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ABSTRACT

This goal of this project was to create a public school district World Wide Web site that staff and community members would use more frequently. The project included three solutions. First, 33 one-on-one and small-group training sessions were conducted to increase awareness and improve Web services. A Web-site advisory committee, which developed Web site guidelines and provided continual input and feedback to the development of the Web site, was facilitated. Second, staff formed a Web-site team to collaborate in management, promotion, and demonstration of the Web site. A new data projector was used to demonstrate the site for school and community groups. Promotional efforts also included integration of the site's URL into a variety of district and community publications. Third, Web-page training was provided to staff at 33 schools and district offices. Staff usage of site features increased based on a comparison of results of 1997 and 1998 surveys. Based on focus group research, the district launched a reorganized Web site in February 1998. An increase of 441.8% user sessions was recorded from February 1 to October 3, 1998. Web design reflected the open communications system recommended by the district's strategic plan. At the end of the project, district offices and schools managed 378 Web pages, an increase of 48.8%. Four appendices contain staff Internet surveys, Web-site guidelines, Web-page developer's orientation, and Web-page tutorial. (Contains 48 references.) (DLS)

# Increasing the Usage of a School District Web Site by Training Staff and Community Members in Its Use and Development

by
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Cluster 2

A Practicum Report Presented to the
Ed.D. Program in Instructional Technology and Distance Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

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## ABSTRACT

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The goal of the project was to create a public school district web site that staff and community members would use more frequently. Results of a 1997 district staff survey suggested that, in general, employees with registered Internet accounts were not using the district's web site. WebTrends, a weekly statistical service, reported an average of 213 user sessions per week from June 1, 1997 through January 31, 1998. The director of communications called for a more decentralized approach to managing the web site, including training and support for staff members at schools and district offices to create and manage web pages.

The project included three solutions. First, the writer conducted 33 one-on-one and small-group sessions to increase awareness and improve web services. The writer facilitated a web-site advisory committee, which developed web-site guidelines and provided continual input and feedback to the development of the web site. Second, after gaining direct access to the web consultant's server, staff formed a web-site team to collaborate in the management, promotion, and demonstration of the web site. The writer and team used a new data projector to demonstrate the site for school and community groups. Promotional efforts also included integration of the site's URL into a variety of district and community publications. Third, the writer provided web-page training to staff at 33 schools and district offices.

Staff usage of site features increased based on a comparison of the results of September 1997 and September 1998 surveys. Based on focus group research, the district launched a reorganized web site on February 1, 1998. WebTrends recorded an average of 941 user sessions from February 1 through October 3, 1998, an increase of 441.8% from the preceding recording period. Web design reflected the open communications system recommended by the district's strategic plan. At the end of the project district offices and schools managed 378 web pages, an increase of 124 web pages or 48.8%.

# Chapter I: Introduction

## Description of Community

The community was located in the Midwestern United States and had a population of 312,000. Originally a railroad, cattle, and oil production center, it supported a diverse aircraft, manufacturing, and services economy in 1998. Its metropolitan economy continued to boom even after the national economy began to slow. The Center for Economic Development and Business Research (1998) reported 279,700 jobs in the County in July 1998, up 3.9% from July 1997. Over 4,400 new manufacturing jobs had been created in 1 year, an increase of 9.2%. Average hourly earnings in manufacturing jobs rose 4.5% to $15.71 while the number of hours worked per week dropped from 42.0 to 40.5. New-home construction increased 18.7%, with most construction occurring in suburban areas. Despite rocky domestic and international economies in 1998, the local economy remained strong. Unemployment dropped to 3.1%.

Like many Midwest communities, the city offered many cultural activities. These included a symphony orchestra, summer stock musical theatre, and an annual river festival. Downtown redevelopment produced a hotel convention complex, historic entertainment area, and a new science learning center for children. Sports enthusiasts could choose from professional baseball, hockey, and soccer. Three local higher education facilities, including a state university, offered undergraduate and graduate degrees.

