

# Inquiry-Based Curriculum Development in a Navajo School

At Rough Rock Demonstration School in Arizona, a bilingual, bicultural curriculum helps Indian students discover the power and validity of their own lives as tools for learning.

“**E**mphasis is shifting,” Hilda Taba wrote nearly two decades ago, “from learning as acquisition . . . to learning as a way of inquiring and thinking” (Taba et al. 1971, p. 1). Few of us doubt the continuing relevance of this idea today as we prepare students for effective citizenship and leadership in an increasingly complex pluralistic society. Yet instruction for ethnic minority students continues to feature repetitive drill, factual recall, and the transmission of a predetermined body of knowledge (Moran 1981, p. 32). Such transmission-oriented pedagogies perpetuate patterns of learned helplessness and school failure among minority youth (Cummins 1986). This is especially true for Native American students, who as a group experience the highest dropout and academic failure rates of all American minorities.

Ultimately, these patterns are rooted in the fact that Indian communities, until recently, have had little say in the education of their children. Controlled by federal agencies, Indian schools have emphasized the replacement of native languages and traditions with the skills valued in mainstream society.<sup>1</sup> This emphasis, first, has failed to prepare Indian children for full participation in their bicultural environment and, second, has created

value conflicts that frequently leave them feeling alienated from both tribal and mainstream life.

Here we report on one effort to resolve this problem: the development of a bilingual, bicultural, inquiry-based curriculum at the Rough Rock Demonstration School on the Navajo

Reservation. Informed by the work of Hilda Taba and adaptations of the Taba model by the Native American Materials Development Center (NAMDC 1980), this curriculum emphasizes open-ended questioning and inductive inquiry incorporating culturally meaningful experiences and concepts.

*Photographs by Fred Biss*



*The presence of parents in classrooms underscores the importance of incorporating culturally meaningful experiences and concepts into the schooling of Navajo students at Rough Rock School.*

## The Community and the School

Though far from major metropolitan centers, the community of Rough Rock has for over two decades captured public attention with its demonstration school, the first school for Indian children to be governed by an all-Indian school board, and the first to implement a curriculum incorporating the native language and culture.<sup>2</sup> Robert A. Roessel, Jr., the school's first director, described the school's philosophy as a "both-and" approach, in which Navajo children are "exposed to important values and customs of *both* Navajo culture *and* the dominant society" (1977, p. 10).

These goals reflect the character of this rural community of approximately 1,250 people, which sits at the center of the nation's largest Indian reservation, in northeastern Arizona. Wage labor, largely jobs at the school, has replaced the traditional pursuits of sheep herding and farming, yet the latter activities, as well as native religious practices and family organization, remain vital at Rough Rock. Navajo continues as the language of local government and of family and ceremonial life; but English has become an almost indispensable second language, its value enhanced by the influence of television and radio, the influx of non-Navajos to the community, recent improvements in transportation, and by the presence of the school itself.

## The Navajo Materials Development Project

Designing a curriculum to address the "both-and" requirements of this setting has been problematic. Over the years school leaders have tried and discarded a number of very different approaches. The resulting curricular inconsistency has been a major contributor to student outcomes well below the expectations of school founders (McCarty 1987).

In 1980 the school board approved the development of an elementary and secondary curriculum to integrate Navajo language and social studies with conventional courses of study. Underwritten by a three-year grant through

## As a group, Native American students have the highest dropout and academic failure rates of all American minorities.

the Indian Education Act, the Navajo Materials Development Project supported a staff of four, a parent advisory committee, native content consultants, and additional curriculum consultants. The authors joined the staff as the project's curriculum specialist/coordinator, curriculum consultant, and editorial assistant/interpreter.<sup>3</sup>

The project soon tapped into earlier work by the Native American Materials Development Center (NAMDC) in Albuquerque, which had produced an outstanding Navajo social studies curriculum. That curriculum was grounded in Taba's emphasis on the learner's social environment. "Learning in school does not begin with a clean slate," Taba observed; "the knowledge, ideas, values, and sensitivities" acquired in children's social environments "determine what the students will, can, and need to learn" (1955, p. 33). Given this emphasis, Taba's model focuses on inductive inquiry as a means of developing the concepts, ideas, and problem-solving abilities relevant in the students' social worlds and of encouraging critical, cross-cultural analyses of attitudes, feelings, and values.

In adapting this model to the school at Rough Rock, we began by surveying community perceptions of social needs. Virtually all of the nearly 100 respondents agreed that Navajo students need the skills to prepare them for full participation in the off-reservation economy. Many also said that by using Navajo culture as a foundation from which to grow, the curriculum could and should prepare students to function effectively

and comfortably in both the Navajo and non-Navajo settings. The respondents repeatedly mentioned the continuing significance of *k'é*, a central Navajo concept meaning kinship, friendship, and "right and respectful relations with others and nature."

