

eduworks

Aligning Instructional Design and Technical Standards

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MEMO

- TO: Instructional Designer
- RE: New Instructional Content Development
- Create instruction using the Sharable Content Object Reference Model (SCORM) to achieve the goals of interoperability and reusability.



What's SCORM to an Instructional Designer?

- A. A programming language?
- B. A format?
- C. A tool?
- D. A paradigm?
- E. A pain?



Posted to Flickr by [Second Life Resident Danel Ariantho](#)

Correct Answer:

E if it doesn't meet the Designer's goals!

What's SCORM to a Programmer?

- A. A programming language?
- B. A format?
- C. A tool?
- D. Job security?
- E. A pain?



Posted to Flickr by Lloyd Budd

Correct Answer:

E if it doesn't meet the Programmer's goals!

What happens...

if instructional and technical needs are not aligned



MUTANT NINJA SCORM!

- The **BIG PACKAGE** (1GB, yearlong course)
- The **ITTY BITTY SCO** (Each question is a SCO)
- The **SCORM Intelligent Tutoring System** (programmed using 1,000 sequencing rules)
- The **CROWD FAVORITE** (Need SCORM? Take your content and wrap it as a single SCO)

**LIMITED
REUSE**

FRUSTRATION

*Debates over
"what is a SCO?"*



Posted to Flickr by San Diego Shooter

Proposed Alignment

**Instructional Design
Concept**

**SCORM 2004
Concept**

Lesson



**Content
Package**

What's New?

- Instructional design not forced into technical framework
- Instructional & technical perspectives considered equally
- Focus on larger objects with more widely accepted definitions: Lessons & Content Packages
- ***NOT FOCUSED ON THE SCO AS THE UNIT OF REUSE***

PACKAGES AS THE UNIT OF REUSE

Technical Advantages

- Provides a context for SCO reuse
 - SCOs can be interchanged within packages
 - SCOs can be extracted from packages
 - *BUT the context for their use and reuse is not lost*
- Enables instructional strategies to be changed without altering the underlying content
 - Sequencing is defined at the package level
 - Learning objectives are defined at the package level
- Natural unit of search, discovery, and exchange (e.g. within the ADL Registry)

LESSONS AS UNIT OF REUSE

Advantages for Instructional Designers

- Aligns with Instructional Theory
 - Driscoll
 - Gagne
 - Merrill
- Aligns with Instructional Design practice
 - Smith and Ragan
 - Dick, Carey, and Carey