As the end of the 20th Century neared, the community underwent major changes. Extensive street and highway construction programs streamlined travel. As many families moved into the suburbs, the city's population became more culturally diverse and

economically disadvantaged. The local newspaper regularly featured editorials and opinion pieces about mobility, equity, and public education.

Writer's Work Setting

The work setting was the local public school district. In 1998-99, the district served 48,454 students from Kindergarten through Grade 12. Enrollment had increased by 579 students from 1997-98. The office of pupil accounting reported that the preK-12 population in 1998-99 included 51.40% male and 48.60% female students. The ethnic distribution of the student population included 23.04% African American; 5.65% Asian American; 13.45% Hispanic/Mexican American; 2.30% Native American Indian; and 55.56% White/Other. The district delivered services at 90 elementary, secondary, and special program sites. Seven technical college campuses provided services to 10,524 secondary and post-secondary students.

In 1998-99, the district's total operating budget was $292.3 million, an increase of 6.71% from the previous year. The district employed 5,614 staff members who worked at least half time and qualified for fringe benefits. This group included 3,674 certified teachers or administrators and 1,940 non-teaching staff. This project addressed only the staff members in this group who used registered district or personal Internet accounts. The district also employed 1,543 staff members who did not qualify for fringe benefits.

The district continued its long-term implementation of a strategic plan to improve instruction and services. In 1992-93, the board of education approved a strategic planning process to address six recommendations from an audit by the American Association of School Administrators (1993). Staff members met with school and community groups for 6 months to gather input. Area businesses completed surveys regarding levels of

satisfaction and needs. In June 1993, over 500 school and community members met and identified recurring themes and unmet needs from the community meetings and surveys. A district planning team developed a mission statement stating that "the district is the primary source of educational excellence and its purpose is to ensure that all students learn the skills and acquire the knowledge for success at continuing stages of their lives."

The district team also created 17 strategies to address the mission statement, including Strategy 15 for communication. These strategies correlated with guidelines from the state board and the North Central Association. From September 1993 to February 1994, over 1,000 community volunteers and staff members developed action plans. The district team and school board approved the action plans in the spring of 1994. Subsequently, the district integrated its processes with state curriculum standards and assessments as well as the National Education Goals. A leadership development process nurtured staff development through training activities. At the building level, staff and state-mandated school site councils developed school improvement plans to be used in the district alignment and state/regional accreditation processes.

The purpose of Strategy 15 for communication was to design and implement a comprehensive internal and external communication system. An action team comprised of staff and community volunteers met weekly to discuss community perceptions, examine past practices, and develop the plan. The action team developed a set of ethical communication principles to drive all processes. It recommended that the district support two-way communication processes through the use of modern technology. To achieve Strategy 15, the team created four action plans, which recommended that the district:

1. Establish direct, open, two-way communication among students, community, and staff.
2. Provide a clearinghouse for the distribution of information.
3. Continually improve communication processes, products, and technologies through research and representative samples of students, community, and staff.
4. Establish a Communications Advisory Committee.

Writer's Role

The writer served as a specialist on the district communications team. The team also included a director, marketing technical assistant, secretary, graphic artist, and team assistant. All members had experience in professional communications or public education. The writer's professional experience included teaching TV production and language arts courses. In 1993-94, the writer co-facilitated the development of the district's strategic plan in communication.

The writer's responsibilities included facilitation of the district's web-site services. The writer also facilitated the creation of the Share Network, a system for redistributing community resources to schools. The writer served as a member of the District Technology Steering Team. During 1997, the writer helped with the United Way's annual campaign and assisted with the district's Friendship Fund campaign at all campuses and support centers.

# Chapter II: Study of the Problem

## Problem Statement

The problem this project addressed was that staff and community members did not use the district's web site as frequently as projected. In 1996, the communications team and a supervisor at the library media services office, hereafter referred to as the web-site team, projected that an average of 400 users would visit the site each week. The objective of Strategy 15 was to develop a two-way communication system. It was hoped that the site would become a vital component of this system. To help fulfill the strategic plan, the web site needed to reflect the mission statement, district objectives, and leadership development process.

