



Bringing Microeconomic Theory to Life

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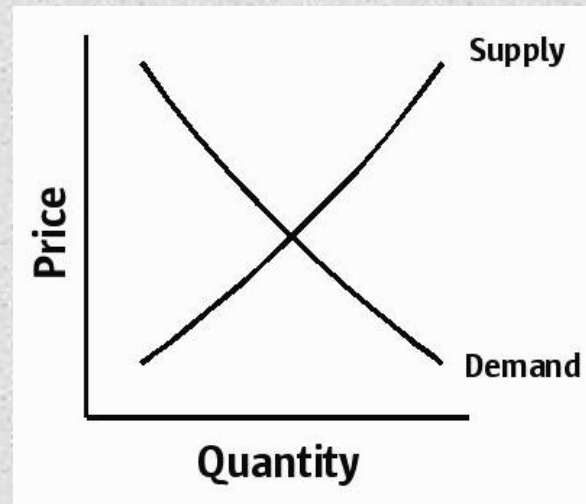


Now known as....

**Will This Be on the Test?
How Exam Structure Affects
Perceptions of Innovative
Assignments**

Traditional Microeconomics Courses

- o Course material:
 - o Theory of consumer and producer decisions
 - o Highly simplified models to describe complex phenomena



Assessments

o Problem sets

o Exams

13) For the utility functions in (11a,c,d), maximize utility subject to a budget constraint when:

$$P_x = 2, P_y = 1, I = 12$$

a)

$$\max \mathcal{L} = x^{\frac{3}{4}}y^{\frac{1}{4}} + \lambda(12 - 2x - y)$$

$$\frac{\partial \mathcal{L}}{\partial x} = \frac{3}{4} \left(\frac{y}{x}\right)^{\frac{1}{4}} - \lambda(2) = 0$$

$$\frac{\partial \mathcal{L}}{\partial y} = \frac{1}{4} \left(\frac{x}{y}\right)^{\frac{3}{4}} - \lambda(1) = 0$$

