Best Practices for Structuring Content and Integrating e-Learning and e-Textbooks

The Publisher Perspective

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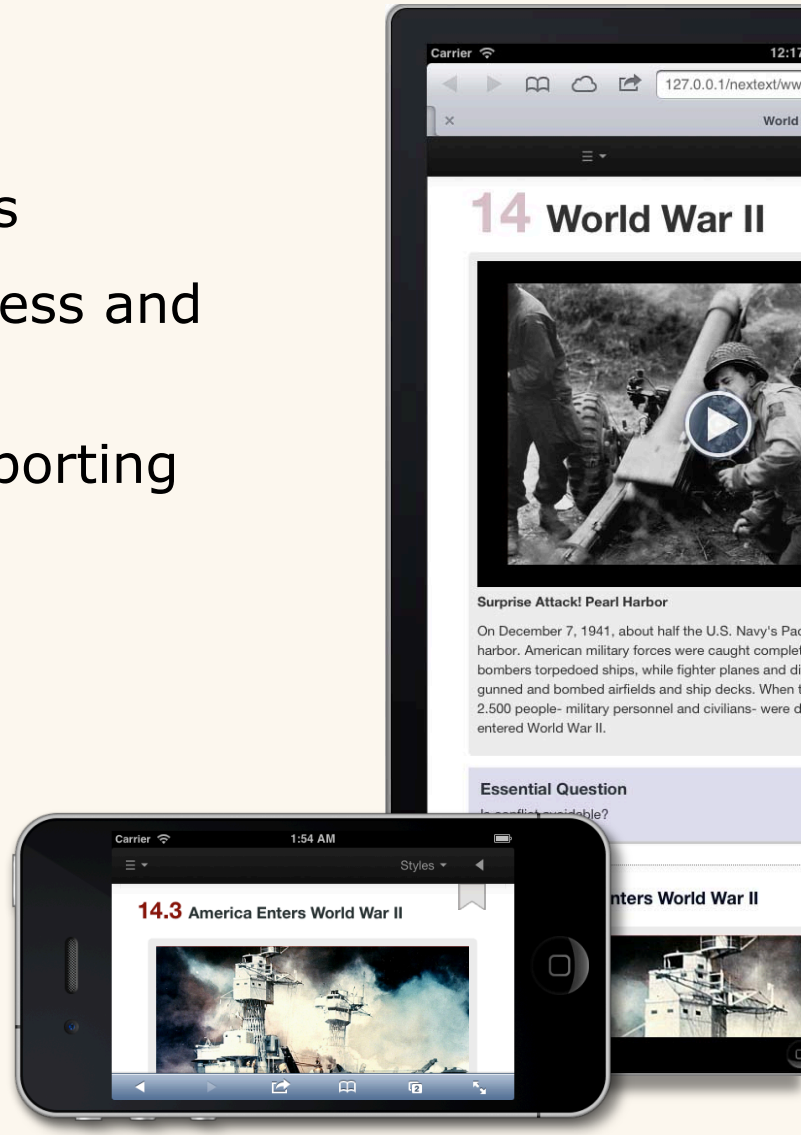
Business Drivers

- Lead transformation to digital
- Enable global business strategies
- Support innovation in new business and product models
- Support efficacy analysis and reporting
- Drive efficiency and lower costs



