two lines below the screen title	Dependent upon type of question used.	Dependent upon type of question used.
Question/Scenario	Two lines below the user instructions	SB: Arial, 10pt, Left Justified Prg: Arial, 14pt, Bold, White, Left Justified Use appropriate punctuation. Do not use dropdown lists as part of a statement/fill in the blank.	
Submit Button	Two lines below the responses	Left Justified	
User Prompt	Bottom	SB: Arial, 10pt, Centered Prg: Arial, 14pt, Bold, Yellow, Centered	Click the SUBMIT button when finished.
Knowledge Check Summary			
Screen Title	Top	SB: Arial, 10pt, Centered Prg: Arial, 18pt, Bold, White, Centered	Knowledge Check – Summary
User Instructions	N/A	N/A	N/A
Screen Text	Two lines below the user instructions	SB: Arial, 10pt, Left Justified, Columns Prg: Arial, 14pt, Bold, White, Left Justified, Columns The question number and corresponding topic name are provided followed by the student grade on the line directly beneath it. Questions answered correctly are highlighted in green.	Question #1: Behaviors of a Problem Characterization Your answer is Correct Question #2: Components of Air Your answer is Incorrect

		Questions answered incorrectly are highlighted in red.	
Submit Button	Two lines below the responses	Left Justified	
User Prompt	Bottom	SB: Arial, 10pt, Centered Prg: Arial, 14pt, Bold, Yellow, Centered	Click the FORWARD button to review material for each incorrect question.
Comprehensive Knowledge Check Introduction			
Screen Title	Top	SB: Arial, 10pt, Centered Prg: Arial, 18pt, Bold, White, Centered	Knowledge Check Introduction
User Instructions	N/A	N/A	N/A
Screen Text	Two lines below the user instructions	SB: Arial, 10pt, Left Justified Prg: Arial, 14pt, Bold, White, Left Justified	<p>When completing the Comprehensive Knowledge Check, keep the following in mind:</p> <p>The questions are self-paced. You can take as much time as you need to complete each question.</p> <p>There are <insert #> questions in this Comprehensive Knowledge Check. You must obtain 100% to successfully complete the Knowledge Check.</p> <p>After completing all questions, you will receive a Comprehensive Knowledge Check Summary screen. This Screen will display the question with "correct " or "incorrect" beside each question.</p> <p>For each incorrect question, you will first review the lesson screen(s) relevant to the question. Then, you will retake the question. You will continue this process - review material, retake the question - until you have successfully answered all questions.</p>

Submit Button	Two lines below the responses	Left Justified	
User Prompt	Bottom	SB: Arial, 10pt, Bold, Yellow, Centered Prg: Arial, 14pt, Bold, Yellow, Centered	Click the FORWARD button to continue.
Comprehensive Knowledge Check			
Screen Title	Top	SB: Arial, 10pt, Centered Prg: Arial, 18pt, Bold, White, Centered	Comprehensive Knowledge Check – Question # 1
User Instructions	Two lines below the screen title	Dependent upon type of question used.	Dependent upon type of question used.
Question/Scenario	Two lines below the user instructions	SB: Arial, 10pt, Left Justified Prg: Arial, 14pt, Bold, White, Left Justified Use appropriate punctuation. Do not use dropdown lists as part of a statement/fill in the blank.	
Submit Button	Two lines below the responses	Left Justified	
User Prompt	Bottom	SB: Arial, 10pt, Centered Prg: Arial, 14pt, Bold, Yellow, Centered	Click the SUBMIT button when finished.
Comprehensive Knowledge Check Summary			
Screen Title	Top	SB: Arial, 10pt, Bold, White, Centered Prg: Arial, 18pt, Bold, White, Centered	Comprehensive Knowledge Check – Summary
User Instructions	N/A	N/A	N/A

Screen Text	Two lines below the user instructions	SB: Arial, 10pt, Bold, White, Left Justified, Columns Prg: Arial, 14pt, Bold, White, Left Justified, Columns The question number and corresponding topic name are provided followed by the student grade on the line directly beneath it. Questions answered correctly are highlighted in green. Questions answered incorrectly are highlighted in red.	Question #1: Behaviors of a Problem Characterization Your answer is Correct Question #2: Components of Air Your answer is Incorrect
Submit Button	Below responses (2 blank lines separating the two).	Left Justified	
User Prompt	Bottom	SB: Arial, 10pt, Bold, Yellow, Centered Prg: Arial, 14pt, Bold, Yellow, Centered	Click the FORWARD button to review material for each incorrect question.
Feedback for Practice Questions			
Correct	To the right of the Submit button.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow Correct! <Restate question with the correct answer.> Ex. Correct! The hood is the most important part of the ventilation system because it collects and contains the contaminant.	Correct! The hood is the most important part of the ventilation system because it collects and contains the contaminant.
Incorrect	To the right of the Submit button.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow Incorrect. <State the correct answer and restate the question with the	Incorrect. The correct answers are a, b, and d. Remember that a hood contains the emitted contaminant.

