

The Convention. Each of the 50 representatives brought his or her draft to the museum. Their chief task once there was the same one the representatives in Philadelphia had faced. They had to balance individual with community interests, and the various colonies' interests with some sense of the intergalactic *common good*. And, their decision making was confounded by conditions of life in space that could hardly be ignored. Many factors had to be considered. As they returned to their colonies, new Intergalactic Bill of Rights in hand, perhaps bearing little resemblance to the draft they brought with them, there would be some justifying to do.

At the convention, children were

first assigned to "pods" of five with one high school student (a "senior counselor") and an adult supervisor. Eventually, two pods merged to a basic unit of ten, then reformed to another group of ten, and so on, jigsaw style—sharing, prioritizing, defending, rethinking, and compromising. At the last assembly, final agreements were formed.

Collaboration. This bicentennial curriculum has a number of exemplary features. Among them are an integrated approach, an attempt to plan peak experiences, and a sort of collaboration that seems to make a difference, not just on paper, but in practice: Lindquist, the other 49 teachers, and Brem are not the managers of their

various organizations. Indeed, the managers were drawn in for support well after the planning had progressed. This is grass roots collaboration among highly inventive and knowledgeable, rank-and-file educators—the worker bees, not the queen bees. The former had the initiative; the latter knew when to provide support and when to get out of the way. □

1. Lindquist drew on the work of George S. Robinson, author of *Living in Outer Space* (Washington, D.C.: Public Affairs Press, 1975).

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English

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Exemplary State- and District-Level Programs for Teacher Improvements Sought

Widespread interest in career development programs and innovative inservice designs for classroom teachers has prompted a search for model state- and district-level programs of teacher improvement.

Acting on recommendations from its Task Force on Teacher Competency Issues, the Executive Committee of the National Council of Teachers of English is seeking information about K-12 programs geared toward teachers of all subjects in four categories:

1. programs of help for beginning teachers in which experienced classroom teachers (i.e., teachers currently teaching at least part-time) are used as consultants;
2. programs that provide inservice or other staff support specifically for minority teachers;
3. career development programs for teachers in which advancement includes continued classroom teaching; and
4. teacher evaluation programs in which teacher competency is determined to some extent through direct

participation of other classroom teachers.

John C. Maxwell, Executive Director of NCTE, in an interview emphasized three major components in the search.

Teacher participation is at the center of things. We hope to identify and disseminate information about programs that make significant use of teacher talent but don't define career development in terms of leaving the classroom. A second concern is for staff development of minority teachers, who are by all indications diminishing in number. Finally, we're looking for programs that cut across all subject areas, not just focusing on the language arts.

If programs in any of these categories exist in your district or state, write a brief description (minimum three double-spaced pages) of the main features of the program, attaching any appropriate supplementary documents. Send the materials not later than 15 December to Lori Alfe, NCTE, 1111 Kenyon Rd., Urbana, IL 61801. □

Keyboarding as a Curriculum Issue in Writing Instruction

Teaching writing with word processors is a clear trend at all educational levels. But without keyboarding skills,

students are likely to be seriously hampered in learning to write with a word processor. Karl Koenke, Associate Director of the ERIC Clearinghouse on Reading and Communication Skills in Urbana, Illinois¹, recently reviewed research and practice in the teaching of keyboarding and concluded that "keyboard instruction is gaining in popularity, especially in the elementary language arts." Koenke identified several key questions and commented on each.

When should keyboarding be learned? Young children are "developmentally ready" for keyboarding instruction by third grade, and programs in upper elementary grades have indeed produced "keyboard-proficient students." But *can* does not imply *must*. Teaching of keyboarding should be carried out, Koenke notes, when students have an actual need to communicate via word processors in their personal lives or in their school assignments.

How much keyboarding skill is required? Students' keyboarding skills should be sufficiently developed that they are not distracted from the act of composing as they type. Students who

can write more quickly by hand dislike typing their work; and when those students do type, they will not revise. Fortunately, students in grades 4-6 need only to reach a typing speed of 10 gwm (gross words per minute) to avoid frustration with keyboarding. (Gross words per minute refers to the number of keystrokes per minute divided by five, disregarding errors).

How can keyboarding instruction best be effected? Experts recommend varying lengths of time needed for keyboard instruction, but Koenke notes that a sound, research-based time frame for upper elementary

school children seems to be "a combination of teacher instruction and microcomputer software tutorial, 35 minutes a day, for four weeks—with scheduled times for review and refresher activities."

Numerous software programs for teaching keyboarding are available, and several states (e.g., Alaska and New York) have developed curriculum guides on keyboarding instruction. Koenke discovered among elementary curriculum supervisors a growing interest in the teaching of keyboarding. A survey of elementary supervisors in the Pacific Northwest

showed 44 percent in favor of teaching keyboarding in the elementary school. Finally, regarding the training of teachers to teach keyboarding, many districts are using high school business teachers as resource persons for inservice training in teaching proper keyboarding techniques. □

1. From a forthcoming article in *English Education*, the journal of the Conference on English Education, NCTE.

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Mathematics

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Specialists for Elementary School

By the end of my first day as a fifth-grade teacher, I felt inadequate. I thought I was doing quite well teaching mathematics, science, and physical education; and reasonably well teaching social studies, reading, and writing. Music, art, and galoshes were my downfall.

I'd never claimed to be a Nietzschean superman, but I had had a pretty good liberal education. In retrospect, I've decided that an adequate fifth-grade teacher must be a true Renaissance person with infinite patience and energy, a passion for clerical details and discipline problems, and a masochistic desire to be described as inadequate by every national commissioner, state legislator, or other politician in need of a quick headline. Of course, the fifth-grade teacher should also expect and welcome professional advice from every person who has graduated from, or ever hoped to graduate from, the fifth grade.

Specialization as Solution

Physicians and attorneys have partially resolved the matter of needing huge amounts of knowledge by specializing—as have secondary and post-secondary educators. But many elementary educators have resisted

specialization because they believe children are better off socially and psychologically if they have to relate to only one adult in school. I agree with this belief as it applies to the first few years of school, although I know of no supporting research evidence even for that level; but I question its validity in the upper elementary grades. Indeed, many schools already employ specialists in physical education, art, and music with no apparent harm to the children's psyches.

Recent international studies suggest that children in the United States fall further behind in mathematics during elementary school than at any other time. Yet only about half of the states require students to take any college course in mathematics or mathematics education to become elementary school teachers. Most elementary school teachers tend to be more verbal than quantitative—both in inclination and in preparation; they must meet substantial requirements in language arts and humanities. There would be more elementary teachers whose favorite subject is mathematics if prospective teachers could specialize in mathematics and look forward to teaching only (or mostly) mathematics.

A Modest Proposal

Over the past five years several profes-

sional organizations and major conferences have called for certifying and hiring elementary mathematics specialists. I believe they are correct. Initially there is no need to require a major in mathematics. Simply choose teachers who like mathematics, enjoy teaching it, and have an aptitude for it. Then help them supplement their preparation and have them teach only mathematics. Perhaps they could also help teachers of the earlier grades improve their mathematics teaching.

I urge the National Science Foundation to fund institutes to facilitate the preparation of elementary specialists in mathematics. In the 1950s and '60s such institutes were not available for elementary teachers because there were about 1.2 million of them and their half-life at the time was about three years (that is, after three years, half of them would no longer be teaching). Thus, funding institutes for elementary teachers seemed like pouring money into a black hole. Since then, the half-life of elementary school teachers has increased substantially. If institutes were limited to present and prospective specialists, they could positively influence the preparation and the attitudes of those who teach mathematics in elementary schools.

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