## Problem Description

In 1994, the library media services supervisor launched a library resources web site for district media specialists on a 5-megabyte Internet account directory. At the request of administration, the supervisor eventually expanded the content to include campus listings and information about district services. Because of the high quality of the web pages, this site became the official district web site.

When the writer joined the communications team in 1996, the staff published printed brochures, newsletters, and other paper items. The cost of paper had nearly doubled during the 1995-96 school year, and the benefits of using other media seemed clear. In the summer of 1996, the team developed a district report that could be published in printed, Internet, and fax-on-demand versions. Due to time constraints, the communications staff created the report without seeking extensive input regarding site organization or the technical issues associated with managing large sites. The report

added 220 web pages to the library media services site. Because the number of files exceeded the capacity of the 5-megabyte account directory, the web-site consultant hosted most of the site on a proprietary server. The web-site contract obligated the provider to give the district staff full management access to the site, but this was not possible. The home page resided on a dial-up account, and the district report resided on the proprietary server. The district did not yet have a registered domain name. When users entered the home page, they had to navigate a labyrinth of links to get to district report documents on the proprietary server. In addition to the inconvenience it created for users, this design inadvertently limited the web-site team's ability to update and manage the site. Nonetheless, the district's administration expected the staff to manage a site consistent with the strategic plan, attractive to users, and easy to update. As the 1997-98 school year began, the web site became outdated. Pressure mounted for the team to reorganize the site and gain access to the server.

Problem Documentation

To document the problem, the writer collected four forms of evidence: a survey of staff members with Internet accounts; WebTrends site usage data; staff and community member input; and a web-page count based on origin. WebTrends software measured usage of the web site in weekly intervals. The web consultant offered WebTrends so the district could monitor user activity on its site.

Table 1.

Staff positions of respondents to September 1997 Internet survey.

| Employment Position | Respondents | % of Total |
|---|---|---|
| Administrative: Building | 20 | 14 |
| Administrative: District | 18 | 13 |
| Certified: Pre-K-Grade 2 | 10 | 7 |
| Certified: Grades 3-5 | 18 | 13 |
| Certified: Grades 6-8 | 12 | 8 |
| Certified: Grades 9-12 | 36 | 25 |
| Certified: Technical College | 7 | 5 |
| Classified: Building | 3 | 2 |
| Classified: District | 9 | 6 |
| Supervisory: District | 10 | 7 |
| Total: | 143 | 100% |

In September 1997, the writer conducted a survey of all staff members with registered Internet accounts (Appendix A). The web-site team sent surveys to 241 staff members who used registered and/or district-paid Internet accounts. The team received responses from 143 staff members, a return rate of 59.3%. The writer administered the survey on scan sheets provided by the district's Quality Improvement Services.

Respondents indicated their use of various Internet and web-site services by marking one of the following choices for each item:

1. Very often: use one or more times daily.
2. Often: use three or more times per week.
3. Less often: use one time per week.
4. Seldom: use one time per month.
5. Never used.

Respondents indicated their employment position category as shown in Table 1.

The first set of items on the staff survey measured usage of general Internet services. The writer included these items to determine how staff members used their Internet accounts. Over 51% of respondents indicated that they used E-mail at least once daily (Survey, item 1a).

At the beginning of the 1997-98 school year, the web-site team introduced 12 staff forums on the site. Staff forums, or newsgroups, enabled registered staff Internet users to communicate asynchronously with other staff members about work-related topics. The District Technology Steering Team's technology framework recommended that user groups be established to connect staff members throughout the district. Staff forums on the web site provided this capability. Each staff member with a registered Internet account could access the forums. The writer developed a printed orientation and mailed it to all registered Internet users. In addition, the web-site team published the orientation on the site. Because most respondents completed the survey in early September, they had no experience with staff forums. However, 43.8% of the staff respondents reported that they already used other newsgroups at least once per week

(Survey, item 1b). Despite these efforts and respondents' familiarity with forums, the district's staff forums had less than 25 messages posted from August 24 through December 31, 1997.

