

Refresh Your Course



**Refresh Your Course!  
Workshop**

Donald Carpenter, Director, CTL  
Marija Franetovic, Course Developer, VITRC  
Gary Cocozzoli & Gretchen Weiner, Library

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By the end of this workshop  
you will be able to:

- Write effective learning objectives using Bloom's Taxonomy.
- Design interactive learning activities based on those objectives.
- Obtain or use library resources needed to implement those activities.

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**Using Learning Objectives  
for Course Design and  
Curriculum Improvement**

Dr. Donald Carpenter  
Civil Engineering Department

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**Introduction**

- Learning Objective: a statement of specific observable actions a student should be able to perform after a period of time  
*Upon completion of this [course, chapter, week, lecture], you should be able to [calculate, solve, estimate, describe, design] the ...*
- Instructional Objectives or Educational Objectives
- Program → Course → Unit

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**Why use Learning Objectives?**

- Identify critical material
  - Course or Curriculum
  - Course Organization
  - Curriculum Planning
  - Eliminate excessive duplication of material
- Facilitate course activities
  - Consider delivery of material
  - Maximize student learning
- Provide a guide for student learning

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**Why use Learning Objectives?**


- Communication:
  - Informs adjuncts or new faculty of course expectations
  - Informs colleagues what students should be able to accomplish (pre-requisite)
  - Informs students of what they are expected to accomplish upon course completion
- Provide for assessment of course performance
  - Assessment of student learning (direct vs. indirect)
  - Accreditation

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### Examples:


- At the end of this lecture you should be able to calculate velocity in a pipe using Darcy-Weisbach and Hazen-Williams equations.
- At the end of this class you should be able describe the function of the kidney in a human body.
- At the end of this course you be able to generate a business plan for a new venture.
- At the end of this session you should be able to explain why we feel fine in 70 degree air but cool in 70 degree water.



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### Learning Objective Creation


- Components to writing an effective learning objective:
  - Identify the learning behavior desired and associated traits
  - Determine the desired level of achievement (based on Bloom's Taxonomy)
  - Select an appropriate action verb based on level
- Use action verbs that are:
  - Measurable
  - Observable
  - Definable
  - Understandable
- Avoid using words like "know", "understand", or "appreciate"
- Writing learning objectives is an iterative process and are interlinked with instructional activities and assessments.



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### Bloom's Taxonomy: Cognitive Domain


- Six defined levels of learning for the cognitive domain:
  - Knowledge – recognize or recall information
  - Comprehension – understand the meaning of information
  - Application – use the information appropriately
  - Analysis – break the information into components
  - Synthesis – put components together to form new ideas
  - Evaluation – judge the worth of ideas
- Lower Level vs. Higher Level
- Verb usage does not guarantee desired level



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### Bloom's Taxonomy Affective Domain


- Five defined levels of learning for the affective domain:
  - Receiving – willingness to attend and receive information
  - Responding – actively participate
  - Valuing – the value a student attaches to an idea or object
  - Organization – organizing different ideas, objects, or values
  - Characterization – characterize a value
- Verb usage does not guarantee desired level



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### An Example of Refreshing a Learning Objective


- At the end of the course I should instill upon the student a comprehension of the design process.
- At the end of the course you should comprehend the design process.
- At the end of the course the student should be able to apply the design process.
- At the end of the course the student should be able to apply the design process for completion of a freeway interchange.



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### An Example of Refreshing a Learning Objective


- To demonstrate to students how to set up the laboratory equipment
- By the end of this laboratory section you should be able to,
  - identify the piece of laboratory equipment to be used during this section (wind tunnel)
  - describe verbally and in writing the steps to be followed in setting up the wind tunnel for use
  - list the necessary precautions when using the wind tunnel
  - demonstrate to the instructor the ability to set-up the wind tunnel and perform the drag coefficient experiment



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### Activity


- EEE2214 Digital Electronics
- Lecture Topic - Multiplexers
- By the end of this lecture, a student will be able to:
  - Describe the use of multiplexers for modular digital design.
  - Utilize Microcap (eCAD) to simulate the use of a multiplexer.
  - Determine whether a multiplexer is functioning with an "OR gate" or a "NAND gate" and if the appropriate gate is being employed.