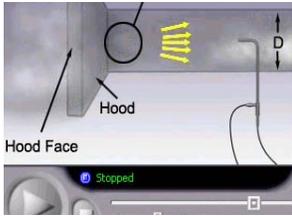
		<p>correct answer.></p> <p>Ex. Incorrect. The correct answers are a, b, and d. Remember that a hood contains the emitted contaminant.</p>	
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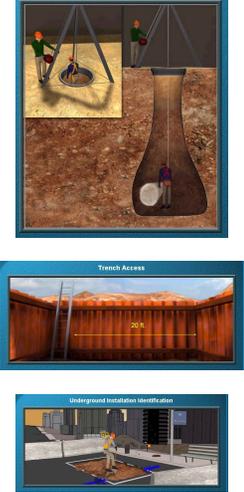
Appendix C: Media Types

Media					
Type	File Format	Example	Description	Strategy	Level of Difficulty
Animated Introduction	.swf		<p>This media component consists of a series of animated screens including text, photos, line art etc, which introduce the entire course.</p> <p>The animated sequences can be programmed to run continuously until the main menu screen appears, or the sequences may contain embedded controls such as back, forward and skip buttons for user control.</p>	<p>This type of screen/media element provides an excellent method to engage/motivate students and to begin a course introduction.</p>	2-3
3-D Animation	.mov .avi .mpg		<p>A complex 3-D animation may include special effects, audio, animated characters, multiple layers, or detailed environments. Since they are not easily modified, complex 3-D animations are the most time-consuming media element to create and require detailed information from a SME. Reuse the animations or elements of complex 3-D animations when possible.</p>	<p>3-D animations provide a great way to re-create a scenario or work environment. They are also good for illustrating:</p> <ul style="list-style-type: none"> • character animations • 3-D particle systems such as <ul style="list-style-type: none"> -explosions -fire -water effects - smoke 	4

Media					
Type	File Format	Example	Description	Strategy	Level of Difficulty
Animated Introduction	.swf		<p>This media component consists of a series of animated screens including text, photos, line art etc, which introduce the entire course.</p> <p>The animated sequences can be programmed to run continuously until the main menu screen appears, or the sequences may contain embedded controls such as back, forward and skip buttons for user control.</p>	<p>This type of screen/media element provides an excellent method to engage/motivate students and to begin a course introduction.</p>	2-3
				<ul style="list-style-type: none"> highly detailed and accurate models that need to be created from scratch, such as environments, machinery, or organic models 	
2-D Animation	.swf		<p>A 2-D animation is an animated illustration created in a 2-D package (Flash) that has simple elements (e.g. shapes, text, photos) animated with simple movements and a limited number of layers. These types of graphics are less time-consuming and are often used when little to no reference items</p>	<p>2-D animations may be used in several different ways to:</p> <ul style="list-style-type: none"> present different terms or several different photos of an object or environment similar to a slide show 	2

Media					
Type	File Format	Example	Description	Strategy	Level of Difficulty
Animated Introduction	.swf		<p>This media component consists of a series of animated screens including text, photos, line art etc, which introduce the entire course.</p> <p>The animated sequences can be programmed to run continuously until the main menu screen appears, or the sequences may contain embedded controls such as back, forward and skip buttons for user control.</p>	<p>This type of screen/media element provides an excellent method to engage/motivate students and to begin a course introduction.</p>	2-3
			are available.	<ul style="list-style-type: none"> • move text or simple shapes, for example showing chemical abbreviations or particles coming out of a vent • animate arrows in flow or schematic diagrams to show a process. 	

Media					
Type	File Format	Example	Description	Strategy	Level of Difficulty
Animated Introduction	.swf		<p>This media component consists of a series of animated screens including text, photos, line art etc, which introduce the entire course.</p> <p>The animated sequences can be programmed to run continuously until the main menu screen appears, or the sequences may contain embedded controls such as back, forward and skip buttons for user control.</p>	This type of screen/media element provides an excellent method to engage/motivate students and to begin a course introduction.	2-3
Animated Line art	.mov .avi .swf		<p>This media type starts with a simple line drawing from a reference manual or slide. The source line art is scanned in or redrawn in a vector based graphics package and this artwork is then brought into an animation package to add descriptive animated details such as moving arrows, pivoting ladders, etc. These work best with high quality source drawings for the artist to work with and they do require detailed information and input from a SME.</p>	<p>Animated line art may be used in several different ways to:</p> <ul style="list-style-type: none"> • illustrate a simple example of how a piece of equipment functions • illustrate air flow 	2

