

Equitable Instruction in Mathematics: Learning to Develop Practitioners

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Session outline

1. Overview

2. Individual presentations

- A. Secondary Mathematics Methods Courses and Equity: What Do Preservice Teachers Need to Learn? Where Can They Learn? (Carol Malloy)
- B. Increasing Awareness of Culture in a Elementary Mathematics Methods Course (Dorothy White)
- C. Enabling Mathematical Achievement: The Work of Teaching (Deborah Loewenberg Ball and Imani Masters Goffney)

3. Cross talk: What are we learning? What are the key issues and challenges?

Overview

- The problem: Preparing teachers who can teach mathematics to all learners
- Many challenges
 - Weak effects of many past interventions
 - Difficulty in coordinating theory, personal self-examination, skills and knowledge, practice
 - Uncertainties about what to teach and how to teach it

The urgency of the problem

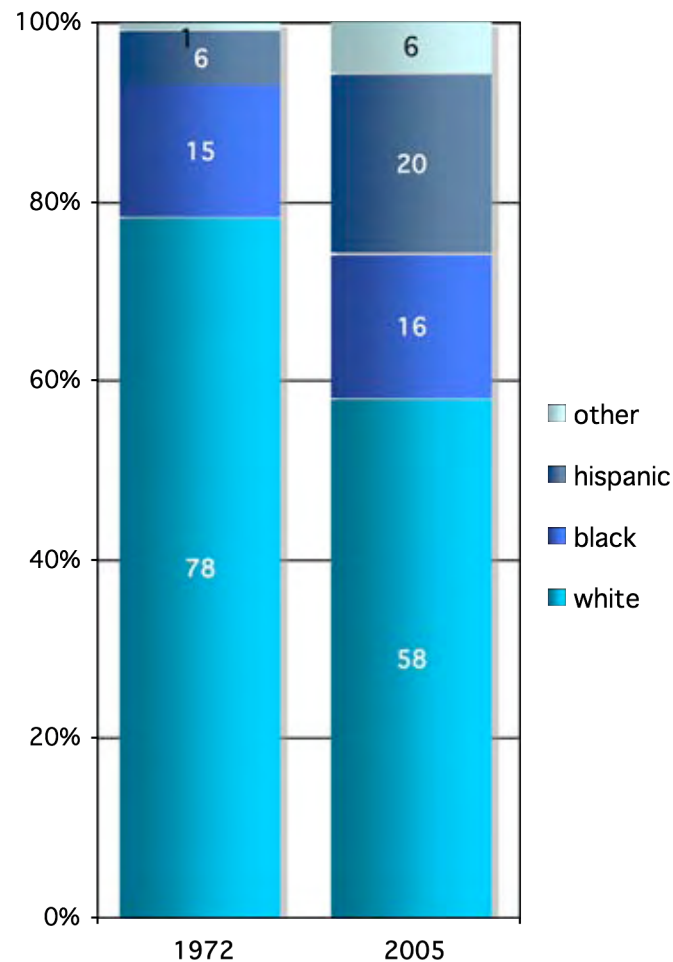
- Enormous gaps in learning opportunities and disparities in achievement (within U.S. and in international comparisons)
- Rapidly changing school population
- Higher, more complex academic goals
- High expectations for all students