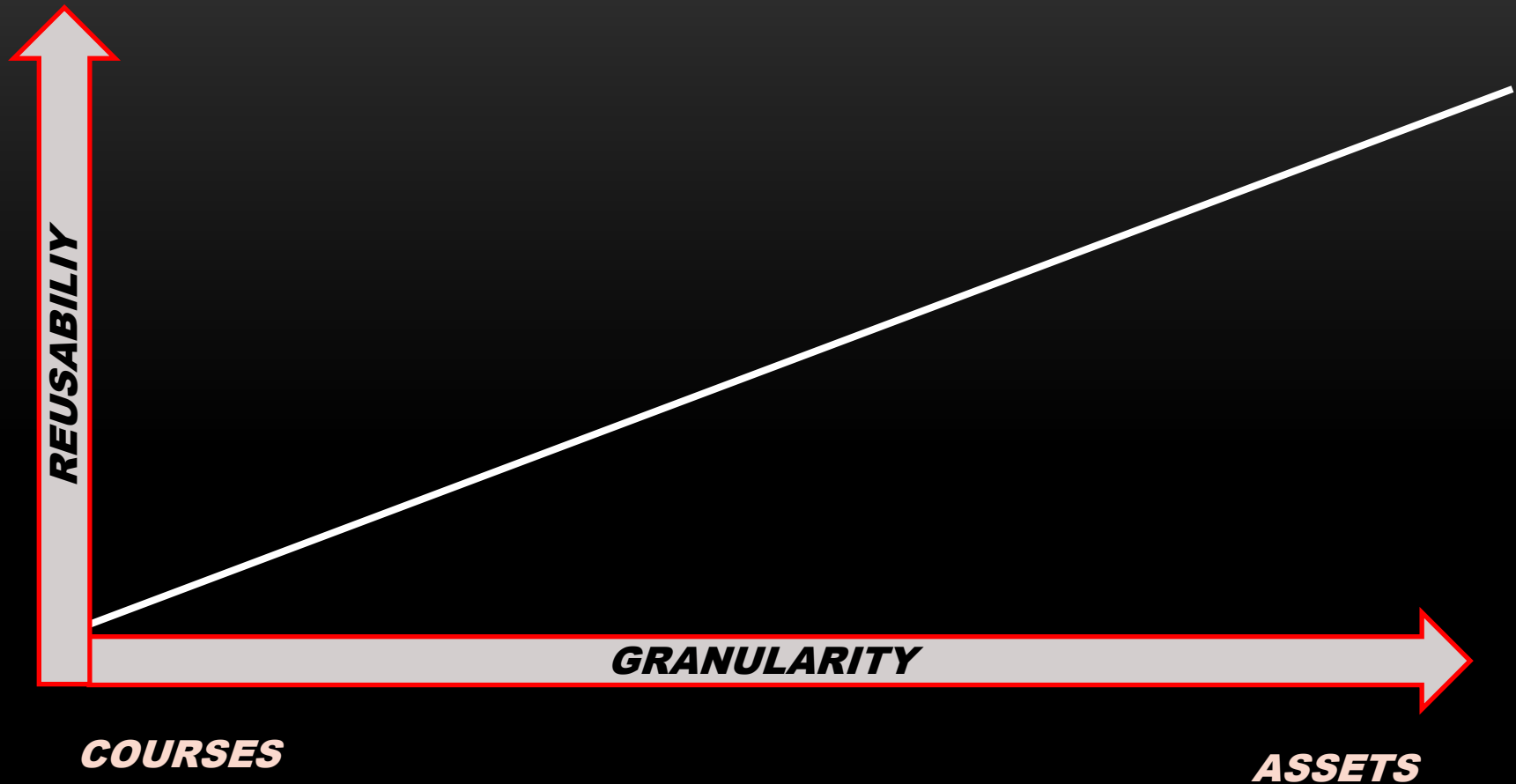
Is this a one size fits all solution?

- Packages can contain
 - No SCOs (just assets)
 - One SCO
 - Multiple SCOs
- Packages support multiple approaches to mapping SCOs to learning objectives
- Packages can contain lots of sequencing or non at all
- Packages can contain alternative or optional content

What about “Learning Objects”