Media					
Type	File Format	Example	Description	Strategy	Level of Difficulty
Animated Introduction	.swf		<p>This media component consists of a series of animated screens including text, photos, line art etc, which introduce the entire course.</p> <p>The animated sequences can be programmed to run continuously until the main menu screen appears, or the sequences may contain embedded controls such as back, forward and skip buttons for user control.</p>	<p>This type of screen/media element provides an excellent method to engage/motivate students and to begin a course introduction.</p>	2-3
2/3-D Illustration	.jpg		<p>Illustrations require a significant amount of time to create because often the illustration must be developed by the artist working from a line drawing or a photograph.</p> <p>Illustrations are static but can include simple interactions such as hot spots with links to pop-up boxes of information.</p> <p>A 3-D illustration is static and not animated. This type of illustration provides the detail and perspective that a flat (2-D) graphic does not provide and is required to</p>	<p>Illustrations are very helpful for providing:</p> <ul style="list-style-type: none"> • a unique perspective on an environment or object • detail unavailable in existing photos or graphics • a recreation of a photo or illustration that is copyrighted • modifications/edits to a detailed illustration 	3-4

Media					
Type	File Format	Example	Description	Strategy	Level of Difficulty
Animated Introduction	.swf		<p>This media component consists of a series of animated screens including text, photos, line art etc, which introduce the entire course.</p> <p>The animated sequences can be programmed to run continuously until the main menu screen appears, or the sequences may contain embedded controls such as back, forward and skip buttons for user control.</p>	This type of screen/media element provides an excellent method to engage/motivate students and to begin a course introduction.	2-3
			adequately explain a concept.	3-D illustrations are very helpful for providing: an accurate example of an environment or object -detail unavailable in existing photos or flat graphics, photo, or illustration.	
Static Graphic	.jpg tiff		<p>A static graphic is not animated. This type of image is great for presenting process flows and static visuals.</p> <p>Examples of static graphics include:</p> <ul style="list-style-type: none"> • diagrams 	<p>Simple illustrations are used to:</p> <ul style="list-style-type: none"> • recreate complex diagrams • design collages • generate tables of 	1-2

Media					
Type	File Format	Example	Description	Strategy	Level of Difficulty
Animated Introduction	.swf		<p>This media component consists of a series of animated screens including text, photos, line art etc, which introduce the entire course.</p> <p>The animated sequences can be programmed to run continuously until the main menu screen appears, or the sequences may contain embedded controls such as back, forward and skip buttons for user control.</p>	<p>This type of screen/media element provides an excellent method to engage/motivate students and to begin a course introduction.</p>	2-3
			<ul style="list-style-type: none"> • illustrations • photo illustration collage 	<p>information</p> <ul style="list-style-type: none"> • modify/edit/existing art work/photographs 	
Photo	.jpg tiff		<p>Photography is an important component of visual instructional content. Photographs can be used “as is” with little editing or manipulated and edited for either static or animated visuals.</p> <p>---- must obtain written copyright permissions for all photos used unless they are obtained from one of the following sources</p>	<p>Photos can be:</p> <ul style="list-style-type: none"> • used to depict scenes in the field or office • used to show actual details of machinery or instrumentation • annotated to include instructional information to enhance the raw 	1-2



Media

Type	File Format	Example	Description	Strategy	Level of Difficulty
Animated Introduction	.swf		<p>This media component consists of a series of animated screens including text, photos, line art etc, which introduce the entire course.</p> <p>The animated sequences can be programmed to run continuously until the main menu screen appears, or the sequences may contain embedded controls such as back, forward and skip buttons for user control.</p>	<p>This type of screen/media element provides an excellent method to engage/motivate students and to begin a course introduction.</p>	2-3
			<ul style="list-style-type: none"> • royalty-free websites • client owned material • government-furnished material • a photo or clip-art CD that has been purchased. 	<p>image</p> <p>Photographs are very powerful when used to:</p> <ul style="list-style-type: none"> • provide a “true-to-life” example of a work environment • show a piece of machinery 	
Digital Video	.mov .avi .mpg		<p>Digital Video can be time-consuming and more costly to produce if there is not “near broadcast quality source material” that has been previously shot and</p>	<p>Digital Video is best used to:</p> <ul style="list-style-type: none"> • provide a “true-to-life” example of a work environment 	4

