

Welcome to NetWorks Webinar

**Steps to Building a Great Learning Objects:
Or.....**

How I became a published Multimedia Developer

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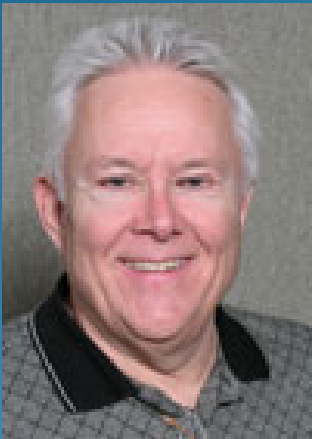
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NetWorks Webinar Presenter

Mr. Bunnow has a Bachelor of Science Degree in education and a Master of Science Degree in Instructional Media Design.



Mr. Bunnow is currently a Trainer and Consultant with the Wisconsin Online Resource Center (Wisc-Online) and has developed and presented over 200 learning object workshops, seminars and conferences for over 1500 faculty and instructional developers focusing on the Design, Development and Delivery of Learning Objects and the application of instructional Media to learning.

Mr. Bunnow's most recent assignment has been to consult with business and industry clients on the development of learning objects and customized Learning Management Systems for company and client training.

Steps To Building a Great Learning Object

or.....

How I became a published Multimedia Developer

Issues in Design

Objects in the Curriculum

Search for Existing objects

Sizing the content

Putting Multi in the Media

The Software

Template/Custom

With or as Assessments

Quality Standards

Copyright

Linear/Non/Linear

The team

Technical Standards

The Design Process

Define The content

Peer/Student Review

Upload Content

Link the Objects

Develop your script

Create Metadata

Track the Object

Evaluate the object

About Wisc-Online

Wisc-Online

(www.wisconline.org)

A consortium of the 16 Wisconsin Technical Colleges

- *A Digital Library of over 2200 online Learning Objects*
- *Over 50,000 registered users*
- *3.5 million hits per month*
- *100,000 unique visitors monthly*
- *365 faculty authors* representing 16 technical colleges, 4 community colleges, 3 foreign countries
- *5- full-time multi-media/technical programmers*
- *1- learning object content editor*
- *6-student interns*
- *1-multi-media instructional designer*
- *Wisc-Online Store* selling downloads, source codes, customized development of learning objects and repositories.

Review your curriculum and find an area of need (Considering the course)



- Whenever you plan a program or course development or revision and learning objects will be part of the curriculum, it is important to develop a spider diagram including Course to Unit to module to Learning Objects.



Review your curriculum and find an area of need (The Bump In The Road)



- Consider instructional units, lessons, learning activities and topic areas that could best be enhanced through the use of an animation, simulation, interaction or a sequence of actions (builds) that incorporate several senses in the learning activity.
- **Consider developing learning objects that address subject matter that you are repeating or remediating frequently.**
- **Some learning content and some learning environments lend themselves to self paced and individualized activity.**
- **Build learning objects because they will make a difference.... not “because we can”.**

Does something already exist?

Don't reinvent the wheel.

Resources may already exist and may be available linking into your curriculum.



- Search www.wisconline.org
(Complete your profile if you are not a current user)
 - Search by subject areas
 - Search by Key words
- Search The Web
(See Learning Object Resources on the Web)
 - <http://www.merlot.org/Home.po>

Does something already exist?

“Maybe I should build it anyway.”

- Faculty do create learning objects even though they do find useful objects on the WEB mainly when:
 - they find the material is too comprehensive.
 - it is not easy to obtain copyright clearance.
 - the object does not allow for interaction between instructor and student. “e-mail”.
 - links are “volatile” i.e. the site changes or is unstable and links can be broken.
 - use requires a license fee.



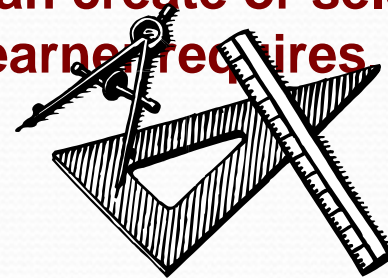
“Sizing” the content to build an object

- This step is often the most difficult for new object builders. We are most familiar with developing units and lessons. The much smaller granule (learning object) takes some thinking about during content creation.
- Using the Granularity scale (Course, Unit, Lesson, learning activity, learning object) helps the developer consider the scope of the content to be incorporated.
- Developers realize that the learning object is a resource that can be grouped with other web pages, text documents, lab activities, and classroom presentations to meet a very specific objective within a larger learning activity, lesson or unit.