$$\frac{\partial \mathcal{L}}{\partial \lambda} = 12 - 2x - y = 0$$

$$3\frac{y}{x} = 2$$

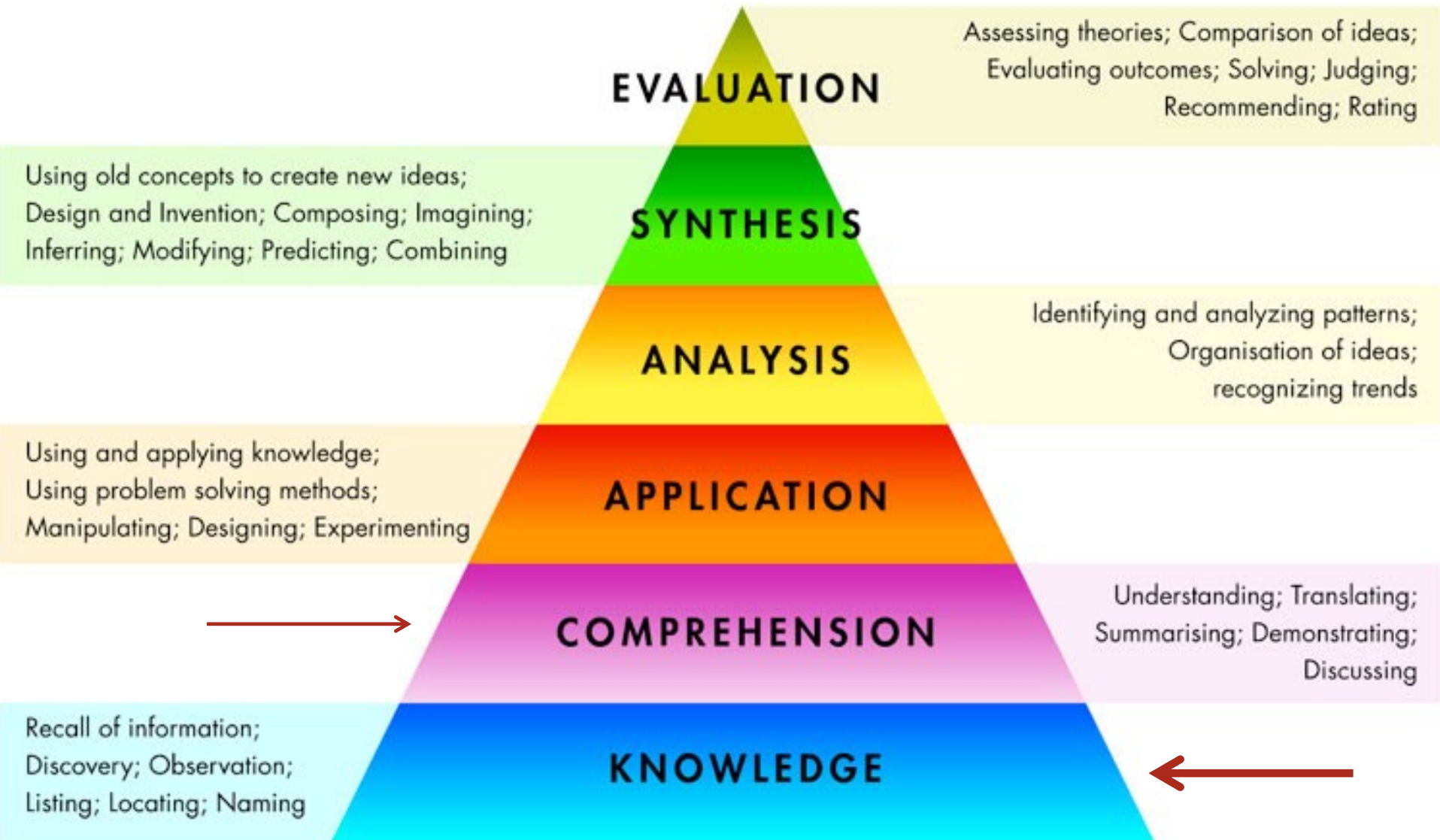
$$y = \frac{2}{3}x$$

$$12 = 2x + \frac{2}{3}x = \frac{8}{3}x$$

$$x = \frac{9}{2}$$

$$y = \frac{2 \cdot 9}{3 \cdot 2} = 3$$

BLOOMS TAXONOMY



Experiment

- o AEB 6106: Microeconomic Principles and Analysis
 - o required MS/MSAB core course
- o Two Assignments
 - o In-class application exercise
 - o Out-of-class writing assignment

In-Class Assignments

- o Find an article in the popular press for which course material could be used to explain/predict article topic
- o In groups: choose article from another group
 - o Develop models to apply to article topic
- o Grade:
 - o Article: 25%
 - o Participation: 25%
 - o Model: 50%

