Adaptive Teaching, Self-Regulating and Goal Setting: Low-Cost Strategies to Make Economics Courses More Inclusive

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Motivation-Institutional Setting

☐ Small liberal arts college with max class size of 30 students

☐ Demographic background of students in introductory economics:
1) 40-45% female, 55-60% male
2) 60-65% White, 25-30% Hispanic,10-15% Black and other races
3) 35-40% first generation students
4) 10% of the students have accommodations
5) Commuter school and nearly all students work 20+ hours a week

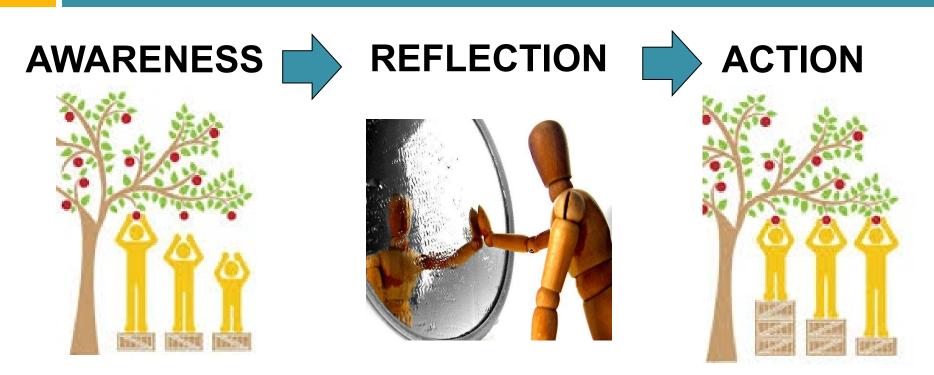☐ Distribution of students' majors in introductory economics: mainly education and business school majors

Adaptive and Inclusive Teaching

- In an inclusive learning environment, all students are supported, and they have a sense of belonging in the classroom regardless of their background, identity and learning needs.

- Previous research characterizes effective teachers as having an adaptive and flexible teaching approach (Corno 2008, Darling-Hammond and Bransford 2005, Fairbanks et al. 2010, Hattie 2009).

Inclusive Teaching

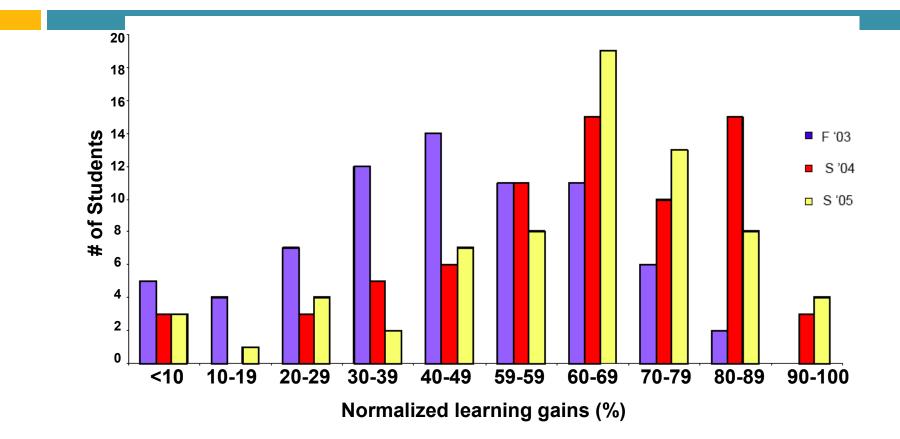**AWARENESS** → **REFLECTION** → **ACTION**

Outline

- Backward Course Design

- Universal Design for Learning (UDL)

- How I used UDL guidelines to modify my classes

- Self Regulation and Goal Setting: A Modified 3-2-1 Exercise
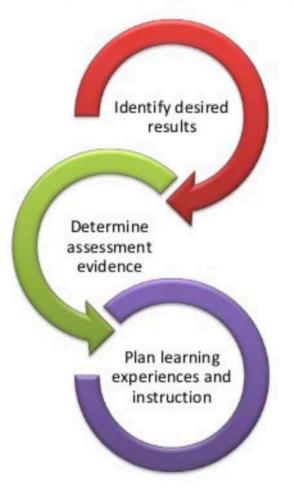
Small changes improve learning

Knight and Wood, 2005 Teaching more by lecturing less Cell Biol Educ 4: 298-310.

Backward Course Design

- Backward course design by Wiggins and McTighe (2005) provides a framework to develop courses that focus on student learning and understanding.

- Research shows that using backward course design approach results in positive outcomes for both students and instructors.

