

## Chapter 9

# A Window to the Administration

### OVERVIEW

This chapter looks at the ways specific networking technologies and tools can benefit administrative staff, the "behind the scenes" players so important in maintaining the growth and health of your school or district.

### The Business of Education

The development of a Connected Learning Community involves technology, people, planning, and a commitment to serving every constituent. The benefits of technology for teachers and students are obvious. Less obvious but just as important are those efforts aimed at bringing administrative staff into the technology improvement picture.

When discussing technology planning, many educators are quick to point out the differences between business and education. However, both face challenges common to any group organized to achieve a goal. One of those challenges is maintaining an efficient support structure for those responsible for the end "product." In the business of education, that means providing the school or district administration with the management tools necessary to ensure a quality education for each student.

Creating knowledgeable students ready for the challenges of the workplace or higher education does not start and end in the classroom. Why should your technology effort?

### Doing Old Work in New Ways

The productivity gains realized by computerizing American businesses have been incredible. Creative ideas for doing old work new ways using computer technology have led to an unprecedented era of growth and innovation. The next era of innovation is just getting under way, with businesses taking advantage of networked computers to collaborate, innovate, and discover cost savings in every aspect of their operations.

So what will happen when your school or district administration gets "wired" to the information superhighway? The results are up to you and your administrative constituents as you implement the school or district's technology plan. Regardless of the technical details, the key to success will be building a solid, consistent technology foundation to support productivity and communication.

### Centralized Data Administration

Dedicating one or more servers to a central data repository will simplify record administration, streamline information requests, and reduce the overhead associated with archive space management and lost-item replacement. Student data, such as transcripts, health records, and government compliance data, can be electronically stored for easy access and report generation as needed.

In library administration, networked computers make school interlibrary loans possible, provide a platform for computerized card catalog searches, and expand the breadth and depth of information services available to the students.

### Remote Access

As your school or district network grows to merge with or embrace other schools, you have an unprecedented opportunity to get all staff "on the same (electronic) page." With a wide area network, administrative staff can instantly communicate on a variety of financial, procedural, and logistical issues, from multi-school purchases to getting the word out about the latest influenza outbreak. And this information is not limited to the district or school sites. Dial-up accounts give your "wired" staff the opportunity to work from the comfort of their home offices or to check in from conferences, seminars, or

district events by using their laptop computers.

Schools not yet ready to take on your advanced technology can dial in to the network from stand-alone stations to learn about the direction of your school or district's newest initiatives. And your administration can learn from the successes and failures of other districts by accessing education-related Internet sites. Administrators can also connect to the district intranet to see what innovations other schools have discovered, from technology integration to the sharing of new lesson plans and online tutorials.

Centralized administration is just the beginning of a process that can remove a lot of the headaches associated with school and district-wide scheduling—from staff and faculty schedules to in-service days to building maintenance—as well as facilitate dissemination of information—from policy changes to procedures for lunchroom monitors.

Remote administration by dial-up access also gives your school or district the most for its technology-troubleshooting dollar. Remote dial-in accounts can simplify diagnosis and allow fewer technology administrators to cover a larger geographical area for routine diagnostics or simple troubleshooting tasks such as restarting a stalled print server.

## Tools for Building the Foundation

Each member of your district or school's administration can become more productive through the technology initiative. This section looks at some of the ways technology can be deployed to realize productivity gains, and how Microsoft Windows platform products, in particular, can energize your staff and help them save time and money.

### The Intranet/Internet

Beyond its myriad uses for instruction, the Internet can speed administrative communication and collaboration and productivity. Setting up an administration Web page to clarify policy and encourage frequent contact among teachers and staff is just the first way for a school or district administration to use the Internet. Now you can use the Internet to improve all your administrative operations — from how your administrators work together to how you extend your network to students, parents, remote learners and others.