Topics

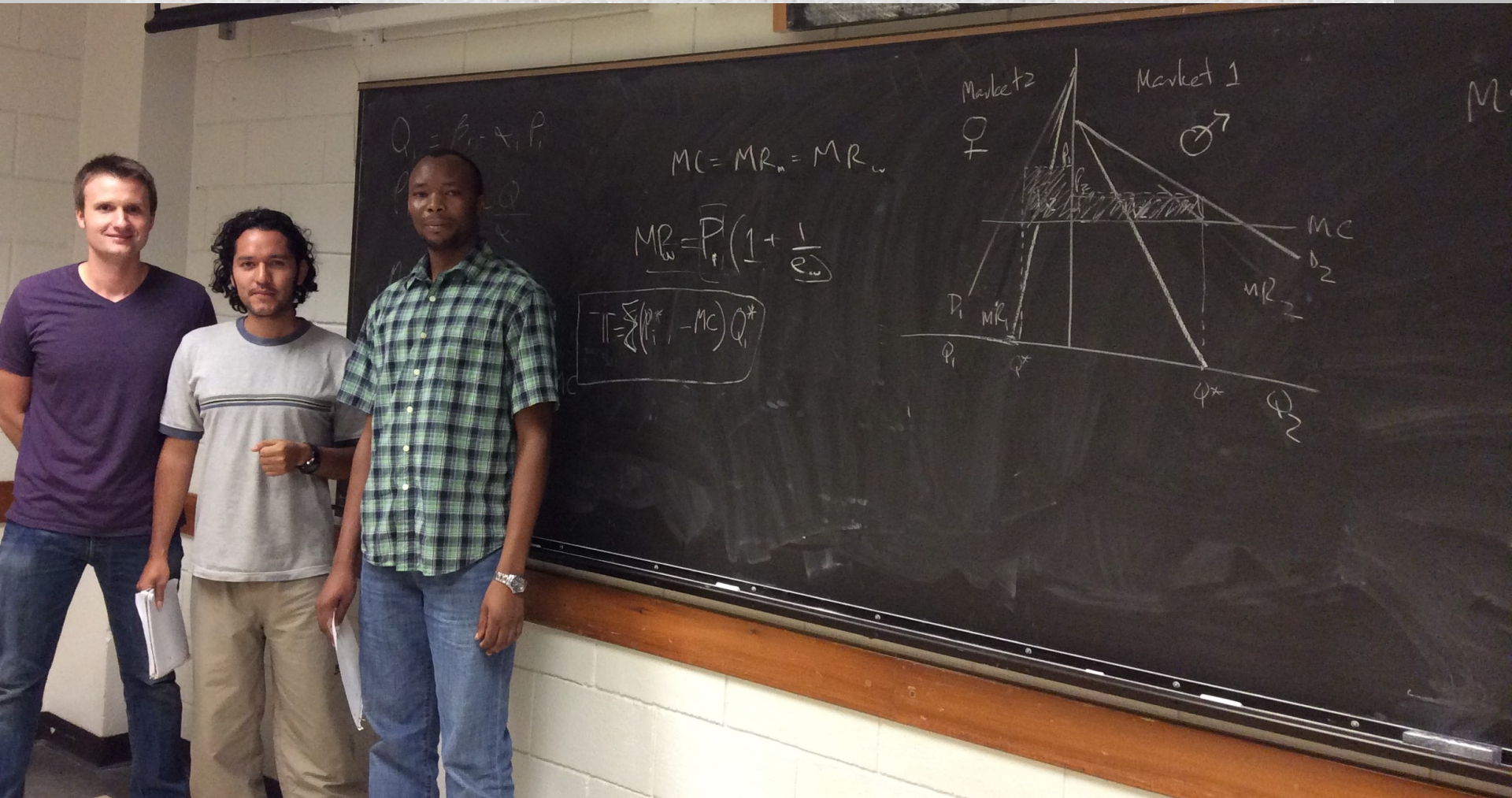
- Why is demand for coffee not declining as prices increase?
- What effects will citrus greening disease have on citrus producers and demand for other juices?
- Why do women pay more for pink razors than men pay for blue razors?
- How does McDonald's profit from its \$9.99 dinner box?

Discussion Generated

- o What models should we use?
- o How will our model have to be modified from in-class example to fit the article's example?
- o What assumptions make sense?
 - o Are orange juice and apple juice really perfect substitutes?
- o What effects will assuming imperfect assumptions have on applicability?
- o What can the model predict about the topic?



Models Presented and Discussion with Whole Class



Writing Assignments

- o Provided with two possible topics with multiple parts
- o Required to write a paper as if acting as a consultant for the relevant stakeholder group.
- o Combined:
 - o mathematical analysis
 - o qualitative discussion

Option 1

The effect of agricultural policy on nutrition and obesity is a recent topic of interest. Due to various policies supporting the production of basic commodities like corn and grains, many processed foods are cheaper than items like fresh fruits and vegetables that generally receive less support from agricultural policies.