Media					
Type	File Format	Example	Description	Strategy	Level of Difficulty
Animated Introduction	.swf		<p>This media component consists of a series of animated screens including text, photos, line art etc, which introduce the entire course.</p> <p>The animated sequences can be programmed to run continuously until the main menu screen appears, or the sequences may contain embedded controls such as back, forward and skip buttons for user control.</p>	<p>This type of screen/media element provides an excellent method to engage/motivate students and to begin a course introduction.</p>	2-3
			<p>that aligns exactly with the storyboard content.</p> <p>When using existing video, obtain written copyright permission unless the video is obtained from one of the following sources:</p> <ul style="list-style-type: none"> royalty-free websites client owned material government-furnished material 	<ul style="list-style-type: none"> illustrate how to perform a task demonstrate how a piece of machinery works 	

Appendix D: Recommended User Instructions

Screen	Prompt Text	Format	Layout/Position
Splash			
Forward	Select FORWARD to learn how to use this training course.	SB: Arial, 10pt, button name in all caps Prg: Arial, 14pt, bold white; button name in all caps	Rollover on text
Back	Select BACK to replay the opening animation.	SB: Arial, 10pt, button name in all caps Prg: Arial, 14pt, bold white; button name in all caps	Rollover on text
Skip	Select SKIP to go immediately to the training course.	SB: Arial, 10pt, button name in all caps Prg: Arial, 14pt, bold white; button name in all caps	Rollover on text
Lesson Menu	Select a lesson to continue.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, white	Centered beneath the logo at bottom of screen.
Topic Menu	Select a topic to continue.	SB: Arial, 10pt, Prg: Arial, 14pt, Bold, yellow	Centered beneath topic buttons.
Lesson Introduction	Select FORWARD to continue.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Lesson Objectives			
Menu	Select MENU to select a topic.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Print	Select PRINT to print the document(s).	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.

Screen	Prompt Text	Format	Layout/Position
Topic Introduction	Select FORWARD to continue.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Topic Content			
Forward	Select FORWARD to continue.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Animation/Video	Select PLAY to view the animation.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Clickable Graphic	Select the image. Select the fan.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Practice			
Submit	Select SUBMIT when finished.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Practice			
At the end of a topic	Select MENU to select a topic.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Lesson Summary			
Menu	Select MENU to select a topic.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.

Screen	Prompt Text	Format	Layout/Position
Resources	Select RESOURCES to access additional information about this lesson – FAQs, Links, and Forums.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, white	The last sentence (left justified) of the main content area.
Resources	Select a resource option to access additional information, or select MENU to select a topic.	SB: Arial, 10pt, Bold, yellow Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
FAQs	N/A		

Screen	Prompt Text	Format	Layout/Position
Links	Select a link to access additional information, or select CLOSE WINDOW to close the window and return to the course.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Forums	N/A		
Knowledge Check Intro	Select FORWARD to continue	SB: Arial, 10pt Prg: Arial, 14pt	Centered at the bottom of the main content area.
Knowledge Check Question	Select SUBMIT when finished.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Knowledge Check Summary	Select FORWARD to review material for each incorrect question.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.

Screen	Prompt Text	Format	Layout/Position
Knowledge Check Review	Select FORWARD to continue.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Animation/Video	Select PLAY to view the animation.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Clickable Graphic	Select the image. Select the fan. (for example)	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Comprehensive Knowledge Check Intro	Select FORWARD to continue.	SB: Arial, 10pt, Bold, yellow Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Comprehensive Knowledge Check Question	Select SUBMIT when finished.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Comprehensive Knowledge Check Summary	Select FORWARD to continue.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.

Screen	Prompt Text	Format	Layout/Position
Glossary	N/A		
Help	N/A		
Congratulations	Select MENU to continue.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, yellow	Centered at the bottom of the main content area.
Print Certificate	Select PRINT CERTIFICATE to print a certificate of completion.	SB: Arial, 10pt Prg: Arial, 14pt, Bold, white	The last sentence (left justified) of the main content area.
Certificate	N/A		

Appendix E: Recommended Body Text Standards

Topic	Standards	Example
Capitalization		
	<p>a. General capitalization:</p> <ul style="list-style-type: none"> - the first word of a sentence - the first word after a colon, if the colon introduces a complete statement - titles of publications - each word in a phrase that is then made into an acronym - days, months - holidays - the pronoun “I,” - proper names <p>The only exceptions to this standard would occur when it is necessary to meet client conventions.</p>	
	b. Titles	
	1. Topic	
	i. Capitalize the first letter of each word (with the exception of articles <i>a, an, and the</i> ; the prepositions <i>at, by, for, in, of, on, to, and up</i> (unless they are the first or last word of the Title); and the conjunctions <i>and, as, but, if, or, and nor.</i>)	All Returns Are In SB: Arial, 10pt Prg: Arial, Bold, 16pt.
	ii. Italicize all titles when referenced directly.	In the lesson, <i>Principles of Industrial Ventilation</i> , you learned....
Capitalization	iii. Do not capitalize words that are parts of titles.	As discussed in <i>Industrial</i>

