ALTHOUGH UTILIZING TECHNOLOGY to improve teaching and learning has been advocated for more than 30 years, the attention paid it on most college campuses has been a fairly recent phenomenon. It took success with word-processing and the widespread use of e-mail to convince the many campus die-hards that the computer is an important tool.

While many were in different stages of conversion, businesses saturated the Internet with information-based marketing. Their success, in advertising products and communicating directly with their customers and employees globally, has had a strong impact on higher education administration. Hardly a college or university, for example, is without an Internet site describing their uniqueness and specialities.

Increasing access to all types of information heralds the next step, namely, an expanded vision of applications—from a marketing tool to instructional applications and changes in ideas about where students are taught, when, and how. Today, students have access to a wide range of distance-learning courses internationally which are in direct competition with those being offered in their home state.

In addition to increasing competition, there are many other reasons for using information technologies to support teaching. However, the most important one may be its potential to address the diversity of students entering higher education, many of whom are not as well prepared as were their parents. We have the technology and the know-how. What
is missing from the recipe is the will to do something about it. We need to acknowledge that American education is in a crisis situation and completely overhaul the system, beginning with new models of instruction, production, and delivery.

The current design of instructional systems, aimed at meeting the challenge of diversity and changing needs, remains insufficient. Many more empirical studies are needed that examine the psychological and educational principles on which technology-supported learning environments are based before we can form new practices and theories that promote learning.

*International Perspectives on the Design of Technology-Supported Learning Environments* introduces the reader to some of the key international developers who are designing instructional settings to improve education and add to our knowledge of instructional-learning theory. We see how they address the design issues through a variety of applications in different contexts together with the psychological and educational principles underlying each project. Chapters are grouped according to three major topics: representation, social interaction, and meaningful contexts and multiple perspectives. The final two chapters on principles of system design, although a very important subject, appear to be somewhat of an afterthought tacked onto the book.

**REPRESENTATION**

The learning environments described in this section on representation attempt to promote learning using different kinds of representations that are first internalized and later externalized to increase student awareness of them. In this way, students are working in the manner of an experienced scientist or mathematician. For example, the Tools for Exploratory Learning Program, directed by the London Mental Models Group and described by Joan Bliss, contains computer tools that allow students either to represent aspects of their own ideas about a domain or to explore and interact with models based on the ideas of others.