Guiding Principles

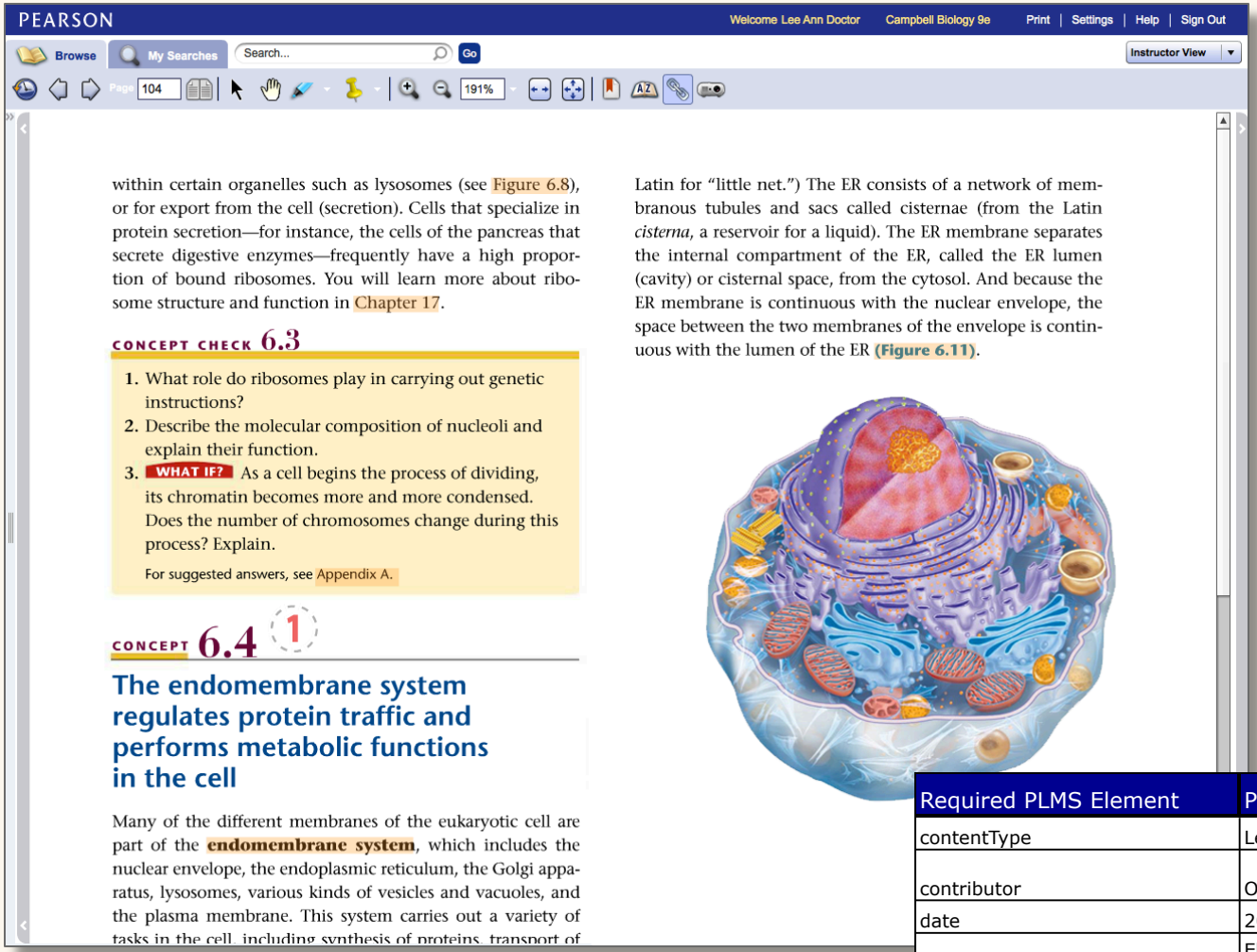
- Leverage industry standards
- Adopt Open Source wherever possible
- Enable media-independent publishing
- Enable a "build-it-once" approach for systems and tools
- Ensure high discoverability of educationally relevant, instructionally effective content within Pearson systems and in external environments

Asset Metadata

Pearson Learning Metadata Standard (PLMS) is an internal asset level standard closely aligned with the Learning Resources Metadata Initiative (LRMI).

http://www.lrmi.net/

- Facilitates search and reuse of educational content across Pearson
- Adopts LRMI elements 100% while optimizing for Pearson's new digital product models
- Enables content to align with the Common Core state standards (OER Commons)
- Optimizes content discoverability in educational search results for Google, Yahoo! and Bing



within certain organelles such as lysosomes (see Figure 6.8), or for export from the cell (secretion). Cells that specialize in protein secretion—for instance, the cells of the pancreas that secrete digestive enzymes—frequently have a high proportion of bound ribosomes. You will learn more about ribosome structure and function in Chapter 17.

CONCEPT CHECK 6.3

1. What role do ribosomes play in carrying out genetic instructions?
2. Describe the molecular composition of nucleoli and explain their function.
3. **WHAT IF?** As a cell begins the process of dividing, its chromatin becomes more and more condensed. Does the number of chromosomes change during this process? Explain.