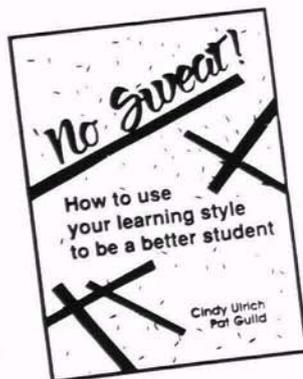
## Curriculum Objectives and Content

In consultation with the parent advisory committee and with NAMDC curriculum developers, the project staff began transforming these responses into curriculum objectives and content. What emerged was a sequence designed to develop concepts, ideas, and problem-solving abilities in the context of culturally relevant experiences and topics, while also promoting competency in English and Navajo. *k'é* became the central concept linking familiar experiences with problem solving in new situations.

The curriculum sequence, shown in Figure 1, is organized around concepts relevant to *k'é*, selected for their power to synthesize and organize large amounts of data. Curriculum content expands in a spiraling fashion to increasingly complex levels of abstraction, generality, and complexity. For example, the concept of *interaction* is treated again and again

**Navajo continues as the language of local government and of family and ceremonial life; but English has become an almost indispensable second language.**

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*Teaching in two languages, the librarian at Rough Rock School uses his students' primary language to promote concept development in both English and Navajo.*

throughout the sequence. In the lower primary levels, the concept is introduced in terms of the interaction of self with significant others and, later, in terms of the Navajo kinship system and persons with whom the child interacts locally. The concept is expanded in the 3rd and 4th grades as students study the interactions of people who make up their community and, more broadly, the interactions of people with the natural environment. At higher levels, the curriculum provides students with opportunities to develop an increasingly sophisticated understanding of the concept in light of the interaction of groups of people, nations, and governments. Both positive and negative consequences of interaction are explored (for instance, in units on Indian/Anglo-European contact) and are related to Navajo notions of balance and harmony implied by *ke'e*.

Concepts, in turn, form the building blocks for main ideas—the remembered learnings students have “after they have forgotten many of the specifics” (Taba et al. 1971, p. 27). For example, by examining the development of Navajo society, first from the perspective of their community and later from tribal, regional, and global perspectives, students repeatedly ex-

plore the concepts of *interaction, change, and causality* in increasing complexity. One of the ideas they arrive at through these explorations is that when two cultures meet, both are changed. In discussions, out-of-class experiences, and their interactions with text, students critically analyze this idea and its implications for the present and future status of their tribe, as well as for tribal-federal and broader social relationships.

This curriculum sequence served as the blueprint for the development of bilingual textbooks, accompanying teacher guides, and visual aids, many produced in color and designed to match the production quality of commercial texts. To accommodate both Navajo- and non-Navajo-speaking teachers and students, the materials are written in both Navajo and English.