  - It increases academic performance, student engagement and satisfaction and their sense of confidence and belonging (Winkelmes et al. 2016, Reynolds and Kearns 2017, Armbruster et al. 2009).

  - Instructors that implement backward design approach provide more frequent feedback on student comprehension, improve their ability to manage time and prioritize content delivery to students, and instructors' experience of lecture preparation (Reynolds and Kearns 2017).

The Backward Design Process

Identify desired results

What I want the students to Understand and know and be able to do?

Determine assessment evidence

How do I check they have learned?

Plan learning experiences and instruction

Which learning activities will lead students to the desired results?

Universal Design for Learning (UDL)

□ UDL is an integrated framework that combines understandings from neuroscience, architecture and technology to craft inclusive and flexible learning environments for diverse learners. (website: https://udlguidelines.cast.org/)

□ UDL has three key principles: students should be provided options for

1) Engagement (The **why** of learning)

2) Representation (The **what** of learning)

3) Action and expression (The **how** of learning)

□ Learners vary in the strength of each of these learning networks, they will also vary in the way that they learn (Rose and Strangman 2007).

Provide multiple means of Engagement

Affective Networks
The "WHY" of Learning

Provide multiple means of Representation

Recognition Networks
The "WHAT" of Learning

Provide multiple means of Action & Expression

Strategic Networks
The "HOW" of Learning

Access

Provide options for Recruiting Interest (7)
- Optimize individual choice and autonomy (7.1)
- Optimize relevance, value, and authenticity (7.2)
- Minimize threats and distractions (7.3)

Provide options for Perception (1)
- Offer ways of customizing the display of information (1.1)
- Offer alternatives for auditory information (1.2)
- Offer alternatives for visual information (1.3)

Provide options for Physical Action (4)
- Vary the methods for response and navigation (4.1)
- Optimize access to tools and assistive technologies (4.2)

Build

Provide options for Sustaining Effort & Persistence (8)
- Heighten salience of goals and objectives (8.1)
- Vary demands and resources to optimize challenge (8.2)
- Foster collaboration and community (8.3)
- Increase mastery-oriented feedback (8.4)

Provide options for Language & Symbols (2)
- Clarify vocabulary and symbols (2.1)
- Clarify syntax and structure (2.2)
- Support decoding of text, mathematical notation, and symbols (2.3)
- Promote understanding across languages (2.4)
- Illustrate through multiple media (2.5)

Provide options for Expression & Communication (5)
- Use multiple media for communication (5.1)
- Use multiple tools for construction and composition (5.2)
- Build fluencies with graduated levels of support for practice and performance (5.3)

Internalize

Provide options for Self Regulation (9)
- Promote expectations and beliefs that optimize motivation (9.1)
- Facilitate personal coping skills and strategies (9.2)
- Develop self-assessment and reflection (9.3)

Provide options for Comprehension (3)
- Activate or supply background knowledge (3.1)
- Highlight patterns, critical features, big ideas, and relationships (3.2)
- Guide information processing and visualization (3.3)
- Maximize transfer and generalization (3.4)

Provide options for Executive Functions (6)
- Guide appropriate goal-setting (6.1)
- Support planning and strategy development (6.2)
- Facilitate managing information and resources (6.3)
- Enhance capacity for monitoring progress (6.4)

Goal

Expert learners who are...

| Purposeful & Motivated | Resourceful & Knowledgeable | Strategic & Goal-Directed |

Provide multiple means of
Engagement

Affective Networks
The "WHY" of Learning

Purposeful & Motivated

Access

Provide options for
Recruiting Interest (7)

- Optimize individual choice and autonomy (7.1)
- Optimize relevance, value, and authenticity (7.2)
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Provide multiple means of
Representation

Recognition Networks
The "WHAT" of Learning

Resourceful & Knowledgeable

Access

Provide options for
Perception (1)

- Offer ways of customizing the display of information (1.1)
- Offer alternatives for auditory information (1.2)
- Offer alternatives for visual information (1.3)

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Language & Symbols (2)

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Provide multiple means of
Action & Expression

Strategic Networks
The "HOW" of Learning

Strategic & Goal-Directed

Access

Provide options for
Physical Action (4)

- Vary the methods for response and navigation (4.1)
- Optimize access to tools and assistive technologies (4.2)

Build

Provide options for
Expression & Communication (5)

- Use multiple media for communication (5.1)
- Use multiple tools for construction and composition (5.2)
- Build fluencies with graduated levels of support for practice and performance (5.3)

Internalize

Provide options for
Executive Functions (6)

- Guide appropriate goal-setting (6.1)
- Support planning and strategy development (6.2)
- Facilitate managing information and resources (6.3)
- Enhance capacity for monitoring progress (6.4)

