**STATEMENT OF TEACHING PHILOSOPHY**

Each new student who comes into my classroom is an intelligent novice, and my mission as a teacher is to guide every intelligent novice towards expertise. To be successful, I need to know the answers to three big questions:

1. *Where are we going?*
2. *Where is each student starting from?*
3. *What guidance do my students need?*

**STUDENT RATINGS AND COMMENTS**

During eight semesters of teaching, all 130 of my student ratings have been excellent (84%), very good (13%), or good (3%). I won the Derek Bok Center Certificate of Distinction in Teaching all eight semesters. This section includes the unedited (and consistently glowing) written comments from all of my student evaluations.

**TEACHING VIDEOS**

Links to a 7-minute teaching [clip](#) and a video of a full-length [section](#).

**SELECTED ORIGINAL TEACHING MATERIALS**

- Reading in the course of the future 16
- Economics of health policy course syllabus 20
- Health policy online debate assignment 28
- Tanga.com microeconomics problem 30

---

1 The cover image was created by entering my student comments into wordle.net. I removed non-descriptive words and forced phrases to remain together. See the back page of this document for the full image.
STATEMENT OF TEACHING PHILOSOPHY

I see each new student who comes into my classroom as an intelligent novice. My mission as a teacher is to guide these novices towards expertise. The great challenge—and the joy—of teaching is that the path from novice to expert is different for each student.

To be successful, I need to know the answers to three big questions:

1. Where are we going? What constitutes expertise in the course content and in the field more broadly? What capacities and mental habits do I want my students to retain after the details of my course have become a distant memory?

2. Where is each student starting from? What knowledge, experiences, and interests can I build on? What content and connections are missing from students’ intellectual schemata, and what misconceptions do they have?

3. What guidance do my students need? What breakthroughs does each student need to achieve in order to gain the expertise we’re seeking? And how can I best help my students to achieve these breakthroughs?

The answers to these questions motivate every teaching decision I make, from overall course design, to lecture content and use of technology, to my evaluations of student learning.

1. Where are we going?

This is the most fundamental question guiding my course design choices, and the answer depends critically on the subject area of the course, its intended audience, and how it fits in with the overall teaching goals of the department. In any case, these goals should address higher-order cognitive skills: I want students in all of my courses to develop the ability to analyze complicated questions thoughtfully, to evaluate economic and policy arguments, and to create novel arguments by synthesizing disparate strands of knowledge.

In an introductory economics course, one (of several) concrete goals would be for students to gain the ability not only to understand, but also to evaluate, economics-related news items. For example, they should be able to write thoughtful responses to
pieces in the finance and economics section of *The Economist*. An intermediate microeconomics class should develop students’ analysis and problem-solving skills, as well as their ability to apply economic concepts to a variety of market settings. In an advanced game theory course, I want my students to develop the ability to design and evaluate new theoretical models of real-world strategic interactions.

In teaching health economics, I would make substantially different course design decisions based on whether or not the course is targeted to economics majors. An education in economics should include learning to analyze theoretical models of economic behavior; for example, economics majors should grapple with the workings of Grossman’s model of health capital. On the other hand, a health economics class for non-majors or a health policy class should spend more time on economic analysis of particular health policy options; the modeling, per se, is secondary to a general understanding of the concept of scarcity, thinking on the margin, and other aspects of the economist’s policy perspective.

2. *WHERE IS EACH STUDENT STARTING FROM?*

To successfully motivate and guide each student, I need to know her strengths, weaknesses, interests, and preferred learning style. I need to be able to build on the skills and knowledge she already possesses, and to demonstrate that I am committed to helping her succeed. This is best achieved through one-on-one meetings, so in smaller classes, I meet individually with each student early in the semester. Even in larger classes, I strive to get to know every student, and give surveys to solicit written feedback at the beginning and midpoint of the semester. In all classes, I stay afterwards (and sometimes bring treats) to encourage casual conversation.

It is my job to know what a student is confused by, even when the student himself doesn’t know. One anonymous student commenter wrote, “[Sam] has a remarkable talent for figuring out what it is that his students are struggling to understand.” When a student asks a question in class, my knowledge of the student not only helps me decipher what lies behind the question, but to know what combination of spoken, written, graphical, mathematical, and kinetic response is likely to best help the student.

This analysis of where students are starting from is not a one-time exercise: students’ knowledge and skills need to be reassessed throughout the course. In class, I am constantly probing my students’ conceptual grasp of the material, and modify my teaching to address any shortcomings. And the purpose of more formal evaluation is
not grade assignment, but analysis of students’ progress towards expertise. Evaluations reveal what material students have mastered, and in what ways they are still confused. The purpose of evaluation is to guide my instruction through the rest of the course (and to help me reevaluate how to approach material in future offerings of the course).

3. **WHAT GUIDANCE DO MY STUDENTS NEED?**

Some of the least effective teachers I’ve had have been extraordinarily accomplished in the field they were teaching: the material came so naturally to them that they had trouble understanding why their students didn’t just “get it” the same way they did.

One of my strengths as a teacher is being able to view the course material through the eyes of my students, a quality I think of as “academic empathy.” For example, Edgeworth boxes have always been intuitive to me, but the mechanics of representing two consumers’ preferences and consumption bundles in the same plane are often baffling to students at first. When I present the material, I don’t immediately draw a box, as my professors have done; instead, I first graph the consumer problem for consumer 1, then separately graph the problem for consumer 2, rotated by 180°. When I then place the graphs on top of each other, even the non-graphically-inclined students tend to grasp where the box comes from, and how to work with it.

