Teaching Economics on the Web
A Study of Student Success

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Research Questions

(1) Does the mode of delivery (face-to-face or web-based) have an influence on learning outcomes?
(2) Are students in an online environment as likely to do as well as in face-to-face classes? Will they be able to equal the complex problem solving of the face-to-face students?
(3) Will web-based students develop more favorable attitudes towards economics than the attitudes developed by students in the face-to-face class?
(4) Do student myths about economics affect their learning outcomes and attitudes towards economics?
Acknowledgments

- Grant from
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  Institute for Teaching and Learning
  The University of Akron

- Data collected under signed informed consent from our students subject to the Institutional Research Board for the Protection of Human Subjects at The University of Akron.
  - Very few failed to give informed consent

- Data collection instruments validated by a number of independent reviewers and created by MA grad, Michael Lovette.

Course under study

- **Introduction to Economic Analysis**
  - One-semester principles of economics
  - 3 cr. General education course
  - Required for engineering majors
  - Both face-to-face and on line
  - The online course is similar to a graduate course offered since Fall 2001
Comparison

- **Online**
  - Offered by Steven Myers
  - No face-to-face meetings
  - Mastery & competency based learning
  - High professor-student interaction
  - No student to student interaction
  - Full use of the WebCT environment

- **Face-to-face**
  - Offered by Michael Nelson
  - Regular class times
  - Lecture and active learning collaborative techniques
  - Better than the norm of 83% “chalk and talk” (Becker and Watts)
  - Some minor web-enhancements such as online gradebook

The online course design has influenced student success

### Grades Distribution

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C/D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online</td>
<td>33%</td>
<td>39%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Face-to-face</td>
<td>8%</td>
<td>37%</td>
<td>40%</td>
<td>10%</td>
</tr>
</tbody>
</table>

### MC Learning Assessment Breakdown / Online

<table>
<thead>
<tr>
<th>Modules</th>
<th>Total</th>
<th>Recognition</th>
<th>Conceptual</th>
<th>Analytical</th>
<th>% C&amp;A</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-8 Micro</td>
<td>331</td>
<td>29%</td>
<td>45%</td>
<td>26%</td>
<td>71%</td>
</tr>
<tr>
<td>9-15 Macro</td>
<td>563</td>
<td>32%</td>
<td>54%</td>
<td>15%</td>
<td>68%</td>
</tr>
<tr>
<td>2-15 Total</td>
<td>894</td>
<td>31%</td>
<td>51%</td>
<td>19%</td>
<td>69%</td>
</tr>
</tbody>
</table>
Student Comments

“The fact that this course was completely internet based, had no bearing on the level of knowledge I gained from the course. I think I learned as much, or even more, than I would have in a traditional classroom. I contribute this most to the way the instructor organized the course.”

Student Comments

“I believe that the benefits of web-based courses … far outweigh any disadvantages such as lack of face-to-face interaction--at least in this particular course. Dr. Myers' course was, of the four I took this semester over the web, truthfully the best organized, most well-adapted to the web (by his efforts) of them all.”
Research design

Student’s success
\[ \text{Student’s success} = f(\text{student’s initial endowments, awareness of the economy, attitudes about economics, student characteristics, course modality}) \]

Student Characteristics

- **Online Students**
  - More likely to be
  - To be older
  - To be non-white
  - To be female
  - To have taken more credits
  - To be decided in their major
  - More favorably disposed to economics

- **Face-to-face Students**
  - More likely
  - To be male
  - To be a freshman
  - To be undecided in their major
  - To spend less time gathering business and economic news.
Design of the online course

- Built in modules
- Modules completed in order
- Competency based testing
- Use student feedback
  - For student learning enhancement
  - For modifying & improving the course

Course Design

- DL requires planning for contingencies
- 14 Content Modules
- Active Learning vs. Passive Learning

Pre-class and Module 1: Preparing Students to Learn

- Email me! [http://gozips.uakron.edu/~myers/online/](http://gozips.uakron.edu/~myers/online/)
  - Is Distance Learning for Me?
  - VARK - testing learning styles
  - Orientation Module—‘ How to logon to WebCT’
  - Orientation Module—‘ How to Use WebCT’
- Syllabus
  - Graduate course
  - Undergraduate course

Pre-class and Module 1: Additional Orientation

- How to Communicate with Dr. Myers
- How to access your online text
- Rules of the game
- Building a relationship –
  - Breakdown the anonymity
  - Survey “Tell me about yourself”
Content Modules 2-15

- Module Introduction & Objectives
- Chapter Introductions
- Content
- Supportive Materials
- Assessment of Learning - Quizzes on objectives with multiple trials
- Evaluation

2 Research & Writing Assignments - some objectives

- Practice and experience in reflecting on a topic in the current economy.
- Practice in analysis of economic trends.
- Gaining of confidence about talking about the economy.
- Ability to know and use the resources of economic commentary, prior analysis and data.
Introductions & Content

- Mostly Passive
- Learner Centered
- Students progress without intervention
- Micro - Modules 2-8
- Macro - Modules 9-15

Graded Assessment

- Competency based
- Everyone strives to get a perfect 10 (Mastery)
- Three attempts, 15 min. time limit
- Questions a mix of (1) Recognition, (2) Conceptual, & (3) Analytic ~70% C&A
- Random intervention by Professor
Role of Module Evaluation

- Planned intervention
- Forced contact
- Focus on the learning
- Professorial encouragement
- Decreases dropout rates
- Process repeats

Module Evaluation

A Classroom Assessment Technique from Angelo and Cross (1993); tested by Chizmar and Ostrosky (1998)

- What comments do you have on this module and your experience in completing it?
- What main point have you learned that you did not fully understand before?
- What questions ... Include any points that still remain muddy or unclear. Do consider posing the muddy points to your fellow students in the discussions.
- What recommendations do you have for us as we continue to change and enhance the course?