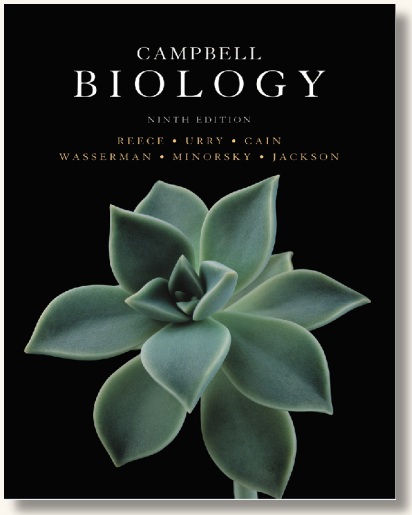
For suggested answers, see Appendix A.

CONCEPT 6.4 1

The endomembrane system regulates protein traffic and performs metabolic functions in the cell

Many of the different membranes of the eukaryotic cell are part of the **endomembrane system**, which includes the nuclear envelope, the endoplasmic reticulum, the Golgi apparatus, lysosomes, various kinds of vesicles and vacuoles, and the plasma membrane. This system carries out a variety of tasks in the cell, including synthesis of proteins, transport of

Latin for "little net.") The ER consists of a network of membranous tubules and sacs called cisternae (from the Latin *cisterna*, a reservoir for a liquid). The ER membrane separates the internal compartment of the ER, called the ER lumen (cavity) or cisternal space, from the cytosol. And because the ER membrane is continuous with the nuclear envelope, the space between the two membranes of the envelope is continuous with the lumen of the ER (Figure 6.11).



Required PLMS Element	Possible Values
contentType	Learning Object
contributor	Other Role > Creator-Pearson Mastering Biology
date	2013-01-11
format	Electronic > Digital, delivered electronically > Online Resource
identifier	GUID-01.1001/1afd2e207af2405b9fd2b1631e6249f0
language	en-US
publisher	Pearson Education
rights	http://www.pearsoned.com/legal-notice/
subject	Biology > Cells > Types of Cells-|DNA|ribosome|cell membrane|plant cells|animal cells|prokaryote
title	Cells Interactivity: Cell Structures

