

en e nd ti te di e ent pp t nitie t
e n the ti diti n high h h e
h d th ee i t ege p ep ti n
ti n nd gene ed ti n he ege
p ep ti n t h t p t t nd p ide ge te
pp t nit t e n e de nding the ti
th gh n h h ed ne ith h
th ee t ting hidden t ing pe i n
ne n it ti n t dent e di ided pe
ei ed i it nde the e e e ex
p e n g e ight t t dent int t nd
p eed e ning th t the end the e
t dent in the e h e n t h d the e
pp t nit t e n the ting t teg e
di e ent ent p int int ege p ep t e
eg e h n e ni e t dent
h ente the ege p ep t t te in high
h it ight et tet e n en gh the ti
t p e high e e ege e

e pite ntin ed et n e ed t ing the e
h een p ge t dent h in the p t ight
h een et t high de nd e in e ing
e eing p ed in high e e the ti ex
p e the t i ing in e e in the pe ent ge
i n e i n t dent e ning edit in ege
p ep t e he e in e e ge e e t
n t te ne t nd d nd g d ti n -i e
ent e the ti edit h p i ie
nd thei en ging e t h e e pped ith
te d p d e ent in the pe ent ge i n
e i n t dent e ning nde g d te nd

Two Meanings of Cognitive Demand

High-Level Mathematics

The percentage of African American students earning credits in college-preparatory mathematics courses increased dramatically between 1982 and 1990. These increases reflected state policy changes involving new standards and graduation requirements calling for more mathematics credits.

Despite the welcome progress, a word of caution: Merely mandating a narrow curriculum consisting of traditional college-prep mathematics courses will not undo problems endemic to the preK–8 mathematics program. Cognitive demand and instructional quality must be raised both in the lower grades and in high school.

Mathematics Tasks in a Classroom

Mathematical tasks convey messages about what mathematics is and what doing mathematics entails. A typical task passes through three phases. High-demand tasks are the starting point. As these tasks are carried out, teachers must keep students engaged in high-level thinking and reasoning, avoiding the urge to do the hard thinking for students when they struggle with a problem. Teachers should encourage students to use more than one problem-solving strategy, represent the problem in multiple ways, and explain and justify their work. High cognitive demands or thinking processes involved in solving a task can include the use of general procedures connected to underlying concepts and meaning, complex thinking, and reasoning strategies.

What Should Policymakers Do?

First, evaluate high expectations and their impact on the nation's educational engagement and participation, and high expectations.

Second, investigate the impact of the current participation and engagement on the nation's educational engagement and participation, and high expectations.

Third, investigate the impact of the current participation and engagement on the nation's educational engagement and participation, and high expectations.

id. . . . *The Struggle for the American Curriculum 1893-1958.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *A History of Mathematics Education in the United States and Canada.* Ed. by Howard Crosby. New York: Praeger, 1971. Pp. 312.

nd. . . . *College and Workforce Training and Readiness.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *An American Imperative: Accelerating Minority Educational Advancement.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *Ethnicity and Mathematics Education: A Handbook of Research on Mathematics Teaching and Learning.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *Ethnicity and Mathematics Education: A Handbook of Research in Mathematics Education.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *The High School Transcript Study Tabulations: Comparative Data on Credits Earned and Demographics for 1998, 1994, 1990, 1987, and 1982 High School Graduates.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *When Teachers Meet: A Handbook of Research on Mathematics Teaching and Learning.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *Social Background Differences in High School Mathematics and Science Course-taking and Achievement.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *Review of Research in Education.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *Mathematics Course-Taking and Gains in Mathematics Achievement.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *The Black-White Test Score Gap.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *Mathematics Teaching Today: Perspectives from Three National Surveys.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *Educational Researcher.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *The Subject Matters: Classroom Activity in Mathematics and Social Studies.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *Teaching Mathematics in Seven Countries: Results From the TIMSS 1999 Video Study.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.

nd. . . . *Educational Leadership.* Ed. by David Tyack. New York: Basic Books, 1975. Pp. 312.