“Sizing” the content to build an object

- Could the content be broken into smaller “grains” and be useful as a learning activity?

Faculty often observe that “the learning object doesn’t contain all of the information to teach a concept or competency.” Exactly! A learning object is one part of the lesson that you as an instructor can create or select and combine and reconstruct as the learner requires.



Putting the Multimedia in your Design

- **Media**

- Animation,
- photography,
- video,
- audio,
- revealed text,
- simulations and Case studies,
- Interactions

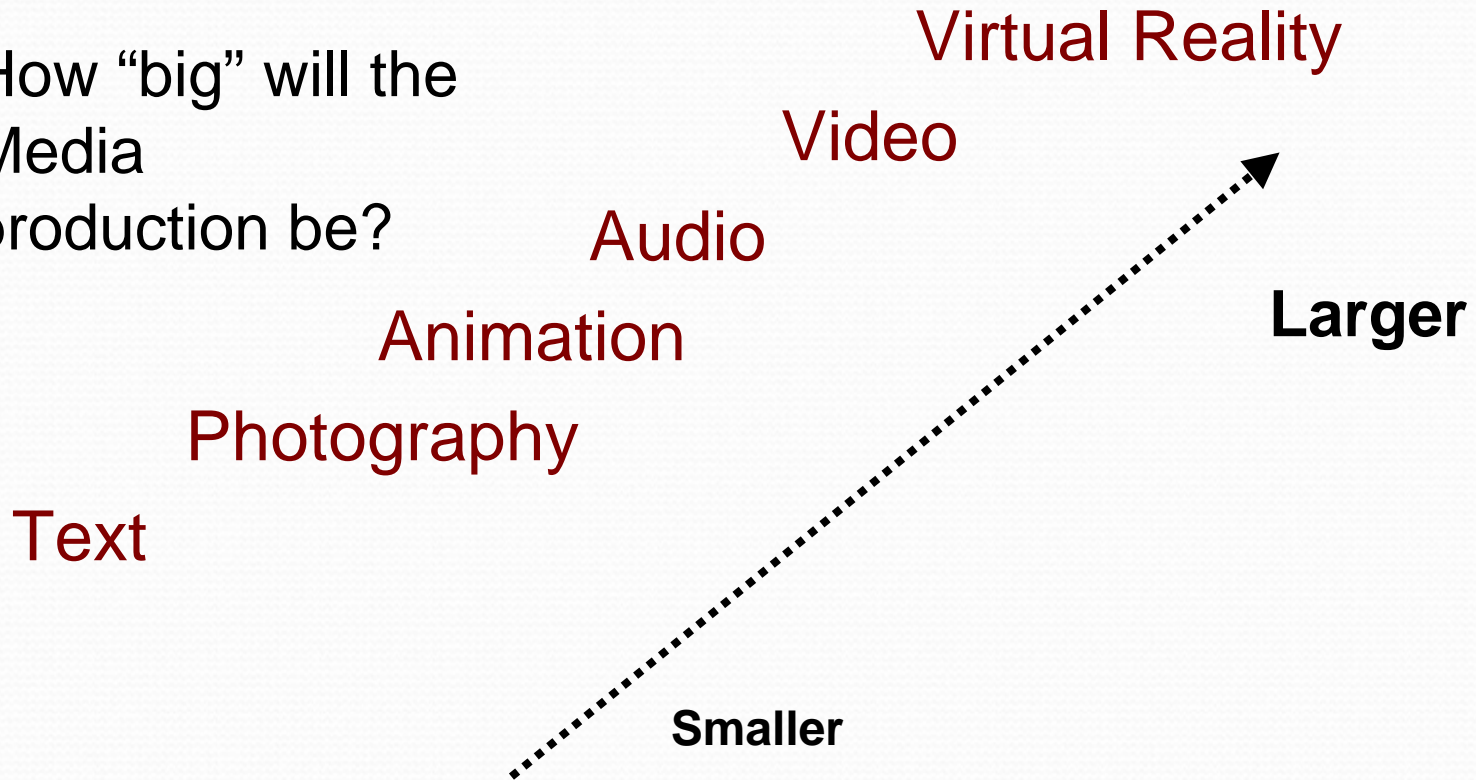


- **Notice how objects contain multiple media.**

Resource CD ideas

Putting the Multimedia in your Design

How “big” will the Media production be?



