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Melo3Ds

Integration (and Creation) of Online Learning Resources. Why and How?

Lynne Crandall, Brenda Gunderson, and Nancy Kerner
University of Michigan at Ann Arbor

Learning Resources

- **Learning Resources**
Any web-based teaching tool (e.g., tutorial, collection,)
- **Learning Objects (LOs)**
Interactive web resources that lead students to learning goals via informed pedagogy

Selection and Integration of LOs

- **LO course collection**
 - Selection based on course needs and goals
 - Provided within syllabus or on website
- **LOs tagged for course integration**
 - Choice based on **needs vs type** of LO
 - Choice focused on LOs that address **difficult concepts or skills**

Selection and Integration of LOs (Physics)

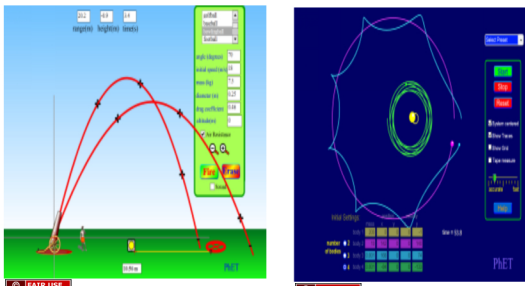
Physics



Games



Selection of Learning Resources (Physics)



Chosen Java Applets = Games = LOs

Selection and Integration of LOs (Physics)

Presentation by Anbo

www-personal.umich.edu/~anbo/presentations/MELO2010physv2.swf

- Created Assignments linked to selected LOs with directives on how to interact with the LO
- Visually link abstract homework problems to reality

Helpful Hints

- Use **"Pause"** feature often to reduce extra takes!
- Adjust **screen resolutions** to provide a "whole screen view" in a smaller video size.
- A **headset/microphone** combination is a worthwhile investment.
- Use the **cursor locate** feature to help viewers follow the cursor.

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How might you *SHARE* your Video Wrapper?

Sitemaker

- Free to UM faculty, staff, grad students
- Allows you to manage access
- Allows easy integration of text, pictures, and video in a cleanly designed page.

Screencast.com (Jing)

- Jing uploads for you and you just send the link or post on Ctools site

Direct Email the Video File

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Time to Make Your Own Video Wrapper

Pick **ONE**:

- Create a Wrapper for another LO in your collection
- Create a Wrapper to show how to do some steps or task at the umich.edu website (e.g. how to find your UM directory entry)
- Create a Wrapper to show your students how to do some task on your Ctools site (get to iTunes U)
- Create a 'card/message' in Word/ppt, wrap it with an audio message and send to ... *mom, friend, yourself*

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Create Your Own Learning Resource

- MERLOT's Content Builder is free and is an easy-to-use web-authoring tool to create Open Educational Resources.

<http://www.merlot.org/merlot/viewMaterial.htm?id=532449>

- Can be used to create different types of websites for different user purposes:

Teaching e-Portfolio, Lesson Plans, Online Courses, Tutorials, ...



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Homework Assignment

- Find three discipline LOs and present and critique one of the LOs using MERLOT evaluation criteria (content, ease of use, teaching and learning effectiveness)
 - Contact your MELO faculty supervisor or workshop leaders for more information!
- Nancy Brenda
Lynne

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Thank You to ...

UM Faculty

Nancy Kerner	Brenda Gunderson
Brian Malley	Gus Evrard
Christine Modey	Karen Rhea

UM Graduate Students

Dave Childers	Kevin Hartman	Jay Holden
Joel Vaughan	Ben Gunsberg	Jeff Meyer
Anbo Chen	Porscha McRobbie	Alicia Hofelich
Kira Gallagher	Jessica Piney	Michelle Lee
Damian Khan	Noah Gardner	Tanya Breault
Tom Brown	Adena Rottenstein	Tim Green

UM Consultants

Victor Wong	Chase Masters	Lynne Crandall
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Video LO Tutorials (Writing and Math)

Writing presentation by
Ben Gunsberg

screencast.com/t/MTE1MGi4MTgt

Mathematics presentation by
Michelle Lee mishlie@umich.edu

screencast.com/t/Y2FiNzUxOWlt

Select one to watch and listen (using your headphones),
then share with your neighbor ...

Process of Making YOUR HOUSE

- **Find** the LO
- **Evaluate** it, anything to fix/change,
how do you want to make it YOURS?
- **Primary fix** = video (to explain, show, guide)
- What **other components** needed?
 - The roof = objectives
 - The basement = assessment/assignment

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Some Screen Capture Background



Get free version of Jing from jingproject.com

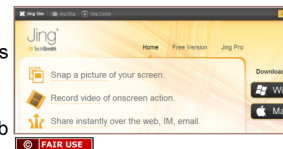
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Jing

Advantages:

- **Free and Easy to Use**
- Captured Shots or Videos
can be saved or
automatically uploaded
- Formats great for the web



Disadvantages:

- Maximum Video Length: 5 minutes
- Can annotate Screen Shot, but no video editing
- Videos are branded
- Video format not always what one would want

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Using Jing

Instructions for Use:

1. Choose "Capture" from the Jing Sun.
2. Select the window of area you wish to record.
3. Select *Screenshot* or *Video*. Record.
4. Preview it.
5. Save it locally, or upload it to Screencast.net.