Building on the solid Internet technologies delivered in Windows NT Server 4.0, Windows 2000 Server provides a well-integrated package containing the application development environment, security, and scalability you need to get more out of existing applications. Plus you can build new and versatile solutions using the most complete set of Internet technologies available.

With Windows 2000 Server, you can:

- Use the Web to securely connect students, teachers, administrators, and suppliers—whether they're on campus or off.
- Build internal line-of-business applications that help your administration run more efficiently.
- Share select information without compromising confidential data.
- Expand your network environment as your application needs evolve.

### ***Integrated Web and Application Services***

Active Server Pages (ASP), first introduced as a component of Windows NT Server 4.0, revolutionized the way Web content was served. This technology allowed educational districts and institutions to create dynamic and highly personalized Web sites. The implementation of Active Server Pages in Windows 2000 Server is faster, more reliable, more scalable, and ready to run on high-end multi-processor hardware.

Windows 2000 also introduces new technologies that let you build richer Web applications and solutions, such as the next generation of the Microsoft Component Object Model, COM+. Developers using COM+ find it much easier to create and use software components, and benefit from a runtime environment and services that are easily used from any programming language or tool.

Another technology revolutionizing the Internet is the Extensible Markup Language (XML). XML enables easy integration of data from multiple sources, reduced network traffic, granular updates, and more meaningful searches. The Windows 2000 XML Parser is implemented as a COM component, providing a complete XML foundation for Windows DNA-based applications.

In addition, Windows 2000 includes integrated support for streaming media, which allows districts and institutions to develop and distribute real-time presentations and rich multimedia content to both internal and external audiences. Imagine being able to send full screen video to your teacher- and student desktops on demand, while providing CD-quality audio, digital rights management, and great integration with other application software.

### ***Internet Scalability and Flexibility***

When Windows NT was introduced, it provided something that was revolutionary in high-volume commercial operating systems: symmetric multi-processing (SMP) support. SMP meant that Windows NT could take equal advantage of multiple microprocessors on the same PC. Although microprocessors continue to get faster and faster, real scalability is achieved by adding more processors or by adding more PCs to a cluster — a process known as "scaling out."

Windows 2000 provides the technologies required to let your Internet applications grow without limitations. For example, it allows the most demanding high-end applications to use more computer memory. In addition, Windows 2000 Server supports four simultaneous processors, while Windows 2000 Advanced Server supports eight. Further, core parts of the operating system have been tuned to ensure that you get more than ever out of each processor. For example, Active Server Pages scales two to three times better on multiple processors than Windows NT 4.0 does.

Should your Internet site grow particularly large, services such as Network Load Balancing (NLB), which is part of Advanced Server, enable you to grow your Internet site by simply adding PCs. NLB then directs traffic on the site to spread it across the multiple machines without requiring you to learn whole new development techniques or reengineer all of your applications.

### ***Security***

As education districts and institutions extend their networks beyond original boundaries, for example by adding extranets and Internet sites, they need to increase system security. In addition, teachers and administrators typically store confidential information on laptops and other mobile computing devices, which may be lost or stolen. To help districts enhance their security to address new ways of using information, Windows 2000 provides end-to-end security. This means that institutions can integrate systems both inside and outside the district network boundaries, while providing complete access control and data protection. Security features include advanced techniques for identifying who is accessing the system, including the use of digital "keys" to access selected data, and a single ID that permits users to access not only their own computer, but also other shared resources (such as printers or files) on the corporate network, the Internet, or even a business partner's network.

Windows 2000 Server provides comprehensive, standards-based security services, including flexible authentication, data encryption, flexible and secure network access, protection of virtual private networks (VPNs) using core Internet standards such as IP Security (IPSec), secure transaction processing, and security extensions for the development platform such as the CryptoAPI.