In a broader context, by knowing where students struggle, I can target assignments and readings to allow students to struggle *constructively* in those areas where they need the most help. I generally believe in assigning a small number of well-targeted readings, and building a strong expectation that students dig into those readings (I have no problem with cold-calling, if done respectfully), rather than assigning a large number of readings that students will invariably skim (if they read them at all). Furthermore, I believe in providing any necessary guidance on how to approach a text constructively; for example, by interactively annotating the text using Acrobat® shared review.1

For me, the classroom is a sacred space, and teaching is a passion. My job as an educator is to engage and inspire each student, and to deepen each student’s ability to think critically about her world. Nothing could be more fulfilling.

---

1 See “Reading in the Course of the Future: Using Adobe® Acrobat® Shared Review to Engage your Students through the Text,” by Samuel S. Richardson. May 2011. (Included in this packet)
In summer 2008, I taught for Professor Amitabh Chandra's "Topics in Health Economics" course, as part of the Ca' Foscari-Harvard Summer School in Venice. Teaching evaluations for this course are unavailable.

“I can’t say enough good things about Sam Richardson’s teaching. He is by far the best teacher I’ve had at Harvard. He is clear and concise, enthusiastic, generous with his time, patient if you don’t understand something, and has a remarkable talent for figuring out what it is that his students are struggling to understand and explaining concepts in different ways so that people with different learning styles can all understand. He made section engaging and often funny. His enthusiasm and dedication motivated me to work much harder in this class than I otherwise would have. His willingness to explain things at length in office hours kept me from getting lost partway through the course when things got confusing. He never made anyone feel stupid for asking even the most rudimentary of questions. He is a phenomenal teacher.”

—Anonymous student comment, Fall 2009
These are the complete and unedited comments from all student evaluations I have received.

**SPRING 2011**

Sam is THE best TF I have ever had. He is the reason I made it through this class. He has an unmatched ability to relay complex concepts in a very approachable way. His commitment to and enthusiasm for teaching are best, bar none. He creates an environment that encourages and supports any types of questions. He is very knowledgeable in the subject and very accessible even outside of office hours. He is truly a paragon of teaching. Any future students will benefit greatly from his teachings.

Sam is fantastic. He is better at presenting econ topics in a intuitive way than any instructor I have ever had. He is also very patient, very clear. If anything, I think he could go a little faster in his presentations, but I also know he is trying to make sure everyone keeps up.

Enthusiastic, clear, welcoming of questions. Every teaching fellow should aspire to this quality of teaching.

Sam works hard to be a good section leader. He'll be a good professor one day.

Sam is the best TF I've had so far. He really is outstanding.

**FALL 2010**

Sam was fantastic! He was so patient and always available for questions and explained things thoroughly. He gave very useful feedback on assignments and I felt very comfortable asking questions in section. Going to section got me through this class.

Interesting lecture on international comparisons!

Sam is a great section leader. He took special care to make sure everyone understood at each step.

Section was very helpful and you were always available in office hours or by email. Thank you!
Sam may be the best TF I've had in 4 years at Harvard. Knowledgeable, enthusiastic, approachable.

Sam was amazing! He was so accommodating and accessible, and really helped clear up a lot of confusing concepts and policies throughout the class. I really enjoyed having him as A TF!

Sam was an excellent TF - very good at explaining concepts and facilitating discussion, as well as noting key points. I really liked the format of section (general questions, then structured discussion). He was also very accessible through email/office hours, and open to student questions.

Sam is one of the best TF's I've ever had. He's smart, bright, enthusiastic, helpful, and just awesome.

This guy will be a great professor one day :)

Sam is very knowledgeable about the course material, and so was very helpful throughout the semester. He is also very fair and facilitates good section discussion.

He is the bomb

Sam was a great TF! He was very knowledgeable about the material, he did a good job explaining confusing concepts and terms. It would be great if Sam typed up a handout of key concepts and ideas from the week's lectures for section. it would clear a lot of things up, and allow students to focus more on what he was saying, rather than worrying about trying to get every word down while taking notes

Sam was wonderful, very good at explaining.

very organized and knowledgeable. makes section fun.

Sam was very helpful in answering my questions and explaining the course material. He was accessible outside of class and a very clear lecturer.

Sam’s one of the best TFs I've ever had. He's extremely friendly and open to questions (even small ones), and he does a great job of generating enthusiasm during discussion. His comments on my assignments were insightful and helpful.

Sam really breaks down the material in a way that helped me to better understand the material. He is always willing to help and very accessible.

Thanks a lot for being very accessible outside of class and discussing challenging concepts with me.
**SPRING 2010**

A top tier teacher. The best section leader I have had.

Sam is the best section leader one can ask for. He has a thorough grasp of all the course material and the wonderful gift of being able to explain it lucidly in verbal, graphical, and mathematical terms. Both in and out of class, he is extremely responsive to student questions. The handout materials Sam prepared were also very helpful.

Sam is probably the best TA I’ve ever had. He is world-class. His pedagogy is very strong as he is clear on the concepts and provides very good useful examples. He is excellent at answering questions and raising interest. I was very happy to have his support this year.

**FALL 2009**

The most effective TF I’ve ever had. Great at teaching sections, generous with his time outside of class, extremely responsive to email, and just generally very good at explaining things in simple ways.

Sam’s sections were very helpful. He did a good job of covering both the technical and the intuitive sides of any particular topic. A very nice complement to the lecture.

Sam was very enthusiastic and responsive, both in class and over email.

I like how he gives a lot of time for students to ask questions. He is very considerate and available for students via emails and meetings. He was VERY helpful.

Sam’s section was fantastic. He responded to questions very well, paced his talks perfectly, and presented material clearly.

Sam did an amazing job of presenting complicated material in a straightforward fashion. He incorporated lots of examples and consistently asked for questions (and then waited to see if we actually had any). His final review was a masterpiece. There were a couple of times when he arrived a little late and seemed flustered to start section.