In the late 1990s, online registration became a popular interactive feature on the Internet. Many organizations used registration forms as the first step in developing consumer transactions. Over 23.8% of the staff respondents used online registrations at least once per week (Survey, item 1c). In addition, 10.6% of respondents indicated that they ordered a product online at least one time per week (Survey, item 1d). Although the web-site team had an interest in expanding services to include registration for staff in-service classes, the response to items 1c and 1d indicated that there would not be sufficient demand for such services to justify the expense.

The second set of items in the survey measured usage of district web-site services. In general, staff members indicated that they used the district site most frequently to access the E-mail addresses of other employees. These responses seemed to be consistent with the frequent usage of E-mail indicated by item 1a.

The web-site team maintained a site list of all employees with registered Internet accounts. When a user selected a staff name, a "mail-to" box appeared. Bernstein (1998) found that an E-mail list provided three benefits. First, it offered a fast, efficient way for the staff and community members to communicate. Second, it promoted good goodwill. Third, it created a community of users who could communicate with each other as a result of having access to the list. According to the survey, only 36.9% of respondents used this time saving feature at least once per week, although 82.2% of respondents indicated that they used E-mail at least once per week (Survey, item 2a).

The web site included links to all school-managed web pages. This feature enabled users to access these documents without conducting browser searches. In September 1997, 32.1% of survey respondents indicated that they used the district site at least once a week to access a school web page (Survey, item 2b).

The web site contained over 280 documents including school profiles, district service profiles, and state report cards. These documents replaced several printed publications that the communications team produced prior to 1996-97. Only 17.1% of staff respondents indicated that they accessed school profile documents at least once per week (Survey, item 2d). The staff Internet survey also asked respondents how often they accessed district services documents and state report cards. Only 17.4% of staff respondents used services documents at least once weekly, and 12.1% of respondents accessed report cards weekly.

In addition, the writer analyzed WebTrends reports, which documented weekly site usage on software connected to the consultant's server. WebTrends defined a user session as "a session of activity (all hits) for one user of a web site. A unique user is determined by the IP address or cookie" (e.g., Software, 1998). The consultant's server automatically provided WebTrends data each week. In addition to user sessions, it recorded usage by hour and day, hits to specific documents within the site, and length of sessions. The district's site attracted an average of only 213 general user sessions per week from June 1, 1997 through January 31, 1998. The team expected about 400 user sessions, or visits, per week. The average session lasted about 8 minutes.

By early 1997, the web site appeared to be disconnected from the district's strategic plan in communication. It resembled a one-way corporate communication model

rather than a two-way distributed system. After publishing the district report on the web site, the team became frustrated by its inability to manage the site and disappointed by the WebTrends reports. The director of communications (memo, director of communications, November 17, 1997) called for a more decentralized approach to managing the web site, including training and support for staff members at schools and district offices to create and manage web pages.

To clarify customer issues, the writer conducted focus groups with elementary, middle school, and high school site councils; the technical college division team; and the chamber of commerce education committee. Input from these meetings revealed that many staff and community members lacked Internet access, found the web site difficult to navigate, or did not perceive any benefits from using it. Opinions regarding what to publish on the web site varied substantially. To reduce the burden on the web-site team, the writer formed a web-site advisory committee comprised of 20 staff and community members. After hearing the input from the focus groups, the committee made final recommendations on the reorganization of the web site in December 1997.

Causative Analysis

The evidence revealed three issues surrounding the site's development. First, district staff members did not use the site's features. Second, the site did not qualify as a two-way communication system prescribed by the strategic plan. Third, general usage remained static even after the addition of a large number of district documents to the web site. The causative analysis determined that site development seemed flawed, staff members lacked a compelling reason to access campus or district office documents, and

attempts to attract the general audience did not succeed. The analysis below explains three underlying dynamics that affected this process.