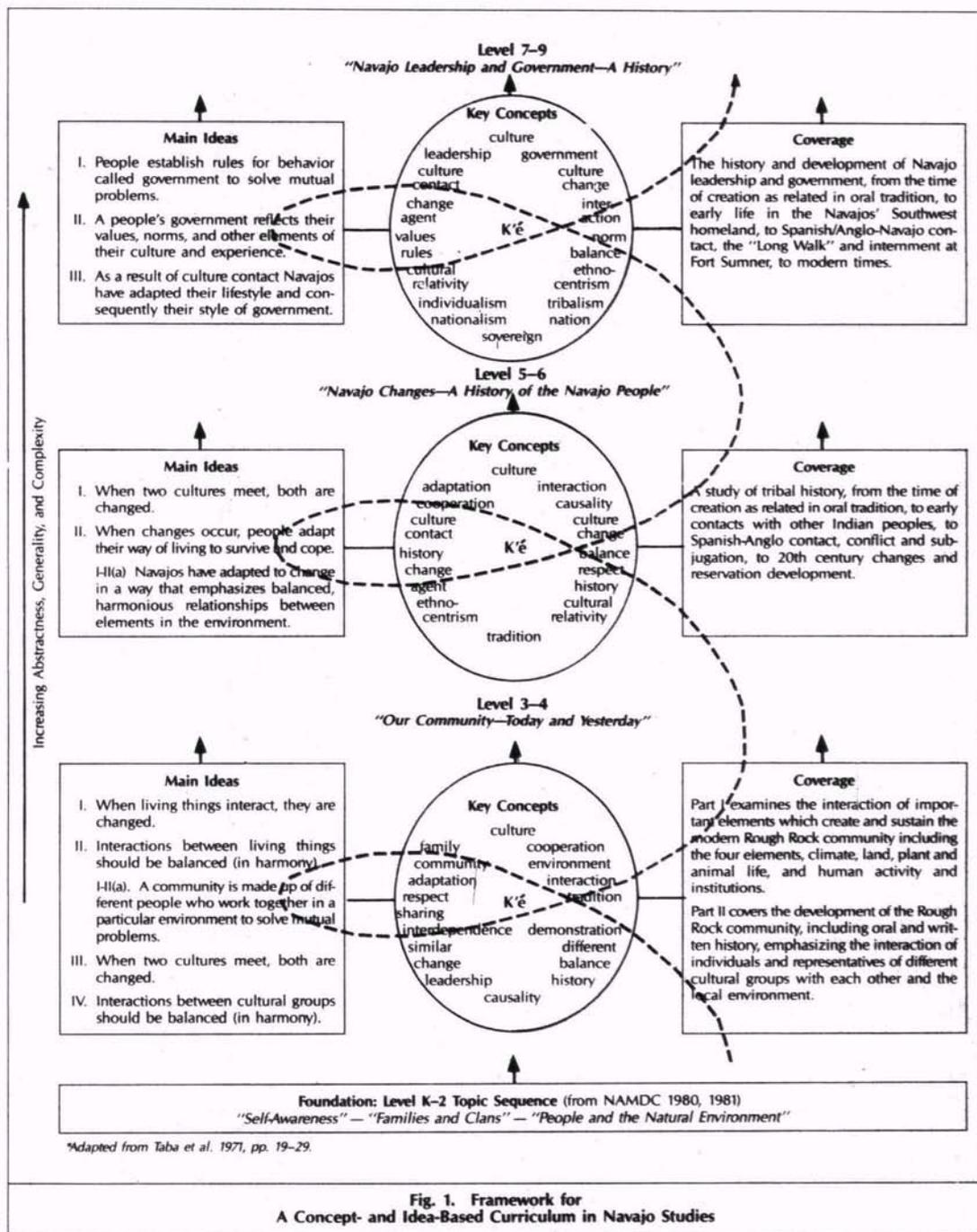
### **Teaching Strategies**

Throughout the curriculum, teaching strategies center on the three-phase process of inductive inquiry described by Taba (1962) and Taba et al. (1971). Students begin by *acquiring information* through observing, listening, experimenting, and interacting with others and with text. They then *organize information* into notes, lists, summaries, pictures, graphs, tables, or similar formats. Finally, they *use this information* to develop key concepts and ideas that can be applied to problem solving.

Open-ended questioning sequences guide students through this process. Those sequences include:

1. *Questions for developing concepts*, which encourage students to observe elements of their environment, interpret and present them by listing items from their observations, then assign labels to their groups. The labels represent concept terms.

2. *Questions for developing main ideas*, which facilitate students' comparison of elements from their observations, development of tentative hypotheses to explain their analyses, and formulation of conclusions based on the evidence they have gathered. In writing about their ideas, they consolidate their learnings.



3. *Questions for applying ideas and generalizations*, which encourage students to use the knowledge they have acquired to prove and predict new or different occurrences. Their oral responses to questions, as well as their writings, serve as an evaluation of the depth of their understanding.

### Piloting the Curriculum

Training sessions helped orient teachers to the materials and inquiry approach, but real enthusiasm for the program came only after the curriculum consultant gave a demonstration lesson in a 4th grade classroom. That lesson, taken from the "Our Community" series, illustrated the questioning sequence for concept development. In subsequent lessons conducted in this class, the concepts of *needs* and *wants* became the basis for developing the idea that "Rough Rock is a community because people work together to solve problems and meet their needs and wants." By the end of the school year, the regular classroom teacher, a Navajo, had guided students through many unit activities, including the cre-

ation of a 6' x 8' floor model of the community, complete with personalized family vehicles, homes, and livestock herds.

Ironically, during the time when this program was being piloted, the school had instituted a program in English basic skills centered on cue-response activities. The contrast between this repetitive drill methodology and the inquiry-based curriculum stalled its adoption for several months. However, after the demonstration lesson and successful piloting in several Rough Rock classrooms, the bilingual curriculum was incorporated as a Navajo Humanities complement to English basic skills. The materials continue to be used at Rough Rock School and have served as a model for other projects.

### Lessons Learned

The story of this curriculum project does not have a satisfactory ending. Funding for the project ended shortly after the materials were implemented, and the effects of their use were not evaluated. This problem is intrinsic to

federally funded Indian schools, which rely on a variety of short-term funding sources—often with competing philosophical aims—to support academic programs. Nonetheless, this curriculum effort carries a significant lesson, for the materials are highly successful in helping Indian students discover the power and validity of their own experiences as tools for "coming to know."

If our goal is to educate children for citizenship in a pluralistic society, then children must actively explore their social environments. This is especially critical for minority students, whose lived experiences have been systematically discounted in conventional curriculums. Our efforts to achieve this goal must do more than require teachers to transmit a predetermined body of knowledge—we must lead students to use their own lives as the basis for inquiry, discovery, creation, and for the evaluation of knowledge. □

1. Federal legislation, including the Indian Education Act of 1972 and the 1975 Indian Self-Determination and Education

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Assistance Act, reflects a major change in this policy. The change, however, has yet to be systematically and universally realized in institutions responsible for educating Indian children.

2. Roessel (1977) and McCarty (1987) provide detailed discussions of the school's early years and subsequent development.

3. Fred Bia, the photographer for this article, served as the project artist.

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