• Stevenson & Stigler: Math achievement in the U.S. and in Japan and the Republic of China
• Problem: “…the performance of the top 5% of U.S. students is matched by the top 50% of students in Japan.” (National Research Council, 1989)
• What does the research show?
First Grade

Beijing  Sendai  Taipei  Chicago

Fifth Grade

Beijing  Sendai  Taipei  Chicago
“...in the past two years, the Union of Concerned Scientists has collected the signatures of more than 8,000 scientists—including 49 Nobel laureates, 63 National Medal of Science recipients and 171 members of the National Academies—who accuse the Administration of an unprecedented level of political intrusion [by stifling research findings]...” Time magazine, Feb 5, 2006

Are We Losing Our Edge?

The U.S. still leads the world in scientific innovation. But years of declining investment and fresh competition from abroad threaten to end our supremacy

By MICHAEL D. LEMONICK
1) It’s the teaching
2) It’s the cultural attitudes
• How are words used? Objects? Problems?
• Pace: Coverage vs. time to think
• Coherence of lessons
  • Reaction to students’ errors
  • Using real world examples; students’ answers
Figure 9.2
Percent of lessons in which the teacher was observed to use students' answers in discussion.
Percent of lessons in which the teacher was observed to present students with a written or oral real-world problem.

- **Sendai**
- **Taipei**
- **Beijing**
- **Chicago**

First Grade:
- Sendai: 30%
- Taipei: 50%
- Beijing: 25%
- Chicago: 10%

Fifth Grade:
- Sendai: 80%
- Taipei: 60%
- Beijing: 40%
- Chicago: 20%
• What kind of performance satisfies parents?
• What teacher characteristics are deemed most important?
  • US: Sensitive; helps children’s esteem
  • Japan: Explains things clearly
• What factors are believed to lead to school success?
Number of points (out of ten) that mothers assigned to indicate relative importance of factors that affect academic achievement.
• Multiple differences:
  • Instruction and class preparation time
  • Cultural attitudes
  • Teachers’ beliefs/attitudes
  • Parents’ beliefs
  • Parents’ expectations
• Other factors:
  • parents set up quiet “homework space”
• Caveat:
  • Which schools? Which cities?
  • Do the differences replicate?
• Tobin et al: Different ideas about preschool education based on different child dev. beliefs

• what is “smart?”

• relation to behavior?

• what is the teacher’s role in a classroom? the other children?

• correcting behavioral problems...