In summary, Windows 2000 Server provides the integrated Web and application development services, scalability, flexibility, and security services to allow districts and institutions to extend their administrative and instructional functions to the Internet. With Windows 2000 Server, educators and administrators can securely connect with teachers, students, parents, suppliers and others — wherever Internet access is available. Administrators can use the Internet infrastructure to offer expanded and innovative applications, rich content, and secure access to information and services.

For more information about Microsoft Windows 2000 Server, see

<http://www.microsoft.com/education/product/windows2000.asp>.

To learn how the Blue Springs, Missouri, school district is using Windows 2000 to enable users to roam and get their data from anywhere in the district, see

<http://www.microsoft.com/technet/education/bluespr.asp>

## Electronic Communication

You'll likely want to look at how messaging and data management can be simplified using your existing electronic mail system. Wouldn't it be great if an automated reminder could be sent to all teachers advising them of the next professional development day? Simple messaging services can get text or a file from here to there, but often lack the ability to add "intelligence" to the system—such as forwarding a principal's messages to an assistant while the principal is on vacation, or generating automated bulletins to key staff based on approaching deadlines.

For more information about Microsoft Exchange 2000 Server, see

<http://www.microsoft.com/education/product/exchange2k.asp>.

Microsoft Exchange Server can provide finely tuned, proactive control of your school or district's e-mail system. An extensive menu of services helps streamline communication, simplifies administration, and reduces the paperwork and labor associated with traditional mass communication methods. Imagine automated warnings to e-mail users to clean out cluttered mailboxes or sending rich text format (RTF) e-mail to users of different e-mail clients or collaborating on documents online across your entire district!

## Centralized Data Management

To learn more about Microsoft SQL Server client-server database management system, see

<http://www.microsoft.com/sql/default.htm>.

For examples of ways schools have used SQL Server to build creative data management solutions, see

[http://www.microsoft.com/education/planning/implement/edv\\_schulecak.asp](http://www.microsoft.com/education/planning/implement/edv_schulecak.asp)

Products such as Microsoft SQL Server can provide a common "home" for a variety of databases, from attendance records to Scholastic Aptitude Test score trends. Microsoft SQL Server includes high-capacity and powerful database development tools that can create user-friendly reports and provide simultaneous access to many users over the school or district intranet. It can also serve as the development platform for document management systems, is highly scalable, and can effectively communicate across platforms to be a comprehensive solution for data management applications.

For examples of how schools and districts are using Microsoft Excel, see

[http://www.microsoft.com/education/planning/implement/system\\_issaquah.asp](http://www.microsoft.com/education/planning/implement/system_issaquah.asp).

Microsoft Excel offer a great front-end for a variety of data collection, querying, and analysis tools for the desktop. In addition to being a strong stand-alone analysis tool, Excel can provide easy access to your central data application by serving as a client to Microsoft SQL Server applications.

## On the Desktop: Productivity Software

Chapter 7, "A Window to the Platform," examined the benefits of a *standardized* network and classroom client operating system. But what about the world of work outside the classroom? In most businesses, highly integrated desktop productivity software is the norm. In a school or district, these packages offer administrators (and teachers looking for personal productivity aids) a streamlined set of tools with a common look that goes beyond conforming to the widely accepted Windows platform.

### Selecting Office Productivity Software

What should you look for in productivity software suites for the district or school office? Your choices should be driven by the needs of your administration, compatibility with your existing infrastructure, and cost-effectiveness. Consider the following when reviewing office productivity software:

- *Cross-platform compatibility*. Does the software have a version available for the core operating system

- platforms in use at your school and district? Are file formats compatible?
- *Cross-application consistency.* Your school or district may not have the resources to finance in-depth training for its administrative staff on a lot of software programs. Do the programs in the productivity package share a "look and feel" that makes learning them easier?
  - *Cross-constituent use.* Can files be shared easily with parents, teachers, other schools, and business partners? Or will time and/or money have to be invested in file conversions or reformatting when documents are shared?
  - *Large market share.* Have business and home users invested in this product in large numbers? Greater market share means more support, training, and troubleshooting resources for your school.
  - *Interoperability.* Can the applications work together? For example, is it easy to embed a graphic from the presentation program in a spreadsheet or convert a table of word processor text into a database table?
  - *Links to your network, the community, and beyond.* Is the software ready to use for Internet and intranet applications? Can you link to data from the World Wide Web in a grant proposal document or quickly publish a budget for collaborative editing using NetMeeting over your intranet?