Another look

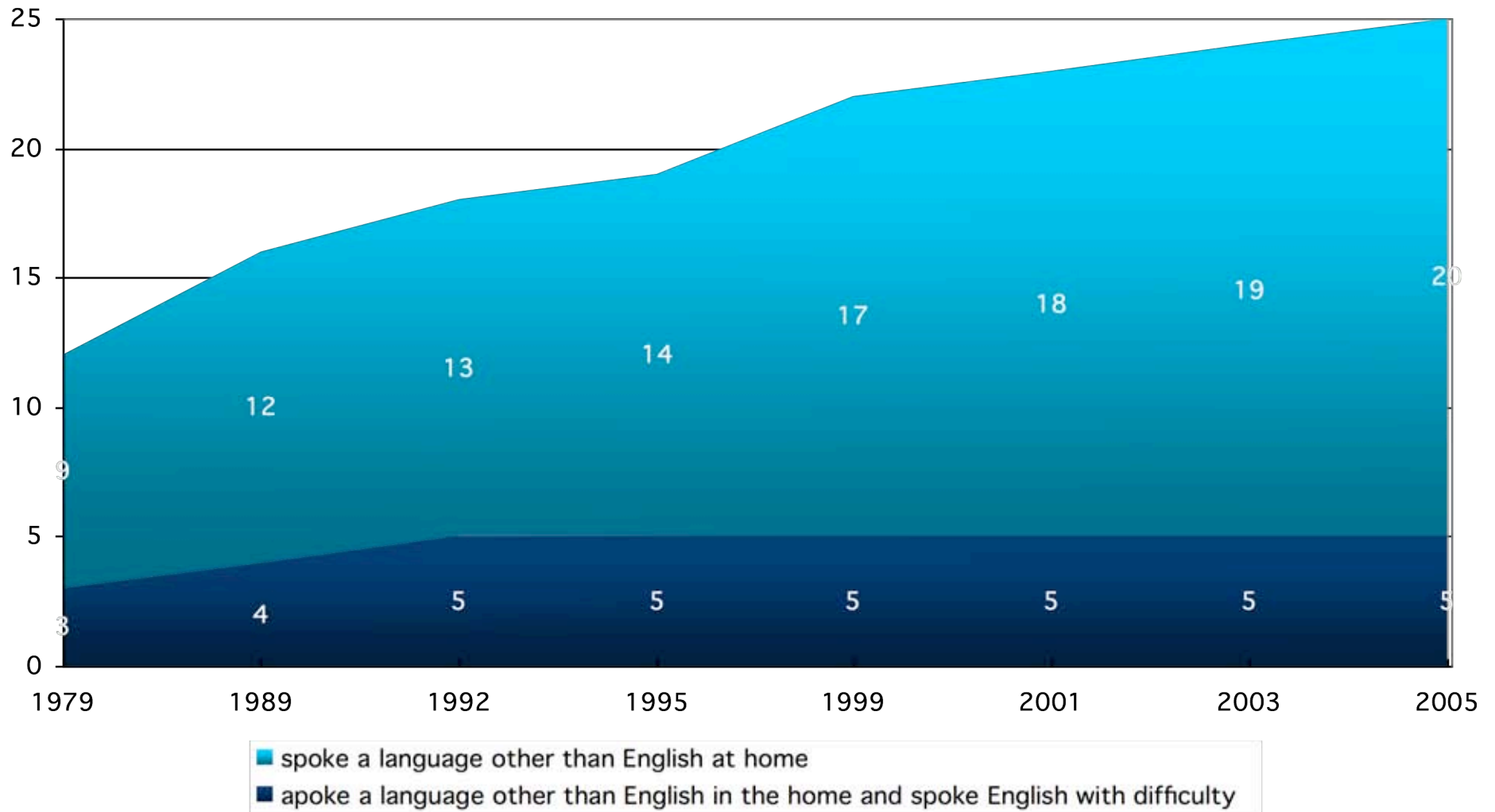
Nine year-olds growing up in low-income communities—

- are on average three grade levels behind their peers in high-income communities.
- have a 50% chance of graduating from high school.
- who graduate from high school read and do basic math at an 8th grade level.

U.S. school-age population: Changing demographics



Pupils' home language



Explaining —and redressing— the “achievement gaps”*

1. Structural, societal, and economic inequality; intergenerational poverty; inequities in school funding
2. Deficit theories → remediation, “compensatory” education
3. Cultural mismatches between students’ resources and modal schooling

* Carol Lee (2007)

Teachers matter — a lot

- Persistent evidence that a large proportion of the variability in student achievement gains is due to the teacher
- So one obvious strategy for improving students' opportunities and learning is to ensure that they have teachers who are able to help them learn
 - Recruitment
 - Professional training

Our aim today

- Present multiple ways to integrate attention to equity and to mathematics in the preparation of teachers, and in practice
- Consider the demands on teachers to teach all learners, and implications for professional education
- Identify areas of progress, challenges, priorities for next steps in research and practice

Discussion and cross-talk

- On what aspects of the problem do we think we have made some progress?
- What are the key challenges?
- Are there key areas of commonality among us? Key differences? What is the significance of these?