Show a little Jing now!

© FAIR USE

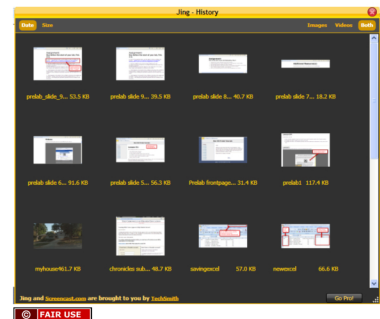
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Using Jing

History:

Convenient
location to:

- view
- share
- delete
recent Jings.



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The Fully Wrapped LO = PreLab 03

Lesson03:

In this lesson, you will generate confidence intervals for estimating a population proportion. You will be able to set the value of the (usually unknown) population proportion, the sample size, and the confidence level. You are also able to decide how many samples will be generated and a confidence interval based on each sample will be computed and displayed. The applet graphs the intervals and those which do contain the true proportion are shown in green, while the intervals that did not contain the true proportion are in red. The true proportion is shown by a blue line on the graph. Trying different settings will allow you to make comparisons and draw some important conclusions about how confidence intervals work.

Lesson:

Watch the following video about how to use the confidence interval simulator.



Simulation Link:

The simulation may be found [here](#).

Assignment:

Check Ctools for due date and submission details.

For each of the questions below, use the applet to help you address the question. Submit your 1-2 sentence summary for each question directly inline to your GSI Ctools site Assignment for prelab3 (or as instructed on your class Ctools site).

- 1 - Set the confidence level to 90% and the sample size to 100. (a) What is the long run proportion of confidence intervals that contain the population proportion? (b) Does the long run proportion depend on the sample size n ? (Try some other sample sizes keeping the confidence level at 90%.)
- 2 - What happens to the length of the confidence intervals as the confidence level increases? Compare some intervals at the 90%, the 95%, the 99% confidence levels (keeping the population proportion and the sample size n the same).
- 3 - What happens to the length of the confidence intervals as the sample size increases? Compare some intervals made using samples sizes of $n = 30$, $n = 50$, and $n = 100$ (keeping the population proportion and the confidence level the same).

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Video Wrapped PreLab Part 1

Introduction:

Brief paragraph describes goals of the activity.



Stat 250 Prelab Tutorials

Tutorials Lesson01

Lesson03:

In this lesson, you will generate confidence intervals for estimating a population proportion. You will be able to set the value of the (usually unknown) population proportion, the sample size, and the confidence level. You also are able to decide how many samples will be generated and a confidence interval based on each sample will be computed and displayed. The applet graphs the intervals and those which do contain the true proportion are shown in green, while the intervals that did not contain the true proportion are in red. The true proportion is shown by a blue line on the graph. Trying different settings will allow you to make comparisons and draw some important conclusions about how confidence intervals work.

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Video Wrapped PreLab Part 2

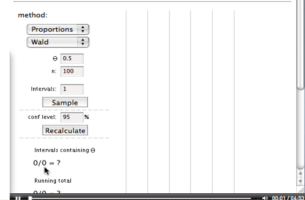
Lesson:

Video Wrapper:

A narrated screen capture video demonstrates the use of the learning object.

Watch the following video about how to use the confidence interval simulator.

Rossman/Chance Applet Collection Simulating Confidence Intervals



<http://sitemaker.umich.edu/stats350.prelab/lesson03>

Video Wrapped PreLab Part 3

Learning Object:

A link to actual online learning object is given.

Simulation Link:

The simulation may be found [here](#).

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Video Wrapped PreLab Part 4

Assignment:

Students complete a short assignment using the Learning Object.

Assignment: Due before the start of your lab, Feb. 2-4.

For each of the questions below, use the applet to help you address the question. Submit your 1-2 sentence summary for each question directly inline to your GSI Ctools site Assignment for prelab3.

- 1 - Set the confidence level to 90% and the sample size to 100. (a) What is the long run proportion of confidence intervals that contain the population proportion? (b) Does this long run proportion depend on the sample size n ? (Try some other sample sizes keeping the confidence level at 90%.)
- 2 - What happens to the length of the confidence intervals as the confidence level increases? Compare some intervals at the 90%, the 95%, the 99% confidence levels (keeping the population proportion and the sample size n the same).
- 3 - What happens to the length of the confidence intervals as the sample size increases? Compare some intervals made using samples sizes of $n = 30$, $n = 50$, and $n = 100$ (keeping the population proportion and the confidence level the same).

Students complete and submit online through Ctools -> no paper!

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Video Wrapped Feedback



Jing

- Free (with optional upgrade)
- Saved as files or links
- Image or video screencapture
- Documents, webpages, etc.