Sam is the best TF I’ve ever had. His presentation of material and response to questions makes everyone feels like he’s teaching to their level despite the range of economic backgrounds in the room. He always finds time to help us understand the material more deeply, often going beyond office hours and section to do so. He really has a gift for teaching, and learning from him has been a privilege.

Sam can explain difficult concepts very well and is very available always.

A+++++. Sam is the model of a section leader.
Best TF I have ever had. Any university that hires him will be getting a phenomenal teacher.

Sam Richardson is a phenomenal teacher of complicated material. He has an exceedingly rare ability simultaneously to grasp and explain tricky economics ideas in mathematical, graphical, and verbal form. He is extremely welcoming of questions during his sections and office hours, and is extremely giving of his time in making sure that all students are caught up.

I can't say enough good things about Sam Richardson's teaching. He is by far the best teacher I've had at Harvard. He is clear and concise, enthusiastic, generous with his time, patient if you don't understand something, and has a remarkable talent for figuring out what it is that his students are struggling to understand and explaining concepts in different ways so that people with different learning styles can all understand. He made section engaging and often funny. His enthusiasm and dedication motivated me to work much harder in this class than I otherwise would have. His willingness to explain things at length in office hours kept me from getting lost partway through the course when things got confusing. He never made anyone feel stupid for asking even the most rudimentary of questions. He is a phenomenal teacher.

Sam is a phenomenally gifted teacher who has a true talent for making difficult concepts intuitively accessible.

Sam was able to make very difficult material quite accessible. I always learned a ton in his weekly sections and his final review session was outstanding.

This guy is one of the best (in every respect) if not the best TA I've ever had in my entire academic career. Keep it up, Sam!

Sam Richardson is the best section leader I have ever had. His presentations were clear, thorough, and he did not dwell on unnecessary material.

Sam is an excellent section leader! I really struggled with this class and I found Sam to be accessible both in and outside of office hours. He is very patient with students and extremely knowledgeable about the subject matter. After office hours with Sam, I felt more relaxed about the course material and thought it was more manageable. He is the best section leader I have had to date! Sections were also clear and the examples were concrete and easy to follow. He made a difficult course easier.

**Spring 2009**

Sam is an excellent teacher. He is skilled at explaining difficult concepts and showing us how to approach problems. In addition, he really makes an extraordinary effort to be accessible outside of class hours and hold review sessions.
Sam is an absolutely incredible, helpful, and considerate TF. He was a wonderful teacher, and very generous with his time throughout the semester and particularly around exams. His well-prepared sections cleared up questions every week, and he was extremely responsive to email throughout the semester. We’re very lucky to have had him teach the course—I appreciate all the extra time and thought that he clearly put in.

I wish there were an option for a response higher than “excellent,” because Sam certainly deserves it. He’s a first-rate teacher -- extremely accessible, well-prepared for section, and attentive to the particular needs of doctoral students who might not have much economics training. We’re very lucky to have had him as our TF!

Fanastic. Clear and engaging sections and always extremely helpful outside of class. You could not get a better TF. Many thanks for the year

Sam is great. May be useful to take time occasionally to draw back and locate material in a wider framework of the course and the field as a whole, but I realise time is short.

Yay Sam! Please don’t have a stroke!

He is the best TF I have ever had. He is the greatest asset of the department--better than the professors, better than anyone! I can’t imagine what I would have gone through without him!

He’s an excellent TF. He always managed to make us understand the main points of the topics covered in lecture and would show us how to use that to solve problems in the assignments and exams. He was always available outside class for questions about the problem sets and exams. He’s very nice and very dedicated to the class.

**FALL 2008**

An outstanding TF - cannot rate highly enough. Sections always clear and useful, extremely helpful in office hours, and respond to emails at lightning speed.

Sam was awesome! One of the best teaching fellows I’ve ever had. He did a really great job of making the material interesting and accessible. And, he was very willing to meet outside of class/office hours to help us understand more difficult concepts. I have only one very small criticism. My section consisted possibly of some of the rudest people with whom I have ever taken a class with. They spoke at full volume with each other while Sam was giving presentations, and during his final exam review section, one woman actually answered her cell phone (after several loud rings) and proceeded to have a full-volumed conversation. I know might feel very high-school to ask students to reduce the volume of their conversations, but their behavior actually made it harder for me (and other students) to listen to Sam’s presentations.
Sam, as always, did a great job with 2020a section this fall. His lectures and examples were always good at clarifying the most important things to focus on from the week of lectures, and Sam’s ability to explain the steps needed to produce the results we wanted is extraordinary. He is a natural-born teacher! And his ability to come up with illuminating answers to many questions on the spot in section and review sessions is impressive. He clearly spends time planning out the content of his sections and figuring out how to fit in all of the important points within our 1.5 hour time frame.

great TF, able to dissect the material and explains very well

His sections and his section notes were very helpful in solving the problem sets.

Sam was a crazy good teaching fellow. Saved me when I was lost.

Sam is an excellent TF. His sections are extremely useful, and he is always available to answer questions during office hours or over email.

Sam is amazing

**SPRING 2008**

Sam is excellent!!

Sam is really receptive to questions, good at answering them, ready to go off of the section script when someone asks a question that needs to be answered, while also being good at successfully teaching what needs to be taught in each section. He seemed to put a lot of thought into what he should present in each section, and was good at detecting what aspects of lecture were likely to be unclear to students. Also had lots of office hours and was always willing to meet outside of class by appointment. I couldn’t think of a better TF for this course. I hope he TFs for 2020a next fall!

Sam was probably the best TF I’ve ever had. His lectures were at least as helpful for understanding the material as the lectures by our two professors. He tailored the subject matter of his examples to students’ interests. He was very responsive to students’ needs; he modified his teaching after soliciting feedback and finding out that students found his sample problems very helpful and wanted to see more examples done in section. He explained concepts clearly and patiently, and never made you feel dumb if you asked multiple questions. Excellent teacher.

