

Economics Education with Experiments

AKINAGA Toshiaki
 Hamamatsu University
 akinaga@hamamatsu-u.ac.jp

Experiments Goes Well with Education

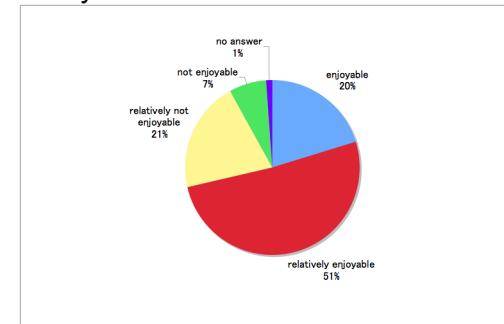
- The oldest market experiments by Edward Chamberlin in 1940s were for education.
 - Vernon Smith as a graduate student took part in the experiment.
- Conservative economists who are dismissive of experimental researches admit educational value of experiments.

Interesting & Useful

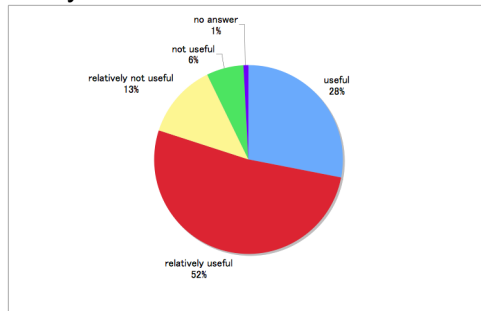
- Many students say experiments are..
 - interesting to participate,
 - useful to understand economics.

Enjoyable?

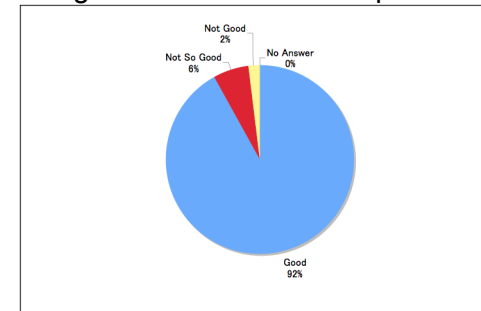
Answers to Questionnaire from my microeconomics-course students



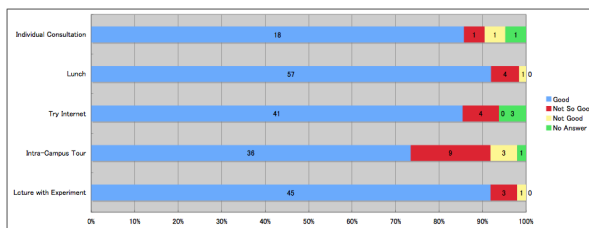
Useful to Understand Economics? Answers to Questionnaire from my microeconomics-course students



Good? Answers to Questionnaire from high-school students at open-campus



Comparison with Other Events Answers to Questionnaire from high-school students at open-campus



Wide Spectrum

- Smart students get...
 - substantive understanding,
 - scientific spirits.
- Non-smart students can have...
 - some naïve understanding,
 - hands-on experience of economic activity,
 - some morals in learning.

Reward

- Classroom experiments need no monetary reward.
 - Only suggestion to maximize profits.
 - Credit toward course grades.

In my course,....

$\underbrace{\text{term - end exam}}_{\text{fullmarks100}} + \underbrace{\text{rewards in experiments}}_{\text{average10}} \Rightarrow \text{course grade}$

Time-Intensive

- Each topic requires at least two sessions:
 - a session to conduct experiments,
 - a session to lecture on the theory.
- Instructors should use much time,
 - to prepare experiments,
 - to summarize results.

Understanding of Economics vs. Performance in Experiments

- Good understanding of economic theory does not imply good performance as a subject in experiments.

Regression

- Explained Variable:
 - The Score of the Term-End Exam
- Explanatory Variables:
 - The Number of Attendances at Lectures
 - The Number of Attendances at Experiments

Negative Effect? Not Significant?

	1st Semester 2001		2nd Semester 2002	
	Coefficient	P-Value	Coefficient	P-Value
Intercept	20.22	2.57E-04	45.59	5.77E-10
At Lectures	3.33	6.75E-08	0.92	0.09
At Experiments	-5.16	6.14E-02	3.14	0.30
Multiple Correlation	0.79		0.47	

Another Regression

- Explained Variable:
 - The Score of the Term-End Exam
- Explanatory Variables:
 - The Number of Attendances at Lectures
 - The Number of Consecutive Attendances at Both an Experiment and a Following Lecture
 - The Product of Two Explanatory Variables

Effects Are Obscure

	1st Semester 2001		2nd Semester 2002	
	Coefficient	P-Value	Coefficient	P-Value
Intercept	18.80	0.01	53.32	8.04E-11
At Lectures	2.70	5.29E-04	0.55	0.39
Consecutive Attendances	-6.19	0.35	-16.78	0.053
Interaction Term	0.26	0.44	1.09	0.023
Multiple Correlation	0.77		0.55	

What I Learned from Experiments

- I was skeptical about economic theories.
 - Is the market really in equilibrium?
- Experiments showed some theories held in a laboratory.
 - Theory holds in a laboratory to some extent. Why not in the real world?

References

1. Akinaga(2004) "A Microeconomics Education with a New Method" (in Japanese), *Academic Journal of Hamamatsu University*, Vol.17 No.2, pp.219-30
2. Roth(1995) "Introduction to Experimental Economics", *Handbook of Experimental Economics* ed. by Kagel&Roth, Ch.1
3. Friedman & Sunder(1994) *Experimental Methods*, Cambridge Univ. Press