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### Activity


- MKTG 6013 Marketing Management
- Course Objective – "The most basic objective of this course is to help you develop the knowledge, mindset, and skills to be effective marketing managers."
- By the end of this course, a student will be able to:
  - Discern and describe the fundamental differences between domestic and international marketing.
  - Identify, synthesize, and disseminate to the class relevant (i.e. related to Marketing Management) business articles from newspapers (Wall Street Journal, Detroit Free Press, etc.) and magazines (Business Week, Crain's Detroit Weekly, etc)
  - Design a target marketing strategy for a small enterprise with a fixed budget and a narrow market focus.



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### Activity


- Your course?



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### References

- How To Write and Use Instructional Objectives – Norman E. Gronlund, Prentice-Hall, 2000.
- Taxonomy of Educational Objectives – B.S. Bloom, Longman, 1994.
- *Objectively Speaking*, Chemical Engineering Education – Richard Felder and Rebecca Brent, 1997.



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**Designing Interactive Learning Activities**

Marija Franetovic  
Course Developer, VITRC  
[franetovic@ltu.edu](mailto:franetovic@ltu.edu) or 248.204.3758




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### What is a Course Developer?

*How could one help w/designing activities?*


- Small picture **activity design**
- Creation of objective-driven activities
  - Versus ‘activities for activities sake’
  - Versus ‘activities for tools sake’
- Alignment to Big picture **course design**



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### What is Course Design?

- Creation of a Course Design Document
- Alignment of Needs to Curriculum to Objectives to Syllabus to Session Topics to Presentations/Learning Strategies/Activities to Assessments that approximate authentic contexts
- Examples of course design processes in this workshop:
  - Creation of objectives based on curriculum objectives
  - Development of strategies/activities based on objectives
  - Location and evaluation of Library resources for activities




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### Course Design

*What Do the Students Get from the Course?*


- Detailed syllabus at onset with ample learning resources
- Well-organized
- Intellectually challenging
- Interaction and communication student to student, student to instructor, student to content
- Factual information
- Understanding of concepts and principles
- Lots of strategies/activities for facts, concepts, principles problem-solving and other higher-order thinking
- Clear assignment directions
- Materials that are used are useful in learning
- The material presented is the material tested
- There are opportunities for feedback on content and delivery, further feedback is used to enhance and modify learning experiences



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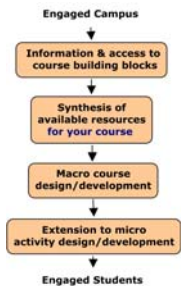
### Course Design Method: ADDIE

- Analyze
- Design *What learning experiences will enable students to accomplish the learning objectives?*
- Develop
- Implement
- Evaluate




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### Importance of Front-End Analysis




Engaged Campus  
↓  
Information & access to course building blocks  
↓  
Synthesis of available resources for your course  
↓  
Macro course design/development  
↓  
Extension to micro activity design/development  
↓  
Engaged Students

*All of you are analysts! CTL Grant Opportunity*



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<b>E</b> nvironment/Evaluation
<b>L</b> earners
<b>I</b> nstructor
<b>T</b> ools/Technologies
<b>O</b> bjective
<b>S</b> trategy/Activity



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### ELITOS: Environment & Evaluation