When local companies began offering Internet service, the district developed no criteria for the funding of staff accounts. In December 1997, the writer found that only 383 (7%) of all staff members used registered Internet accounts. Of staff members with registered personal or district-paid accounts, 25.6% were administrators and supervisors; 55.3% were certified teachers and support staff; and 19.1% were classified staff.

The district and sites paid a local Internet Service Provider $130 for a 9-month account and $160 for a 12-month account. Although many school libraries possessed Internet accounts, staff members found it inconvenient to use these services during the school day. The consultant estimated that an additional 10% of the staff used unregistered personal Internet accounts.

The writer developed the staff Internet survey to determine the usage of various general Internet services and specific district site features. The survey results revealed limited use of all services and site features except those relating to E-mail. The writer also convened and facilitated the web-site advisory committee to facilitate reorganization of the web site. Members of the advisory committee, which included staff and community members, commented that the site's organization and content did not appeal to the average user and needed to engage staff members' interests more directly.

The web-site team lacked the ability to update documents or create a distributed communication system because of server restrictions. The writer interviewed members of the web-site team to understand the history of the web site. A supervisor in another department pioneered the web site in 1994 after communications staff members chose not

to work on the project. As a result, the communications team did not begin to consider strategic plan alignment issues until early 1997. By that time, the web site resembled a one-way communication system.

The writer reviewed the contract with the web consultant to understand what happened in the 1996 negotiating process. The contract clearly called for district access to manage site documents, but staff members did not assert these rights. The consultant placed district report document files on its proprietary server because the library media services Internet account directory lacked the space for such a large project. Thus, the district lost access to document files immediately upon publication.

Campus and district office staff members did not possess the skills needed to create web pages. Without a sense of ownership, they lacked reasons to use the site. The library media services supervisor reported low enrollment for HyperText Markup Language (HTML) training, which provided essential skills for web-page development until new software became available. Although software such as Microsoft Word 97 converted text and graphic files to HTML, many staff members seemed unaware of this development. The writer confirmed that 16 of 90 elementary, secondary, special program campuses managed their own web pages in January 1998. Four district offices managed web pages at that time.

Relationship of the Problem to the Literature

The literature review focused on site development issues. Internet browsers made the World Wide Web accessible to laypersons in the mid-1990s. During intense periods of media ballyhoo over electronic commerce, many organizations scrambled into the site

development field as though it was the California Gold Rush. Simply building a site, however, did not guarantee that users would patronize services.

In education, large school districts experienced organizational problems in developing web sites. The creator of the original Oakland, California Unified School District web site faced organizational problems as the site gained in popularity. Users found it difficult to understand headings on the home page and navigate content. Staff members lacked experience in developing attractive web pages (Shotland, 1997). The site, originally developed to provide dial-up access for the district's teachers, became cluttered after students, administrators, and community members got involved.

The Internet is an additional communication channel for organizations, but it is not a complete communication system. By 1998, many companies used the Internet to sell products and publish annual reports, but some customers and stock holders remained loyal to paper publications (Russell, 1997). Historically, communicators had distributed annual reports and other major printed documents to board members, managers, and stakeholders. Some laypersons seemed overwhelmed by the quantity of material available in a web-site annual report.

According to Ford (1995), people only used a web site if they perceived its information to be of value. If users perceived the quality of a site's content to be mediocre, interest dwindled. Within organizations, staff members did not select a consistent editorial or graphic style or delegated this task to webmasters, who did not take the time to proofread, edit, or update documents. Instant publication brought embarrassing attention to unresolved content and form issues. Customer feedback

focused on mistakes rather than the information and image the organization wanted to provide.