## Microsoft Office 2000

For information, on how to create course documents, import files, and share information as Web pages; collaborate with others using Web discussions; publish a PowerPoint presentation to the Internet so students can review later; protect your crucial software files from accidental damage; see the online tutorial at <http://www.microsoft.com/education/tutorial/online/office2kHome.asp>  
For information on how to use Office applications to create a customized digital dashboard that brings crucial administrative information directly to your users desktops on a continuous basis, see <http://www.microsoft.com/technet/education/ddhpcs.asp>

Microsoft Office 2000 products give schools the tools needed to enhance teaching and learning, and realize the full potential of the Web.

**Access 2000 Overview** -- Access is a database application to generate, analyze and create reports easily.

**Excel 2000 Overview** -- A spreadsheet application that can easily format data into charts for print or online use.

**PowerPoint 2000 Overview** -- Easily organize, powerfully illustrate, and professionally deliver your ideas in a presentation.

**Word 2000 Overview** -- Word simplifies common word-processing tasks with built-in intelligence.

**Publisher 2000 Overview** -- Create professional-looking marketing materials with this business desktop publishing application.

**PhotoDraw 2000 Overview** -- Provides photo editing and illustration to create custom graphics for use in PowerPoint, Word, Publisher and on the Web.

**FrontPage 2000 Overview** -- Create and manage Web sites with this full-featured software package.

## Foundations for Learning

In considering the critical need for technology in schools, school and district administrations don't necessarily come to mind first. The Connected Learning Community, however, relies on these members of the education team to "lead by example"—through adoption of state-of-the-art technologies outside the classroom and by seamless integration with the student learning environment.

One of the great truths of the computerized school is the need for flexibility and the ability to re-use

technologies to fulfill a variety of needs. The tools and technologies discussed here are no different from those that play such a vital role in the classroom — only their application and the tasks performed vary. In the next chapter, "A Window to the Classroom," these same technologies and tools are reconfigured and blended with new resources to realize and enrich the Connected Learning Community.

## Chapter 10

# A Window to the Classroom

## OVERVIEW

Productivity and specialty software can streamline classroom administrative tasks, support the development of exciting curricula, and provide students with innovative and interactive learning experiences. This chapter discusses selecting and using technology classroom tools and how Microsoft products can contribute to creating a Connected Learning Community.

The hardware that powers your school or district's network provides the potential for transforming your students' classroom learning experiences. However, transforming that potential into the time savings and innovative teaching that define the Connected Learning Community depends on the successful application of the right software.

## Productivity Software: Tools for Teaching and Learning

Office productivity software suites are no longer limited to business use. Today, they provide teachers and students with a streamlined set of tools that includes word-processing, spreadsheet, graphics, database, and electronic mail programs. Teachers can use the tools to become more productive in their classroom administration and teaching activities, and students can use them to discover new ways of learning while preparing themselves for technology use in the world beyond school.

### Selecting Productivity Software

So, what should you look for in productivity software suites for the classroom? The needs of teachers and students, ease of use, compatibility with your existing infrastructure, and cost-effectiveness should drive your choices. Consider the following criteria:

- *Cross-platform compatibility.* Schools often have different types of computers in their networks (for example, Intel-based computers running Microsoft Windows and Apple computers running Macintosh system software). If that is the case in your school or district, look for a productivity suite that provides cross-platform compatibility.
- *Intelligent automation.* The new performance standards in productivity software demand an understanding of context. State-of-the-art products recognize user intent and automatically deliver the required functionality (that is, intelligent automation). With the right productivity package, people can "delegate" tasks to the computer more than ever before.
- *Consistency for easy learning.* A suite of software products that work and look alike enables people to learn faster, minimizes training and support costs, and stimulates users to take full advantage of every feature available to improve their productivity. For true user benefit, consistency must permeate the products; for example, they should have similar menus, menu structure, dialog boxes, and icons, as well as common keystrokes and commands.
- *Integration for greater productivity.* Integration in a productivity software suite means two or more applications can work together to accomplish a task. According to Forrester Research, Fortune 1000 companies consider application integration to be the most important criterion—more important even than individual product features—when they evaluate productivity suites. Maybe it should be at the top of your list of criteria, too.
- *Development tools.* Prepackaged office applications will meet many classroom productivity tool needs, but they won't meet all of them. You'll need customized applications, too, such as interfaces that provide easy access to databases of student records. Today, many productivity suites include reusable building blocks of software objects and easy-to-use but powerful development tools, so custom applications can be created quickly and simply.
- *Quality applications.* The foundation of a productivity software suite is its individual products. Consequently, the applications that make up a productivity suite should be leaders in their product categories. The other criteria shouldn't force you to settle for compromises in quality.
- *Vendor reputation.* The software vendors' policies, licensing, and support are important purchase criteria—more so than with single-application purchases.

## Learning to Use Productivity Software

For examples of putting productivity software to use in your school or district's curriculum, see *Microsoft in Education/Scholastic's Productivity in the Classroom* at <http://www.microsoft.com/education/tutorial/default.asp>.

Learn more about Microsoft Press at <http://mspress.microsoft.com>.

Students learn how to use productivity software tools by 1) taking computer application courses to learn the features and functions of specific tools, and 2) completing lessons that use the software as a key tool. The most successful schools use both methods.

Computer application courses. Productivity software courses give students basic software knowledge and technology skills training, providing a foundation they can expand on as they uncover the power of technology. Microsoft Press publishes *Step by Step* books and practice file sets that can be used in application courses.

Integration of technology and curriculum. Integrating productivity software into existing curricula as a learning tool is based on the goal of preparing students for the workforce: Just as employees use computers to do their work, students use computers to do their learning. When properly integrated into the curriculum, software and computers become essential tools, making the relevance of technology in the students' lives obvious. Teachers generally find that students using technology as a tool for learning complete their work faster and produce higher-quality results.

## Microsoft Office 2000 in the Classroom

For more information, see "In and Out of the Classroom with Office 2000" at <http://www.microsoft.com/education/tutorial/classroom/o2k/default.asp>. This guide provides self-paced lessons to help teachers and students explore and use the features of Microsoft Office 2000.

Teachers using or considering Office 2000 may want to request a copy of ***Teaching and Learning with Microsoft*** at <http://www.microsoft.com/education/product/cdoffer.asp>. It features timesaving templates, clip art, wizards, classroom activities, training resources, and ideas for using Microsoft applications in the classroom.

If preparing students for the workforce is a primary goal for schools, then it makes sense for schools to use the productivity tools that they'll most likely find in the workforce — and that means Microsoft Office. The technological reasons schools are selecting Microsoft Office are just as important. Microsoft Office provides schools with a single productivity tool standard regardless of the type of computer being used: That is, teachers who use Macintosh computers can share data created in Microsoft Office with administrators who use PCs running Microsoft Windows.

Educators like the software's features, which are powerful yet very easy to learn and use. IntelliSense® technology automates many common tasks, enabling users to focus on their projects, *not* on the computer tools they need to accomplish them. And because consistency is built into the various Microsoft Office applications, once a user has learned one, he or she knows enough to get started in any of the others. Schools that value the Internet — which means, after all, virtually all schools — appreciate Microsoft Office's Web-ready features, which make it easy to publish to the Web and to collaborate with students and educators over the Internet. Last, the price of Microsoft Office is very attractive. Microsoft Office is far more powerful than "Works"-type applications, yet only slightly more expensive than purchasing Microsoft Works or individual productivity applications.