Topic	Standards	Example
Continued		<i>Ventilation</i> , industrial ventilation is a method of controlling...
	iv. If titles are hyphenated capitalize both words.	Continuous Line-Type Detectors
	2. Screen	
	i. Capitalize the first letter of each word (with the exception of articles <i>a, an,</i> and <i>the</i> ; the prepositions <i>at, by, for, in, of, on, to,</i> and <i>up</i> (unless they are the first or last word of the Title); and the conjunctions <i>and, as, but, if, or,</i> and <i>nor.</i>)	All Returns Are In SB: Arial, 10pt Prg: Arial, Bold, 18pt.
	ii. Italicize any reference to the title of a lesson and/or topic.	
	iii. If titles' are hyphenated, both words are capitalized.	
	3. Graphic Titles	
	i. Capitalize the first letter of each word (with the exception of articles <i>a, an,</i> and <i>the</i> ; the prepositions <i>at, by, for, in, of, on, to,</i> and <i>up</i> (unless they are the first or last word of the Title); and the conjunctions <i>and, as, but, if, or,</i> and <i>nor.</i>)	All Returns Are In SB: Arial, 10pt Prg: Arial, Bold, 14pt.
	ii. If a title is hyphenated, both words before and after hyphen are capitalized.	Continuous Line-Type Detectors
	4. Labels	
	i. First letter of a label is upper case	Rotor blades
Capitalization Continued	c. Lesson/Topic/Title References	
	1. Capitalize the first letter of a lesson/topic reference	Lesson 6: Local Exhaust Ventilation
	2. Capitalize the first letter of each word (with the exception of articles <i>a, an,</i> and <i>the</i> ; the prepositions <i>at, by, for, in, of, on, to,</i> and <i>up</i> (unless they are the first or last word of the Title); and the conjunctions <i>and, as, but, if, or,</i> and <i>nor.</i>)	SB: Arial, 10pt Prg: Arial, Bold, 14pt.
	3. If titles are hyphenated, both words before and after hyphen are capitalized.	Continuous Line-Type Detectors

Topic	Standards	Example
	d. Lists	
	1. Columns	
	i. Capitalize the first letter of all important words in column titles, but capitalize only the first letter of the first word in column entries	
	2. Bulleted	
	i. The first letter of the first word of each bulleted item is in lower case. Note: Reference the bullet section for more details.	
	3. Numbered	
	i. Capitalize the first letter of the first word of each item in the numbered list.	
Capitalization Continued	e. Button names	
	1. Use all caps	Click the FORWARD button to continue.
	f. Pop-Up Text boxes	
	1. First letter of each sentence is capitalized.	SB: Arial, 10pt Prg: Arial, Bold, 14pt.
	g. Screen Text	
	1. First letter of each sentence is capitalized.	
	2. If word is hyphenated, use lower case for each first letter.	
	h. Mathematical Equations	
	1. User lower case letters for mathematical equations	$a + b = c$
Abbreviations		
	a. Time	
	1. Use the lowercase abbreviations a.m. and p.m. with periods	8 a.m.

Topic	Standards	Example
	between the letters and a space between the time and the a.m./p.m. designation.	
Acronyms		
	a. Write out (define) the entire acronym the first time it appears (in each lesson) followed by a blank space and the acronym in parenthesis. Thereafter, use the abbreviation.	Ex. Local Exhaust Ventilation (LEV)
	b. The first letter of each word in the acronym is capitalized	
	c. Plural Acronyms – add a lowercase “s” to the end	LEVs
	d. Possessive Acronyms – add an apostrophe and an “s”	LEV’s
	e. Add acronym to glossary	
Numbers		
	a. Write out numbers at the beginning of a sentence (unless referencing a standards document). Rephrase a sentence to avoid beginning with numbers. Use hyphens after written out numbers ending in ‘y’.	Thirty-one
	b. Express all numbers numerically.	Lesson 2; 7 cans
	c. Express all fractions numerically.	3½ cans; ¾ in
	d. Use numbers followed by the words million, billion, and higher amounts, unless exact amounts are required.	5 million cans
	e. Use decimals for amounts less than one percent and always precede the decimal point by a 0.	0.07%
	f. Use commas for large numbers.	2,537,250,000
Symbols		
	a. Add one space before and after the “=” sign	
	b. Add one space before and after mathematical signs	□, □, □, □□□□□□□□□□□□□□□□x, etc.
	c. When x is used to indicate “crossed with” or magnification, it is	

Topic	Standards	Example
	separated from the accompanying words by a space.	
	d. Add one space before and after bracket sets.	{abcd}, [abcd], (abcd)
	e. Use the degree symbol instead of the word <i>degree</i> following a figure denoting measurement.	2°
	f. Do not use the “&” instead of the word “and” unless it is part of a formal name/title.	
	g. Use the % symbol for all percentage references, with no space between the # and %.	2% NOT 2 percent
Mathematical Equations		
	a. Use lower case letters for mathematical equations.	$a + b = c$
	b. Exponents and subscripts are a smaller point size than the corresponding number/symbol.	