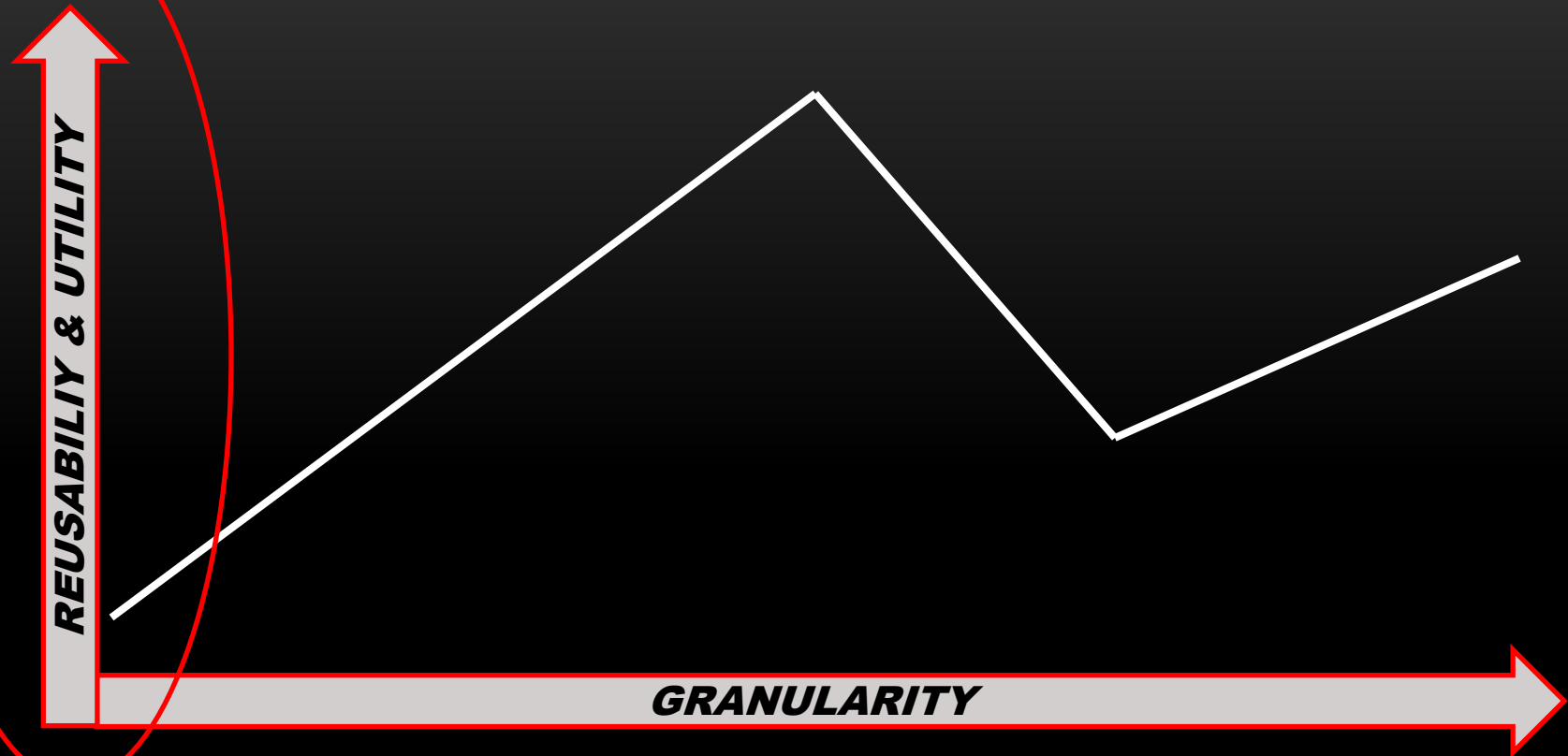
- Hodgins (2006)
 - “In hind sight I can see that one of my greatest errors was in assuming that everyone would understand that Learning Objects exist within a conceptual model for content. Overall they were not meant to be a fixed thing.”
- *Within a SCORM instructional design context, almost everything that has been proposed as a learning object can be realized as a type of content package!*