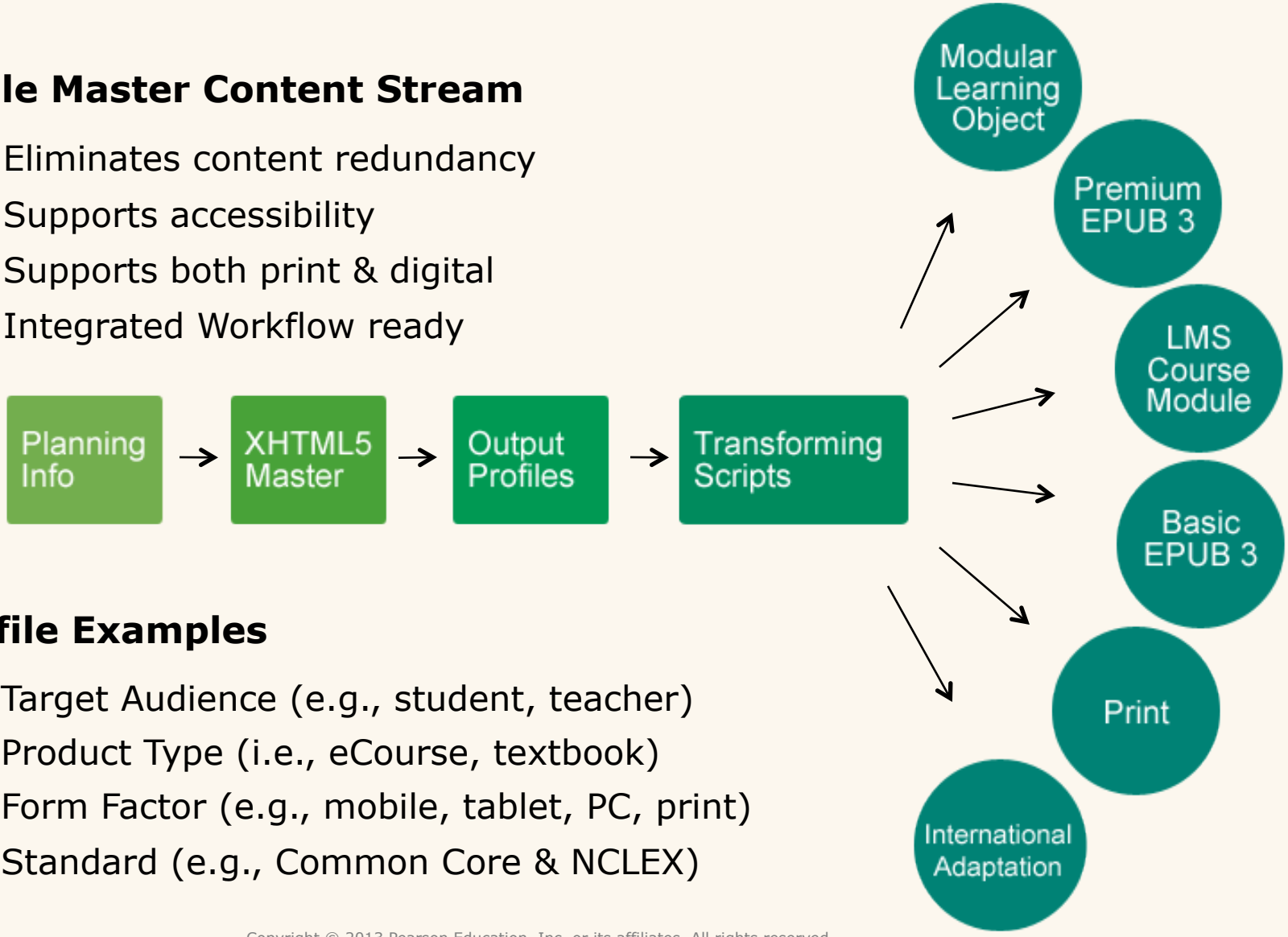
Digital Output Ready Content Markup

In 2012 Pearson developed a XHTML5/EPUB 3 schema as the standard for semantically tagging educationally relevant narrative text (and structures) in a single content stream for delivery to multiple products, formats, platforms and devices.

Narrative Text Standard

Single Master Content Stream

- Eliminates content redundancy
- Supports accessibility
- Supports both print & digital
- Integrated Workflow ready



Profile Examples

- Target Audience (e.g., student, teacher)
- Product Type (i.e., eCourse, textbook)
- Form Factor (e.g., mobile, tablet, PC, print)
- Standard (e.g., Common Core & NCLEX)