Web sites cannot be all things to all people. Some innovators wanted to establish sites that would attract mass audiences. Research indicated that many of these sites did not attract the customers they needed to be successful (Buchanan & Lukaszewski, 1997). Unfortunately, users who used the Internet to surf the newest sites did not prove to be the target audience for most service-oriented companies or organizations.

Customers did not readily adopt interactive site services. In a survey of 104 large companies, Buck Consultants found that only 15 successfully used their web sites for sales (Jones, 1997). Sonesta Hotels & Resorts, a company with an interactive site, averaged less than one online reservation per month after investing between $20,000-$50,000 to establish its web site. Organizations had difficulty understanding the dynamics of Internet communications. Early site users tended to seek product information rather than interaction with the organization, and this frustrated many developers.

Locus of control is difficult to maintain on the Internet. Cruthirds and Hanna (1996) found that users meandered randomly through sites, making analysis of communication transactions difficult. Links and other visual metaphors distracted or misguided users as they first navigated sites.

Innovators often neglected the evaluation of site performance. Many web developers enjoyed designing sites with the newest technology. In this time-intensive process, they failed to collect or report usage data even though server software could readily provide this information (Franks, 1995). Without this data, they could not determine whether a web site reached its goals.

In summary, the literature review revealed that site development remained a relatively new venture. A bandwagon effect followed the introduction of the Netscape Internet browser. Like the district, other organizations hurried to establish an Internet presence without fully understanding the medium's unique characteristics.

# Chapter III: Anticipated Outcomes and Evaluation Instruments

## Goals and Expectations

The goal of the project was to create a web site that staff and community members would use more frequently. For the purpose of this project, staff members included employees with registered district-paid or personal Internet accounts. The library media services supervisor registered all district-paid Internet accounts. Staff members could register personal accounts by contacting the supervisor. The web site listed all registered accounts by staff name and site. Community members included students, parents, and other interested stakeholders. Fulfillment of expectations involved the advancement of the district's Strategy 15 for communication, which recommended a two-way system for staff and community members.

## Expected Outcomes

The following outcomes were projected for this practicum:

Outcome 1: Staff usage of district site features will increase based on a comparison of the results of a September 1997 survey and a survey to be conducted at the end of the project.

Outcome 1 standard of performance: The results of the staff survey to be conducted at the end of the project will show the following increases in weekly usage of district site features compared to the September 1997 survey:

a) The number of respondents to the post-survey who indicate that they use the web site at least once per week to access E-mail addresses of other staff members will increase by at least 20%.

b) The number of respondents to the post-survey who indicate that they use the web site at least once per week to access school web pages will increase by at least 20%.

c) The number of respondents to the post-survey who indicate that they use the web site at least once per week to access school profile documents will increase by at least 20%.

Staff users will report increased satisfaction with the web site, based on a comparison of comments from the web-site advisory committee, various internal groups, and personal interviews.

Outcome 2: The number of weekly general user sessions on the web site will increase from an average of 213 during the period of June 1, 1997 through January 31, 1998, to an average of at least 426 during the project.

Outcome 2 standard of performance: General usage of the district web site will increase by at least 100% during the project. Participants in one-on-one and small-group sessions will be able to access various features of the web site.

Outcome 3: Web-site design will reflect the open communication system recommended by the strategic plan.

Outcome 3 standard of performance: By the end of the project, campuses, and other district offices will manage at least 20 more web pages. As appropriate, documents in the revised web-site will give users the opportunity to provide continual input or feedback.

Measurement of Outcomes

Outcome 1 measurement: Surveys of staff members with district Internet accounts measured usage of general Internet services and district site features before the project began and at its conclusion. Surveys provided an efficient way to reach Internet users at campuses or district buildings. The writer also documented user comments and meetings of the web-site advisory committee, staff and community groups, and personal interviews. The writer improved site services based on this input.

Outcome 2 measurement: Weekly data summarized information about user sessions on the web site. WebTrends, which the consultant generated at the end of each week, provided objective data about usage. This information helped the writer revise site services based on actual usage. One-on-one and small group sessions with internal and external audience members provided additional feedback about site design. Results of sessions enabled the writer and the web-site team to manage, promote, and demonstrate the site more effectively.

