

Active Learning in Economics via Real World Investigations

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Abstract

Introductory college courses in economics typically provide learning opportunities via classroom lectures and textbook reading assignments. In this setting timeliness of examples, and applications, is often limited by the publication lag of textbooks, relative to current economic events. As a supplementary learning opportunity, I propose some out-of-class group research investigations of current events. Different groups (say, 'red', 'green', and 'blue' groups) work on different questions then make brief oral reports in class, on their findings. Instructors can ask questions of the groups. I report on the effectiveness of the research investigations, for an introductory macroeconomics class taught in the summer of 2009.

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1 Introduction

Economics, as a subject currently taught at the college level, is a mix of timeless ideas and real-world applications. For the typical instructor of economics principles, perhaps easiest is to lecture on the timeless ideas, and leave it to the student to apply these ideas, if needed, through some supplemental reading assignments. This way, the same lecture notes can be used semester after semester, passed down from the instructor's own days as a student, to a next generation of students, and so on. This teaching culture can produce very elegant, polished lectures, and instill deep knowledge in the minds of the best students.

For students with limited aptitude or intrinsic appreciation for economics, a dry presentation of timeless economics principles may be insufficient to deliver useful economic knowledge. These students may be unable to apply economics principles to current economic events, without additional learning opportunities. Even the assignment of relevant readings, say of textbook current-event examples, or articles in the news (Wall Street Journal, etc.), may fail to stimulate real application of economics principles. In terms of current news, success is limited by the fact that news articles are not usually targeted at students attempting to apply economics principles, and so the information is not necessarily organized in a way that makes the application of specific economics principles straightforward. In terms of textbook current-event examples, success is limited by the publication delay of textbooks. While most college-level economics textbooks spawn new editions every 1-3 years, changes in edition do not correlate well with changes in economic reality.

Supplementary learning opportunities are available, to further the real-world application of economics principles. Notable among these are in-class group activities and experiments, both of which are participatory and therefore involve "active learning".² A limitation of in-class group activities is that, without access to computers students can not gain access to real world, timely data. Also, they may not have enough time to study and coordinate in class, so as to successfully apply economics principles. A limitation of experiments is, again, the limited access to real-world data, and the limited scope with which experiments have (yet) been used to grasp economics principles.

Robert Frank is an economist who has written recent economics textbooks that address the need for students to better apply economics principles. Frank's innovative "economic naturalist" activities invite each student to apply economics principles to very specific and practical economic situations, and to place their thoughts in writing. Related to this approach, Daniel Hamermesh uses vignettes³ to place economics principles carefully within the context of everyday human experiences. These types of activities are well-conceived, elegant approaches for connecting economics principles with everyday life. One limitation is that they do not involve current economic data, and so do can not show how economics relates to today's measurable economy.

²See Becker, Watts, and Becker (2006) for a recent survey of supplementary learning strategies for teaching economics at the higher education level.

³see Hamermesh (2005).

2 Active, Real-World Learning

I attended an economics teaching symposium a few years ago, sponsored by McGraw-Hill publishers, and was much impressed by presentations by Robert Frank and Dan Hamermesh, on active learning strategies. Since then I have wanted to make active learning a more “real time” sort of exercise, making careful use of timely information. I attended another teaching symposium this spring, but did not yet find the right kind of learning activity, for my purposes. As I turned to my teaching assignments this summer, I decided to put together some activities myself.

As a supplementary learning opportunity, I propose some out-of-class, group research investigations of current events. The research questions illustrate, or test, economics principles, in situations accessible to students. Weekly assignments are made via the internet, and group members interact on the internet, with the instructor kept ‘in the loop’ on all interactions. Different groups (say, ‘red’, ‘green’, and ‘blue’ groups) work on different questions then make brief reports on their findings, each week. Instructors can give feedback to the groups. All students have access to all questions, and may comment on other groups’ presentations. Groups are graded on the quality of their report, and their skill in responding to questions.

The proposed research questions each challenge students to do one of two things:

1. **measure the economy:** Obtain or compute an economic statistic, such as the economic growth rate, using the most recent available data, and comment on the result.
2. **re-examine the familiar:** Apply an economic principle to a current real-world situation with which students are likely familiar, such as the market for textbooks.

In terms of ‘research’, group members are invited to use their personal knowledge of real-world situations, as well as publically available information. Emphasis is placed on events currently taking place, hence timeliness of group reports is rewarded.

To illustrate the “measure the economy” type of activity, here is an assignment that I recently gave my principles of macroeconomics class:

Research Activity 1

Dear teams, listed below are the mission assignments for next week’s (Wednesday night) class. For each task, use the website:

<http://research.stlouisfed.org/fred2/>

which is the Federal Reserve of St. Louis’ website containing economic data and statistics. We visited this site last class, but the glory of that adventure was limited by slow download speeds. No such limitation will hinder the teams in pursuit of their missions.

