

A Summer Intensive for Designers, Developers, and Managers of eLearning 8

Session

Practical Strategies for Building Truly Re-usable Learning Objects



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### What is a reusable learning object (RLO)?

The IEEE Learning Technology Standards Committee defines a reusable learning object as "any entity, digital or non-digital, which can be used, reused or referenced during technology supported learning."

According to William Horton, reusable learning objects are "reusable components we can combine whenever we need to teach someone, to communicate to someone, or even entertain someone." (*Designing Knowledge Objects*)

A reusable learning object has the following characteristics:

- It addresses a specific learning objective.
- It combines information, practice, and assessment.
- It is generally 2 to 15 minutes long.
- It is a standalone component, which can be reused and combined with different learning objects.
- It is catalogued, so that it can be retrieved for reuse.
- It is stored in a database, learning content management system, or other electronic cataloguing system.

#### **Reusing versus repurposing**

Kim E. Ruyle and Peder Jacobsen explain the difference between reusing and repurposing learning objects in their valuable article, *Guided Discovery Teaching Methods and Reusable Learning Objects*.

**Reuse** – "Reusing an object means using it in its entirety without modification. When this is possible, development, maintenance, and storage dollars are saved because when the parent object is updated all the instances of use are also updated."

**Repurpose** – "Repurposing breaks the link to the parent object, creates a copy, and allows for modification of the copied object. In this case, development dollars are saved, but maintenance and storage costs are increased because there is now a separate (modified) version of the parent object. Without a doubt, in the industry as a whole, there's a lot more repurposing going on than true reuse."





### **Planning checklist**

Before you implement reusable learning objects, here are some issues to consider.

- ✓ Clearly define terms.
  - What does reusable learning object (RLO) mean in your organization?
  - How do you define reuse and repurpose to reflect the needs of your organization?
  - Is your definition straightforward enough to be easily implemented?
- ✓ Identify your audience.
  - Are you building courses for a number of distinct audiences?
  - What is the role and existing level of expertise of each audience?
  - What is the relationship between audiences?
  - Are some audiences a higher priority than others?
- ✓ Establish goals for reuse.
  - How much content will you reuse?
  - When will you reuse it?
  - Will you reuse content across audiences?
  - Will you repurpose content by modifying the original RLO in some way?
  - How will you track the relationship between the original RLO and the repurposed RLO?
- Plan how to store and categorize learning objects so that you can find them again.
- ✓ Set standards for the interface, interactions, and writing style, and communicate them.
- Establish rigorous quality assurance processes so that you won't reuse poor design, errors, or technical problems.
- ✓ Sell the benefits of reusable learning objects to your project team.
- $\checkmark$  Start small, then evaluate and refine your processes regularly.





### **Establishing standards**

#### Standards for writing style

In addition to standards that you would adopt for any course, consider the following issues when designing reusable learning objects.

#### **Cross-references**

As Instructional Designers, we make use of cross-references to show the relationships between concepts. However, cross-references introduce obstacles to reuse.

You don't necessarily need to eliminate all cross-references, but you do need to think carefully about where you will use them and why. Consider the future implications of the following references:

- to other parts of the course
- to pages / screens within lessons
- to concepts that have been covered previously or will be addressed later
- **Tip:** Your organization's definition of a reusable learning object plays an important role in the way you use cross-references.

#### **References to specific audiences**

If you plan to reuse learning objects for more than one audience, references to specific audiences can create obstacles to reuse.

However, in some situations, references to specific audiences are important. For example, in the financial services industry, individuals must be licensed to perform certain activities, such as selling mutual funds, securities, or life insurance. In these areas, it is critical to make specific mention of roles, even though this may prevent reuse.

Think carefully about when it is appropriate to refer to a specific audience.

#### Terminology

While minor differences in terminology are tolerable when they appear in different courses, they can create confusion when they are presented sequentially. Therefore, it's critical to:

- Establish standards for consistent terminology to be used across all courses.
- Make sure all course developers understand and use this terminology.





#### Interface standards

Some learning object standards advocate that learning objects must be independent of interface standards. If your methodology is not independent of the interface, then it's important to use consistent interface standards for all reusable learning objects. The use of templates is a good strategy.

Again, this is already a principle of good course design; it just becomes more critical when learning objects are reused in different contexts.

### **Selling the benefits of reusable learning objects**

Like all change, introducing reusable learning objects may create anxiety and conflict. RLOs are controversial, particularly when the concepts appear to contradict some of the principles of design.

