MAJOR APPLICATIONS
OF INSTRUCTIONAL
TECHNOLOGY

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Introduction

In the words of Malcolm X, “education is our passport to the future, for tomorrow belongs to the people who prepare for it today.” One such passport for educators grappling with the preparation of their students is the use of technology applications as tools for learning. Not only will children need these tools to successfully navigate their years of formal schooling, but they will also need these tools to successfully navigate their lives in the 21st century. To effectively use these tools, educators and their students must become comfortable via an ongoing daily integration of the major instructional technology applications in the classroom.
The goal of this chapter is to provide a road map for effectively integrating technology in the classroom. It is not intended to provide detailed instruction in specific applications but rather to offer a preliminary view of each application as an instructional tool. The chapter first defines the six major software tools used in classrooms today:

- Word processing
- Spreadsheets
- Databases
- Paint and draw
- Multimedia/hypermedia software
- The World Wide Web

Following an introduction, the major benefits of each application and the commonly accepted content and technology standards for using these tools in the classroom will be explained. Next, some 20 lesson plan ideas, along with associated learning objectives, are offered for consideration. Lesson plan ideas are divided into Primary (pre-K through Grade 2), Intermediate (Grades 3 through 5), Middle (Grades 6 through 8), and Secondary (Grades 9 through 12), following the International Society for Technology in Education (ISTE) National Educational Technology Standards for Students (ISTE, 2000). Within each of the four grade levels are sample lessons that integrate the standards and applications into a curriculum following principles of best practice.

The question “Why do we use technology in the classroom” closely parallels the questions asked when any new technology first arrived on the educational scene. “Why bring pencils to the classroom?” “Why give textbooks to the students?” “Why use blackboards for teaching?” Each technology must be considered in light of its use as a tool for increasing student understanding. Ultimately, the choice depends upon the resources available in the school, their availability to the teacher, and the skills of a teacher to select resources that most effectively enhance student learning.

Technology should only be chosen if and when it enhances student learning. It should not be used because the school has recently spent thousands upgrading its computer lab, or because it has just invested in
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