Attention to Thinking Skills
Thinking skills is a subject of increasing interest among English and language arts teachers. A recent National Council of Teachers of English (NCTE) survey revealed that teachers consider thinking skills the area in which quality materials and professional development are most urgently needed. In a poll of the CEE (Conference on English Education), Commission on Supervision and Curriculum Development, state and local language arts coordinators expressed strong interest in thinking skills, citing the close relationships among thinking, talking, and writing. Thinking skills are a recurring theme in inservice sessions on "process approaches" to writing instruction, since such approaches often include brainstorming, language games, and guided discussion as preparation for writing.

Some English specialists warn that attention to thinking skills could result in curricular fragmentation, and also foresee simplistic applications of Bloom's taxonomy, Guilford's model of intellect, and other complex formulations. Others, however, see exciting possibilities for integrating thinking skills with language arts instruction but acknowledge that relationships among global skills (like problem solving and critical thinking) and narrower skills (like sequencing, comparing and contrasting, and analogizing) are poorly defined.

Statement Defines K-12 English Instruction
The Essentials of English, a statement about the purpose and content of English and language arts instruction, was approved by the NCTE Executive Committee last fall to encourage "reflection and dialogue" among educators. An outgrowth of the Essentials of Education document endorsed by 24 professional associations, the Essentials of English statement includes sections on language, literature, communication skills, and thinking skills.

In introducing the statement, NCTE president William Irmscher said that contrary forces of "multiplication and subtraction" are at work in the English curriculum. "By multiplication, I mean expanding the English curriculum to the extent that its essential nature becomes obscured and we're no longer exactly certain what the role of the English teacher is. The English classroom can easily become a catchall for any topic anyone thinks ought to be addressed," Irmscher said. He described subtraction as "the tendency to reduce English studies to a limited list of objectives that address almost exclusively the basic competencies," as in the minimum competency movement. Single copies of Essentials of English are available at no cost through Member Services, NCTE, 1111 Kenyon Rd., Urbana, IL. 61801.

English Teachers More Involved, Satisfied Than Others
A comparative study of English teachers and teachers of other subjects reveals that a higher percentage of English teachers report that their career expectations have been met and that they would enter teaching again. The study, conducted by Jeannie Oakes for the Institute for Development of Educational Activities in Dayton, also reveals that English teachers as a group are slightly older than teachers of other subjects, yet tend to be more liberal politically.

In professional attitudes, English teachers appear to take their teaching more seriously and are more involved with their subject, according to Oakes. They are also less conventional in educational beliefs and less supportive of narrow emphasis on basic skills. The Oakes study, which was reported in the August 1982 Resources in Education, concludes that English teachers focus more on the "intrinsic aspects" of teaching.

Elective Programs Can Teach "Basics" Says Teacher of the Year
LeRoy Hay, 1983 Teacher of the Year, is a 38-year-old English teacher and department chair at Manchester High School in Manchester, Connecticut. Hay, who is affectionately known to his students as "Doc," commented recently on elective programs in English, stressing rigor in course content and guidance in course selection.

"Sometimes parents don't recognize the basics," Hay said, "because we're not teaching spelling and grammar the way they were taught when they were in school." But Hay believes it is possible to teach fundamental skills within a varied elective program: "When I assign the first essay in my theater elective, a student will say 'Wait! This isn't a writing course! But all of our courses, whether they're in film or science fiction or mystery stories, involve reading, writing, speaking, and listening," Hay is especially concerned that his students become fluent in speaking, chiefly because "teachers of English have tended to put speaking in the back seat. It's difficult to teach and encourage. Yet our students are going to have to communicate by speaking as much as writing."

Selection of elective courses (offered in grades 11 and 12 at Manchester High School) is carried out as thoughtfully as instruction. "English teachers take an active role in guiding students. They take time in their classes to go over the next semester's courses. Each course description makes clear what the heaviest emphasis is. We try to help students choose electives so they get the emphasis in all of the skill areas. We talk to parents, too."