Learning objects with assessments or as assessment

Assessing mastery is an important component of the teaching and learning process. Do I incorporate assessments in my learning of

- [Socialization-The Process of Becoming Ourselves](#)
- [Understanding Political Cartoons](#)
- [Print Reading-Holder](#)
- [Construction of The Cell Membrane](#)
- [Mechanism Description-Can opener](#)
- [Indicator Quiz](#)

Define The content

The goal is to script your content only once.

- Write the content with a specific learning level in mind
- Determine the competency you want to address.
- Outline the learning object content.

Develop your script (Online script form)

To move your content to a multimedia rich resource requires a script.

The **Script Form** is your tool to create the content in an electronic format that you upload for technical development.

Develop your script (Online script form)

The screenshot shows a web browser window titled "Project Planning Worksheet (Script)". Inside the browser, there is a "Title Frame" containing a table with two columns. The left column is titled "Directions for Programmers" and contains the text "(Provide special instructions for needed graphics, photos, video, animations, special navigation, etc.)". The right column is titled "What will the viewer see...". Below the table is a section labeled "Audio for this screen (if needed)".

Directions for Programmers	What will the viewer see...
(Provide special instructions for needed graphics, photos, video, animations, special navigation, etc.)	

Audio for this screen (if needed)

Script Form

Your script form is on the
Wisc-Online Faculty Builders Site

Peer/Student review

- You will have opportunity to discuss the object visual and multimedia design with instructional designers and/or the technical developer. You may want to “model” your object after an existing object, but first.....
 - **Is content accurate?**
 - **Is something unclear or missing?**
- After you have created your script and before you submit the content you will need to find a knowledgeable co worker or friend and ask them to review the content for accuracy. Images, text, mathematical equations and graphics need to be reviewed for accuracy and clarity.
- If you have a student who is knowledgeable ask them for a students “eye” especially for clarity. When we have content familiarity we often “assume information that is not presented.

Final Script edit

- Fill in the gaps
- Revise for accuracy



Creating and Using Metadata

One of the most challenging issues in developing and using learning objects (Learning content) is the creation of Metadata (data about data).

- You must determine the context within which you will use the learning content and then determine the standards (IEEE, SCORM) of metadata that you will incorporate.**
- You will need to determine the technical process for embedding the metadata.**

The Wisc-Online Skimmit

- When your script is edited and ready for submission you will select the Skimmit tool. This fill-in form provides the metadata that will be shown on the Wisc-Online repository and in the search tools.

Directions

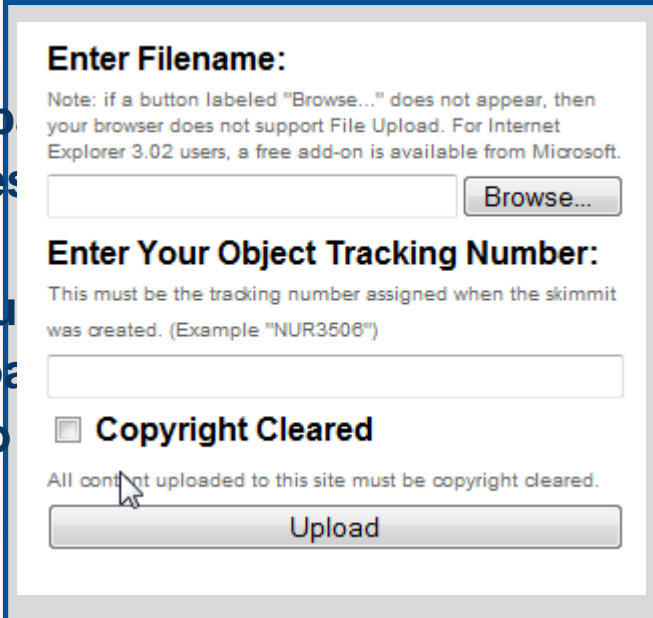
Select each tab and complete the metadata in detail so that the faculty looking for objects can find your object and know that you are the author.