Green group: Find and report the values of quarterly real GDP for: year 2007 quarter 3, year 2007 quarter 4, and year 2008 quarter 1. Using these values, compute the economic

growth rate, between year 2007 quarters 3 and 4, and between year 2007 Q4 and year 2008 Q1. In conventional terms, was there a recession occurring in the period: quarter 3 of 2007 to quarter 1 of 2008? Explain.

Blue group: For the month: May 2008, find and report the U.S. Civilian Employment number, Civilian Labor Force, Civilian Unemployed, and Civilian Unemployment Rate. How does this Unemployment Rate compare to that observed in the "healthy" economy at May 2006, and to the "recession" economy of May 2001? Also, what is the value of median duration of unemployment reported for May 2008? Interpret this value.

Red group: Find and report the consumer price index (CPI, for all urban consumers, not seasonally adjusted) for the months: March, April, May of 2008. Using these numbers, compute the U.S. inflation rate for the March-April and April-May periods. Are these rates above, or below, long-run historical average inflation? Compare your recent (2) months' consumer price inflation rates to the inflation rates of energy-related goods and services (...obtain the energy cpi, compute the energy inflation). Interpret the result.

In the above research activity, the month May 2008 was the most recent month for which the relevant economic data is available. To generalize this type of activity, the assignments should ask students to find the most recent available data. To illustrate the "re-examine the familiar" type of research activity, here is an example I recently used:

Research Activity 2

Dear teams, for this research activity, you will re-examine a familiar situation, from the perspective of economics. As a class, you are all taking an economics course as a cohort of MBA students, and all of you work for Barnes-Jewish medical Center (BJC) in St. Louis Missouri. So, BJC is a familiar situation to all of you. Groups, please research and answer the following questions:

Green group: Is the price of BJC health services equal to its marginal cost? Explain.

Blue group: Is the demand for BJC health services elastic, or inelastic? Explain.

Red group: Does BJC earn a positive economic profit? Explain.

For the above research activity, the context is quite specific, as appropriate to the class. To generalize, the context could be shifted to the market for textbooks, say, rather than the market for BJC health services.

3 An Example with Results

In the summer of 2009 I taught the course Introduction to Macroeconomics (Economics 241) at Southern Illinois University, in Carbondale Illinois. The class contained 29 students, which I summarize in the following table:

GROUP	No. of STUDENTS	AVG GPA	PERCENT MALE	AVG AGE	MEDIAN	PLAN
					EXPECTED INCOME	GRAD SCHOOL
1	9	1.89	67%	21	\$48,000	75%
2	9	2.89	89%	23	\$48,000	100%
3	11	3.45	73%	21	\$43,000	86%

The column labelled “median expected income” contains the group-wise sample median of the students self-reported expectation of annual income upon graduation. The last column, “plan grad school” contains the group-wise percentage of students planning to attend graduate school.

During the semester I required students to complete two Group Tasks, as follows:

Task A: summarize the current state of a sector of the U.S. economy

Task B: describe the current living standard in a foreign country

For the first task, I divided the economy into three sectors: output, labor, capital, and invited groups to select one. For the second task, I let groups choose whichever country they wished.⁴

group	Task A sector	Task B country
1	output	Nigeria
2	labor	Malaysia
3	capital	Brazil

Deliverables, for each group, consisted of in-class group oral reports, and individual e-mailed reports by each group member. I graded groups based on their general success in accomplishing each Task.

In addition to promoting students’ success on their group work, I wanted to see how success on this sort of work may correlate with success in accomplishing course objectives. Relevant learning objectives, in terms of the group research activities, are:

- Comprehend the meaning and construction of economic data, and use the data to describe the state of the economy.
- Comprehend economic information and data reported in the public domain, and use it to describe the state of the economy.

To assess achievement toward objectives I used scores on selected test and homework questions, such as:

⁴As it turned out, each group studied a country from which one of the group’s members originated.

“The expenditure approach to measuring GDP sums together components C, I, G, and NX. Which of these components has been the biggest, historically”

Here is how the class fared, in terms of achievement:

	group	group	group
	task	course	learning objective
group	grade	gpa	assessment
			mean score
1	B	1.89	56%
2	A	2.89	83%
3	A	3.45	100%

As indicated, successful group research on current economic conditions is positively linked to course grade and learning objective attainment. Of course this a single class, and relatively small in terms of enrollment, so it impossible to generalize much.

It would be interesting to see if classes that do the proposed sort of group research activity perform better on assessed objectives than those classes that don't. Due to the specifics of my teaching assignments, I have not yet had the opportunity to gather data that can successfully make this comparison. By way of speculation, I think that the above-described group research activities are a productive means of engaging those students who struggle in the course due to boredom, and for this reason I'd predict some benefit in terms of overall achievement on learning objectives. I also think that such activities are a means to more fully engage the brighter students, and attract them to the economics major.

William E. Becker, Michael Watts, and Suzanne R. Becker (2006): Teaching Economics: More Alternatives to Chalk and Talk. Published by Edward Elgar.

Hamermesh, Daniel (2005): Economics is Everywhere. Publisher: Princeton University Press.