Teachers and students using Microsoft Office 2000 Academic Professional Edition will benefit from Microsoft Excel, Microsoft Word, Microsoft PowerPoint, Microsoft Access, and the Microsoft Outlook messaging and collaboration client. Built-in Web features include the ability to save Microsoft Excel, Word, PowerPoint, and Microsoft Access documents to HTML for Web publishing, and easy-to-add hyperlinks between any Microsoft Office application and documents on a LAN, or even out to the Internet. For a brief outline of the classroom productivity features of Microsoft Office, read on:

- *Microsoft Word*. With Microsoft Word 2000, teachers and students can quickly create and modify various types of documents used in the classroom, edit and format them in interesting and dramatic



ways, and save them as templates for future use. Microsoft Word can help teachers create accurate tests and efficiently track student performance. Students can use Microsoft Word to publish a weekly or monthly newsletter that provides information on class projects, upcoming events, test dates, student of the week, and so on.

- *Microsoft Excel.* For teachers, an electronic spreadsheet adds a whole new dimension to recording and reporting student performance. With Microsoft Excel, teachers can make their grade books look the way they want and track student data in different ways. Both teachers and students can use Microsoft Excel to create interesting and useful charts. And students can take a Microsoft Excel chart and insert it into a Word for Windows 2000 document, giving real impact to research papers and reports.
- *Microsoft PowerPoint.* Teachers and students can use Microsoft PowerPoint presentations graphics program to make effective presentations with overheads, graphics, and text.
- *Microsoft Outlook.* Microsoft Outlook messaging and collaboration client manages e-mail, calendars, contacts, tasks, and documents or files on the hard disk drive. It can help students and teachers communicate through e-mail, and help them share information by means of public folders, forms, and Internet connectivity.

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### A Teacher Productivity Toolset

Teachers can use Microsoft Office 2000 to automate many of the tasks for which they're responsible, freeing themselves to focus on more creative activities. For example, with Microsoft Office, it's easy to record student grades and attendance electronically, automate progress reports, create newsletters and calendars, and share information, like worksheets and tests, with other teachers.

Microsoft Office includes templates and wizards that simplify and even automate many administrative tasks. For example, Microsoft Access (included in the Microsoft Office 2000 Professional Edition) includes a sample database that educators can easily customize to keep track of students' grades.

One of the most exciting uses of technology for educators is electronic presentation in the classroom. Each application in Microsoft Office has tools to facilitate electronic presentation of course materials, from the Web publishing tools in Microsoft Word to the animation and other visual effects available in Microsoft PowerPoint.

### Multimedia Presentation Options

It's fun to create multimedia documents and presentations using Microsoft Office 2000, but of course teachers' main interest in creating these teaching aids is to share them with students. Office 2000 supports a wide range of output types, from screen-based presentations to color transparencies made with an ink jet printer. To make the most of multimedia, though, teachers and students will need hardware to go along with the software. Let's take a look at screen-based display options: monitors, LCD overhead projection panels, and LCD projectors.

**Monitors.** The 15-inch and 17-inch monitors shipped with most computers are adequate for one or two students, but are not suitable for sharing an image with an entire class. You may need to add hardware to the computer you plan to use for classroom presentations. Fortunately, there are a number of inexpensive ways to put your image on the "big screen."