Sam was an excellent TF! Very clear lectures, great examples, knew the material inside out. Couldn’t have asked for a better TF for this class! THANK YOU SAM!!
Sam is a gifted teacher. He clearly has command of the material, and his notes are always clear and complete. His ability to convey difficult concepts in easy-to-understand (but still rigorous) terms separates him from other TFs I've had at Harvard or elsewhere.

Sam is one of the best TFs I've had at Harvard. He is lucid, effective, and good at answering questions on the spot (and we asked him some hard ones!) he is also prompt at answering questions via email and is always happy to stick around after class and answer more questions or talk about the material.

Sam is amazing in the care and help he offers the students. His sections are well-organized and very thorough. Also, he always answers questions so kindly even outside of the class. Thank you so much Sam for an amazing year that helped me (re)gain a passion and confidence for Economics and I hope the best for you in your endeavors.

FALL 2007

TA is an excellent teacher. He explains everything in detail and gives useful examples. He is very committed to his job and encourage students to participate. Particularly outstanding is the fact that, whenever a student makes a question, he says "good question" or "good point," letting the student know that the question she asked was valuable. However, sometimes section went too slowly. TA could improve if he were more sensitive to realize what topics the students already know.

As I mentioned. I believe Sam's Section was useful and practical. He is extremely committed with his students, always approachable, and he always have the patience and knowledge to answer our questions. I appreciate that a lot. I really hope, Sam, you would be in econ2020b.

Sam was always very well prepared. His lectures were clear and added a lot of detail and practicality to the more theoretical material presented in class.

Sam is a great TF. Sections are always very well organized, with great examples, and he does a very good job clarifying concepts from the lecture.

One of the best TF I've ever had. He has the ability to explain something very difficult in a very easy way.

Sam is an excellent instructor. I have no complaints with his teaching. He is friendly and knowledgeable about the material. I found his section presentations to very nicely summarize what's going on in the course--oftentimes with greater clarity and precision than in the lectures. I found his examples also extremely helpful. (I didn't do very well on the midterm, though, so I'm not sure how helpful it all ended up being. There seems to be a mismatch between what's on the problem sets and covered in section--and what appears on the exams.)
very good, knowledgeable, enthusiastic discussion leader; breaks down material very well; accessible & available for office hours and always ready to answer questions

very clear and very helpful sections. I felt that I understood better once I saw Sam present the material. There was a feeling that perhaps the examples were too easy since problem sets were often harder.

Sam was one of the best economics Tfs that I’ve had here. His teaching was well grounded, lucid, and appropriately paced. He walked through relevant examples which were both simplified and extended (more complicated) versions of the problems we dealt with in lectures and in problem sets. This helped us to gain not only immediate understanding of the material but also how to expand on and apply the concepts and problem solving skills and intuition we developed. One aspect in which he could see some room for improvement is in encouraging student discussion. Although it is important that he work through the material he wants to cover in each section, I believe that his sections would be enriched if he finds a way to incorporate discussion. Again, for a subject such as economics which would naturally develop through discussions among bright and interested minds, who knows what might pop up.

Sam was a superb section leader. He was extremely well-prepared, and his explanations were very lucid and easy to follow.
16 Reading in the Course of the Future: Using Adobe® Acrobat® Shared Review to Engage your Students through the Text

20 Economics of Health Policy: Course Proposal and Syllabus

28 American Health Care Policy: Online Debate Assignment

30 Microeconomics Problem Set Question: Tanga.com Daily Contests
READING IN THE COURSE OF THE FUTURE

Using Adobe® Acrobat® Shared Review to Engage your Students through the Text

May 2011

Samuel S. Richardson

Health Policy PhD Candidate, Harvard University

richard5@fas.harvard.edu

Prepared for “Designing the Course of the Future”,
a Derek Bok Center for Teaching and Learning seminar,
with financial support from The Teagle Foundation
MO VING BEYOND PAPER-BASED TEXT

Do you remember when people instructed their e-mail programs to automatically send incoming e-mails to a printer? In our lifetimes, people who routinely print out PDF documents will seem as peculiarly backwards (and as environmentally wasteful). We may worry about the effects on our students of constant connection to electronic devices, and students reading on their laptops may have their attention divided between several activities. But I don’t think this is a battle that as educators we can, or should, fight. Instead, let’s consider what we can gain when our students read from screens instead of from paper.

In the Designing the Course of the Future seminar, Marlon Kuzmick asked, “Forget about what technology exists; what would you like to be able to do with technology in your classroom?” I immediately thought about how technology could enrich students’ reading experiences; I wanted to be able to connect with my students through the texts they were reading. Here was my wish list:

- I should be able to easily add content to all students’ texts, including comments, highlighting, videos, external links, etc.
- Students should be able to view the document with or without my additions.
- A student should be able to add comments or questions directed towards me, without changing what other students see.
- I should be able to respond either to a single student, or push the question and response to every student’s document.
- Students should be able to share their comments within study groups.

Not to sound like an unpaid advertisement, but Acrobat® can do all of this now!

We know that students learn more when they are actively engaged in learning, rather than being passive recipients of knowledge. It is a rare student who can successfully create an active learning experience out of reading a traditional paper-based text on his or her own. By providing a text that answers students’ questions, we encourage them to read actively. And by encouraging students to answer questions posed by the teacher or by classmates, we convert readers from content-learners into content-creators.

---

1 See, for example: Sherry Turkle. Alone Together: Why We Expect More from Technology and Less from Each Other. Basic Books, 2011.
PREPARING THE TEXT

Whenever we give a reading assignment, we need to know our goals for what the students should learn from the text. With an electronic text, we can add our own content ahead of time to help students meet those goals:

- **Are there questions you want students to be considering while they read?**
  Add those questions to the top of the document.