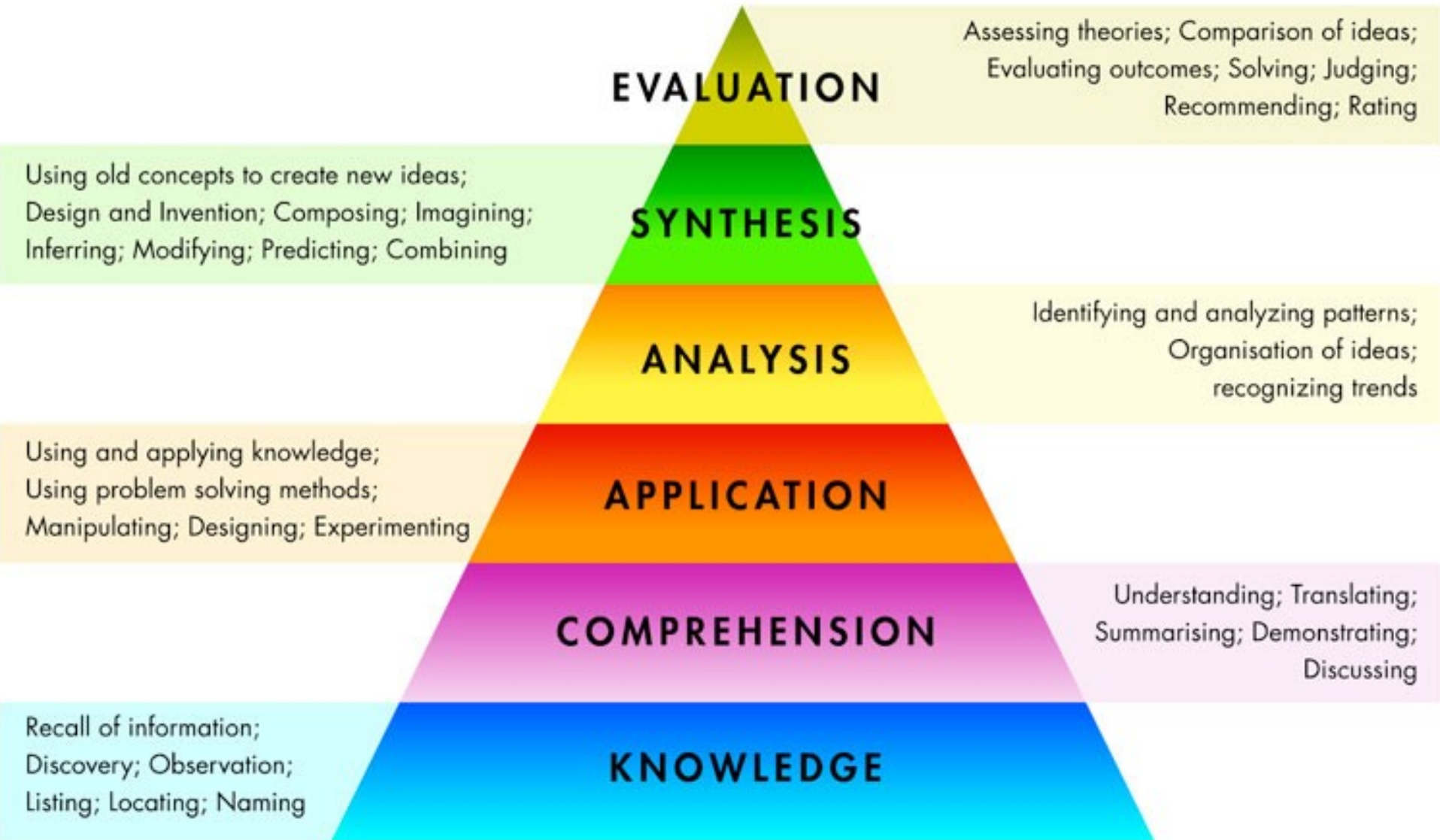
- 1) First, construct a model that explains an individual's choice of what kinds of foods to consume. Consider how the model or model parameters might differ across different kinds of consumers.
- 2) Next, consider the effects of adding a tax (sometimes referred to as a "fat tax") to unhealthy foods (ex- foods high in sugar, foods low in nutrients, etc.). How does this affect the consumer's decision? How will effects vary across groups of consumers?
- 3) How would the tax affect consumer welfare? Consider all types of consumers.
- 4) Instead of taxing unhealthy foods, the government could extend various forms of subsidies and price supports to healthy fruits and vegetables. How would this affect the consumer's decision? How would it affect consumer welfare?
- 5) From a consumer welfare perspective, is there a preferred method of inducing healthier choices? Discuss why or why not. Be sure to use your results from parts 2 – 4 above in your discussion.

