Implementing Topic-Driven Courses in Principles of Economics

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Outline

1. Predominant method of “**chalk-talk-test**” is **inefficient**
2. Describe the **topic-driven** course and its benefits
3. Discuss **cost savings to teachers** of topic-driven course
4. **Future work** and call-to-action

“Chalk-talk-test” dominates principles classes

⅔ of principles classes are Lecture-based or “chalk-and-talk” (Geoffe and Kauper 2014)

- Half of teachers who lecture believe lecture is superior other half think it is inferior, but cost-effective

98% of principles classes use exams accounting for 65% of final grades on average (Walstad and Miller 2016)

Rethinking chalk-talk-test

Active learning leads to better learning (all educational psychologists)

- *Like at the scale of scientists' agreement on climate-change*
- We have ample evidence active learing is superior in economics classrooms (e.g. Salemi 2002, Dorestani 2005, Freitas 2022)

And tests are just problematic

- Multiple choice exams incentivize cramming (Scouller 1998)
- Creative assessment can measure deeper learning (Bahrani et al. 2015)
- Problem-based assessment can better measure real-world skills (Nagel et al. 2020)

Teaching Well is Hard..

Topic-driven course to lower cost of teaching well

We know how to teach better, the next challenge is to reduce the cost

- One method to incentivize adoption of best practices

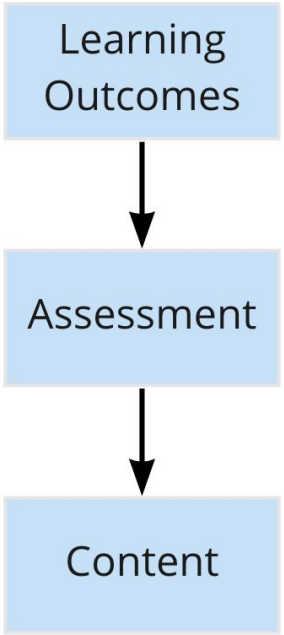
Topic-driven course:

- Builds in many teaching best practices
- Easy to share and implement

Backward Design

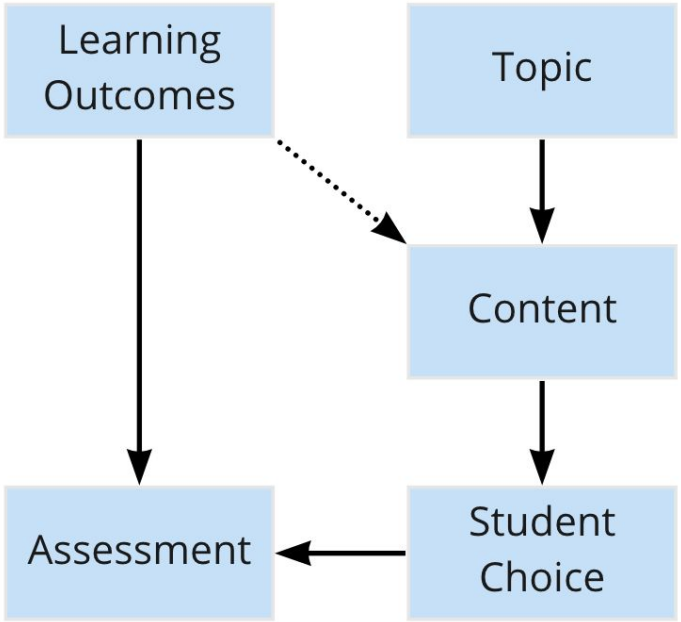
Core principles of backward design:

- Start by identifying what is **important** (ex: learning outcomes)
- Ensure class is designed to **teach** and **assess** the desired learning outcomes



The topic-driven structure we propose builds in these core principles while rearranging the model slightly

Topic-driven backward design model



Topic determines content

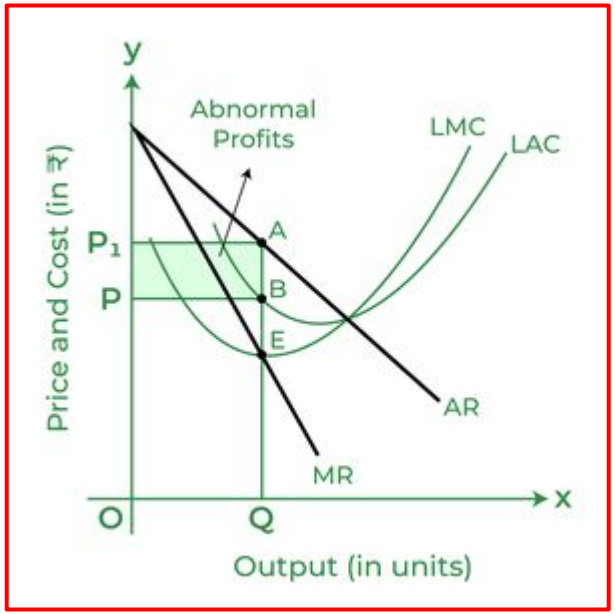
Economics applies to everything, so almost any topic is fair game