- **Are there sections that students will need extra help with?**
  Insert a clarifying comment, a link to a document that will help them, or a video of a mini-lecture covering that section.

- **Are there terms that students are likely to misunderstand?**
  Insert a definition for the term, or a link to a webpage providing more information.

- **Are there concepts you want students to play with?**
  You can insert any Flash® file directly into the document.

- **Are there sections students can skim or skip?**
  Color those sections gray.

- **Are there points in the text that you want students to debate with one another?**
  Insert a comment asking the debate question, and students can create a thread of replies.

These are just some of the possibilities, and the best use of the technology will obviously depend on the course and the text. One way to think about what content to add is to ask, “If I were working individually with a student to help him or her get the most out of this particular text, how would I supplement the text?” In this case, you get to supplement the text for your entire class at the same time (and your added content will be available every time you teach the text in the future).
ENGAGING STUDENTS DURING THE READING PROCESS

An active reader asks questions of the text throughout the reading process. You can encourage your students to be active readers by making sure that their questions are answered (either by you or by classmates).

As soon as you send your prepared text to your students, the document is “live”: anyone can add comments, videos, or other content (but cannot modify the original text itself). Everyone’s documents will be updated periodically with additions from others.³

You can decide partway through to add more content to the document. Perhaps several students all seem confused about the same point: you can add a clarification for the entire class. Maybe a student had a particularly insightful comment or question: copy that student’s contribution to the entire class.

Before a class meeting, you can pull up a list of comments sorted by where in the document they are located. Depending on the type of comment, this could give a good indication of where students’ interests lie, or where many of your students are feeling confused.

HOW WILL THIS CHANGE YOUR COURSE?

By adding content directly to the documents your students are reading, you support their learning in a way that once could only be done during class time. You can arrive in class confident that your students have been able to learn what you wanted them to learn from their reading, and free up class time for activities that can only be done in class.⁴

---

³ Students may show comments from the entire class, but this is likely to lead to cognitive overload, so they should be encouraged to select the option to hide everyone else’s comments (except the teacher’s). Alternatively, you could form students into small study groups; members of a study group would then see and respond to other members’ comments. Regardless of how you approach this, you may want to ask students to read the text once while hiding all comments, before engaging with comments in a second reading.

⁴ Note that for this method to work well, students need to read the text twice: once to ask their questions, and again to see what your answers were and what additional comments you added. This means you may need to limit the quantity of reading.
ECONOMICS OF HEALTH POLICY

Course proposal and syllabus

May 2011

Samuel S. Richardson

Health Policy PhD Candidate, Harvard University

richard5@fas.harvard.edu

Prepared for “Designing the Course of the Future”,
a Derek Bok Center for Teaching and Learning seminar,
with financial support from The Teagle Foundation
COURSE MOTIVATION AND DESCRIPTION

Health care spending has been rising inexorably for decades, now accounting for over one-sixth of the United States economy\(^1\) and about one-quarter of the federal budget.\(^2\) The ability to think critically about health policy issues is almost a necessity for today’s college students, whether they plan to work in the health care sector, contribute to public policy, or simply be well-informed citizens and taxpayers. Meanwhile, economics has been emerging as the dominant social science for analyzing health policy questions. This course will teach students (potentially with no background in economics) how to apply economic thinking to a range of important health policy questions.

In this course, I want to avoid the danger of students being overwhelmed by sheer quantity of reading. Mastery comes from deep engagement with course material, not from completing a long reading list. I have selected one focused reading per week, and we will use the shared review features of Adobe® Acrobat® to dig deeply into that reading.\(^3\) Class time will be spent reinforcing the broad economic concepts from the readings, and discussing how to apply those concepts beyond the context of one particular reading.

---


\(^3\) See “Reading in the Course of the Future: Using Adobe® Acrobat® Shared Review to Engage your Students through the Text,” by Samuel S. Richardson. May 2011.
Learning Goals

Content Goals

Students will gain the ability to:

- Explain the main assumptions neoclassical economists make about human nature, and discuss situations in which these assumptions are unlikely to hold.
- Interpret demand and supply curves, and explain why (and under what assumptions) their intersection identifies the economically efficient quantity.
- Discuss ways in which health care markets violate the assumptions underlying the efficiency of markets.
- Explain moral hazard and adverse selection, and identify situations in which these phenomena are likely to cause problems with health care markets.
- Understand characteristics of health insurance policies, and explain the reasons why health insurance plans have some of these characteristics.
- Apply cost-effectiveness analysis to resource allocation decisions.

Goals for Skills, Values, and Attitudes

Students will:

- Gain an appreciation of the (dismal) concept of scarcity.
- Develop an ability to explicitly consider the incentives (both financial and non-financial) that influence everyday decision-making.
- Develop an ability to think critically about unintended consequences of government policies.
- Improve their ability to argue persuasively for a policy position.
- Develop an ability to analyze health policy questions from an economic perspective.
- Become more sophisticated consumers of data and research. Students should understand the difference between correlation and causation, and be able to consider multiple explanations for observed correlations.
LOGISTICS

MY AVAILABILITY OUTSIDE CLASS

• **E-mail**: I can be reached at richard5@fas.harvard.edu. I usually respond quickly, but please allow up to 24 hours for a response.

• **Questions about readings**: If you have questions or comments about readings, please enter the comment directly in the PDF document (instructions will be provided). If your question or comment is particularly insightful, I may share it with the rest of the class.

• **Before/after class**: I will be available at least half an hour before and half an hour after class time for questions or discussion.

• **Office hours**: My office is __________. Office hours will be ___day from ___ to ___ and ___day from ___ to ___. Please sign up for a fifteen-minute slot on the course’s Google calendar. If none of the available times works for you, please e-mail me to set up another time. I will hold extended office hours during week 2 to meet all of you, and to discuss your Gapminder presentations.

