

Reacting to the Past in a Mathematics Classroom

SIGMAA QL Session on Infusing QL into
Mathematics and Nonmathematics Courses
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Reacting to the Past

“Reacting to the Past (RTTP) consists of elaborate games, set in the past, in which students are assigned roles informed by classic texts in the history of ideas.”

<https://reacting.barnard.edu/>

Ways and Means, 1935: Debating the Social Security Act through Math



John Curran, Mark Higbee, Russell D. Jones, and Andrew M. Ross
Eastern Michigan University

Ways and Means

- 78-page gamebook (available from the game authors)
- Instructor's guide
- Data spreadsheets and other primary sources
- “What Really Happened” presentation

Student Roles

- Three factions:
 - New Dealers
 - Conservatives (Anti-New-Dealers)
 - Center
- Special individual roles:
 - Chairman of the Ways & Means Committee
 - First Lady Eleanor Roosevelt

Timeline

- One week: Preparatory material
 - Presenting data graphically
 - Basic descriptive statistics
 - Savings models
 - Inflation-adjusting financial values
 - Practice with Excel

Timeline

- One week: Interlude
- One week: Debates!
- One day: Post-mortem
 - What really happened
 - CBO report

Example Draft Bill from Class

- Unemployment:
 - 10% flat tax to give families \$900 a year
 - Printing 1.4 million dollars for 5 years
 - Must have proof that the adults are applying for jobs
- Healthcare:
 - Spend \$15 mil on creating hospitals for more jobs
 - Health insurance for all Americans and making it mandatory and funded by taxes on a sliding scale
 - Spend \$30 mill on supplying free healthcare to those who cannot afford it.

Example Draft Bill from Class

- Old-age Pensions:
 - 4.3% pay-as-you-go, declining 1% every 10 years
 - Pre-retirement fund is encouraged for save-as-you-go retirement fund
 - Defined benefits of 45% of pre-retirement income
- Widows and Orphans:
 - Spend \$200 million on homeless shelters;
 - Sliding tax to provide for widows and orphans
 - Widows must get a part time job after 1 year
 - Each year, the emergency fund provided will decrease by $\frac{1}{2}$

Ways and Means: The Good

- Substantive quantitative ideas
 - Inflation adjusting
 - Methodological issues
 - Finding and working with real data
 - Progressive taxation
- Enthusiastic student participation

Ways and Means: The Bad

- Debates had room for improvement
 - Draft bill missed some ideas
 - Crazy/unreasonable ideas unchallenged
 - Not enough interaction
- Precision and significant figures

Ways and Means: The Ambiguous

“I saw all this in my HISTORY class!”