Topic	Standards	Example	
Units of Measure			
	a. Express units of measure in their abbreviated forms.	Weight or Mass: Pounds = lb Ounce = oz. Ton = tn. Weight = wt. Length: Inches = in Square Inch = sq. in Feet/Foot = ft. Square Foot = sq. ft. Yard = yd. Mile = mi.	Time: Second = sec. Minute = min. Hour = hr. Month = mo.
	b. Include a space between the number and unit of measure.	2 ft.	
	c. To express a relation between two or more similar measures, the units of measure are repeated.	2 ft. x 6 ft. x 9 ft.	
	d. Do not use symbols to reference units of measure. Exceptions: Percentages and Degrees	2 in. NOT 2'' 2% NOT 2 percent 2° NOT 2 degrees	
Punctuation Continued			
	a. Commas		
	1. In a series of three or more items, follow the <i>comma, comma, and</i> convention.	Three agents used in extinguishing fires are water, carbon dioxide, and	

Topic	Standards	Example
		dry chemicals.
	b. Quotation Marks	
	1. Place commas and periods within quotation marks.	“I believe in the sun,” she said, “even when it isn’t shining.”
	2. Place a question mark inside quotation marks when it is part of the actual quote.	“To be, or not to be?”
	c. Colon	
	1. First letter after the colon is typically lower case.	There are two designs of dry chemical fire extinguishers: stored-pressure and cartridge-operated.
	Exception: Capitalize the first word after a colon only if it introduces a complete statement.	The results are conclusive: Four out of five dentists ...
	d. Hyphens	
	1. Use hyphens after written-out numbers ending in y (only when used at the beginning of a sentence).	Thirty-one
	2. Use hyphens to separate numbers that are not inclusive.	Social security and/or telephone numbers
	3. Use hyphens in compounds containing a participle when the compound precedes the noun it modifies.	Fire-extinguishing agents, life-threatening pathogens
Punctuation Continued	4. Use hyphens where it’s necessary to clarify the meaning of compound adjectives.	Fast-sailing ships (fast modifies sailing) vs. fast sailing ships (fast modifies ships)
	5. Do not use hyphens in compounds containing an adverb ending in ly when the compound precedes the noun it modifies.	Widely accepted solution
	6. Do not use hyphens to write words formed with prefixes (there may be some exceptions).	Antisocial, omnipresent
	e. Em dash	
	1. Use instead of commas or parentheses if the meaning that follows is essential to the sense of the structure.	He had spent several hours carefully explaining the operation – an operation that would put an end to the resistance.

Topic	Standards	Example
	2. Use before a final clause summarizing a series of ideas.	
	f. sub and superscripts	
	1. Use subscripts when appropriate such as when referring to elements or in mathematical equations.	Helium= H _e ; Static Pressure Loss= SP _{LOSS}
	2. Use superscripts when appropriate such as when referring to temperatures.	25°
Bulleted Lists		
	a. Spacing	
	1. Insert two spaces after a bullet	
	2. Insert two spaces between bullets (dependent upon screen real estate).	Follow formatting conventions on screen 1 of 5 in E&T/Protective Systems/General Requirements.
	b. Left justify bullets	
	c. Punctuation – Objective Screens	Follow formatting conventions established in E&T.
	1. Place colon at the end of the stem (if the last word of the stem is a verb, do not use a colon).	
	2. If different verbs are used in different bullets, place the verb in initial caps on a line above the bullet group for which the verb applies.	
	3. The first letter of the first word of each bulleted item is lower case.	
	d. Punctuation – Content Screens	
	1. Place colon at the end of the stem (if the last word of the stem is a verb, do not use a colon).	
	2. Follow the <i>comma, comma, and</i> convention	
	3. The last bullet in the list ends with a period/appropriate	

