DIVERSIFYING ECONOMIC QUALITY (DIV.E.Q.)

an online resource promoting inclusive, innovative, and evidence-based teaching practices in economics

DiversifyingEcon.org provides more information on the interventions recommended in this slide show.
Diversifying Economic Quality: A Wiki for Instructors and Departments

Proven strategies for the classroom
- Consider the impact of wait time.
- Employ technology wisely.
- Avoid stereotype threat.
- Use cooperative learning.
- Use inquiry-based learning.
- Promote inclusive communication.
- Provide inclusive teaching.
- Join the Wikipedia Education Program.
- Flip your classroom.

Proven practices for instructors
- Provide opportunities for involvement with research.
- Reflect on personal prejudices.
- Foster a growth mindset in your students.
- Offer wise criticism.
- Vary your assessments and retrieval exercises.
- Get to know students personally.
- Share these study tips.
- Be aware of a third theory of discrimination.
- Incorporate heterodox theories into your courses.
- Teach economics with nuance and humility.

How can you participate?
- Read these pages.
- Tell others.
- Share your research and your strategies.
- Produce new evidence.
- Follow @Div_E_Q

Div.E.Q. is sponsored by the AEA’s Committee on the Status of Minority Groups in the Economics Profession.


Take an Implicit Association Test.
<table>
<thead>
<tr>
<th>Potential Interventions</th>
<th>Mentoring and Role Models</th>
<th>Content and Presentation Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without accurate information about the broader application of economics (e.g., beyond finance and consulting), women are more likely to major in less rigorous fields, often within the social sciences or humanities.</td>
<td>Women are more sensitive to their grades in introductory courses when choosing their major than are men. The creation of networks among students within the department and showing support for their decision to major in the field has been effective in recruiting underrepresented minorities.</td>
<td>On average, female undergraduates are less confident about their quantitative skills than are men even if they are equally able and prepared. Their lack of confidence may diminish their belief that economics fits their personal strengths and abilities.</td>
</tr>
<tr>
<td>Use the UWE-AEA Video (to be produced by the AEA before Fall 2015) during freshman orientation week to highlight key points about the major, including:  • The many applications of economics;  • The diversity of its practitioners; and  • The range of potential careers. Also use the video at the start of the introductory course, post it on the course website, and include it on the department’s website.</td>
<td>Mentoring:  • Increase the number of female TAs/grad students/older undergrad mentors for students in intro and intermediate courses.  • Make a video of your alumni talking about their work involving economics, even though “economist” may not be in their job title.  • Facilitate opportunities for research and collaboration with the faculty.  • Help students find summer jobs that value economics, are dynamic, and include human contact.</td>
<td>Add modules and case studies to introductory and intermediate courses. Use more evidence-based material in teaching.  • Present information through real-world examples that cover diverse subfields in economics and related disciplines.  • Include study results and also information on the researchers who did the work and how they became interested in the subject. Invite the researchers to give a lecture.  • Help faculty communicate more clearly and encourage more evidence-based theory courses.</td>
</tr>
<tr>
<td>Augment the material provided on your department’s website or in printed pamphlets to highlight information such as:  • Subfields and upper-level courses;  • Various career options and course requirements for the different career tracks; and  • How economics relates to other fields and majors, and the high return to an economics degree.</td>
<td>Creating student learning communities:  • Encourage coffee/study breaks in the economics department lounge.  • Organize student groups to work with the department to create talks and conferences on diverse topics.  • Connect with students through social media.</td>
<td>Support independent/group projects in various sub-fields (e.g., health, education, poverty, crime, inequality, sports).  • Have students interview community residents about issues in recent economics news (e.g., pay-day loans; Affordable Care Act; student debt) and how they have been affected.  • Coordinate community service opportunities that apply economic concepts and tie into course material.</td>
</tr>
<tr>
<td>Guest speakers in lecture and other times:  • Invite alumni working in diverse fields to talk about their jobs and interests.  • Have talks during campus open days, e.g., freshman parents’ weekend.  • Guest speakers in lecture classes should include diverse faculty in terms of gender, race and field.  • Recruit faculty, from non-business/non-finance fields, who are inspirational and approachable.</td>
<td>Faculty lunches:  • Have informal lunches with professors and TAs.  • Pick faculty who specialize in diverse areas of economic research (e.g., health, labor, education, environmental, econ history, behavioral, corporate finance).</td>
<td>Make sections more conducive to learning for students with different skill levels, styles of learning, and interests.  • Separate sections based on students’ quantitative experience, not by ability.  • If sections are heavily skewed by gender, deliberately change the gender mix and collect data on grades and drop-off rates.</td>
</tr>
<tr>
<td>Webster, May 2015</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SUCCESS STORIES