Students Encouraged to Write Letters
Writing for real audiences rather than composing "dummy runs" for the teacher's red-pencil review is a distinctive aspect of the renewed interest in writing. Research in England by James Britton and in the United States by Arthur Applebee shows a startling lack of focus on communication as the goal of writing instruction.

To help motivate writing in real-life situations, the U.S. Postal Service, in cooperation with the National Council of Teachers of English, has produced two booklets on letter-writing for classroom use. The secondary level booklet, All About Letters, includes ideas for class discussion, student projects on business and personal letter writing, and

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comments and letters from well-known figures ranging from E. B. White to Arthur Ashe. The elementary-level booklet, *P. S. Write Soon!*, stresses activities for younger children—round-robin messages, original greeting cards, and letters to relatives. Both books are 64 pages in length and are available ($2.50 single copy; class sets of 20 or more, $1.50 each) through NCHE, 1111 Kenyon Rd., Urbana, IL 61801.

## Curriculum Trends: Mathematics

**Stephen S. Willoughby**

### The New Basics

For years, mathematics educators and various groups of mathematicians and educators have advocated a change in emphasis in the K–12 mathematics curriculum. The latest in this long line of recommendations comes from the Conference Board of Mathematical Sciences (CBMS). In its report, the CBMS recommends that calculators and computers be introduced into the mathematics classroom as early as possible, that more emphasis be placed on mental arithmetic, estimation, and approximation, and that less emphasis be placed on pencil-and-paper arithmetic. The CBMS report also advocates more emphasis on statistics and probability at all levels.


### NAEP Mathematics Results Mixed

The results of the 1982 National Assessment of Educational Progress (NAEP) in mathematics showed some improvements over previous years, but unfortunately, the improvements were mostly limited to lower-order skills, such as simple computation and the recall of facts—the very things that omnipresent calculators and computers can do more efficiently than human beings.

Thirteen-year-olds and those students traditionally thought to be "disadvantaged" made the greatest gains. Encouraging results were seen in students' ability to compute with decimals, increased proficiency with the metric system (and a corresponding decrease in proficiency with traditional measures), and access to computers (which doubled between 1978 and 1982).

Mathematics educators who commented on the results were distressed by the apparent confirmation that the "back to basics" movement seems to have produced improvements in precisely those abilities that are least important in a rapidly changing technological society. The National Council of Teachers of Mathematics, for example, recommends that "problem solving in mathematics be defined to encompass more than computational facility."

One example that seems to show that we are failing to teach children to use their intelligence to solve problems is this:

**Problem:** An army bus holds 36 soldiers. If 1,128 soldiers are being bused to their training site, how many buses are needed? Without a calculator, 23.9 percent of 13-year-olds got the right answer, but with a calculator, only 7.1 percent of 13-year-olds arrived at the right answer. In both cases more students proposed a fractional or decimal answer than proposed the correct whole-number answer. Those who used a calculator were far more likely to use the wrong operation than those who did not use calculators, and they were also more likely to round down rather than up.

The Third National Mathematics Assessment: Results, Trends, and Issues, No. 13-MA-01, is available at $9 a copy from the Distribution Center, Education Commission of the States, Suite 300, 1560 Lincoln St., Denver, CO 80295. An Agenda for Action: Recommendations for School Mathematics of the 1980s is available at $1 per copy (80c for NCTM members) from the National Council of Teachers of Mathematics, 1906 Association Dr., Reston, VA 22091.

### Qualified Mathematics Teachers Needed

The shortage of qualified teachers of mathematics has been attracting national attention through statements by the President, members of Congress, and various national commissions. Although the shortage has existed for four decades in varying degrees of severity, it has become much worse in the past ten years. Since 1972 there has been a 77 percent decline in the number of people prepared to teach secondary-level mathematics, and only about 44 percent of those who are prepared actually become teachers. Almost five times as many mathematics and science teachers leave the teaching profession for other employment as those who leave to retire.

Bills being considered by Congress would provide more than $400 million to begin to reduce the negative impact of the shortage. Some of the money would be allocated to increase the number of teachers prepared, some for equipment, some for upgrading the education of in-service teachers, and some for various other activities to help improve mathematics and science edu-