

Chapter X

Administration of Educational Web Sites

ISTE NETS_T, I. Technology operations and concepts

Teachers demonstrate a sound understanding of technology operations and concepts.

ISTE NETS_T, V. Productivity and professional practice

Teachers use technology to enhance their productivity and professional practice.

ISTE NETS_T, VI. Social, ethical, legal, and human issues

Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice.

Chapter objective: The teacher demonstrates knowledge of strategies and techniques for Web site administration.

District Technology Infrastructure

Technology infrastructure is the system of cabling, phone lines, hubs, repeaters, switches, routers, and related devices that connects computers throughout an organization. In a school district, a wide area network (or WAN) is the “backbone” that connects all local area networks (or LANs) and computers across the various sites and campuses. Good telecommunications infrastructures allow users to access information and connect with other people throughout the organization, and via the Internet to the world. Without a complete infrastructure, such capabilities are available only on a limited basis (Kurose & Ross, 2004).

A WAN generally provides its users with the capability to use e-mail, connect to the Internet, and interface with other, external computer systems. WANs usually are “closed” systems, configured to prevent persons outside the WAN from accessing information housed within it. The WAN connects LANs together throughout the system; LANs in turn connect the computers and printers within a single building, such as a school or central office building. LANs connected to a WAN can offer their users the Internet and the other capabilities mentioned. It is not uncommon to see some school district stretched across hundreds of square miles using several telephone companies. Districts have to negotiate with phone companies to agree on the lines used by district WANs; sometimes it could be as complex as ISDN in one area, T1 in the second, and fractional T1 and 56 kb/s in the third (Lucas, 1997). In some cases, bridges are used to create links between the various telephone lines; then, adapters and modems are used to complete the network solution, allowing

Figure 10.1. A sample District Technology Plan (Elkhart Community Schools, 2005)

Current infrastructure and infrastructure plans:

Currently, the Elkhart Community Schools’ WAN (wide-area network) is composed of an amalgamation of ISDN, ADSL, and T1 lines in a “double star” topology. Several buildings connect via 768K ADSL lines to the primary star; others connect via 128K ISDN lines to the secondary star at Central High School, which is connected to the primary star via a shared T1 line. The WAN is connected to the Internet via three IHETS T1 lines. The district is currently investigating various wireless and fiber-optic scenarios to determine the most cost-effective manner in which to create a more robust WAN, and it is anticipated that a project to create this high-bandwidth infrastructure will be completed within the next 3 years.

Among its functions, the WAN provides Internet access; content filtering; client and Web-based e-mail service; SPAM filtering; gateway-level antivirus protection; intrusion detection; a firewall; and secured access to district-based student, personnel, and financial management systems. As connections to district schools are made more robust, other services that are currently duplicated and distributed at each building will be consolidated in the district’s data center.

Each building in the district has a local area network (LAN) that provides functions such as user authentication; file services for administrators, teachers, and students; student records management; library automation; and access to the WAN. Most buildings are 100MB switched network environments, although some offer only 10/100MB shared connections. Because the district’s LAN equipment is upgraded at a rate of two to three buildings in each year, all buildings should offer a minimum of switched 100MB capacity within the next few years.

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