Further reading on the topic:

<http://www.scientificamerican.com/article/fresh-fruit-hold-the-insulin/>

<http://abcnews.go.com/Health/Wellness/fat-tax-lower-obesity/story?id=16353067>

B L O O M S T A X O N O M Y



How did students evaluate new assignments?

For each of the assignments below, how much do you agree/disagree with the following statement:

This assignment significantly increased my understanding of course material

	Strongly Disagree	Disagree	Agree	Strongly Agree
Problem Sets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Writing Assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-Class Application Assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Studying for and taking exams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



How did students evaluate new assignments?

Rank the assignments based on how helpful they were in developing your understanding of course material, where 1 corresponds to the most helpful, 2 corresponds to second most helpful, and 4 corresponds least helpful. Drag and drop assignments to rank them.

Problem Sets	1
Writing Assignments	2
In-Class Application Exercises	3
Studying for and taking exams	4

Fall 2014

Increased Understanding

Difference in means compared to:

	Mean	Problem Sets	Studying for Exams	In-Class Applications	Writing Assignments
Problem Sets	3.73	-	0.00	0.36*	0.45**
Studying for Exams	3.73	0.00	-	0.36	0.45*
In-Class Applications	3.36	-0.36*	-0.36	-	0.09
Writing Assignments	3.27	-0.45**	-0.45*	-0.09	-

Fall 2014 Assignment Ranking

Difference in means compared to:

	Mean Rank	Problem Sets	Studying for Exams	Writing Assignments	In-Class Applications
Problem Sets	1.89	-	-0.33	-0.78***	-1.33***
Studying for Exams	2.22	0.33	-	-0.44	-1.00**
Writing Assignments	2.67	0.78***	0.44	-	-0.56
In-Class Applications	3.22	1.33***	1.00**	0.56	-



Fall 2015

Introduced one application-based question on each exam

Fall 2015

Increased Understanding

Difference in means compared to:

	Mean	Problem Sets	Writing Assignments	Studying for Exams	In-Class Applications
Problem Sets	3.88	-	0.13	0.31**	0.56**
Writing Assignments	3.75	-0.13	-	0.19	0.44**
Studying for Exams	3.56	-0.31**	-0.19	-	0.25
In-Class Applications	3.31	-0.56**	-0.44**	-0.25	-

2014 VS. 2015

Assignment	Mean		Difference in Means
	2014	2015	(2015 - 2014)
Problem Sets	3.73	3.88	0.15
Studying for Exams	3.73	3.56	-0.16
In-Class Applications	3.36	3.31	-0.05
Writing Assignments	3.27	3.75	0.48**
N	11	16	

Fall 2015 Assignment Ranking

Difference in means compared to:

	Mean Rank	Problem Sets	Writing Assignments	In-Class Applications	Studying for Exams
Problem Sets	1.69	-	-0.94***	-1.13 ***	-1.19 ***
Writing Assignments	2.63	0.94***	-	-0.19	-0.25
In-Class Applications	2.81	1.13***	0.19	-	-0.06
Studying for Exams	2.88	1.19***	0.25	0.06	-

2014 VS. 2015

Assignment	Mean Rank		Difference in Means
	2014	2015	(2015 - 2014)
Problem Sets	1.89	1.69	-0.20
Studying for Exams	2.22	2.88	0.65*
Writing Assignments	2.67	2.63	-0.04
In-Class Applications	3.22	2.81	-0.41
N	9	16	



Student Feedback, 2015

“Excellent course, all of the materials used helped me to understand the course material instead of just memorizing it for the test. The writing assignments were really challenging but ended up being my favorite part of the class because I learned so much.”



Student Feedback, 2015

“One of my favorite parts about the class was the in-class writing assignment which allowed students to put econ in life.”

“The in-class assignments really put real world application in play.”

Conclusions

- Students may gauge understanding based on exam performance
- Adding applications to exams increased perceived usefulness of application assignments
 - In-class, group work less well-received

Conclusions

- Observed high-order learning taking place with both assignments
- Feedback from past students that it helped prepare them for their thesis



Acknowledgements

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Thank you!

Questions?