



YALE NATIONAL INITIATIVE

to strengthen teaching in public schools®

Curriculum Units by Fellows of the National Initiative

2007 Volume VI: Keeping the Meaning in Mathematics: The Craft of Word Problems

Preface

In April 2007 the Yale National Initiative to strengthen teaching in public schools accepted sixty-three public school teachers from ten cities to participate in seven national seminars held at Yale. The Initiative is a long-term endeavor to establish exemplary Teachers Institutes in underserved school districts in states throughout the country. Following the approach developed in New Haven and demonstrated in Houston, Pittsburgh, and other cities, it builds upon the success of a four-year National Demonstration Project. Teachers Institutes are educational partnerships between universities and school districts designed to strengthen teaching and learning in a community's public schools. Evaluations have shown that the Institute approach promotes precisely those dimensions of teacher quality that improve student achievement.

Half of the teachers, designated Yale National Fellows, were from six cities that are planning or exploring the establishment of a new Teachers Institute: Atlanta, GA; Charlotte, NC; Chicago, IL; New Castle County, DE; Richmond, VA; and Santa Fe, NM. Other National Fellows were from Teachers Institutes that are members of the National Initiative League located in Houston, Philadelphia, Pittsburgh, and New Haven. The Fellows attended an Organizational Session of the seminars held in New Haven on May 4-5. The seminars reconvened during a ten-day Intensive Session from July 2-13.

The seminars, which concluded in mid-August when the Fellows submitted their completed curriculum units, included "Adapting Literature," led by Dudley Andrew, R. Selden Rose Professor of Film Studies and Comparative Literature; "Renewable Energy," led by Gary W. Brudvig, Professor of Chemistry, Molecular Biophysics and Biochemistry; "Across the Curriculum with Detective Fiction for Young People and Adults," led by Paul H. Fry, William Lampson Professor of English; "Keeping the Meaning in Mathematics: The Craft of Word Problems," led by Roger E. Howe, William R. Kenan Jr. Professor of Mathematics; "Maps and Mapmaking," led by Mary E. Miller, Vincent J. Scully Professor of the History of Art; "Latino Cultures and Communities," led by Stephen J. Pitti, Professor of History and of American Studies; and "The Science and Technology of Space," led by Sabatino Sofia, Professor of Astronomy.

The twin purposes of the national seminars were to provide public school teachers a first-hand acquaintance with the Institute approach to high-quality professional development, and to cultivate their leadership either in a League Teachers Institute or in the development of a new Teachers Institute. Each participating teacher wrote a curriculum unit to teach students what he or she had learned and to share with other teachers locally and, over the Internet, internationally. The units contain four elements: objectives, teaching strategies, sample lessons and classroom activities, and lists of resources for teachers and students. The curriculum units National Fellows wrote are their own; they are presented in seven volumes, one for each seminar.

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James R. Vivian

New Haven

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