<b>Course Culture</b> <ul style="list-style-type: none"> <li>• Programs university known for</li> <li>• Rank</li> <li>• Accreditation</li> <li>• Curriculum</li> </ul>	<b>Course Activity Event of Instruction</b> <p><b>Where are we?</b></p> <ol style="list-style-type: none"> <li>1. Gaining attention</li> <li>2. Informing learner of the objective</li> <li>3. Stimulating recall of prerequisite learning</li> <li>4. Presenting the stimulus material</li> <li>5. Guiding</li> <li>6. Providing feedback about performance; corrections</li> <li>7. Assessing the performance</li> <li>8. Enhancing retention</li> <li>9. Providing for transfer</li> </ol>
<b>Course Format</b> <ul style="list-style-type: none"> <li>• Face-to-face (F2F)</li> <li>• Hybrid</li> <li>• Online</li> </ul>	
<b>Comprehensive Course Feedback</b> <ul style="list-style-type: none"> <li>• Course evaluations</li> <li>• Assessments</li> <li>• Activities</li> </ul>	

Gagne's Theory of Instruction in Driscoll. (2005)  


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### What is a hybrid course?

- **Hybrid Course:** F2F and Online
- Hybrid Formats: Alternating days, alternating weeks; Sessions broken up into F2F and online activities; Course broken up into x% F2F sessions and y% online sessions
- **Hybrid Course Redesign Tips**


*All of you are innovative! VITRC Grant Opportunity*



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### ELITOS: Learner Analysis


- Multiple Intelligences
  - Visual-Spatial
  - Auditory
  - Verbal-Linguistic
  - Tactile
  - Logical-Mathematical
  - Interpersonal
  - Intrapersonal
  - Musical-Rhythmic
- Other considerations: genx, adult learners, attention span
- Activities for getting to know your students
  - [Learning Styles Online Quiz](#)
  - F2F: Informal 1<sup>st</sup> class questionnaire activity
  - Online: Creation of Individual Website activity



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### ELITOS: Instructor Analysis



- *nosce te ipsum*
- **Learner-centered teaching**
  - Fun?
  - Consideration of different backgrounds, cultures, values, learning styles
  - Linking new knowledge to different mental models, motivation levels, transfer opportunities
  - Choices in: goal creation, activity, technology used
  - Alternate assessments using: portfolios, projects, apprenticeships
- *listening...*



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### ELITOS : Tools/Technology Selection

- Blackboard: syllabus, documents/assignment, grades
- Blackboard beyond a digital filing cabinet:
  - Asynchronous Communication Tools such as Discussion Board, Message Board, Announcements
  - Collaboration Tools such as
    - Wimba
    - Pronto
  - Web 2.0 Social Bookmarking Tools such as Scholar

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### ELITOS : Facilities/Associated Technologies, Other Ts


- T221
  - Live and On-demand Video streaming
  - Video-conferencing
  - Multimedia teaching & development lab
- E26
  - Interactive boards for collaboration/online sharing
- Other Tools:
  - Blogs, Wikis, MySpace/Facebook
  - Concept Mapping, Digital Gaming
  - Discipline-specific simulations, Second Life, etc.



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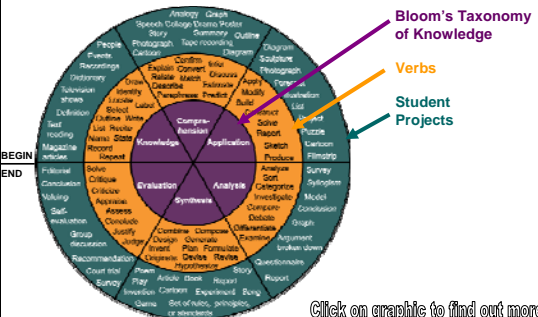
### ELITOS: Objectives

- Bloom's Taxonomy of Knowledge
- Verbs
- Lower to Higher order thinking
- Subordinate/enabling objectives
- Terminal objectives
- SMART: Specific, Measurable, Attainable, Realistic, Time-bound
- Considerations: Pre-requisite knowledge, Motivation, Transfer behavior




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### ELITOS: Strategy/Activity Development




Click on graphic to find out more!