Learning Outcomes

Challenges:

☐ Learning objectives for the course vs. for the lectures:

Too much focus on foundational knowledge

☐ Weren't student-oriented:

Academic preparedness

Relevance and belonging

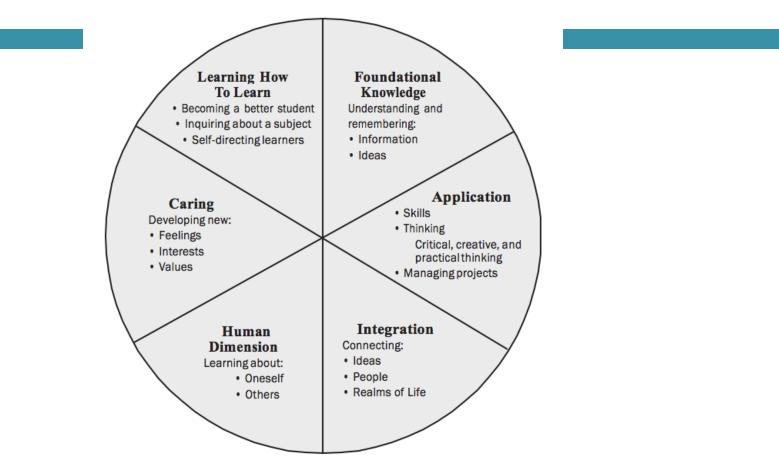**Top 3 most valued skills identified by faculty**

1. Problem-solving/critical thinking
2. Data interpretation
3. Constructing an argument from data

% of Faculty who say that they do NOT spend sufficient time on these teaching skills

Coil et al., 2010

Taxonomy of Significant Learning-Fink 2003

©2003 by John Wiley & Sons, Inc. Adapted with permission from John Wiley & Sons from *Creating Significant Learning Experiences* by L. Dee Fink.

Learning Outcomes

UDL:

☐ **Recruiting Interest:** Optimize individual choice and autonomy

☐ **Recruiting Interest:** Optimize relevance, value, and authenticity

☐ **Sustaining Effort & Persistence:** Heighten salience of goals and objectives

☐ **Self Regulation:** Facilitate personal coping skills and strategies

Learning Outcomes

Action:

☐ Effectively communicate what learning looks like in economics and clarify the learning expectations

☐ Integrate "Learning How to Learn" into the learning objectives
- Punctuated lectures, facilitating study groups, note-taking, retrieval practice, reflection homeworks

☐ Incorporate student interests into content objectives by offering choices

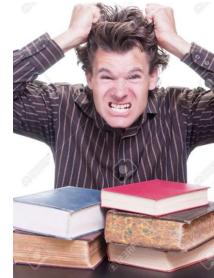# Summative Assessments

Challenge:

Managing motivation and exam stress

UDL:

☐ **Self Regulation:** Promote expectations and beliefs that optimize motivation

Action: Align learning goals, assessment and learning experience

Summative Assessments

Challenge:

UDL:

☐ **Expression & Communication:** Use multiple media for expression and communication

Action: Assess learning in various ways

Exams	Date	Weight
5 quizzes	See the table below	30% (Total)
Midterm Exam	Oct 27	30%
Final Exam	Dec 16, 8:00-11:00 am	40%

Exams	Date	Weight
MyLab and Mastering Assignments	TBA via Canvas	30%
Global Perspective Signature Assignment	TBA via Canvas	15%
Midterm I	February 23	15%
Midterm II	April 13	15%
Final Exam	TBA via Canvas	15%
Attendance and Participation	during lectures	5%
Discussion/Reflection Assignments	TBA via Canvas	5%
Exceptional Participation/Pop Quizzes	"extra credit"(Please read the note below)	

Learning Experience, Activities & Formative Assessment

Challenge: How to display of information?

☐ Accessibility: Barriers-Explicit and Implicit?

UDL:

Language & Symbols:

☐ Clarify vocabulary and symbols

☐ Support decoding of text, mathematical notation, and symbols

☐ Illustrate through multiple media

Recruiting Interest: Minimize threats and distractions

Comprehension: Activate or supply background knowledge

Learning Experience, Activities & Formative Assessment

Action:

☐ Redesign lecture materials to appeal auditory and visual learners

☐ Provide alternatives to auditory and visual information

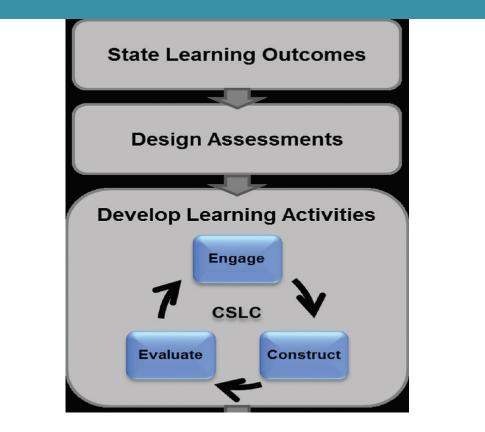☐ Close-reading activities-- text and graphs

☐ Simplify notation

☐ Standard notation across classes: collaboration with colleagues

Learning Experience, Activities & Formative Assessment

Challenge: How to switch from lecture to active learning environment?