- Note that you can acknowledge multiple authors.
- Carefully consider your title and Description. Potential users will decide to view and use the object based upon this information. It is the information that faculty will see when they first find your objects.
- Be sure to include any key words that do not appear in your Title or Description.
- Submit the Skimmit and print a copy when you receive a printed copy that contains the information you have submitted.

The Skimmit is found on the Faculty Builders site on Wisc-Online

Submit the script/Attachments

- The Skimmit metadata is held in the database waiting for the content (script and images)
- Be sure that the script is ready before you create the SKIMMIT submission and upload the script and images that you want us to include by “clicking” upload on the [Wisc-Online Developers site](#) and follow the directions.



Enter Filename:
Note: if a button labeled "Browse..." does not appear, then your browser does not support File Upload. For Internet Explorer 3.02 users, a free add-on is available from Microsoft.

Enter Your Object Tracking Number:
This must be the tracking number assigned when the skimmit was created. (Example "NUR3506")

Copyright Cleared

All content uploaded to this site must be copyright cleared.

Please note that you will be asked to confirm that the script and the text and the images have been copyright cleared. This is our confirmation that we can proceed.

Track Them


Whenever you create a learning object you can keep track of the building process.

Learning Objects Tracking Database

87 item(s) listed.

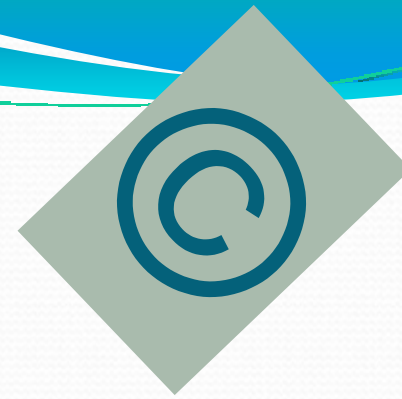
If you would like to see author information for undeveloped learning objects, please click [here](#).

- Skimmit received
- Content Received
- Assigned
- In production
- Grammar Review
- Instructor review



<u>Object ID</u>	<u>Name</u>	<u>Status</u>
ACE12907	Transformer Action Demonstration	<i>Content Received</i>
ACE13007	Inductive Reactance Demonstration 1	<i>In Production</i>
ACE13107	Inductive Reactance Demonstration Video	<i>Assigned</i>
AER107	An Introduction to Wittman Regional Airport in Oshkosh, WI	<i>Assigned</i>
AER207	Airspace	<i>Assigned</i>
AER407	C172 Profiles	<i>Assigned</i>
AER507	Be76 Profiles	<i>Grammar Review</i>
AER607	The Primary Controls of an Airplane	<i>Assigned</i>
AER908	The BE-76 Checklist	<i>Instructor Review</i>

Copyright



- **Be sure that all materials are copyright cleared. This includes text and images that are forwarded with the script. Copyrighted materials may be submitted with permission. Keep a printed record if you have received permission to included others copyrighted materials in your learning object.**
- **Faculty may scan and submit copyrighted images with directions for graphics and animations for purposes of explanation only.**
- **Note that you are required to affirm that what your upload is copyright cleared. We take this very seriously and we trust that you will as well.**

Link them

The **Wisc-Online Learning Object repository** houses the objects as they are being developed and searched by faculty. The **Wisc-Online Learning Object repository** contains hyperlinks to each object and instructors link these objects via the url into their web site, learning management system, into presentations or e-mails.



The screenshot shows a learning object entry for "Orifice Plate Flowmeters". On the left is a graphic with the text "LEARNING OBJECT" and "Process Control". To the right, the title "Orifice Plate Flowmeters" is displayed next to a yellow button labeled "Add to 'My Favorite Objects'". Below the title, the author is listed as "Terry Bartelt - Fox Valley Technical College" and the technician as "Evan Dold". The date is "3/18/2008". The description states: "Learners examine the operation of an orifice plate flowmeter as it is used to make process control measurements. A brief quiz completes the activity." A "FREE Link" is provided: http://www.wisc-online.com/objects/index_tj.asp?objID=ELE1407. At the bottom, there is a green button "View Object" and a search icon with "55 Hits". A blue arrow points from the bottom right of the screenshot towards the "FREE Link" text.