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### ELITOS: Strategy/Activity Development

- Results from ELITO: environment/evaluation, learner, instructor, technology/tools, objectives
- Alignment between course objectives, presentation, strategy/activity, and assessment



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### Presentation/Learning Strategy/Activity


*Instructor models, guides, scaffolds*

#### Facts


1. Clustering, chunking, elaborating, building associations, patterns, graphic organizers
2. Use of mnemonics, rehearse
3. Carefully match objectives

#### Concepts

1. Examples, non-examples, use of diverse settings
2. Create concept-map, Give examples/non-examples, Explain categories
3. Assess critical attributes, irrelevant characteristics/errors – explain why



Smith P.L. & Ragan T.J. (1999)



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### Presentation/Learning Strategy/Activity


*Instructor models, guides, scaffolds*

#### Rules


1. Present/demonstrate relationship
2. Diagram relationships, Correct/incorrect application
3. Determine applicability, apply, explain

#### Procedures

1. Less complex to complex
2. Use checklist
3. Order, reorder into correct order



Smith P.L. & Ragan T.J. (1999)



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## Presentation/Learning Strategy/Activity

*Instructor models, guides, scaffolds*

### Problems

1. Sub-divide into subordinate, less complex to complex (varied to ill-defined), model think-alouds
2. Give analogies, monitor success of solutions, ask guiding questions & provide hints, correct/incorrect feedback to response/process feedback, represent problem in alternate ways
3. Solve different problems in different scenarios, isolate critical attributes, test others', justify

Cognitive strategies, Affective, and Psychomotor



Smith P.L. & Ragan T.J. (1999)

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## Active Learning Strategies

- Activating Prior Knowledge
- Automatizing
- Chunking
- Directing Attention
- Elaborating
- Emphasizing Meaning
- Identifying Conditional Knowledge
- Identifying Relevance
- Including Images
- Off-Loading
- Organizing
- Practicing Metacognitive Awareness
- Providing Advance Organizers
- Repeating
- Reviewing
- Using Analogies

Woolfolk (2008)

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## Active Learning Activities

- Interactive lectures
- Participatory discussions
- Writing activities
- Problem-based case studies
- Cooperative learning groups
- Debates, panels, role-plays, simulations, and/or games
- Peer teaching

Bonwell & Eison (1991)

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## Strategies that promote deep lasting learning

1. They understand course and program goals
2. They are academically challenged and given high, but attainable expectations
3. They spend more time actively involved in learning and less time listening to lectures
4. They engage in multi-dimensional real world tasks in which they explore, analyze, justify, evaluate, use other thinking skills, and arrive at multiple solutions, such tasks may include realistic class assignments, field experiences and service learning opportunities

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## Strategies that promote deep lasting learning cont.

5. The diversity of learning styles are respected so they are given a variety of ways to learn and to demonstrate what they have learned
6. Positive interactions with faculty and students
7. They spend significant time studying and practicing
8. They receive prompt concrete feedback on their work
9. They have opportunities to revise their work

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## Strategies that promote deep lasting learning cont.


10. They participate in co-curricular activities that build on what they are learning in the classroom
11. They reflect on what and how they have learned and seek coherence in their learning
12. They have a synthesizing experience such as independent study or research project
13. Assessment focus on the most important course and program goals and learning activities in their own right

Suskie, L. (2004)

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### EEE2214 Engineering examples

<b>Refresh Your Course</b>	<b>Objective</b>	Describe the use of multiplexers for modular digital design.	
	<b>Strategy/Activity</b>	Associate the use of multiplexers to...	using WIMBA for Group Discussions.
	<b>Strategy/Activity</b>	Locate the components of multiplexers...	on a Hotspot Diagram in an Online Respondus Quiz or using a learning object found in <a href="#">MERLOT</a> .
	<b>Strategy/Activity</b>	Draw a flow chart that describes the use of...	in collaboration with team, using Interactive Concept Mapping.
	<b>Strategy/Activity</b>	Identify the correct description on their use...	while playing a game with Multiple Choice Questions on topic.




