Using experiments to teach and how AEELab plays into it

AEC Pedagogy Brownbag Series
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Seminar outline

- Why use experiments in teaching
- What types of experiments can be used?
- Differences between graduate/undergraduate courses
- Teaching with/about experiments
- AEELab set up and tentative rules
Experiments as a teaching tool

- Improves student motivation
- Encourages active and through learning
- Provides context and illustrations of theoretical/dry contexts
- Breaks apart the lecture mode
- Encourages work with student outside of established social groups
Drawbacks

- Take a lot of time (especially given potentially steep learning curve)
- Oversimplifications
- Not taken seriously
- Might illustrate cases of market failures, but not when intended!
☐ Clear instructions

☐ minimize learning/upset feelings at having “lost”

☐ Providing feedback and de-briefing after experiments

☐ Drawing on concepts in later classes, linking to homeworks, assigning remote experiments as take-home activities

☐ continuously refer to the same experiment
Types of classroom experiments

- Individual experiments
  - inefficiency of gifts, pit trading, pair trading, tax/subsidy/price floors

- Group experiments
  - competing firms (labor and capital endowments per firm vary), market entry choices, oligopoly

- Some assignments are split between take home (individual) and classroom (group) activities
  - tying individual preferences to demand, individual supply/production constraints to supply, etc.
Computerized teaching experiments

- http://projects.exeter.ac.uk/feele/LecturerStart.shtml

- The games above can be used on most internet devices
- Can be assigned to students in advance of class/used in online teaching
Incentives in experiments

- Many experiments require non-hypothetical incentives to truly work
  - removing fair/nice behavior in competitive markets
- Monetary incentives are costly
  - Limit participant pool
- Introducing credit incentives could be counterproductive
- Interesting research on incentives in teaching
Sidebar: Field experiment on behavioral incentives in classrooms

- The Behavioralist Goes to School: Leveraging Behavioral Economics to Improve Educational Performance (Levitt et al., 2016, American Economic Journal: Economic Policy)
- Test scores improve when rewards (financial and non-financial) are immediate
- Non-financial rewards have more impact (trophy, photo of qualifying students)
  - those are the ones teachers are able to set themselves!
  - small financial rewards might have negative spillovers for other classes
- Delay in rewards removes incentive motivation
Grad vs. undergrad

- **Undergraduate**
  - illustrating concepts in economics theory
  - introducing policy tools not currently in wide use
  - discussion of experimental design approach is distracting

- **Graduate**
  - Base concepts and theory are well understood
  - Experimental design discussion helpful in discussing assumptions, modeling approaches, use of data
  - Teaching experiments, rather than using experiments to teach
Teaching experiments
Teaching experiments

Taking a course in experimental economics is a little like going to dinner at a cannibal's house.
Teaching experiments

- Taking a course in experimental economics is a little like going to dinner at a cannibal's house.

- Sometimes you will be the diner, sometimes you will be part of the dinner, sometimes both.
Tying experimental concepts to standard estimation approaches

- compare and contrast randomization (experiment) and non-random assignment

Experiment for the sake of experiment

- low value added

- context dependency

- different types of experiments

Combining existing project with supplemental experimental data
Grad sources of experimental designs

☐ Current literature: focus on and critique of design across fields

☐ https://www.socialscienceregistry.org/ only open to RCTs, for AEA

☐ http://ridie.3ieimpact.org/index.php?r=search/index all development work

☐ https://cos.io/rr/ - preregistration with “virtually guaranteed” publication
Grad activities in the lab

☐ Recreating conducted experiments

☐ contrasting treatments (not seen to actual participants)

☐ highlighting perceived experimenter demand

☐ Piloting/testing surveys/experimental designs for student research

☐ Going through IRB application sharpens final design
Applied Experimental Economics

current state and tentative rules of engagement
Participant pool

- Potential pool contamination
  - Absolutely no deception
  - Requirement of incentives
  - Participant pre-registration
  - IRB approval required for recruitment
- Tablets available outside the lab
- Current recruitment strategy (commitment to SONA Systems?):
  - Facebook targeted ads ($0.5 per zip-code targeted ad)
  - Information boards, existing pools (food science, psychology contamination risk?)
Currently:

16 participants at a time

9 Microsoft surface Pros
+ 1 admin (more to come)

Projector + screen
Using the lab

- Open for scheduling experiments
- Minimum average participation payment targeted at $15 for student participants
  - Standard practice is above average hourly wage
  - Higher for staff/non-student participants ($25)
- Over-recruitment
  - Show up compensation at $5, and priority for other sessions of the experiment
- Recruitment in own classes is discouraged (IRB), but can be done through classes in general
Using Surfaces

☐ Can be checked out for use in classroom experiments, as long as they are returned safely to me =) and no conflicts with scheduled experiments exist

☐ Any new Software installation should be discussed and approved in advance
Suggestions/requests for the lab are welcome!