When introducing reusable learning objects to your team, it's important to acknowledge the potential limitations, while stressing the benefits to Instructional Designers.

Benefits include the following:

- Streamlined update and maintenance processes.
- More consistent, cohesive content across courses.
- Increased sharing of ideas and content among Instructional Designers and project teams.
- Ability to devote more resources to designing creative and engaging learning objects that can be reused across courses.





### References

#### Introduction to reusable learning objects

W. Longmire. "A Primer on Learning Objects." *LearningCircuits*, March 2000 <u>http://www.learningcircuits.com/mar2000/primer.html</u>

Robby Robson. "Learning Object Tutorial." 2001. <u>http://www.eduworks.com/LOTT/tutorial/</u>

#### Designing with reusable learning objects

Tom Barron. "Learning Object Pioneers." *LearningCircuits*, March 2000. <u>http://www.learningcircuits.com/mar2000/barron.html</u>

William Horton. *Designing Knowledge Objects: Crafting reusable components for teaching, communicating, and entertaining.* <u>www.horton.com</u> – see Knowledge Objects

Peder Jacobsen and Kim E. Ruyle. "Implementing Effective Course Design with Reusable Learning Objects." *The eLearning Developers' Journal*, February 10, 2003.

http://www.elearningguild.com/pbuild/linkbuilder.cfm?selection=fol.16

Warren Longmire. "Content and Context: Designing and Developing Learning Objects."

http://www.learnativity.com/download/LwoL3.pdf

Ann Rockley, Pamela Kostur, and Steve Manning. *Managing Enterprise Content: A Unified Content Strategy*. New Rider, October 2003.

Kim E. Ruyle and Peder Jacobsen. "Guided Discovery Teaching Methods and Reusable Learning Objects." *The eLearning Developers' Journal*, February 3, 2003.

http://www.elearningguild.com/pbuild/linkbuilder.cfm?selection=fol.16

#### **Reusable learning object issues**

Josh Hartnett. "Where have all the Legos gone? Why reusable learning objects haven't caught on." *Online Learning Magazine*, February 2002. This article can also be found at the Blue Missile web site at: <u>http://www.bluemissile.com/articles/instruct\_legos.htm</u>

Edward Welsch. "SCORM: Clarity or Calamity?" *Online Learning Magazine, Summer 2002.* This article can be found online at <u>http://www.onlinelearningmag.com/onlinelearning/magazine/article\_display.jsp?v</u> <u>nu\_content\_id=1526769</u>





# Building Truly Reusable Learning Objects

Norm Friesen. "Three Objections to Learning Objects." Athabasca University - <u>http://phenom.educ.ualberta.ca/~nfriesen/</u>

### LEGO

LEGO EXPLORE Games Builder - part of the official LEGO site, where you can build virtual LEGO structures. http://www.lego.com/eng/explore/games/builder/default.asp

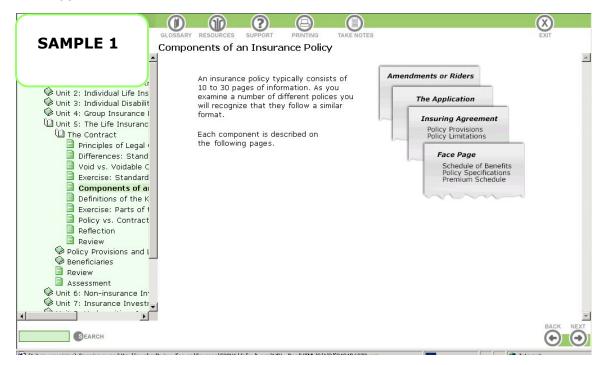


THE ELEARNING

Each screen sample represents one reusable learning object. All samples are courtesy of The Canadian Institute of Financial Planning.

For Sample 1:

- Identify any obstacles to reuse.
- Suggest an alternative.



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We repurposed the exercise shown in Sample 2A for use in another course.

	GLOSSARY RESOURCES SUPPORT PRINTING TAKE NOTES	EXIT
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Three Categories of F		
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Money Market Funds		
Exercise: Money M		
Bond Funds	They purchase bonds that are indexed to inflation.	
Dividend Funds	I	
Exercise: Income	e (c) They purchase bonds usually from one issuer.	
Reflection		
Review 🖗 Growth Funds	They purchase bonds that mature in less than 1 year.	
Combination Growth a		
Comparing the Funds		
Review		
Assessment		
Unit 4: Economic Enviror		
Unit 6: Taxation	-	
Unit 7: Pensions and Ret	i .	
Unit 0, Decemptibilities		-
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Search		$\odot$

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Sample 2B shows the repurposed version. What have we changed?