### MKTG 6013 Marketing example #1

<b>Refresh Your Course</b>	<b>Objective</b>	Discern and describe the fundamental differences between domestic and international marketing.	
	<b>Strategy/Activity</b>	Create a table with a list of domestic marketing characteristics versus a list of international marketing strategies then	<p>a) When your group is presented with a case study on the Discussion Board (or in-class) collaboratively identify its domestic and international strategies, and explain why.</p> <p>b) Engage with other groups, adding ones they might've been missed or that do not belong, providing reasons why.</p>




### MKTG 6013 Marketing example #2

<b>Refresh Your Course</b>	<b>Objective</b>	Identify, synthesize, and disseminate Marketing Management business articles on a particular topic.	
	<b>Strategy/Activity</b>	For incoming marketing students, arrange the necessary directions and information needed to be able to identify topic relevant library resources then	<p>a) Work with one other person to design a web quest to those resources and input applicable references and their descriptions into course-specific Scholar.</p> <p>b) As a class, collaborate to build a course-specific collection of online marketing resources in Scholar.</p>




### MKTG 6013 Marketing example #3

<b>Refresh Your Course</b>	<b>Objective</b>	Design a target marketing strategy for a small enterprise with a fixed budget and a narrow market focus.	
	<b>Strategies/Activities</b>	<p>a) Write and describe in detail a) a real-world marketing challenge of a small enterprise with a fixed budget and a narrow market focus and the positions of its stakeholders, and</p> <p>b) How you would design a target marketing strategy, and explain the reasoning for your criteria.</p> <p>On-going Throughout course, keep a blog about your learning experiences.</p>	<p>On-going As a class, collaborate on a wiki which builds examples in a particular knowledge base.</p> <p>c) Then in a team, with assigned x, y, z roles, and one of the class case studies - role-play until you reach a consensus and build a team target marketing strategy over the course of ~2 weeks.</p> <p>c) For the next ~2 weeks, implement aspects of marketing strategy to a different team. (within team, switch roles)</p> <p>d) Evaluate other groups. (within team, switch roles)</p> <p>May use in F2F class, WIMBA, Discussion Board, Second Life simulation, or in a hybrid delivery mode.</p>



## Your Turn!

<b>Refresh Your Course</b>	<b>Objective</b> acquisition & application		
	<b>Strategy/Activity 1</b>		
	<b>Strategy/Activity 2</b>		
	<b>Objective</b> higher-order thinking skills		
	<b>Strategy/Activity 1</b>		
	<b>Strategy/Activity 2</b>		



### References


- Bonwell, Charles C. & Eison James A. (1991). *Active Learning: Creating Excitement in the Classroom*. Retrieved on 1/4/08, from <http://www.ntlf.com/html/lib/bib/91-9dig.htm>
- Driscoll, Marcy. (2005). *Psychology of Learning for Instruction (3rd Ed)*. Boston, MA: Pearson Education, Inc.
- Smith P.L. & Ragan T.J. (1999). *Instructional Design*. Oklahoma: John Wiley & Sons.
- Suskie, L. (2004). *Assessing Student Learning: a Common Sense Guide*. Ankar Publishing Company. (p 311)

Handouts


- Nuher, Ed. (12/18/07). *LO Job Aid 1pg*. Post on using Bloom's Taxonomy in constructing lessons. Retrieved on 1/4/08, from The National Teaching and Learning Forum <http://www.ntlf.com/Library/>
- Woolfolk, A. (2008). *Educational psychology Active learning edition (10th ed)*. Boston, MA: Allyn & Bacon.