Outcome 3 measurement: At the beginning of implementation, the writer tabulated the 488 web pages: 234 managed by the team, 228 by schools, and 26 by district offices. The writer collected this information at the end of the project and reported changes. This process enabled the writer to determine the success of web-page training and staff response to the concept of a distributed communication system.

## Chapter IV: Solution Strategy

### Discussion and Evaluation of Solutions

Staff and community audiences did not use the district's web site as frequently as projected. Strategy 15 for communication recommended the development of a two-way communication system using new technology. The solutions literature highlighted effective usage of Internet sites and related technology services.

Maitra (1996) discussed several themes of strategic site development. Decision-makers need to understand what is possible before developing strategies and goals, which are more important than technology. Managers should use traditional and non-traditional methods to measure site payoffs. In the practicum writer's school district, the strategic plan determined all operational decisions. To qualify for continued funding, the district web site had to reflect the open communication system recommended in the strategic plan. The form of the web site followed this functional need. The practicum writer used surveys and trend data to establish the project's success.

Decentralized management of a site facilitates expansion. According to Rosen (1997), many organizations and companies decentralized the web site during the second stage of development. However, Rosen recommended that a central staff continue to manage the site's technology, structure, and design. The district web site described in this report initially occurred in an ad hoc manner. Publication of the district report on a proprietary server forced the issue of access. After listening to focus groups and getting recommendations from the web-site advisory committee, the practicum writer and team worked with the consultant to reorganize and redesign the site. The consultant continued to manage the server technology as the team learned how to use FrontPage 98. Campuses

and district offices could create their own web pages. The web-site team provided links from the site's server to these independently managed web pages.

Publication of the 1996 district report involved adapting a print-style publication for the Internet. Some users commented that the web pages had too much text and not enough white space. Team members began to understand that a web site must address the unique reading habits of users. Morkes and Nielsen (1997) began conducting web usability studies in 1994. Their studies concluded that users scan rather than read text. In one study, the researchers created several versions of a web site. Each version had its own writing style. The control site featured a promotional writing style. When compared to the control version:

> The site scored 58 percent higher in measured usability when it was written concisely, 47 percent higher when the text was scannable, and 27 percent higher when it was written in an objective style instead of the promotional style used in the control (p.1).

Morkes and Nielsen (1997) reached three conclusions based on their research. First, users scanned for meaningful sentences and clauses rather than reading web pages word-for-word. Second, users preferred short, pithy content. Third, users preferred factual information rather than marketing hype.

Successful web developers reduce the cognitive burden for users by simplifying design and writing content that can be skimmed (Spool, Scanlon, Schroeder, Snyder, & DeAngelo, 1997). Based on usability tests, Spool et al. proposed these guidelines: write in the journalistic inverted-pyramid style, use topic sentences and one idea per paragraph;

keep scrolling to a minimum by using links; use default link colors; and add search functions

Web sites need more than information to attract users. Elemental, Inc. designed sites for IBM and other Fortune 500 companies (Dager, 1997). Elemental's research determined that sites must be attractive and able to educate the user. In an urban district's site, users want information that will help them make decisions. For example, many prospective homebuyers compare school information before they select a neighborhood. The site must be able to provide this information in an unbiased, easy-to-read format. Form followed function in the development of the district site. The practicum writer and communications staff designed web pages that users could easily locate, read, or print. The practicum writer facilitated the web-site advisory committee and sought user feedback to determine future revisions.

The president of Receptive Marketing, an Internet mall, described the six levels of interaction on a web site (Emerick, 1995):

1) Dialogue: discussions in real-time via chat sessions.
2) Research: information gathering in a decision-making process.
3) Service: release and discussion of product or service information.
4) Support: product or service assistance.
5) Lead acquisition: development of new business contacts.
6) Ordering: registration for membership, samples, or courses; ordering of product or service.