SAMPLE 2B Exercise: Income Funds Exercise: Income Funds Exercise: Income Funds Funds Funds Funds Exercise: Income Funds Fund Fund Fund Fund Fund Fund Fund Fund	
<ul> <li>Introduction to Mutua</li> <li>Types of Mutual Fund</li> <li>Three Categories o</li> <li>Income Funds</li> <li>Money Market Fund</li> <li>Mortgage Funds</li> <li>Bond Funds</li> </ul>	*
<ul> <li>Dividend Funds</li> <li>Exercise: Income</li> <li>Growth Funds</li> <li>Equity Funds</li> <li>International and C</li> <li>Specialty Funds</li> <li>Real Estate Funds</li> <li>Exercise: Growth F</li> <li>Combined Income :</li> <li>Balanced Funds</li> <li>Asset Allocation Fu</li> <li>Exercise: Combinec </li> <li>Belanced Funds</li> <li>Exercise: Combinec </li> </ul>	

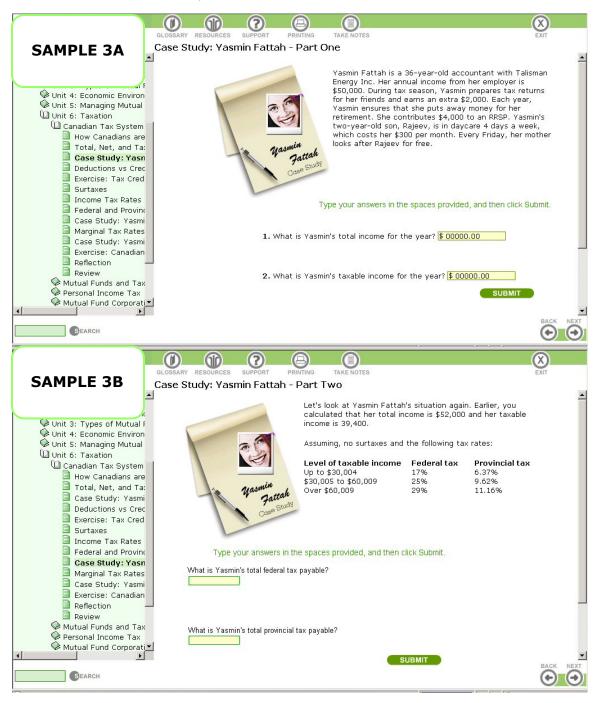
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The multi-part case study shown in Sample 3A and Sample 3B required modification before we could reuse it. Why? How could we avoid this?



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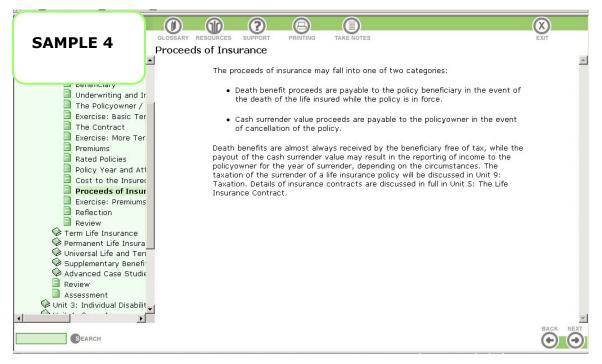


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For Sample 4:

- Identify any obstacles to reuse.
- Suggest an alternative.

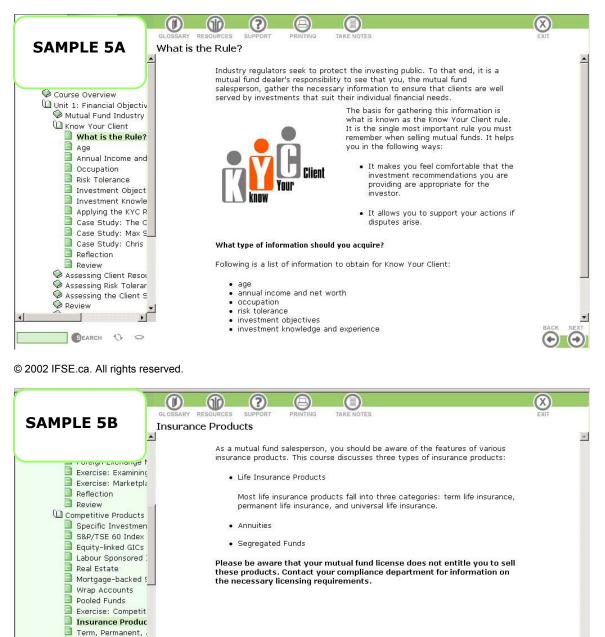


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Samples 5A, 5B, and 5C have a similar obstacle to reuse. Would you modify them? If so, how?



