

Content Standards, Curriculum Frameworks, and Teacher Professional Development

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Content standards, curriculum frameworks, and teacher professional development are all critical components of the effort to become first in the world in science and mathematics education. Content standards describe our vision and our goals, curriculum frameworks provide guidance on how to realize the vision and achieve the goals, and professional development provides the tools for teachers to convert the vision into reality in their individual classrooms. All three must be coherently and consistently linked if the effort to improve science and mathematics education is to be successful.

In New Jersey, draft standards in seven content areas are currently being reviewed statewide and will be presented to the State Board of Education for adoption early in 1996. Over the past three years, with the assistance of a grant from the US Department of Education, the New Jersey Mathematics Coalition and the New Jersey Department of Education have collaborated to produce the *Preliminary Version of the New Jersey Mathematics Curriculum Framework*; this document is intended to serve as a resource and as a guide to teachers and districts intending to implement the draft mathematics standards in their classrooms and curricula. (A revised version of the framework will be published after the State Board of Education adopts content standards.) The framework's chapters address individually each of the 18 proposed standards, providing about 25 pages of information on what the standard means at each grade level cluster, what student expectations are appropriate at those grade levels, and examples of grade-appropriate classroom activities which could help achieve those expectations.

What is the value of such a document? Shouldn't content standards be enough? Content standards certainly are necessary. "You have to know where you're going before you try to get there." This adage seemed self-evident to me when I heard Governor Romer say it at a conference several years ago, and it seems self-evident to everyone that I have shared it with. Content standards describe where we want to go, what we want to achieve; they provide clear statements of our vision and goals. But those clear statements are anything but clear when teachers and curriculum developers must consider how they can be achieved in the classroom. And in states like New Jersey, where there are nearly 600 separate districts, it is very difficult for all but the largest districts to afford the serious effort needed to translate the goals of the standards into the reality of the classroom. Curriculum frameworks, particularly if they are regarded as organic databases, permit the individual teacher and the individual district to draw on the experiences of their colleagues in other districts. Curriculum frameworks should provide the basic structure, the framework, which enables the district to develop its own curricula, addressing its specific needs, based on the standards.

When standards are elaborated into curriculum frameworks, the important role of teacher professional development becomes clear. The visionary statements of the standards are generally appealing to districts and classroom teachers; indeed, they often (sometimes mistakenly) feel that they are already addressing the standards. However, when school personnel see the implications of the standards as they are presented in a curriculum framework, they become aware of the scope of what the standards mean. One of the most consistent reactions of teachers and administrators to the New Jersey framework is the recognition that an intensive statewide effort will be needed to provide teachers with the tools that they need to implement the standards.

What are the local, state, and federal roles in this process?

The development and adoption of content standards and curriculum frameworks belongs at the state level, since that provides for the involvement and buy-in of the entire community, as well as important professional development opportunities for those engaged in the process. National standards play a key role in that they provide state education communities with a substantial starting point for their deliberations. Another key role at the national level is the linking of national educational initiatives and federal funding opportunities to the development and implementation of standards and frameworks at the state level. If achieving high standards in mathematics and science is an important national priority, then federal funds in general, and for mathematics and science education in particular, should be channeled to those efforts which will enable states and districts to achieve the high standards that they have established.

This applies particularly to teacher professional development. In order to achieve the vision described in our standards, almost every teacher of mathematics in the state, at all grade levels, will need to be involved in a sustained long-term program of professional development. If the standards represent what the New Jersey mathematics education community values, then certainly all of the funds currently available for professional development in mathematics in New Jersey should be channeled to programs which enable New Jersey teachers to implement the recommendations of the standards. Moreover, if becoming first in the world in science and mathematics education is indeed a national goal, then additional funds should be made available, at both the national and state levels, if current funding is insufficient.

Funding alone is, however, not the answer. Although in recent years there has been significant acceptance of the idea of standards and of the importance of aligning local curriculum and instruction to the standards, there appears to have been no significant change in attitudes about the nature and importance of teacher professional development. Teacher professional development is generally equated with attending a few day-long conferences or workshops each year, or perhaps with participating in summer institutes; moreover, participation by teachers in even these activities is not considered a high priority by most school boards and administrators.

In order for standards and frameworks to make a difference, we need a different attitude toward teacher professional development -- it must be viewed as a necessary part of the

everyday life of the teacher. For example, all teachers of mathematics should become familiar with the mathematics standards (both national and state) and accompanying documents, and should be engaged in a systematic program to bring the standards into their classrooms. This can be done, over a period of time, through regular mentoring and collegial activities organized by teachers who have participated in intensive discussions about these documents with regional or state leaders. This may mean that time is regularly set aside for such discussions, that teachers are encouraged to meet regularly with colleagues, that skilled teachers might spend, for example, half the day sharing their expertise with their colleagues both in their own school districts and, through pooling of professional resources, throughout their geographical regions. When we recognize that teacher professional development should be part of every teacher's job description, we can find many ways of structuring our schools so that it does indeed take place.

At the state level, there should be a coordinated plan for providing workshops and institutes, for connecting the available professional resources with the professional development needs of teachers. The actual commitment to professional development, of course, needs to emerge from the local level. But the national role again will be key. There has to be a clear message, reflected in national initiatives and funding policies, and echoed at the state level, that professional development is critical, and that administrators and local school boards need to find ways of structuring professional development activities into the everyday activities of teachers.