

students will no longer view such parks as mere amusement.

Almost all communities have scientists, engineers, or technicians available as human resources for their classrooms. In Iowa City, Iowa, research scientists are presenting ethical, moral, and technological issues related to science as part of a monthly seminar series for teachers. Many teachers are realizing that these same discussions can be carried out in their classrooms.

In Jamestown, Rhode Island, 7th graders study classical concepts of ecology in science and, in social studies, analyze their community socially, economically, and geographically. A significant portion of the course engages students in comparing their outdoor ecology study with their study of the community. By drawing parallels and relationships, students learn that their community functions much like a natural environment. During the 8th grade, each student teaches a short unit on ecology to students in lower grades. Here students can move beyond their own classrooms into a different role in their community.

In other locations, students are becoming involved in actual decision-making and governmental bodies. For instance, in Casper, Wyoming, and Imperial, Missouri, students have made

presentations before senate subcommittees, city councils, and school boards, and have testified in court. These students know firsthand how science extends throughout their environment.

Benefits of Community Involvement

Students in these programs grow up as part of the community and feel strongly that they have decision-making power and influence over their environment. In the process, they are working with people in all facets of the science field. What better way to understand career alternatives than to work shoulder to shoulder with people in the field. Working with adults, students improve their own ability to communicate, understand, and relate. Everyone profits when students and adults work closer together.

One benefit of this local involvement is a movement away from the de facto national science curriculum. Since each community is unique, widespread community involvement in the science curriculum will, by necessity, produce an indelible stamp of that community on the school curriculum, the students, and teachers. Such a stamp does much to increase a community's pride in its schools, the school's pride in its community, and

students' feelings of belonging and self-esteem. □

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Reading

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Developing Inferential Comprehension

Reading is an inferential process. We make inferences constantly as we read, by combining prior knowledge with information from the page. If we read that the cowboy rode off into the

sunset, we know immediately that he is going west. This inference is made by combining a piece of information from the text—into the sunset—with a piece of information from our prior knowledge store—the sun sets in the west. Imagine that you read that Mer-

cury is the smallest planet; in another part of the text you read that Pluto probably is the size of Mercury. From

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these two pieces of information you can infer that both Mercury and Pluto are smaller than the other seven planets.

While inferencing seems to be a necessary and automatic part of comprehension for sophisticated readers, children often do not make inferences automatically. Comments such as, "I can't find that answer" and "It didn't say that anywhere" are commonplace indicators of children's apparent belief that if it doesn't say it in so many words, it doesn't say it. This lack of automatic inferencing results in greatly reduced comprehension since much of comprehension depends on inference.

Administrators, supervisors, and teachers interested in classroom-tested strategies that improve student ability to make inferences should read the

Journal of Reading Behavior (1983, Volume 3). Two articles in this volume report on successful inference training and summarize earlier efforts in this area. A report by Carr, Dewitz, and Patberg (pp. 1-18) reveals that students who are shown the relationships of key vocabulary in a structured overview before reading, who complete cloze activities that require them to integrate text information, and who complete a checklist reminding them how to integrate this information, improve their inferential comprehension ability. A report by Raphael and McKinney (pp. 67-86) shows that children trained to identify types of questions—Right There (literal), Think and Search (inferential), and On My Own (from prior knowledge store)—improved their ability to answer inferential questions. Both studies used middle-grade students and showed that the largest

gains were made by students of average or below-average ability. Cited in the literature is an earlier study by Hansen and Pearson in which 2nd graders learned to make inferences by writing on strips of paper information from their prior knowledge stores and from the text and weaving them together.

Inferencing—reading between the lines—is now better understood from both a theoretical and classroom practical standpoint. Strategies that are theoretically sound and empirically tested now exist and can be used to help children at all grade levels integrate information and make inferences. Once these and other similar strategies become a part of daily classroom instruction, our children can become better comprehenders and better thinkers. □

The Principalship

ROLAND S. BARTH

The Leader as Learner

If only the principal will grow, the school will grow. To change something, someone has to change first. People changing is a most important—and most perilous—enterprise. One of the principal's most difficult tasks is promoting the professional development of staff members. But people changing is even more important and perilous when the people to change are principals.

As learners, principals have a bad reputation. Many in my own school community wondered whether I was educable. Parents, teachers, students, central office personnel, and even oth-

er principals had their doubts. My involvement in the Harvard Principals' Center has reinforced my beliefs about how difficult it is for principals to become learners as well as leaders.

Principals as Reluctant Learners

The first obstacle, of course, is time. More is expected of me with less. If I stay to participate in a teacher's math workshop, the schedules for next semester and the parent phone messages will go unattended. Of course, saying "I don't have time" is another way of saying other things are more important, and perhaps more comfort-

able, for us. Time is precious and demands are many. The leader's learning takes a back seat.

A second impediment is our experience as learners. Few principals come to learning activities without baggage from prior activities. District inservice and university course work have left most of us, at best, unsatisfied and, at worst, painfully scarred. Principals run things, and most run them well. People who run things don't like to be themselves run—especially badly. One reason principals resist opportunities for learning is that they have been there before and have found what's there lacking. Few retain much

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