…combine an array of interventions
GRINNELL SCIENCE PROJECT

Components:
• Curricular reform
• Community building
• Student-faculty research
• Pre-orientation

Outcomes:
• In early 1990s, 42 women science majors per year and 8 students of color. By 2008, 90 women and 21 students of color.
• Other students have also benefited from the mentoring and the curricular and pedagogical changes.
• Nearly 70% of the College’s science majors enter graduate programs. Grinnell ranks eighth on a per-capita basis in producing science PhDs.
PRINCETON DIVERSITY PROGRAMS IN MOLECULAR BIOLOGY AND QUANTITATIVE & COMPUTATIONAL BIOLOGY (DOCTORAL)

Components:

• A more holistic approach to evaluation of candidates
• Aggressive recruitment
• Undergraduate summer research program
• Pre-orientation

Outcomes:

• The percentage of underrepresented minority students in each entering class increased from 3% in the period from 2003-07 before the program started to 22% in 2008-12.
COMPUTER SCIENCE AT HARVEY MUDD COLLEGE

Components:

• Renamed and revised intro course (fun, relevant, not intimidating)
• Significant exposure to counterstereotypes
• Early research opportunity

Outcomes:

• The number of women computer science graduates quadrupled in six years.
INTERVENTIONS

I. Faculty awareness

II. Curricular reform

III. Department outreach
FACULTY AWARENESS

- Correct the misconception that “There’s no problem”

Evidence:

Our profession includes disproportionately few women and members of historically underrepresented racial and ethnic minority groups.

- The underrepresentation is present at all stages of the pipeline.
- We are less diverse than other disciplines.
- We are not getting better over time.
Female Tenured and Tenure-Track Faculty

Author's calculations based on the 2013-2014 AEA Universal Academic Questionnaire
Black & Hispanic Tenured and Tenure-Track Faculty
Author’s calculations based on the 2013-2014 AEA Universal Academic Questionnaire
FACULTY AWARENESS

- Correct the misconception that
  “That’s not a problem”

Evidence:
The lack of diversity impedes the development of the discipline.
CONSEQUENCES

INEQUITY and INEFFICIENCY
CONSEQUENCES FOR THE PROFESSION

Diversity brings a greater range of insights and perspectives

- in policymakers’ choices (Chattopadhyay & Duflo Econometrica 2004)
- in dictator experiments (Kamas, Preston & Baum Feminist Economics 2008)
- in AEA members’ views (May, McGarvey & Whaples Contemporary Economic Policy 2013)

Diverse groups are more innovative than homogeneous groups

- in scientific research (Freeman & Huang Journal of Labor Economics forthcoming)
AEA MEMBERS’ VIEWS (May, McGarvey & Whaples 2013)

Disagree: "The U.S. has an excessive amount of government regulation of economic activity."
Male: 41%, Female: 62%

Disagree: "Job opportunities for men and women in the U.S. are approximately equal."
Male: 16%, Female: 58%

Agree: "The U.S. should link import openness to the labor standards of its export partners."
Male: 22%, Female: 52%

Agree: "The distribution of income in the U.S. should be made more equal."
Male: 41%, Female: 73%
FACULTY AWARENESS

Correct the misconception that
“There’s nothing we can do about it”

Evidence:

The environment we create and sustain supports certain students better than others.
INTERVENTIONS

SUPPLY and DEMAND
THE PIPELINE
“DEMAND” SIDE FACTORS INCLUDE:

- Implicit biases
- Micro-inequities
- Classroom habits
- Department policies
## IMPLICIT VS. EXPLICIT BIASES

<table>
<thead>
<tr>
<th></th>
<th>Implicitly biased</th>
<th>Implicitly unbiased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explicitly biased</td>
<td>A few</td>
<td>NA</td>
</tr>
<tr>
<td>Explicitly unbiased</td>
<td>Most of us</td>
<td>A few</td>
</tr>
</tbody>
</table>
IMPLICIT ASSOCIATION TESTS

Disability ('Disabled - Abled' IAT). This IAT requires the ability to recognize symbols representing abled and disabled individuals.

Skin-tone ('Light Skin - Dark Skin' IAT). This IAT requires the ability to recognize light and dark-skinned faces. It often reveals an automatic preference for light skin relative to dark skin.

Native American ('Native - White American' IAT). This IAT requires the ability to recognize White and Native American faces in either classic or modern dress, and the names of places that are either American or Foreign in origin.

Race ('Black - White' IAT). This IAT requires the ability to distinguish faces of European and African origin. It indicates that most Americans have an automatic preference for white over black.