Important Note! We do not recommend that you send students to Wisc-Online. Link the objects so students can go directly to the objects.

Use Them

Web Sites
E-Mail

(Attached Word .doc)

Classroom Presentations
“My Favorite Objects”



Evaluate Them

Effective instruction closes the loop

- Is the object effective?
- Is the object effective in this learning environment?



Submit a review - Internet Explore...
http://www.wisc-online.com/objects/reviewobje

Wisc-Online
Wisconsin Online Resource Center

Write A Review

Please give us your feedback on this object.

Your Name:

Your Email Address:

Position: Please Select ▾

Enter your review.
Please enter your review of this learning object in the text box below. We value your opinions and suggestions, and we will post them for instructors and students to view. All comments will be reviewed before they are posted.

[Write a review](#)
[Tell a friend](#)
[Copy the link](#)
[Reviews\(15\)](#)

[Men](#)
u



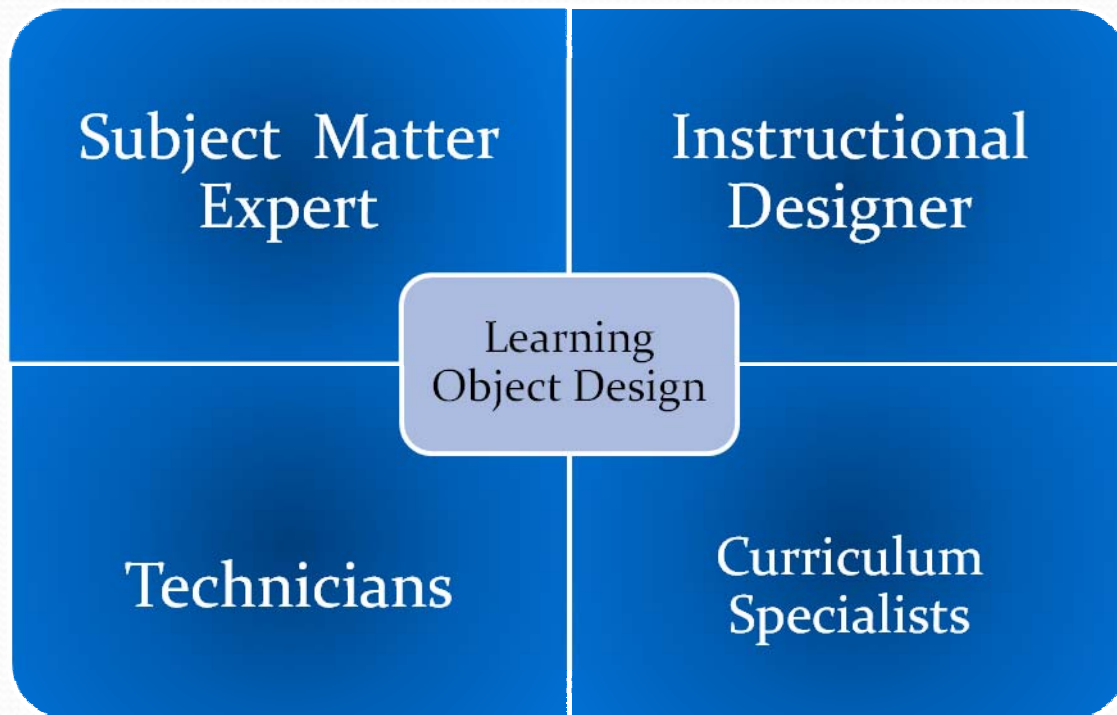
The Team The design and process are
Largely dependent upon
the team you work with.

**What skill sets, software, hardware and staff
can you expect to have available as you develop
your learning objects?**

**Don't forget to include time resources
in your planning**

The Team

The design and process are largely dependent upon the team you work with





Questions?

Metadata

Wisc-Online tags its objects with metadata. What the heck does that mean?

- **Metadata**

Literally, "data about data," metadata includes data associated with either an information system or an information object for purposes of description, administration, legal requirements, technical functionality, usage, and preservation.