- *Video output standards.* The latest generation of PCs and notebook computers offers video cards that generate NTSC and/or S-Video formatted output for direct connection to large-screen televisions. If your computer does not have the right ports, video "daughter cards" that connect to the existing display adapter can be added for as little as \$100.
- *Signal converters,* available from a number of vendors, offer PC-to-TV signal conversion and are often bundled with video capture and editing software. Prices start at about \$150 and may be even less expensive for basic, no-frills models. Newer notebook and desktop computers may have signal converters built directly into their video hardware, making the connection to your TV as easy as setting up a VCR.
- *Large-screen monitors* are becoming more affordable as technology continues to drive down manufacturing costs. Standard CRT-type monitors in 19-inch diagonals are available for about \$400. Large-diagonal (36-inch) flat-panel monitors thin enough to hang on a wall are available for around

\$2,000.

LCD projectors. Once considered beyond the reach of all but the most well-funded presenters, LCD projectors have become highly affordable. Entry-level projectors (which include both a light source and the LCD matrix to project your image) start at \$1,500. Models that project the highest quality output from TV, video, or PC input are available for \$3,500 and more; they include stereo sound, crisp images, and the ability to project easily visible images in normal lighting conditions.

## Classroom Specialty Software

No single vendor can provide a technology solution for every educational need. However, there are companies that are experts in specialized solutions for education. Microsoft is teaming up with these independent organizations to create new products and services for the classroom computing environment.

For more information on Microsoft Certified Partners, see <http://www.microsoft.com/mcsp/>.

McGraw-Hill School Systems is one such independent Microsoft Solution Provider in the education market. Their Web site is <http://www.mmhschool.com>.

Microsoft and independent Microsoft Solution Providers can also work together to create specialized applications — like Student Information Management Solutions — using Microsoft Office products as building blocks.

### Supplemental Curriculum Software

Obviously, productivity software is not the answer for every curriculum enhancement. In history and mathematics classes, for example, specialty software products can be highly effective additions. Look for software that pushes learning experiences beyond existing materials while drawing clear relationships between subject matter in text, videos, and multimedia.

See <http://www.microsoft.com/mcsp/> for a list of companies and products in the supplemental curriculum software category.

Interactive multimedia CD-ROMs can assist the classroom teacher in a variety of subject areas. But how do you decide which titles to select and how to use them? The following tips will help:

- *Leave it to the experts.* Teachers, librarians, and curriculum developers are the experts when it comes to selecting appropriate support materials for the classroom. They should take the lead in choosing textbooks, videos, and CD-ROM software titles. Be prepared to offer assistance if requested.
- *Evaluate potential titles on a range of criteria.* If you or your instructional experts are evaluating CD-ROM titles for the first time, be sure to look at these criteria when choosing a program: Does the software...
  - Address an instructional need?
  - Engage the viewer and warrant repeated use?
  - Have high-level design and multimedia production values, or is it simply "shovelware" (text and graphics hastily put together)?
  - Offer timely and accurate content?
  - Offer superior performance and functionality; that is, is it reliable, easy to learn, and easy to use?
- *Can the CD-ROM be served over your network?* Should you buy one copy of the new title for every computer, every classroom, every library? The answer depends on the network capability of the software and how the teachers plan to use the program. If the software is primarily for independent research, a copy in each library might suffice. If the title will be part of classroom instruction, copies in each room are necessary. If you have networked computers, you may need to purchase only one CD-ROM for the server and additional licenses for individual computers to access the server.

Remember that the performance of any multimedia CD-ROM title running across a network with multiple users depends on the quality of the software (was it designed to be run in that fashion?) and the quality and speed of your network.

### Supplemental Curriculum Software and Resources from Microsoft

For more details on activity guides for Microsoft titles, see the Lessons, Activities, & Tutorials Web page at <http://www.microsoft.com/education/mctn/tool/default.asp>. Many of the guides are available online. In addition to productivity software, Microsoft has published a wide range of multimedia software that can

supplement your school or district's curriculum. Microsoft also publishes activity guides for Microsoft titles typically used to supplement curricula. These guides help teachers incorporate technology into their curricula by providing simple activities, more extensive lesson plans, and guided tours and training lessons. The guides are included in the product box as posters, activity cards, or booklets when you purchase the Academic Edition of Microsoft software titles.