Age ('Young - Old' IAT). This IAT requires the ability to distinguish old from young faces. This test often indicates that Americans have automatic preference for young over old.

Gender - Career. This IAT often reveals a relative link between family and females and between career and males.

Weight ('Fat - Thin' IAT). This IAT requires the ability to distinguish faces of people who are obese and people who are thin. It often reveals an automatic preference for thin people relative to fat people.

Presidents (Presidential Popularity' IAT). This IAT requires the ability to recognize photos of Barack Obama and one or more previous presidents.

Gender - Science. This IAT often reveals a relative link between liberal arts and females and between science and males.

Asian American ('Asian - European American' IAT). This IAT requires the ability to recognize White and Asian-American faces, and images of places that are either American or Foreign in origin.

Weapons (Weapons - Harmless Objects' IAT). This IAT requires the ability to recognize White and Black faces, and images of weapons or harmless objects.
IMPLICIT BIAS: SOME EXPERIMENTAL RESULTS


• White job candidates with mixed or moderate qualifications are chosen significantly more often than black candidates with identical credentials. (Dovidio & Gaertner Psychological Science 2000)

• Evaluators systematically change the importance they ascribe to various factors to justify their decisions. (Hodson, Dovidio & Gaertner Personality and Social Psychology Bulletin 2002, Uhlmann & Cohen Psychological Science 2005)
REDUCING IMPLICIT BIAS

• Faculty awareness  (Price & Wolfers QJE 2010; Pope, Price & Wolfers 2014)
  ➢ Have department members take the tests at https://implicit.harvard.edu

• Faculty exposure to counterstereotypes  (Dasgupta et al.)

• Time, clarity, accountability for faculty decisions  (Bertrand, Chugh & Mullainathan AER 2005)

• Faculty training  (e.g., Bank of England, FRB)
MICRO-INEQUITIES

• A field experiment set in academia

• Subjects—6,548 faculty in 89 disciplines at 259 universities—received an email from a prospective doctoral student requesting a 10 minute meeting.

• The gender (male, female) and race (Caucasian, Black, Hispanic, Chinese, Indian) of the student, as signaled by the name, was randomly assigned.

MICRO-INEQUITIES: PROFESSORS’ RESPONSE RATES

Response rates to minorities/females are in parentheses.

REDUCING MICRO-INEQUITIES

- Crowd out micro-inequities with micro-affirmations (Rowe Journal of the International Ombudsman Association 2008)

  e.g.,
  - Open doors to opportunity (offer research assistantships, proactive course selection advice,…)
  - Start a conversation
  - Write brief notes of encouragement and appreciation
  - Provide fair, specific, and “wise” feedback*

THE EFFECT OF RULES AND HABITS

Rules, habits, practices, and culture can systematically and unintentionally advantage or disadvantage members of particular groups

- in judges’ nomination of grand jurors (Haney Lopez Yale Law Journal 2000)
- in teaching, hiring, evaluating, admitting, and advising (Bayer 2014, DiTomaso 2013)
CAREFULLY EXAMINE RULES, HABITS & PRACTICES

➤ Change policies and practices that inadvertently dissuade students, e.g.,

  • Course prerequisites e.g.,
    - Offer alternate pathways into the major
    - Offer own Math for Economists course (Anna Aizer @ Brown)
  • Timing of TA sessions
  • Kinds of examples used in class
  • Assuming the students most comfortable in speaking about economics with the instructor are those who have the best understanding of, or most interest in, the material
INTERVENTIONS

I. Faculty awareness

II. Curricular reform

III. Department outreach
WHAT ARE OUR PROFESSION’S HABITS IN THE CLASSROOM?

• We love to lecture. (Watts & Schaur The Journal of Economic Education 2011)

• References to “gender, race, and ethnic issues” are rare. (Ibid.)

• Most economists are either not aware of alternative teaching methods or think preparation is too time consuming. (Goffe & Kauper The Journal of Economic Education 2014)

• There is solid evidence that other methods are more effective than lecturing.
CURRICULAR REFORM

• Incorporate active learning
• Foster growth mindsets
• Improve the climate
• Offer meaningful content
INCORPORATE ACTIVE LEARNING

• in-class inquiry and cooperative learning activities in which students engage in higher order thinking (Hoyt & McGoldrick 2011)

  ➢ Use Think-Pair-Share

• strong increases in student performance (Freeman et al. Proceedings of the National Academy of Sciences 2014)

• disproportionate benefits for STEM students from disadvantaged backgrounds and for female students in male-dominated fields (Lorenzo, Crouch & Mazur American Journal of Physics 2006)
BLOOM’S LEVELS OF UNDERSTANDING