- Ex: study habits, prisonomics, war in Ukraine, Taylor Swift…
- Topic choice a function of importance, relevance, and interest

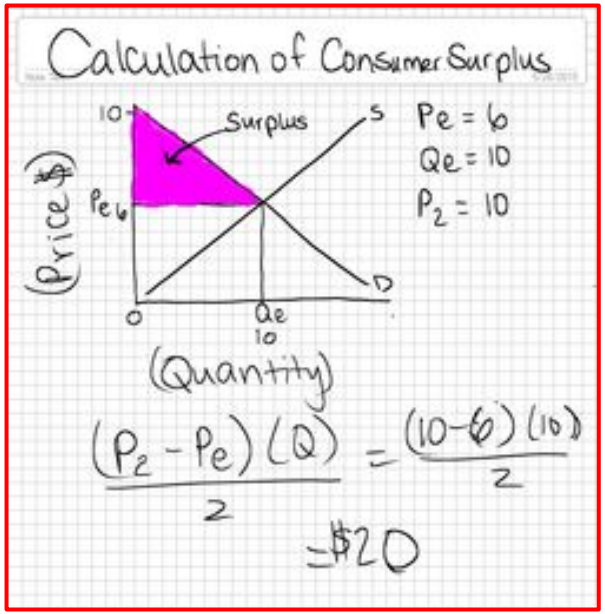
Apply economic models and concepts, which we refer to as “content”

- Class discussions (a focus of the structure) should connect and use 3-5 economic concepts to understand topic
- Content is short (<15 min) videos / lectures / readings
- Focusses content (and depth) to what helps understand topic

Some familiar things may drop out



$$E = \frac{\frac{(q2 - q1)}{(q1 + q2)/2}}{\frac{(p2 - p1)}{(p1 + p2)/2}}$$



Less is more

To develop deep learning, “sacrifice breadth for depth” (Bacon and Stewart 2006)

Cram material into course → more incentives for students to cram for assessments → less prepared for real world and future classes

Repetition and connecting concepts promote deep learning / retention

Skills-based learning outcomes

Content provides context

But skills pay the bills

- Skills-based hiring is on the rise (Fuller, Langer and Sigelman 2022)
- Greater labor market returns to soft-skills than hard-skills (Edin et al. 2022)

Skills are broadly applicable providing flexibility in topic / content selection

Skills-based learning outcomes

Skills I selected for Principles of Microeconomics. Yours may vary!

1. **Build economic modeling skills**–selecting, applying, and analyzing appropriate models to understand real-world problems.
2. **Improve critical thinking skills** to analyze problems in a logical and consistent framework.
3. **Creatively apply economic concepts** to new situations and contexts.
4. **Improve communication** to clearly demonstrate understanding in written, verbal, and visual formats.

Major assessments

3 projects with same structure and grading rubric

- Powerpoint presentation with 2-3 minute *maximum* video
- Follows similar format as a topic lesson plan–students apply economic concepts and models to understand new topic/prompt
- Scaffolded structure
  - 1st project: apply concepts of marginal analysis and graph to everyday decision with specifics of expectation
  - 2nd project: choose from selected prompt with minimal suggestion of content to include
  - 3rd project: apply 3 concepts to new topic
- Student choice on topics and content to apply

Single point grading rubric

Concerns Areas for Improvement	**Category and Description** Standards / Goals / Expectations	**Accolades** Exceeding Expectations
	Modeling- Select and apply appropriate economic models. Your models should be explained simply, but with enough detail for it to be helpful in understanding and analyzing the topic / prompt.	
	Analysis- Apply consistent and logical reasoning as you address the topic / prompt. Lay out a convincing chain of analysis, with key parts supported by theory and/or empirical evidence.	
	Economics terminology- Include and define	

… So where are the cost savings?

1. No rotating test bank and relatively low grading cost due to short projects (while providing detailed feedback)
2. Thinking on the margin
    a. Can integrate active learning one topic at a time
    b. Project-based assignments can be included in any class format
3. Shareable public goods
    a. Modular design
    b. A few teachers each creating one topic creates a whole class
        i. A class packed with best teaching practices
    c. Adapt, discuss, and critique topics and content from faculty with diverse backgrounds and views → DEI benefits

Future work

Call to action: if 10 (or more) teachers wanted to get together and each create one topic they are passionate about we could:

- Create and disseminate an easy to implement class
- Collect data (quizzes, student self-evals, teacher observations) to empirically estimate implementation cost and effectiveness
    - (Currently it is all anecdote and theory, in case that's not obvious)
    - Large data sets, like this could be, are rare in pedagogy literature
- Optimize and improve – the way I am doing it is far, far, from perfect
    - Grading, in particular, could use further study

Thank you!

Comments, questions, and concerns are highly appreciated!

Please email kyle.montanio@ucdenver.edu if interested in joining others to contribute and improve on this topic-driven approach!