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SEARCH

Annuities Segregated Funds

Exercise: Insurance Reflection Review

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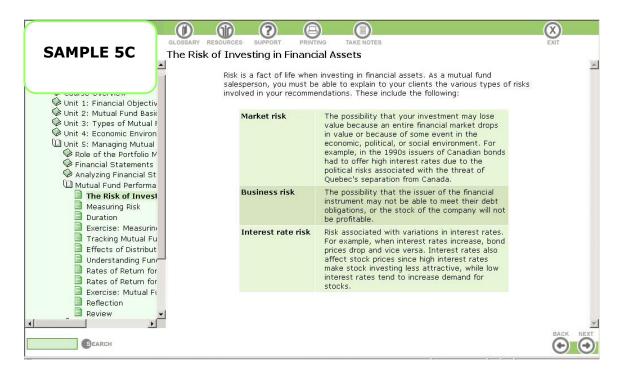
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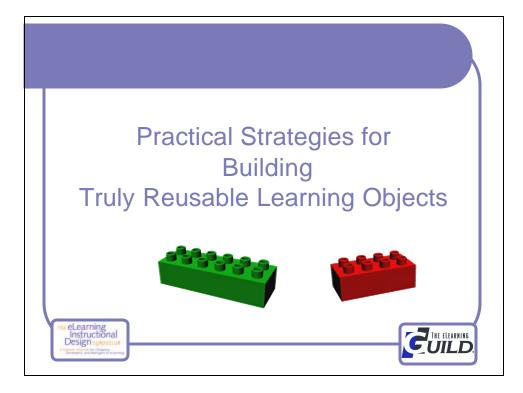
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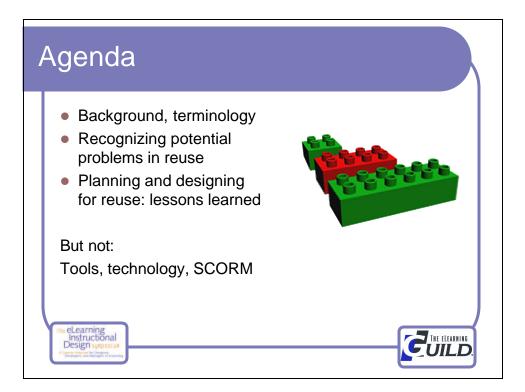


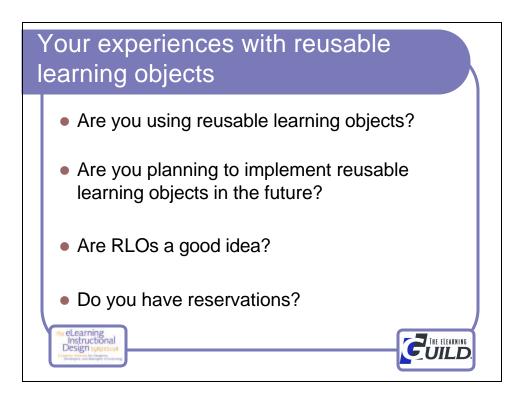
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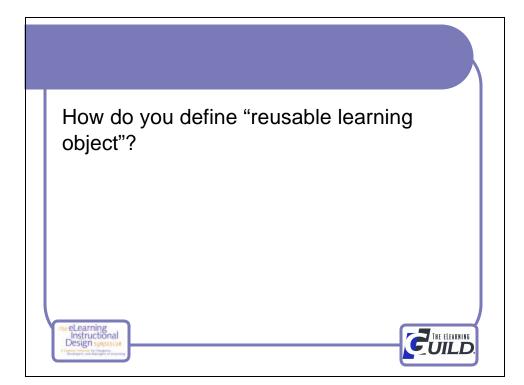