<http://www.screencast.com/users/cmodey/folders/Jing/media/8bd96754-d693-4b5e-ba59-952afb2f2e4d>

Advantages of LO?

- Addresses fundamental concept.
- Provides excellent visual demonstration.
- User can adjust controls.

Disadvantages of LO?

- Learning Objectives?
- Directions?
- Terminology/Notation unknown to our students

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Initial Assessment of LO

- The “Simulating Confidence Intervals” LO has the **potential** to enhance students’ understanding of an important concept.
- However, the **imperfections** make the LO unsuitable as a standalone resource.

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A Solution

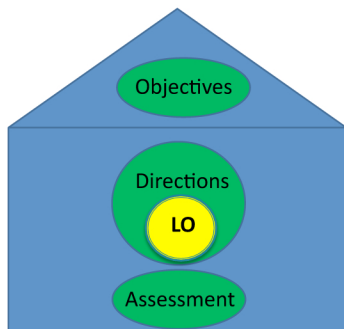
- “**Package**” the LO within the framework of a larger, instructor created lesson.
- **Instructor guidance** using can alleviate the problems caused by LO imperfections.

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Instead of:



My students will see:



Why a video screen capture?

- The **video wrapper** allowed the instructor to:
 - Introduce the LO
 - State the learning objectives
 - Explain inconsistency in notation
 - How it works
- After watching the video, students can use the LO independently.

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Unique LO Collection Building (Psychology)

An Innovative End of Term Assignment

- Intro Psych students pick own "muddiest point"
- Student = *para-peer reviewer* **found, reviewed, recommended LO** to address muddiest point
- Students **submitted mini-review** of LO and recommendation for why and how to implement in course

Unique LO Collection Building (Psychology)

Students recommended many quality LOs **previously overlooked or undiscovered**

Examples

Pavlov's Dog- A classical conditioning simulation
Cataloged in: [Science&Technology/Biology/Zoology](#)

Mouse Party- A simulation for examining the effect of common illicit drugs at the synaptic level
Cataloged in: [Science&Technology/Chemistry/Biochemistry](#)

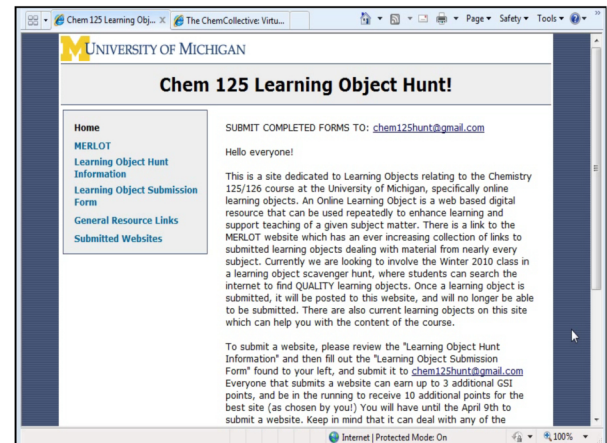


Unique LO Collection Building (Chemistry)

Presentation by Kevin Hartman,

screencast.com/t/MTE1MGi4MTgt

- "LO Scavenger Hunt" to find "best course LO"
- Student submits mini-review and recommendation for why and how to integrate LO in course
- Points awarded based on review, quality of LO, recommendation specifics, and peer feedback

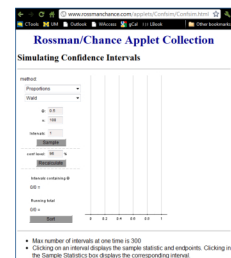


Overall Outcome: The Big Idea

Move from a model where students are not only engaged learners but also co-teachers.

(Potentially Useful) LO in Statistics

- Simulating Confidence Intervals
- Authors: Beth Chance, Allan Rossman (CP)



<http://www.rossmanchance.com/applets/ConfSim/ConfSim.html>

Interdisciplinary LO Collection

- Undergraduate students have different levels of academic training
- Success in undergraduate education demands a solid foundation in a variety of basic academic skills

Why interdisciplinary?

Examples:

Writing skills
Working in Groups
Presentation skills
Study skills

- How can we work towards leveling the playing field?

Integrating LOs (Psychology) and Creation of an Interdisciplinary Collection

Presentation by Adena Rottenstein

<http://www.screencast.com/t/ODc1OTU3>

- Unique course specific listings of LO collections
- LOs are video clips with relevant assignments
- Interdisciplinary collection details

MERLOT

- LO resource collection in MERLOT growing exponentially
- Useful LO evaluation criteria
- Ability to submit LOs and create personal LO collections
- Power of affiliation with a global teaching and learning community

Why MERLOT?

1. Create a Personal LO Collection on MERLOT

Creation of an LO collection

- Time to create your own personal collection!
- See *Assignment 1* on page 3 of your workshop handout

<http://www.merlot.org>

2. Make LO collections student accessible. How?