READINGS

I have only assigned one reading per week, but I expect you to engage deeply with each of the assigned readings. We will use collaboration tools in Adobe® Acrobat® to create an interactive reading experience. For each reading, you will have 3 days for your first reading, during which you will insert any questions and comments that you have. I will then spend a day to responding to and sharing comments with the class, and in the following 3 days I expect you to read the newly annotated document.

GRADING

10% Gapminder presentation: due week 3
5% Health insurance reflection: due week 4
10% Market efficiency written assignment: due week 5
15% Take-home midterm exam: due week 7
15% Response to opinion piece: due week 10
5% Cost-effectiveness worksheet: due week 10
10% Case study question responses: due week 11
15% Online debate: due week 12
20% Participation (in class and readings): Quality matters more than quantity.
105% *I will drop the worst 5% of your grade.*
**SCHEDULE** *

**WEEK 1. THE BIG PICTURE**
- What are some major macro-determinants of health? Why do different countries have different life-expectancies, and why does life expectancy change over time?
- Why has health care spending increased so quickly in developed countries? What are some possible policy approaches to reducing health care spending growth?
- What issues should we keep in mind when considering health data?

**Assignments:**
2) Use Gapminder (www.gapminder.org) to prepare a five-minute presentation on some interesting aspect of the life-expectancy vs. GDP per capita graph over time. (Due during week 3)

**WEEK 2. ECONOMICS I: DEMAND**
- Where do demand curves come from? What do they represent?
- In what ways are demand curves for health care problematic?

**Assignments:**

**WEEK 3. ECONOMICS II: SUPPLY AND MARKET EQUILIBRIUM**
- Where do supply curves come from? What do they represent?
- How does market power (monopoly/oligopoly) affect supply curves?
- Market equilibrium: when is it efficient?

**Assignments:**
2) Brief written assignment: Choose any market and write two pages about ways in which the market equilibrium is or is not efficient. Use Google Docs to workshop with a partner; you will be graded on your paper, as well as on the comments/suggestions you give to your partner. (Due during week 5)

* This schedule borrows some items from courses taught by Meredith Rosenthal and Michael Chernew.
WEEK 4. RISK AVERSION AND INSURANCE

- What is the theoretical reason for insurance?
- What are the main characteristics of a health insurance policy?

**Assignments:**
2) Web activity: Go to www.ehealthinsurance.com and simulate buying an insurance policy for yourself. What differences do you notice if you use your home zip code instead of your college zip code? What influenced your decision-making the most? What should influence you, but maybe didn't? Write a reflection (max two pages) and be prepared to discuss in class.

WEEK 5. MORAL HAZARD

- What is moral hazard, and why does it lead to inefficiency in health care markets?
- What aspects of insurance policies counteract moral hazard, and what are the drawbacks of using these tools to reduce moral hazard?

**Assignments:**

WEEK 6. ADVERSE SELECTION

- What is adverse selection, and why does it lead to inefficiency in health insurance markets?
- How can insurance markets be designed to reduce adverse selection problems?

**Assignments:**
WEEK 7. QUALITY OF CARE

• What do we know about the quality of medical care in the US?
• What economic incentives lead to skimping on quality?

Assignments:
1) Take-home midterm exam covering weeks 1-6. Students will be asked to apply health economics concepts to answering questions about a policy proposal we have not studied in class.

WEEK 8. GEOGRAPHIC VARIATIONS

• How large are the geographic variations in cost and quality of care?
• What are the possible economic explanations for geographic variations?

Assignments:
1) Find an opinion piece in a major newspaper or magazine regarding some aspect of health policy. Write a 3-page response in which you address how well the piece reflects the economic realities of health care. Use Google Docs to workshop with a partner; you will be graded both on your paper, and on the comments/suggestions you give to your partner. (Due during week 10)

WEEK 9. REPORT CARDS AND PAY-FOR-PERFORMANCE

• What are the theoretical justifications for quality report cards and pay-for-performance (how do they affect demand and supply curves)?
• Do these methods increase the quality of care?
• What are the possible drawbacks (multitasking, other unintended consequences)?

Assignments:
1) Reading: Samuel Richardson. “Pay-for-Performance in the National Health Service: Quality, Multitasking, and Unintended Consequences.” *Dissertation papers 2 & 3 (excerpts).*
WEEK 10. COST-EFFECTIVENESS AND COMPARATIVE EFFECTIVENESS

- How do we calculate cost-effectiveness ratios?
- How should we think about the economic value of human life?
- Why (and how) should health care be rationed?

Assignments:

WEEK 11. PHARMACEUTICALS

- What do we mean by efficiency when it comes to pharmaceutical pricing and innovation? How is this efficiency related to cost-effectiveness?
- Why are there patent protections for drugs?

Assignments:
1) Reading: *Nexium case study*.
2) Send a written set of responses to the case study questions before class (about 2 pages).

WEEK 12. HEALTH CARE REFORM AND COST GROWTH REVISITED

- What are the current health care reform proposals and how well do they address the cost growth problem?

Assignments:
1) Reading: Summary of current health reform proposals (created by me)
2) Online debate: Students will be split into small groups. Each group will engage in a discussion-forum-based debate about whether or not a particular reform proposal should be passed.
Overview and Purpose: In this assignment, you and your section-mates will engage in a civil but spirited week-long online policy debate regarding Medicare Part C. This assignment is intended to help develop your ability to analyze a health policy question, and to use evidence and rhetoric to promote a policy position. You will be attempting to convince your classmates that your assigned position is the best policy.

Assignment Setup: The debate will take place in a discussion forum on your section’s page on the website. Check right away that you can access your section’s page (there should be a link with your TF’s name on the left-hand side of the website).