Traditional View of Reuse



The smaller the object, the more reusable

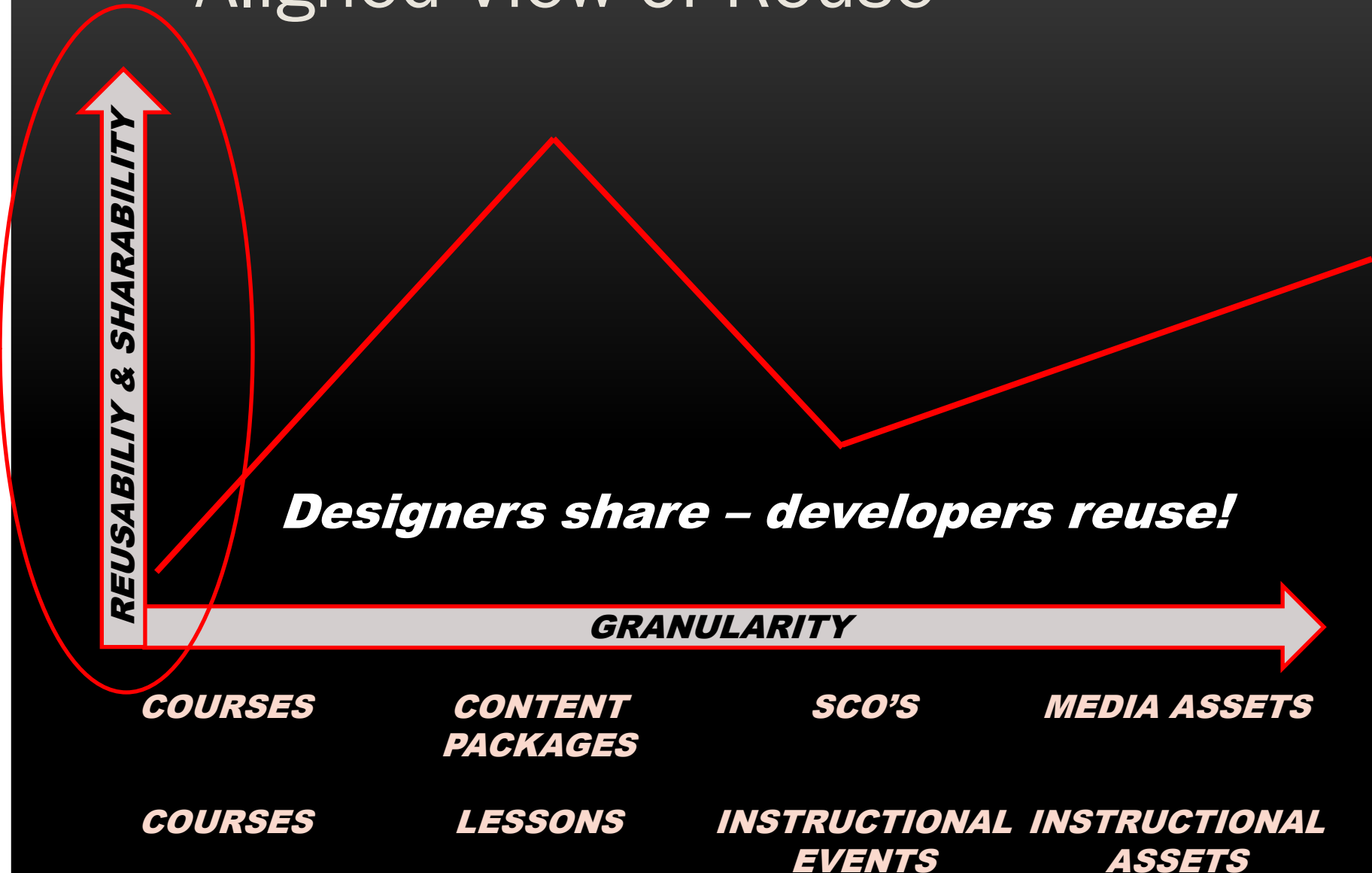
Content Model View of Reuse



COURSES **AGGREGATIONS** **LEARNING OBJECTS** **INFORMATION OBJECTS** **ASSETS**

Self-contained content objects with single learning objectives are the “Lego’s” of instructional content

Aligned View of Reuse



Conclusions



Instructional Design and Technical Standards Can be Aligned:

- There is a sweet spot for sharing instructional content that considers *both* instructional and technical aspects that focuses on *the package* as the technical unit of exchange
- Instructional designers and trainers **share** lessons
- Standards provide technical specifications for exchange
- Developers **reuse** technical objects found *inside* packages.

QUESTIONS AND ANSWERS

SPEAKER CONTACT INFORMATION

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Backup

Proposed Alignment (Details)

Instructional Design Concept

Lesson

Descriptive Information

Instructional Strategy

Instructional Events

Instructional Assets

SCORM 2004 Concept

Content Package

Metadata

Sequencing & Navigation

Sharable Content Objects

Assets & Resources

Aren't SCOs the unit of reuse in SCORM? “Technically” maybe, but ...

- **SCOs are technical objects that interact with an LMS in a prescribed manner**
- Adding instructional requirements to SCOs is problematic:
 - Mapping SCOs to single learning objectives is restrictive
 - Big SCOs lead to higher costs (Graph is from Chrysler) but using small SCOs can impact the user experience
- **Defining SCOs is an implementation and business issue, not an instructional design issue!**