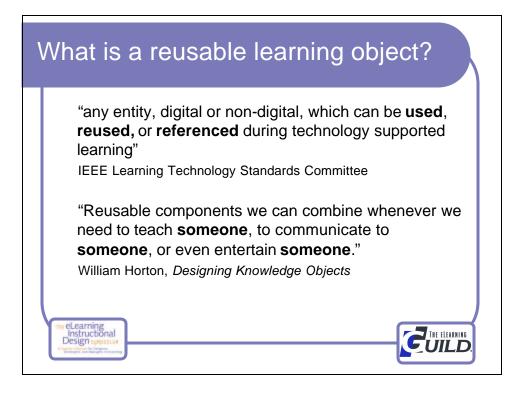


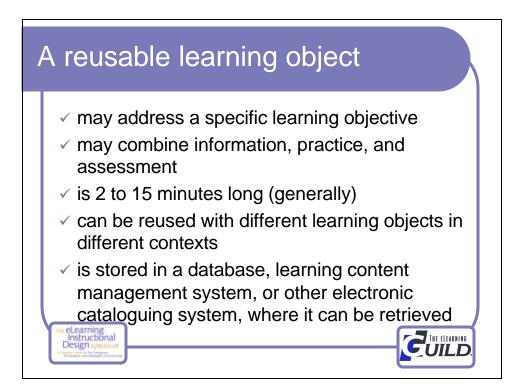


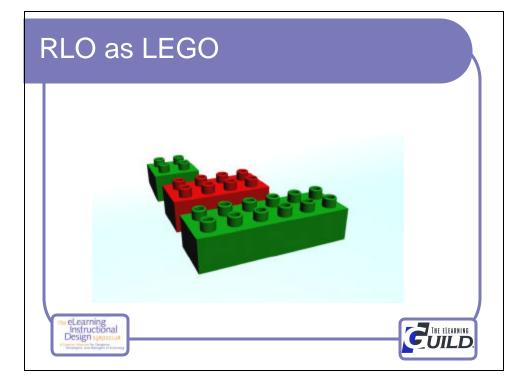


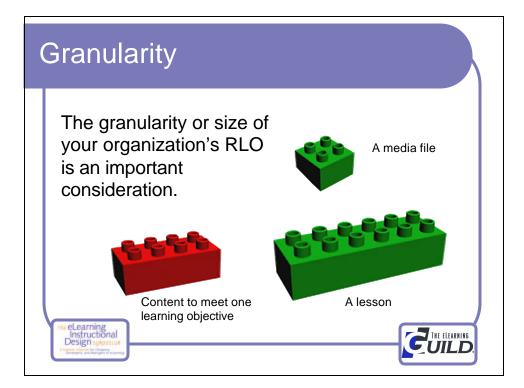






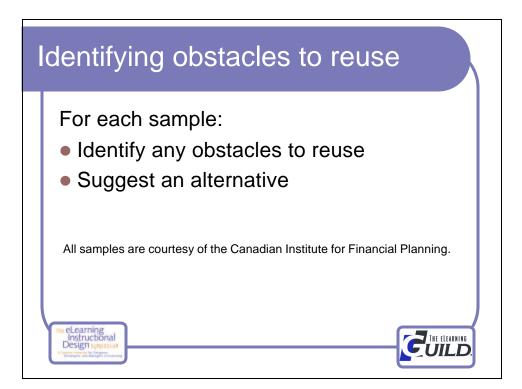




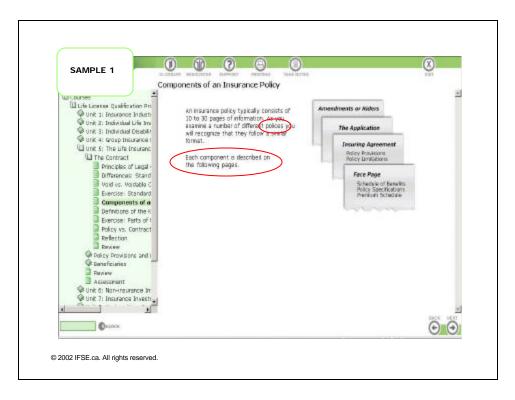




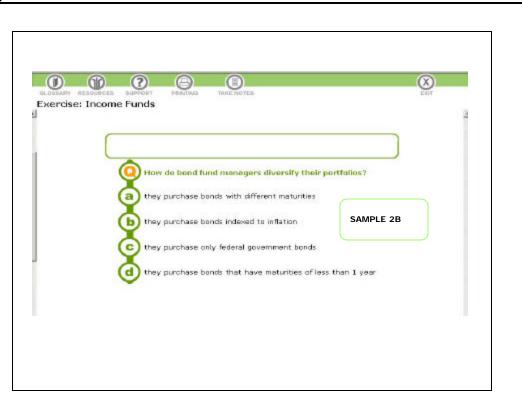
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