- **IEEE, IMS, SCORM**

Wisc-Online will tag the learning object when it is completed and will place it in the repository where you can link it into your learning application

Multimedia Quality Standards

- **Content is accurate and unambiguous**
 - Text information is correct and unambiguous.
 - Feedback to learner provides adequate reinforcement or remediation.
 - Processes or order of activities are accurate and meet business and manufacturing accepted standards.
 - Labeling is accurate.
 - Images, video and animations are accurate for demonstration within the learning object.
- **Scope of the content is appropriate as a learning object**
 - Content is sufficient to warrant learner time on task/learning object activity.
 - Content is granular and focused. (Content able to be further granulated should be re edited.)

Multimedia Quality Standards

- **Learning “environment” engages learner:**
 - Navigation is clear and provides learners with access to content in a non-linear design where possible...
 - Directions are appropriate and clear.
 - Interaction/feedback between learner and object or learner and faculty are provided where appropriate.
 - Appropriate media is used to present information i.e. text, audio, graphic, photo, video, animation.
- **Learners are provided with feedback when asked to assess their knowledge**
 - Objects that ask learners to complete computations or select correct answers will be provided feedback whether answers are correct or incorrect.
 - Objects asking learners to make observations as in case studies will provide feedback and evaluation opportunities student to student or student to faculty.

Multimedia Quality Standards

- **Learning activity meets identified goals**
 - Learning object has clearly stated objective(s).
 - Learning resources and activities meet stated objective.
 - Assessments embedded in objects directly assess stated goals and objectives.
- **Learning Objects contains all resource materials and tools for student to complete the learning activity**
 - Learning objects requiring students to apply tools or data have information and tools embedded in the learning object. Calculators, tables of information, formulas, and definitions are linked via tabs or buttons.
 - Note: Occasionally information cannot be embedded and may be referenced.

Software



SME as Designer and Builder

- Template Software
- Basic Graphics Software
- Basic Media Capture and Development