You will be assigned to one of four groups, taking the following positions:

1) Keep Medicare Part C the way it is now (adopting the PPACA benchmark changes or not, as you prefer).
2) Expand Medicare Part C to all Medicare enrollees (supplanting Parts A and B).
3) Abolish Medicare Part C.
4) Neutral “referees”.

Preparation: The following three articles should provide sufficient background to allow you to participate fully in the debate; you may (but are not expected to) use other sources:


Opening Statement: With your group, you will write a (roughly) 500-word opening statement, in which you explain and defend your position, laying out the two or three best arguments in favor of your position.

(Neutral referees: In your opening statement, you should briefly explain the best single argument in favor and the best single argument against each of the three policy options.)

Please note that your opening statement is not expected to list all the arguments in favor of your position, nor is it expected to anticipate all possible challenges to your arguments. You will have time to elaborate in your comments later in the week.
Your opening statement must be posted by 11:59pm, two days after your section meets. (Thursday sections post their statements Saturday night, Friday sections post Sunday night, and Monday sections post Wednesday night.) If your group posts late, you will lose 0.1 points (1 percent of the total grade for the assignment) for each hour the statement is late.

Discussion: Once opening statements are posted, you will have four days to write comments criticizing other positions and defending your position. (Neutral referees: At this point, you may choose to stay neutral in your comments, or you may choose to promote any of the three positions.) Note that comments should typically be short; one-sentence comments could be quite incisive, and people will tend to get lost in your comment if you write more than a paragraph or so. Your comments should focus on the substance of the policy debate, rather than on trivial details.

Some possible types of comments (by no means exhaustive): elaborating on one of your arguments from the opening statement; building on or clarifying a comment you or a classmate made; criticizing a classmate’s argument (you should be civil but should not pull punches…note that the most effective criticisms are often quite charitable); responding to a classmate’s criticism; providing factual evidence for or against an argument; promoting a new argument in favor of or against a position.

You should expect to spend some time each day reading what others have written and posting at least a couple of your own comments. You will be graded based on your three best days of comments.

Citations: Any reference to an outside source must be cited in a way such that your classmates will be able to find the material (for the three papers above, citing the author is sufficient). You must cite factual statements that are not common knowledge in health policy circles, and must also list a citation if you make an argument that is taken from an outside source.

Grading: Your grade will be based primarily on the persuasiveness of your arguments. Writing style will be graded only insofar as it promotes or impedes your ability to persuade.

The overall assignment will be graded from 0 to 10. The opening statement will be a group grade, worth up to 4 points.

You will be graded individually for your comments, receiving up to 6 points; please note that you will not be graded primarily on quantity of comments. Your TF will grade each day’s comments on the following scale (in-between grades are possible), and will add up your best three days of comments:

0: You did not comment, or your comments were completely lacking relevance.
1: You added to the debate, but your comments were relatively unpersuasive or unoriginal.
2: Your comments added meaningfully to the debate; they were thoughtful and persuasive.
3: Your comments were truly stellar; you went well beyond our expectations.

Note that three days of receiving 2’s constitutes full credit and excellent work; a 3 will allow you to make up for another day’s lower score, but 3’s will be very rare. In no case will you receive more than 6 points overall for your comments.
Tanga.com daily contests

Note: I designed this problem for a problem set in a doctoral-level microeconomics course. The problem is intended to encourage students to struggle with the full range of Nash Equilibrium concepts we had presented up to that point in the course, including weak dominance, trembling-hand perfection, equilibria in three-player games, and mixed strategy Nash Equilibria.

The following game is played daily on Tanga.com: players submit 3 different positive integers (with no information on others’ submissions), and the person who submits the lowest number that was not submitted by anyone else wins a prize. For example, if the numbers submitted were \{1,1,2,2,3,3,4,5,5,91\}, the person who submitted the number 4 would win.

(a) Discuss some reasons why game-theoretic analysis of this game is difficult.

Now assume that there are two players playing the game only once, and each player submits only one number. Also assume that “not playing” is not in the strategy space.

(b) Is there any single strategy that weakly dominates each other pure strategy for either player?

(c) Describe the set of Nash equilibria for this two-player game. Which of these equilibria are trembling-hand perfect?

Now assume that there are three players, with each player still submitting only one number.

(d) Explain why no strategy weakly dominates all other pure strategies for either player.

(e) Explain why any combination of pure strategies where exactly one player chooses the number 1 or where exactly two players choose the number 1 will yield a Nash equilibrium of the three-player game.

(f) Explain why there is no other pure strategy Nash equilibrium of the three-player game that does not follow the form of the outcomes in (e).

(g) There is a Nash equilibrium in mixed strategies, with each player playing the same strategy. This equilibrium has each player’s probability of playing 1 (\(p_1\)) being approximately 0.456. Find \(p_2\) and \(p_3\). Describe how you expect the probabilities for numbers higher than 3 (\(p_4, p_5, \ldots\)) to behave.

Hint: start by calculating your probability of winning if you play the number 1 and the other two players play \(p_1 = 0.456\).
Solution: Tanga.com daily contests

(a) There are many aspects of this game that make game-theoretic analysis intractable. A few of these are:

- Players do not know in advance how many other players there will be (and in practice the number of players tends to be large, on the order of 2000-4000). For each player, we would need to specify beliefs not only of the strategies played by other players, but also their expectations about the number of other players.
- The strategy space for each player is extremely large: the set of all triples of positive integers. We often deal with large strategy spaces (think Cournot, Bertrand, or Stackelberg competition), but in those cases the payoff function is simpler than is the case here.
- We may want to model the repeated nature of this game: each day the players find out the results from the previous day’s game, and their strategies may depend on those results.