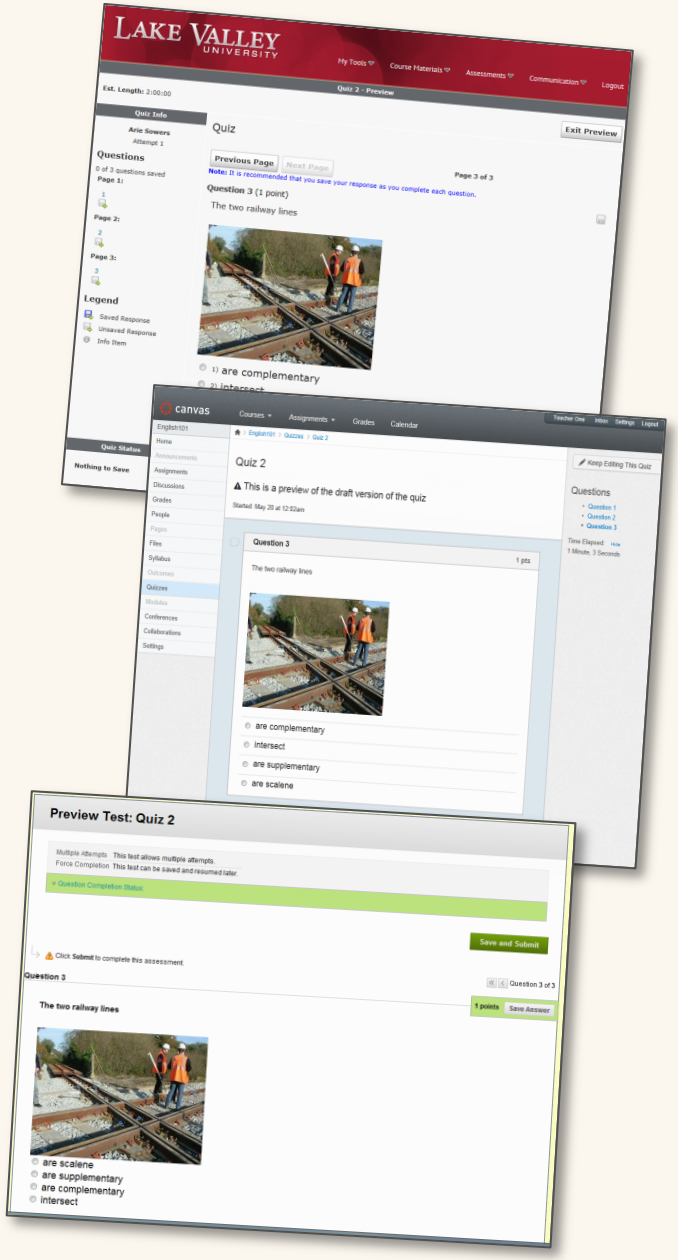
Assessment

Phase 1 Recommendations

- Adopt QTI v2.1 to enable assessment data to be interoperable between Pearson & 3rd party systems

Phase 2 Agenda

- Develop a QTI profile for custom assessment items (standard markup to tag test items consistently)
- Define metadata and controlled vocabularies
- Define content packages (tests/sections)
- APIP



Accessibility

Pearson NA has defined 42 Accessibility guidelines in alignment with industry and government standards.

- Meet current US Government Section 508 Standards
  - § 1194.21 Software applications
  - § 1194.22 Web-based applications
  - § 1194.41 Information, documentation and support
- Aligned with the W3C International Web Content Accessibility Guidelines
- Version 2.0 (WCAG 2.0) at Level AA
- Commitment covers content as well as technology
  - Alt Text, Long Descriptions, etc.

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Search

World War II

Contents Media Bookmarks Journal Glossary Gallery Styles

Themes
Night Background
Sepia Background
Standard Background
Font Size
Smaller Font
Larger Font

Results of the Attack

The Americans suffered heavy losses: nearly 2,500 people killed, 8 battleships severely damaged, 3 destroyers left unusable, 3 light cruisers damaged, and 160 aircraft destroyed and 128 more damaged. The U.S. battlefleet was knocked out of commission for nearly six months, allowing the Japanese to freely access the needed raw materials of their newly conquered territories, just as they had planned.

Despite these losses, the situation was not as bad as it could have been. The most important ships—aircraft carriers—were out at sea at the time of the attack and survived untouched. In addition, seven heavy cruisers were out at sea and also avoided detection by the Japanese. Of the battleships in Pearl Harbor, only three—the USS *Arizona*, the USS *Oklahoma*, and the USS *Utah*—suffered irreparable damage. American submarine bases also survived the morning, as did important fuel supplies and maintenance facilities. In the final analysis, Nagumo proved too conservative. He canceled a third wave of bombers, refused to seek out the aircraft carriers, and turned back toward home because he feared an American counterstrike. The American Pacific Fleet survived.

During the attack, Japanese torpedoes and bombs sank or capsized six huge battleships and several smaller ships. Most of the damaged ships were eventually repaired and returned to fight in the Pacific later in the war.

America Declares War

As the news about Pearl Harbor spread across the nation and FDR prepared to address Congress, Americans rallied together. Many did not know what to expect, but they anticipated monumental changes. Journalist Marquis Child recalled thinking, "Nothing will ever be the same," and added, "it never was the same."

The attack on Pearl Harbor left little doubt about declaring war on Japan. The Soviet Union's conversion to the Allied side, following Germany's invasion in June 1941, made some Americans doubt the wisdom of supporting the Allies. The attack on Pearl Harbor changed that. It made the necessity of declaring war on Japan clear and ended any continuing political divisions between isolationists and interventionists.

On December 8, President Roosevelt gave a speech to Congress

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Surprise Attack on Pearl Harbor

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Implementation

Impacts

- People/Process/Tools
  - New roles and procedures (happening now)
  - Roadmaps to bring systems and tools into compliance (ongoing through 2013-14)
- Content: Go forward today versus remediation of legacy

Implementation Challenges

- Managing resistance to change
- Providing support for creation and maintenance of, and compliance with, standards
- Addressing questions around global application of standards
- Keeping up with rapidly evolving standards, markets and product models

Next Steps/Looking Forward

Educational Publishing Industry Standards

- Pearson is working with IDPF to co-organize and host a workshop on educational publishing via EPUB 3.

- Pearson is preparing a proposal to submit an EPUB3 output format (EduPUB3) for educational content as an open standard to IDPF.