Topic	Standards	Example
	punctuation	
Bulleted Lists Continued	e. Punctuation – Practice/Knowledge Check/Module Comprehensive Module Check/Course Knowledge Check Screens	
	1. Place colon at the end of the stem (if the last word of the stem is a verb, do not use a colon).	
	2. Use appropriate punctuation (period) at the end of each bullet.	
	3. For ‘fill in the blanks’ format capitalize and punctuate bulleted items accordingly. Ex. If fill in the blank begins a sentence, first letter of each bullet is capitalized and sentence ends with appropriate punctuation.	
	h. Left Justify Bullets	
General Lists		
	a. Vertically align dollar signs (\$), decimals, commas, and mathematical symbols in columns of numbers.	
	b. Capitalize the first letter of all the important words in column titles, but capitalize only the first letter of the first word in column entries.	
Numbered Lists		
	a. Used primarily for procedures and/or practice/knowledge check questions.	
	b. Begin list items with a number followed by a period with one space between the period and the list item.	1. Industrial Ventilation
	c. Use appropriate punctuation for complete sentences.	
	d. Do not insert a line space between items in a numbered list.	
	e. If included within content, indent the list 5 spaces.	
	f. If included with a question, left-justify the list.	
Formatting		
	a. Font (type, size, and attributes)	

Topic	Standards	Example
	1. Screen text	SB: Arial, 10pt Prg: Arial, Bold, 14pt.
	2. Graphic text	SB: Arial, 10pt Prg: Arial Bold, 14pt.
	3. Title Bar	SB: Arial, 10pt Prg: Arial Bold, 16pt.
	4. Screen Title	SB: Arial, 10pt Prg: Arial Bold, 18pt.
	5. User Prompts	SB: Arial, 10pt Prg: Arial Bold, 14pt.
	b. Attributes	
	1. Italicize Topic title references	
	2. Graphic titles are bold	
	3. Prompt text is bold	
	c. General Spacing	
	1. One space after a period.	
	2. One blank line between paragraphs	
	3. Two spaces between a bullet and the list items that follow	
	4. One blank space between bullets	
	5. No space on either side of a forward slash.	Tapers/Contractions/Expansions are designed to move air
	d. Alignment	
	1. Paragraphs are left justified	
	2. Bullets are left justified	
	e. Forward Slash	
Pop-Ups/Rollovers		
	a. Underline only the words/phrases to be clicked.	<u>excavation face</u>

Topic	Standards	Example
		NOT <u>excavation face.</u>
	b. Text box disappears when you roll off the item.	
	c. Capitalize the first letter of each sentence.	
	d. Sentences end with appropriate punctuation.	
	e. In the first sentence, include the name/phrase/topic that was clicked.	
Text within Graphics		
	a. Titles	
	1. Capitalize the first letter of each word (minus, for example, articles <i>a, an,</i> and <i>the</i> ; the prepositions <i>at, by, for, in, of, on, to,</i> and <i>up</i> (unless they are the first or last word of the Title); and the conjunctions <i>and, as, but, if, or,</i> and <i>nor.</i>)	SB: Arial, 10pt. Prg: Arial, Bold, 16pt.
	2. Center with graphic.	
	b. Regular graphic text	
	1. Two points smaller than graphic title.	
	2. Follows same standards for screen text.	
	3. Labels	SB: Arial, 10pt. Prg: Arial, Regular, 14pt.
	4. Text	SB: Arial, 10pt. Prg: Arial, Bold, 14pt.
Titles		
	a. Lesson/Topic	
	1. Capitalize the first letter of each word (minus, for example, articles <i>a, an,</i> and <i>the</i> ; the prepositions <i>at, by, for, in, of, on, to,</i> and <i>up</i> (unless they are the first or last word of the Title); and the conjunctions <i>and, as, but, if, or,</i> and <i>nor.</i>)	SB: Arial, 10pt. Prg: Arial, Bold, 16pt.
	b. Graphic	
	1. Capitalize the first letter of each word (minus, for example,	SB: Arial, 10pt.

Topic	Standards	Example
	articles <i>a, an,</i> and <i>the</i> ; the prepositions <i>at, by, for, in, of, on, to,</i> and <i>up</i> (unless they are the first or last word of the Title); and the conjunctions <i>and, as, but, if, or,</i> and <i>nor.</i>)	Prg: Arial, Bold, 16pt.
Prompt Text		
	a. Center at the bottom of the main content area.	SB: Arial, 10pt Prg: Arial, Bold, 14pt