1. **Factual knowledge:**
   - Define
   - List
   - State
   - Name
   - Cite
   - Remember and recall factual information

2. **Comprehension:**
   - Demonstrate understanding of ideas and concepts
   - Define
   - List
   - State
   - Name
   - Cite

3. **Application:**
   - Apply comprehension to unfamiliar situations
   - Use
   - Diagram
   - Compute
   - Solve
   - Predict

4. **Analysis:**
   - Break down concepts into parts
   - Compare
   - Contrast
   - Distinguish

5. **Synthesis:**
   - Transform and combine ideas to create something new
   - Develop
   - Create
   - Propose
   - Design
   - Invent

6. **Evaluation:**
   - Think critically about and defend a position
   - Judge
   - Justify
   - Defend
   - Criticize
   - Evaluate

Figure from Wood, 2009. Ann Rev Cell Dev Bio
FOSTER A GROWTH MINDSET

• Encouraging students to see intelligence as malleable can raise academic enjoyment, engagement, and performance. (Aronson, Fried & Good Journal of Experimental Social Psychology 2002)

• Teachers with growth mindsets allow a broader range of students to do well. (Rheinberg, 2000, Dweck, 2008)
  • Gender gaps in academic disciplines (Leslie et al. Science 2015)

➢ Inform students and instructors that:
  – Intelligence is not a fixed trait.
  – Intelligence expands through effort, mistakes, and perseverance.
  – Math ability can be developed.
  – Economic intuition can be acquired.
IMPROVE CLASSROOM CLIMATE

- Set a tone of inquiry and collaboration, and promote inclusive communication.

- Add wait time after asking a question. (Do not call on the first hand to go up.)

- Build collaboration with pair work and study groups.

- Consider separating sections by previous experience.
OFFER MEANINGFUL CONTENT

➢ Provide opportunities for students to use economics to examine issues important to them. e.g.,
  - The intro course, especially, should link to students’ existing knowledge and experiences.
  - Regularly connect intermediate theory course material to real problems.
  - Ask students to connect a new concept, such as opportunity cost or marginal benefit, to a setting meaningful to them.
  - Use some class time to present brief summaries of a wide range of empirical studies in economics.

➢ Implement carefully. (Create space, but don’t assume certain topics are women’s issues.)

➢ See “Content & Presentation” column of UWE Potential Interventions sheet for more ideas.
INTERVENTIONS

I. Faculty awareness

II. Curricular reform

III. Department outreach
DEPARTMENT OUTREACH

• Provide exposure to counterstereotypes
• Actively recruit
• Offer research opportunities
• Build community
PROVIDE EXPOSURE TO COUNTERSTEREOTYPES

• Instructor identity affects student performance. (Carrell, Page & West QJE 2010)
• Female science students perform better when the images in their textbooks include women scientists. (Good, Woodzicka & Wingfield The Journal of Social Psychology 2010)

➢ Invite a diverse array of speakers
➢ Review and update images on department website
➢ Appoint female TAs (Doug McKee @ Yale).
ACTIVELY RECRUIT

- Attend orientation fairs, and bring women majors to help you recruit.

- Extend personal invitations
  - to admitted students with high math SAT scores and/or AP Calculus
  - to students who get grades of B or better in Principles

- Host events to introduce students to the diverse, interesting things people do with their training in economics.

- Create and publicize majors that combine economics with another area (e.g., offer a certificate in health economics).

- See “Better Information” column of UWE Potential Interventions sheet for more ideas.
OFFER RESEARCH OPPORTUNITIES

- Allow students to engage in research through in-class activities, course projects, independent study, and research assistantships.

- These experiences may improve participation and persistence. (Linn et al. Science 2015)

- The benefits of research opportunities can be enhanced with
  - duration
  - individual mentoring
  - discussion of research with mentors
  - group meetings with other RAs to discuss current research
  - guided exploration of relevant literature
  - synthesis through writing reports or posters
BUILD COMMUNITY

- Establish peer networking.
- Encourage female students to attend conferences, and help finance their trips.
- Offer faculty mentors, graduate student mentors, and/or near-peer mentoring.
  - Faculty/student mentor programs have been found to raise academic performance and retention.
  - Same-gender or same-race mentorship is particularly effective at increasing student's feelings of self-efficacy, academic motivation, and interest in a subject (Asgari, Dasgupta, and Cote, 2010)
- See “Mentoring” column of UWE Potential Interventions sheet for more ideas.
IN SUM

Critical connections for students

• with material
• with faculty
• with each other

Critical moments for students

• entering college
• intro course
• intermediate theory

DiversifyingEcon.org provides more information on the interventions recommended in this slide show.