Websites

- VITRC <http://www.ltu.edu/vitrc/>
- Merlot <http://www.merlot.org/>
- Hybrid <http://www4.uwm.edu/ltc/hybrid/>
- Learning Styles <http://www.learning-styles-online.com/>
- Learnner-centered <http://www.facdev.niu.edu/facdev/resources/guide/SectionC.pdf>
- Bloom's Taxonomy [http://cstep.csumb.edu/Obj\\_tutorial/](http://cstep.csumb.edu/Obj_tutorial/)




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### Keeping it Legal: Making Copyrighted and Online Resources Work for *you*





Gary Cocozzoli, Library  
248-204-3000  
[refdesk@ltu.edu](mailto:refdesk@ltu.edu)




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### Reserve Desk Services

- Old Way
  - Physical unit of some sort
- New Way
  - Electronic unit of some sort
    - Find via LinkSource or A-to-Z finding tools
- Future Way
  - eReserve system
    - Through a dedicated provider
    - Via Blackboard Content Management System







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### The New Way

- Provide the full-text online from within Blackboard
- To solve copyright dilemma:  
Link to the original text, don't reproduce it
- Make sure the link allows users from off-campus to get into the document



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### Sound the Alarm!



- Is it Copyrighted?
  - No, it isn't: if in the public domain, can copy or scan directly into Blackboard if you wish
  - Yes, it is: have to get permission first
    - To scan or copy it, or use it more than once
    - Library resources are already paying copyright
  - Maybe, not sure?
- So How do you know?
  - "Ask a Librarian"



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### Wonderful World of Copyright

Do I have to pay to use it?



**In many cases the answer will be "It Depends"**


<http://copyright.com>  
May terrify you when you see the costs of some items!  
For "their" take on the subject  
<http://www.copyright.com/Services/copyrightoncampus/>

For the journal publisher...





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### The Fab Four Fair-Use Factors

- **Purpose and character** of the use: commercial, or for nonprofit educational purposes? 
- **Nature** of the copyrighted work: factual biographies vs. works of fiction, plays, etc.
- **Portion used:** the entire work (an image) vs. part (chapter of a long novel, film clip)
- **Effect** on the market: will it deflect sales?


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### TEACH\* Act solves all problems, doesn't it?



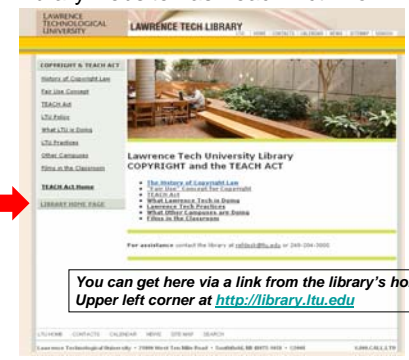
- Well, it helps...
  - Limit only to students enrolled in your class (e.g., Blackboard) when they are enrolled
  - Off-campus or on, your "class" no longer has to be a physical entity like before
  - Can do some selected things without permission
    - One time photocopy of handouts
    - Using only portions of a work
    - Films are really a problem to deal with

(\* TEACH Act: "Technology Education and Copyright Harmonization Act")




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### Library website has Teach Act Info




You can get here via a link from the library's homepage, Upper left corner at <http://library.ltu.edu>




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### Using LTU's resources




- All databases/full text protected by a proxy server, EZProxy
- Login using Banner ID (initials+Banner number)
- This is a protection for everyone: use is limited to faculty, staff, and currently enrolled students
- Can't log in? Contact library immediately!
- Eventually, will require your password too




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### Find the PURL




- Persistent URL** – the permanent "address" of the article, not the URL in the search bar (that is temporal not eternal)
- Varies greatly among our 80 databases, some use it, some do not
- See the handout for some suggestions
- DOI (digital object identifier)
  - Will usually work too





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### Building the script




- If from a database or full-text source:
  - You must add the proxy server address: <http://ezproxy.ltu.edu:8080/login?url=>
  - You must add this to the front of a URL that the library tracks: <http://ezproxy.ltu.edu:8080/login?url=http://nameofthedatabase.com/etc/etc.htm>

Note: from off-campus, sometimes the EZProxy statement will already be appended to the citation





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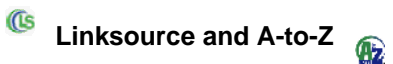
### Try to test the link off-campus