Appendix F: SCORM Data Model Calls Supported by Plateau

SCORM DATA MODEL CALLS SUPPORTED BY PLATEAU - Source, Plateau Content Integration Guide	
API	Data Model Element
LMSInitialize()	The content must call this function before calling any other API function. It indicates to the LMS system that the content is going to communicate. The LMS can take any initialization steps required in this function. For instance, this can contact the CMI via AICC messaging to pull down the cmi.core variables for quick access.
LMSGetValue()	This function is used to pass data from the CMI to the content. Only one value is returned for each call. The category and/or element is named in the parameter.
	The following LMSGetValue parameters are supported by Plateau:
	cmi.core._children - returns "student_id, student_name, lesson_location, credit, lesson_status, entry, score, total_time, exit, session_time".
	cmi.core.student_id
	cmi.core.student_name
	cmi.core.lesson_location - 255 char string typically used for bookmarking
	cmi.core.credit - returns "no-credit" or "credit"
	cmi.core.lesson_status - indicates SCO completion - returns one of the following: "passed", "completed", "failed", "incomplete", "browsed", or "not attempted"
	cmi.core.entry - returns "ab-initio", "resume", or ""
	cmi.core.score._children - returns "raw, min, max"
	cmi.score.raw - the raw score value
	cmi.score.max - the maximum possible score - if not set, assumed 100
	cmi.score.min - the minimum possible score - if not set, assumed 0
	cmi.core.total_time - returns the sum of all a learner's session times
	cmi.core.lesson_mode - returns "browse", "normal", or "review"
	cmi.suspend_data - 4096 char string usually used for progress data
	cmi.launch_data - 4096 char string used to pass data to the SCO on launch from the LMS
	cmi.objectives._children - returns "id, score, status"
	cmi.objectives._count - returns the number of objectives currently stored for this SCO.
	cmi.objectives.n.id - returns the objective identifier where "n" is the objective number
	cmi.objectives.n.score._children - returns "raw, min, max "

LMSGetValue() Cont	<p>cmi.objectives.n.score.raw - the raw objective score value</p> <p>cmi.objectives.n.score.min - The minimum possible score - if not set, assumed 0</p> <p>cmi.objectives.n.score.max - the maximum possible objective score - if not set, assumed 100</p> <p>cmi.objectives.n.status - indicates if the learner has completed the objective - returns one of the following: "passed", "completed", "failed", "incomplete", "browsed", or "not attempted"</p> <p>The following are legitimate element names, but are write-only. These would therefore return "" and set an error: 404 - element is write-only.</p> <p>cmi.core.exit</p> <p>cmi.core.session_time</p>
LMSSetValue()	<p>This function is used to pass data from the content to the LMS. The parameter indicates which category or element is being set. Only one value may be set with a single function call.</p> <p>The following LMSSetValue parameters are supported by Plateau:</p> <p>cmi.core.lesson_location - 255 char string usually used for bookmarking</p> <p>cmi.core.lesson_status - indicates SCO completion - accepts "passed", "completed", "failed", "incomplete", "browsed", "not attempted"</p> <p>cmi.score.raw - the raw score value</p> <p>cmi.score.max - the maximum possible score - if not set, assumed 100</p> <p>cmi.score.min - the minimum possible score - if not set, assumed 0</p> <p>cmi.core.exit - indicates how the learner left the SCO - accepts "time-out", "suspend", or "logout"</p> <p>cmi.core_session_time - Time spent in the SCO - HHHH:MM:SS.SS</p> <p>cmi.suspend_data - 4096 char string usually used for progress data</p> <p>cmi.objectives.n.id - the objective identifier where "n" is the objective number</p> <p>cmi.objectives.n.score.raw - the raw objective score value</p> <p>cmi.objectives.n.score.min - The minimum possible score - if not set, assumed 0</p> <p>cmi.objectives.n.score.max - the maximum possible objective score - if not set, assumed 100</p>

LMSSetValue() Continued	<p>cmi.objectives.n.status - indicates if the learner has completed the objective - accepts "passed", "completed", "failed", "incomplete", "browsed", or "not attempted"</p> <p>The following are legitimate element names, but are read-only. These would therefore return "false" and set an error: 403 - element is read-only:</p> <p>cmi.core.student_id cmi.core.student_name cmi.core.credit cmi.core.entry cmi.core.total_time cmi.core.lesson_mode cmi.launch_data</p> <p>The following elements are legitimate element names, but are keywords for multiple elements. These would therefore return "" and set the error code 402 - "Invalid set value, element is a keyword":</p> <p>cmi.core._children cmi.core.score._children cmi.objectives._children cmi.objectives._count cmi.objectives.n.score._children</p>
LMSCommit()	Any values set using the LMSSetValue command are stored for delivery. This function submits any values not yet sent to the LMS.
LMSFinish()	The content must call this function before it terminates, if it successfully called LMSInitialize at any point. It signals to the LMS that the content has finished communicating. The content may not call any API function except LMSGetLastError after it calls LMSFinish
LMSGetLastError()	This function provides content with a way of assessing whether or not any given API call was successful, and if it was not successful, what went wrong. This routine returns an error code from the previous API call. Each time an API function is called (with the exception of this one), the error code is reset in the API. The content may call this any number of times to retrieve the error code, and the code will not change until the next API call.
LMSGetErrorString()	This function returns a textual description of the error represented by an error code number.

LMSGetDiagnostic()

This function would return an LMS-specific error description based on an error code number.