Technical Team Supported

- Advanced Design Software
- Media Capture and Development
- Database

The Learning Granularity Scale

Courses

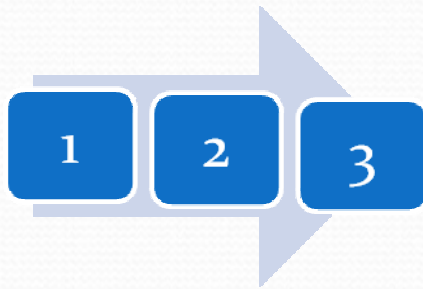
Units

Lessons

Learning Activities

Learning Objects



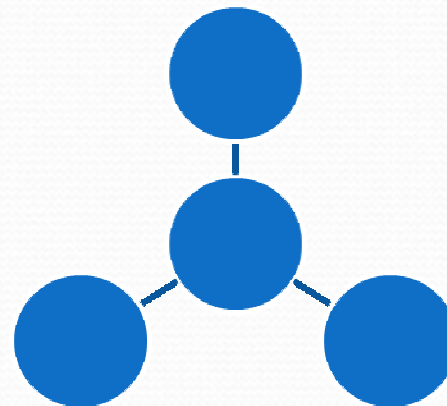


Linear

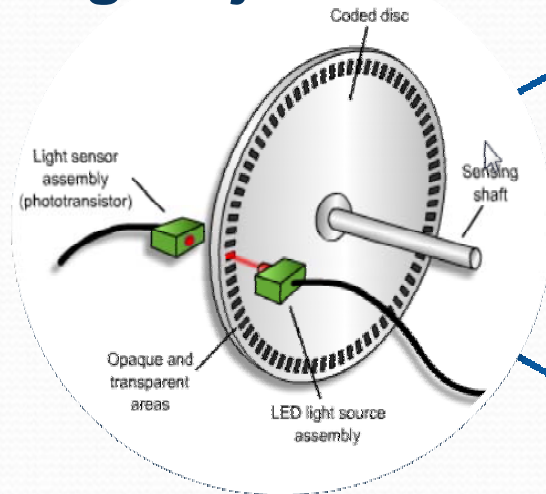
Sequential learning

Learner directed learning

Non-Linear



Learning Object



Template

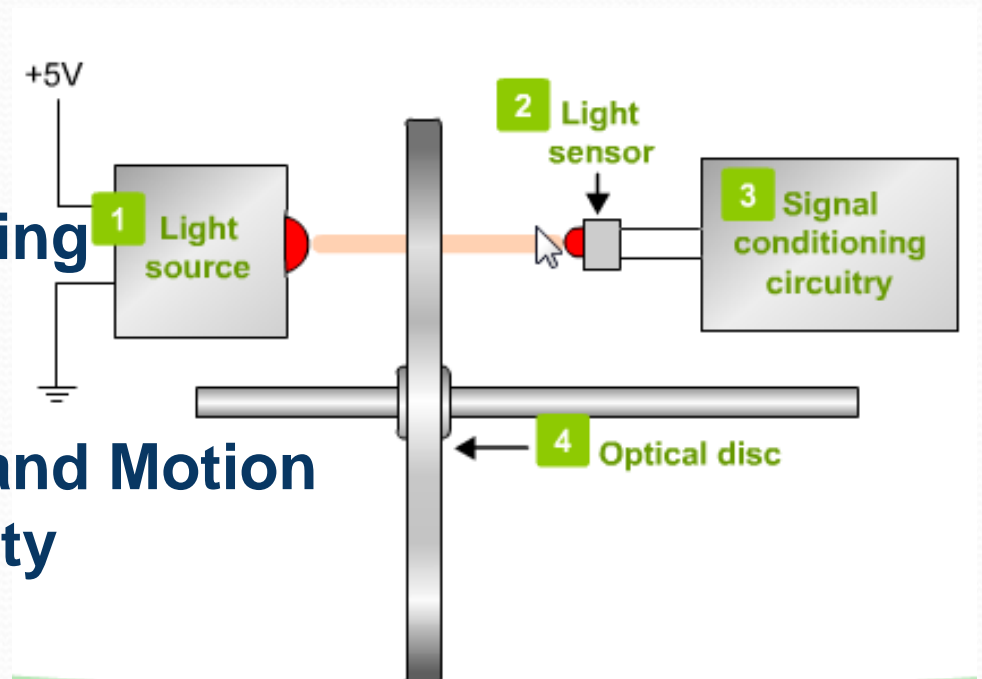
- Instructor designed and developed
- Limited alternatives

Custom

- Full media alternatives
- Greater infrastructure and development time

Technical Standards

- Text and Fonts
- Color
- Directions and labeling
- Navigation/Linking
- Imaging
- Animation/Reveals and Motion
- Browser Functionality
- Projection
- File Management
- Copyright



Software SME as Designer and Build

Pachyderm	http://pachyderm.nmc.org/
Articulate	http://www.articulate.com/products/studio.php
SoftChalk	http://www.softchalk.com/
Zoomerang	http://www.zoomerang.com/
Impatica	http://www.impatica.com/
Raptivity	http://www.raptivity.com/
PowerPoint	http://office.microsoft.com/en-us/powerpoint/default.aspx
Word	http://www.microsoft.com/en/us/default.aspx
MindJet	http://www.mindjet.com/us/

Wisc-Online	http://www.wisconline.org
Penn State	http://tlt.its.psu.edu/mto/archivist.html
Merlot	http://www.merlot.org/merlot/index.htm Software
Annenberg	http://www.learner.org/
Photo Research	http://www.photoresearchers.com/main.html

Software Technical Team Supported

Camtasia	<u>http://www.techsmith.com/</u>
Flash	<u>http://www.adobe.com/products/flash/</u>
Sound Forge	<u>http://www.sonycreativesoftware.com/</u>
Poser	<u>http://graphics.smithmicro.com/</u>
SitePals	<u>http://www.sitepal.com/</u>
Audacity	<u>http://audacity.sourceforge.net/</u>
Audition	<u>http://www.adobe.com/products/audition/</u>
JavaScript	<u>http://www.javascript.com/</u>
Captivate	<u>http://www.adobe.com/products/captivate/</u>

Thank you for attending

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Future Webinars

- **May 8** – Technical Programs: Here to Stay or Too Expensive to Maintain? Action To Take!
- **May 9** – Electronics 2010: A New Systems Approach to Teaching Electronics



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