(b) This is the upper-left corner of the payoff matrix, with best-responses underlined:

\[
\begin{array}{cccc}
\text{Player 1} & 1 & 2 & 3 & 4 \\
1 & 0,0 & 1,0 & 1,0 & 1,0 \\
2 & 0,1 & 0,0 & 1,0 & 1,0 \\
3 & 0,1 & 0,1 & 0,0 & 1,0 \\
4 & 0,1 & 0,1 & 0,1 & 0,0 \\
\end{array}
\]

Regardless of what the opponent plays, playing 1 is always at least weakly better than playing anything else, and there are strategies for the other player such that playing 1 is strictly better. So 1 is a weakly dominant strategy for both players.

(c) As can be seen from the payoff matrix, any strategy in which at least one player plays the number 1 is a Nash equilibrium. All numbers greater than 1 are weakly dominated by 1, so the unique trembling-hand-perfect equilibrium is (1,1). Note that this implies there are no mixed-strategy Nash equilibria.
(d) Here is part of the payoff array for the three-player game:

\[
\begin{array}{c|cccc}
\text{Player 1 plays 1} & & & & \\
\hline
\text{Player 3} & 1 & 2 & 3 & 4 \\
1 & 0.0, 0.0, 0.0 & 0, 0, 0 & 0, 0, 0 & 0, 0, 0 \\
2 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
3 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
4 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
\end{array}
\]

Player 2 plays 1

\[
\begin{array}{c|cccc}
\text{Player 3} & 1 & 2 & 3 & 4 \\
1 & 1, 0, 0, 0 & 0, 1, 0 & 0, 1, 0 & 0, 1, 0 \\
2 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
3 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
4 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
\end{array}
\]

Player 1 plays 2

\[
\begin{array}{c|cccc}
\text{Player 3} & 1 & 2 & 3 & 4 \\
1 & 1, 0, 0, 0 & 0, 1, 0 & 0, 1, 0 & 0, 1, 0 \\
2 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
3 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
4 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
\end{array}
\]

Player 3 plays 1

\[
\begin{array}{c|cccc}
\text{Player 3} & 1 & 2 & 3 & 4 \\
1 & 1, 0, 0, 0 & 0, 1, 0 & 0, 1, 0 & 0, 1, 0 \\
2 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
3 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
4 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
\end{array}
\]

Player 1 plays 3

\[
\begin{array}{c|cccc}
\text{Player 3} & 1 & 2 & 3 & 4 \\
1 & 1, 0, 0, 0 & 0, 1, 0 & 0, 1, 0 & 0, 1, 0 \\
2 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
3 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
4 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
\end{array}
\]

Player 3 plays 2

\[
\begin{array}{c|cccc}
\text{Player 3} & 1 & 2 & 3 & 4 \\
1 & 1, 0, 0, 0 & 0, 1, 0 & 0, 1, 0 & 0, 1, 0 \\
2 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
3 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
4 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
\end{array}
\]

Player 1 plays 4

\[
\begin{array}{c|cccc}
\text{Player 3} & 1 & 2 & 3 & 4 \\
1 & 1, 0, 0, 0 & 0, 1, 0 & 0, 1, 0 & 0, 1, 0 \\
2 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
3 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
4 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 & 0, 0, 1 \\
\end{array}
\]

(e) Each player has the following set of best responses:
- If both other players play 1, I am indifferent between all numbers other than 1 (I win as long as I play something other than 1).
- If exactly one other player plays 1, I am indifferent between all numbers (my payoff is zero regardless of what I play).
- If neither other player plays 1, I am indifferent between all numbers strictly lower than the minimum played by the other players. (Or if the other players play the same number as each other, I am indifferent between any number other than the number they played.)

Taking these conditions together, all players are best-responding whenever exactly one or two players play the number 1. The set of pure-strategy Nash equilibria includes all such cases.

(f) The other possible cases involve no player playing 1 or all three players playing 1. In all such cases, there is at least one person who does not win and has an incentive to deviate.

If a strategy profile involves no player playing 1, then there is incentive for a player who is not winning to play a number lower than those played by his opponents. Iterating this process eventually results in at least one player playing the number 1.

If all three players are playing 1, then each player has an incentive to deviate and win by playing something other than 1.
For a mixed-strategy Nash equilibrium, we need that each player is indifferent between all pure strategies that are played with positive probability, given the mixed strategies played by the other players.

If I play the number 1, I win if and only if neither other player plays the number 1. Since each player independently plays 1 with probability $p_1$, the probability that neither other player plays 1 is $(1 - p_1)^2$. Given $p_1 = 0.456$, $(1 - p_1)^2 = 0.296$, so my probability of winning if I play the number 1 is 0.296. For our mixed strategy to be a Nash equilibrium when played by all players, we need that my probability of winning equals 0.296 regardless of what number I play.

If I play the number 2, I win if both other players play 1, or if both players play numbers strictly greater than 2. The probability of this equals $p_1^2 + (1 - p_1 - p_2)^2$. We need $p_1^2 + (1 - p_1 - p_2)^2 = 0.296$. Substituting in 0.456 for $p_1$ and solving for $p_2$ yields $p_2 = 0.247$.

If I play the number 3, I win if both other players play 1, or if both players play 2, or if both players play numbers strictly greater than 3. The probability of this equals $p_1^2 + p_2^2 + (1 - p_1 - p_2 - p_3)^2$, which we need to equal 0.296. We substitute in 0.456 for $p_1$ and 0.247 for $p_2$ and solve to get $p_3 = 0.133$.

These probabilities are following a pattern (and if you didn’t see the pattern to this point, you could have continued by calculating $p_4, p_5$, etc., until you saw the pattern). The pattern is of the following form: for all $i$, $p_i = 0.456 \times (1 - 0.456)^{i-1}$. (Note that our answers above are off slightly due to rounding.) For the obsessive-compulsive among you, you can check that $\sum_{i=1}^{\infty} p_i = 1$, which is how I found $p_1 = 0.456$ when writing the problem.