Designing meaningful learning experience

College Science Learning Cycle

Withers, M., 2016 The College Science Learning Cycle: An Instructional Model for Reformed Teaching, CBE-LSE 15:4.

Learning Experience, Activities & Formative Assessment

UDL:

☐ **Recruiting Interest:** Optimize relevance, value, and authenticity

☐ **Comprehension:** Activate or supply background knowledge

☐ **Sustaining Effort & Persistence:** Foster collaboration and community

Action:

☐ Engage: Brainstorming on the main problem to be covered as an "hook" exercise

☐ Construct:

☐ Evaluate: Clicker/polling questions and a discussion of the possible rationale behind the wrong answers

An Example-GDP

- Two of the questions that we will answer in this course are "How well are we doing compared to our grand grand-parents?" and "How well are we doing compared to other countries?". However, in order to answer these questions, we need to have a comparison criteria.

- As a group, come up with 3 factors/aspects of our life that you think should be included in the selection criteria.

- As we know from chapter 2, we use data to answer the questions we have. So, for this round, your task is to think about data sets that you can use to analyze the factors you came up with in the first round. Please find a total of 3 variables, one for each factor, that would measure these factors.

Learning Experience, Activities & Formative Assessment

Challenge: How to make students take ownership of their learning?

UDL:

Self-regulation:

☐ Facilitate personal coping skills and strategies

☐ Develop self-assessment and reflection

Learning Experience, Activities & Formative Assessment

Action: A Modified 3-2-1 Reflection Assignment

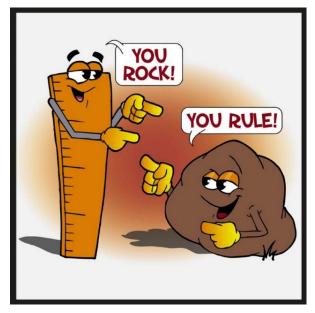Please provide your reflections on this chapter by providing all of the following:

☐ Three things I learned in this chapter and why I found them interesting

☐ Two questions I still have and want to learn more, or two things that I did not understand and need more clarification

☐ One aspect of the lecture, homework assignments or the textbook that I enjoyed and/or found useful in terms of my learning experience

Learning Experience, Activities & Formative Assessment

Reflections:

☐ Student buy-in and switching the responsibility to the students: Linking it with the learning objective

☐ Opened a new channel of communication

☐ Unintended consequences:

1) Motivation
2) Valuable information for goal-setting and planning

Learning Experience, Activities & Formative Assessment

Challenge: Exam anxiety: "I don't know where to start, how to study"

UDL:

Executive Functions:

☐ Guide appropriate goal-setting

☐ Support planning and strategy development

Action: Goal Setting Activity

Goal Setting Activity

1. Without referring to your notes and other course materials, write down everything you remember for each chapter included in the exam.

2. Refer to the last question of the weekly homework assignments for each chapter. This question asked you to reflect on your learning for each chapter. Look at the first item that asks you to report three things you learned in this chapter. Do you still retain this information? Compare your responses to part 1 of this exercise with the first item of the reflection question for each chapter.

3. Refer to the second part of the reflection question in which you reported two questions you still have and want to learn more, or two things that you did not understand and need more clarification. Did you get answers to your questions or clarifications of the concepts you had difficulty in understanding? If so, how? If not, what will you do to get an answer or clarification before the exam to be well-prepared?

Goal Setting Activity

4. Refer to the lecture slides for the learning outcomes of each chapter included in the exam. By comparing the learning objectives of each chapter to your responses to part 1 of this exercise, identify all topics, concepts and competencies that you need to improve to prepare well for the exam. Please be as detailed and specific as you can.

5. Explain your action plan or studying strategies on how you will get prepared well for the exam. Be as detailed and specific as possible: explain what you will do, in which order you will complete these tasks, when and where you will complete them, and how much time you will allocate to each task. Make sure to prioritize tasks to use your time effectively if things do not go as planned.

Thank you!

Thank you for your attention!

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