

Author(s): MELO 3D Project Team, 2011

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Creating an Interdisciplinary Collection of Learning Objects to Address Basic Skills



By Adena Rottenstein, July 2011

The Challenge



- Undergraduate students enter the University with different levels of academic training
- Success in undergraduate education demands a solid foundation in a variety of basic academic skills

Examples:

Writing skills
Working in Groups
Classroom Presentations
Study skills

- How can we work towards leveling the playing field?

The Solution



- Players: “Michigan Education through Learning Objects” (MELO)
 - Faculty, Staff, & Graduate Students from **gateway courses**
 - Interdisciplinary (Statistics, Chemistry, Romance Languages, etc.)
- Resource: Online learning materials, or Learning Objects (LOs) accessed through MERLOT.org
- Outcome: Create an interdisciplinary collection of LOs that address basic skills

Discussion Break!

- Break up into groups by discipline
- Work together to come up with 3 basic/foundational academic skills that
 - Are critical for academic success
 - Students commonly lack
 - Apply across various disciplines

Math Skills

- Fractions, Basic Algebra, Pre-calculus
- General Statistics concepts
- Graphing, Interpreting Graphs
- Representing data in various forms

Scientific Method

- Understanding a scientific experiment
- Using different research methods

Writing Skills

- Complete structured sentences, etc.
- Writing a group report
- References
- In-text Citations

Study Skills

- How to read & take notes on a chapter
- Exam Preparation

Communication & Group Work

- Group dynamics
- Communication with-in groups

Problem Solving Strategies

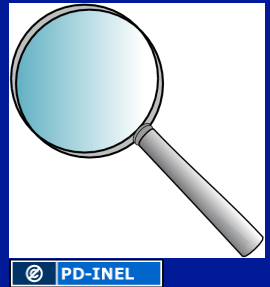
- Critical Thinking
- Systematic Problem Solving

Presentation Skills

- Creating an effective presentation
- Delivering an effective presentation
- PowerPoint Skills

The Process II

Searching & Posting



- Search (independently) for LOs to address the areas of greatest need
- Create a group website for posting search results and composing LO commentary
- Submit individual LO findings to website with commentary

The Process III

Selecting



- Collaborate in Selection
 1. Review preliminary collection
 2. Establish inter-rater reliability with reviewer scorings
 3. Select best LOs for the final collection

- Which LOs were selected for the final collection?
 - 4.25 star rated LOs and above
 - Overlapping LOs (found & posted by multiple reviewers)
 - LOs applicable to at least three academic disciplines

The Outcome


An Interdisciplinary Collection of LOs to Address Basic Skills


- 17 LOs
- 6 Categories
 - Mathematics
 - Sciences
 - Technology
 - Writing
 - Interactive
 - General


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| The Cross-Discipline Collection | | | | |
|--|-------------|--|---|----------------------------|
| UNIVERSITY OF MICHIGAN Cross-Discipline Collection of Learning Objects | | | | |
| Navigate Database Table: "The MERLOT@Michigan Collection of BASIC SKILLS for Remedial Instruction" Current records are #1-17 out of 17 in found set (17 total records in table) | | | | |
| Single View Search Find All <<First <Prev Next> Last>> | | | | |
| Title of LO | Category | Topic or Skill Targeted | LO web address | Show |
| Study Guides and Strategies | General | A guide to a wide variety of study skills. Basic study skills, time management, and problem solving. | http://www.studygs.net/ | Details... |
| Statistics Every Writer Should Know | Mathematics | A guide to very basic statistics | http://www.robertniles.com/stats/ | Details... |
| Graphing the line $y = mx + b$ | Mathematics | A tool for graphing a linear function | http://www.ltcconline.net/greenl/java/BasicAlgebra/LineGraph/LineGraph.htm | Details... |

Example LO from the Collection

[our approach](#) | [contact us](#)





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microsoft office

- Access 2003
- Access 2007
- Excel 2003
- Excel 2007
- PowerPoint 2003
- PowerPoint 2007
- Publisher 2003
- Publisher 2007
- Word 2003
- Word 2007

openoffice.org

- Base
- Calc
- Impress
- Writer

web layout

- HTML & CSS

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What People Say:

"Was stumbling the web until I found a very magnificent web site:



Pros/Cons of X-Disc Project

Strengths

- Allowed for inter-departmental collaboration
- Found strong inter-rater reliability for evaluating LO usefulness
- Created a resource for faculty/GSIs

Weaknesses

- Deployment
 - Were people aware of the resource?
 - Did they have easy access to the resource?
- Evaluation
 - Did people find the resource useful?
 - Was there a mechanism for providing feedback or evaluating usefulness?

In the Future...

- Create a new interdisciplinary collection
- Build on strengths from previous collections
 - E.g. peer-review
- Address weaknesses from previous collections
 - E.g. create better deployment & evaluation mechanisms

Next Steps

- As you work on your discipline-specific collections, keep an eye out for resources that you feel may be useful across disciplines
- Brainstorm ideas for how this created resource could best be used by the people in your discipline
- Buy Adena beer and/or chocolate

Thank You!

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