- If it works, fine
- Firewalls can be an issue for some of your students – only their employer can fix that
- If it does not work, contact the library
  - A few items do not require EZProxy links
    - Such as PubMed, Open J-Gate
  - Library needs to add the links to its linking database...sometimes these URLs change without notice! Letting us know, we can fix it
  - Consider using RefWorks or RefShare for citations



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 **Linksource and A-to-Z**


- A-to-Z lists all 53,000 full-text journal titles
  - Includes “embargo” information if any
  - Includes all the websites that offer it in full-text
- LinkSource “sniffs out” full-text articles in other databases – just follow the link
  - You’ll get either the full-text or a menu
  - May be available in several different sources
- A very helpful Impatica session on linking:
  - <http://tinyurl.com/3xmmf5>




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**For Books or eBooks in TechCat**

- Find the record you want in the online catalog
- Click on “MARC” record in right column
- Look for field 020 (ISBN) or 022 (ISSN)
- Here is the link for a book or an ebook (“bn”):  
[http://libweb.campus.ltu.edu/web2/tramp2.exe/do\\_keyword\\_search/guest?SETTING\\_KEY=english&index=default&servers=1home&query=bn+159904398x](http://libweb.campus.ltu.edu/web2/tramp2.exe/do_keyword_search/guest?SETTING_KEY=english&index=default&servers=1home&query=bn+159904398x)


for a journal title (“sn”):  
[http://libweb.campus.ltu.edu/web2/tramp2.exe/do\\_keyword\\_search/guest?SETTING\\_KEY=english&index=default&servers=1home&query=sn+0885-8969](http://libweb.campus.ltu.edu/web2/tramp2.exe/do_keyword_search/guest?SETTING_KEY=english&index=default&servers=1home&query=sn+0885-8969)



Blackboard Demo on using ebooks for a class:  
<http://tinyurl.com/2uciv5>  
 Under “Library Instruction Site/Test”




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OR...

**“ASK LIBRARIAN”**




**For Assistance**



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**Why you *should* “Ask a Librarian”**

- Free advice by phone, email or in-person!
- Can review your choices of resources with you; are you aware of new options?
- Can help you fix a link that does not work
- Can review your assignment effectiveness – will your students be successful?
- Can offer a presentation to your class – in classroom or in library
- Can order more books etc. to better support your class assignments



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**Library is waiting to help you**


- Call us at 248-204-3000 
- Email [refdesk@ltu.edu](mailto:refdesk@ltu.edu) 
- Website <http://library.ltu.edu>  
 – Or via <http://my.ltu.edu> 




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**LTU Librarians**

- Gary R. Cocozzoli
  - Director of the Library
- Cathy Phillips
  - Head of Technical Services
- Gretchen Weiner
  - Reference and Instructional Services
- Mary Alice Power
  - Reference and Interloan
- Elizabeth Simmons
  - Architecture Resource Center
- Sheila Gaddie
  - Reference




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## The Ability to Engage in Life-long Learning


Gretchen Weiner, Reference Librarian  
Phone: 248.204.3000  
Email: refdesk@ltu.edu



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## What the library can do for you

- **Old – Bibliographic Instruction**
  - Library orientation
  - One shot session, often out of context
  - Attempt to cover “everything”
- **New – Information Literacy**
  - Focuses on a specific assignment
  - Highlights specific skills and resources
  - Building blocks for life-long learning




Refresh Your Course

## ALA DEFINITION

- Information literacy is a set of abilities requiring individuals to
  - “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.”<sup>1</sup>

1. “Info Lit for Faculty,” American Library Association, August 29, 2006.  
<http://www.ala.org/ala/acrl/acrlissues/acrlinfo/infoltovreview/infoforfac/infoforfac.cfm> (Accessed January 11, 2008)  
Document ID: 176523




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## Present & Future Learning

