

Course [syllabus](#). There is some flexibility with the syllabus and readings depending on the interests of the seminar group.

Here are some framing questions to think about. In this age of accountability and data packaged in our public education system in standardized testing, we test reading and math. We learn to read so we can read to learn. And math? Why math? Answering this question is where we need to start when appraising and reimagining mathematics education.

Our seminar:

- To aid in getting to know one another as people in our class community I posted a set of [Google slides](#): We each can make a slide with photos and text to introduce ourselves and our interests in general.
- you can make an appointment with me using [this link](#). (<https://gottlieb2.youcanbook.me>)
- **Office hours**: Mondays 4-5 pm and Thursdays 1:45 - 2:45 pm in SC 430.
- e-mail: gottlieb@math.harvard.edu

Suggested videos:

- Here's the TED talk Tibah mentioned. Math is the hidden secret to understanding the world by Antonsen: <https://www.youtube.com/watch?v=ZQElzjCsl9o>
- **Matt** shared some interesting videos: [The first is about "Digital Aristotle," the idea of giving every student an AI tutor. The second is a Key and Peele sketch called "If We Treated Teachers Like Pro Athletes."](#)

Course Subject Matter: What are the goals of mathematics education at the middle and high school level, and how do these goals impact our evaluation of the success or failure of math education in America? Why does math education at these levels matter? What societal structures (historic, economic, political, cultural) impact mathematics education? How does math education in turn impact societal structures? As the world changes, do the goals of mathematics education change, and in what ways?

We will sharpen our ability to assess mathematics education in the US by investigating international case studies.

Readings in preparation for weekly discussions will include a combination of writings, some by authors who have done large-scale national and international studies, newspaper articles, articles by experts in the field. This will help us make sense of the debate in the press, inside the mathematics and math education communities, and amongst policymakers about the state of mathematics education and what should be done about it.

There is one text that is required reading: *The Teaching Gap* by Hiebert and Stigler. You can purchase it for between \$3 and \$12 online. We will also read (sizeable) segments of *Building Thinking Classrooms in Mathematics* by Peter Liljedahl.

Course Goals:

- students will be able to be informed, reflective participants in conversations about the integrative issues involved in math education.
- students will think about change and the space between intent, implementation, and impact. Students will think about what societal structures impact educational issues, and mathematics education in particular.
- students will think about their own mathematics learning (and the choreography of their classes, whether past, present, or future) through different lenses.

Class 1	Class 2	Class 3
What are the goals of mathematics education?	Putting Math Education in the U.S. in Historical Context	The Broad Strokes: Cross-Cultural Comparisons

<u>Class 4</u> Case studies: culture and math education	<u>Class 5</u> class 10/4; HW for 10/11 Equity Issues in Math Education in the U.S. (Cesarina and Milan)	<u>Class 6</u> class 10/11; HW for 10/18 The Opportunity Gap. How can it be bridged? (Cesarina and Milan)
<u>Class 7</u> class 10/18; HW for 10/25 Impacting change in the culture of the classroom (Moeka and Ari)	<u>Class 8</u> class 10/25; HW due 11/1 Cultural change as advocated by <i>Building Thinking Classrooms</i> (Moeka and Ari)	<u>Class 9</u> class 11/1; HW due 11/8 What should we be teaching? Who and what should determine this? (Cyrus (broad queries + Algebra) Matt & Sebastian (on Data science))
<u>Class 10</u> class 11/8; HW due 11/15 Policy and Change (Darcy, Tibah and Matt) Standardized testing (and Grades) (Darcy and Sebastian)	<u>Class 11</u> class 11/15 more Policy and Change (Darcy, Tibah) Roads towards Improvement (Cyrus)	<u>Class 12</u> class 11/29 Student Presentations 3:00 Cyrus Hamlin 3:30 Sebastian Lennox 4:00 Darcy Lin 4:30 Milan Naropanth 5:00 Matt Tobin
Student presentations continued. . . Tues. December 5th, 7:30 - 9:30. 7:30 Tibah Abid 8:00 Ari Kaufman 8:30 Moeka Koyama 9:00 Cesarina Marte	There are many more courses you can take to go more deeply into issues of education. Click on this page to get a sampling of some.	Opportunities around Cambridge/ Boston /Harvard to get involved in education/ math education. <u>You can make a difference!</u>

Class Leadership:

- **Class 5:** Equity & the opportunity gap: understanding the problem: Cesarina & Milan
- **Class 6:** Active Learning, Bridging the opportunity gap, promising programs: Cesarina
- **Class 6:** Tracking and Detracking: Milan

- **Class 7:** Impacting Change in the culture of the classroom: Ari, Moeka, Tibah
- **Class 7/8:** Building Thinking Classrooms: Moeka, Ari
- **Class 9:** Curricular issues: Cyrus (broad queries and Algebra) Matt and Sebastion (on Data science)
- **Class 10:** Policy and Change: Darcy, Tibah
- **Class 11:** Roads towards improvement - what should guide us? Cyrus
- **Standardized testing (and Grades)** Darcy, Milan, and Sebastian