- [ACRL](#) competency standards
- Information literacy leads to lifelong learning
- An information literate person is able to:
  - Determine the extent of information needed
  - Access the needed information effectively and efficiently
  - Evaluate information and its sources critically
  - Incorporate selected information into one’s knowledge base
  - Use information effectively to accomplish a specific purpose
  - Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally


Source: “Information Literacy Competency Standards for Higher Education,” American Library Association, September 01, 2006.  
<http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.cfm> (Accessed January 11, 2008)  
Document ID: 18969



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## Design an assignment


- Relate at least one assignment to specific information literacy (library) skills
- You don’t have to give up content but, you may need to adapt
- With the right skill set, students will be better able to access the appropriate content



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## Library Support

- Determine what resources the library has:
  - Librarians, books, journals, databases...
- What support best suits your needs
  - Library visit or Librarian visit to class
  - Librarian input on assignment
  - Content
- If students are not successful with their research, their papers won’t meet your standards



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## Know the **LIBRARY** website

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## The Library Doesn't Have Any Resources

- May not have your favourite journal
- May not have it in the format you want
- Then again ...

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## Freshmen – Success is key

- Introduction to Engineering
  - Introduce students to scholarly articles in a specific database: **Science Direct**
    - Search for, find, read/print, evaluate a particular article given partial information
    - e.g. author/keywords from subject or title
  - Introduce students to **ASTM Standards**
    - Search for, find a particular standard

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## Sophomores

- Familiarity with journal literature
- Library resources
  - What is available through the library?
    - **IEEE Xplore** – very powerful database
      - Now includes journal lit, conference proceedings & standards
      - Select articles & set up links in BlackBoard
      - Or select a couple of specific journals and direct them...

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## Digital Electronics

- From Prof. Csaszar's course description
  - "Students are introduced to the major journals relevant to the field..."
  - What is the meaning in context of **YOUR** class
  - How will you achieve this?
    - "engineered research"
    - Student initiated research


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## Grad Students


- From Prof. Shuayto' syllabus:
- "As MBA students, you should be reading... general press...and more specialized business publications..."
- "...discuss classic and emerging issues... articles from leading business publications."



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## Deja Vue


- All roads lead to life-long learning
- If the building blocks fit together
  - Students already familiar with some of the literature
  - Ready to be introduced to more
  - Will not be overwhelmed
  - Able to identify, locate, analyze, evaluate in order to create



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## Books or Periodical Literature


- *Electronic or print or both?*
- [TechCat](#), as well as links to [Electronic Reference Resources](#) & [A to Z](#) may be helpful in determining access to electronic full text
- Not all databases are completely full text



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## RefWorks



- New "tool"
- Bibliographic management [software](#)
- Not appropriate for all levels or all assignments
- Definite learning curve involved
- Requires extra time but may be worth it
- @ the LTU Library
  - Tutorials and help screens on RefWorks site
  - Sessions offered by library staff – schedule will be posted on library website



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## Information Overload

- Research skills need constant development & refining
- Students need navigation & evaluative tools but these also require "learning"
- Undergrads, in particular, need to be set up for success not failure

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## Activity

### Include an *Information Literacy* component in your content assignment

From ACRL competencies:

- 2. *The information literate student constructs and implements effectively-designed search strategies.*<sup>1</sup>
  - Develops a research plan appropriate to the investigative method
  - Describes a general process for searching for information
  - Describes when different types of information (primary/secondary, background/specific) may be suitable
  - Gathers and evaluates information, modifies research plan as new insights are gained
- Consider:
  - Can the student articulate the difference between scholarly journals and popular magazines
  - Is the student able to identify trade journals and describe their value
  - Is the student able to identify prominent journals in the field
  - Will the student be able to identify the appropriate database to find the content
  - Does the student recognize those articles that are available full text and those that are not

1. Standard Two, Performance Indicator 2. "Information Literacy Competency Standards for Higher Education," American Library Association, September 01, 2006. <http://www.ala.org/acrl/acrlstandards/informationliteracycompetency.cfm> (Accessed January 11, 2008) Document ID: 165693