In the practicum writer's district, staff members encountered functional capacity issues in setting up the site. Each person who worked on this project had many other job

responsibilities, most of which did not relate to the site. In the future, the district could provide additional release time for the activities that Emerick (1995) described. In the meantime, the practicum writer and web-site team had to improve the information format and provide opportunities for user feedback or interaction.

Hagel & Armstrong (1997) described the dynamics of increasing returns at a well-designed web site. They recommended four reinforcing and interacting cycles to develop growth on a web site: transaction offerings, content attractiveness, member loyalty, and member profiles. The practicum writer and district staff members did not have access to a server or technical staff necessary to produce retail transactions or user profile applications this year. However, the staff had control over content attractiveness, a factor in developing loyalty among users. Therefore, the district site did not focus on retail transactions or collections of user profile information. Instead, the practicum writer and web-site team focused on developing an accurate, attractive, and user-friendly site.

Successful web design included interactivity beginning with the site's home page (Lewis & Lewis, 1997). People adopted the Internet because they liked demonstrations, searches, downloads, and games. Web designers incorporated requests and forums to satisfy this need. The primary purpose of the district's site described in this practicum was to provide information in an open communication system. While the district staff wanted interactive features, the budget did not allocate the technical staff necessary to create many of the functions described by Lewis and Lewis. "Mail-to" links and other modest features encouraged interactivity. The practicum writer and web-site team remained receptive to other low-cost solutions.

The Lawrence, New York School District and Cooperating School Districts of St. Louis, Missouri emphasized content, interaction, and feedback when developing their web sites (Massey, 1997). The Lawrence district developed an easy-to-use site for the whole community and created links with external sites to create a valuable resource. Staff used strategic planning tools such as flowcharts to integrate the sites into normal business. Students could register for classes 24 hours a day. Community ownership of a web site is essential if long-term funding is to be assured. Staff and community members must perceive the site as a convenient and friendly information tool. During this project, the writer continued to explore how the site could become an integral part of district operations.

The Oakland, California Unified School District hired a design firm to reorganize its web site so students, teachers, and parents could easily find their way to the information they need (Shotland, 1997). It took a substantial amount of time to get the input necessary to create the site. Once the web-site team made its decisions, the district needed another level of expertise to implement the project. During the practicum, the writer and the web-site team employed an external consultant because district staff members lacked the time and training necessary to create attractive, user-friendly web pages. Once the revised site became operational, district staff managed its content.

Corporations learned how to use the Internet as an interactive device and sales center (McGraw, 1997). Dell, a direct-sales computer manufacturer, published over 50,000 pages of site information for its customers in 1997. The company created sites for its largest customers so they could access custom information about their hardware configurations, orders, billings, and shipping dates. Dell's daily online sales grew from

$1.5 million in 1997 to $10 million by late 1998 (Holstein, Thomas, & Vogelstein, 1998). The Dell model provided a discrete organization of information based on specific customer needs. Information should be organized from the home page in such a way that it is meaningful to customers. During the practicum, the writer used input from small-group and one-to-one user sessions to revise organization and content for specific audience groups.

Organizations nurture customer relationships through a continuum of transactions (Cronin, 1995). Satisfaction and loyalty are based on the quality of an organization's communication and its responsiveness to individual needs. Organizations customize sites to satisfy customers and get information about specific needs, input on new products or services, and feedback. High quality sites such as www.microsoft.com regularly change the layout, graphics, and content of their web sites. In addition, these sites provide ample opportunities for users to interact with the company via E-mail. While the practicum writer and web-site team lacked the time to conduct frequent overhauls of the site, management increased the ability to make revisions and provide current E-mail links to improve customer interactions. Staff designed the web site to attract customers and encourage them to return for more information or help. During the practicum, the writer and team members used customer input and feedback to revise organization, content, and design.

Effective site developers learned how to address Frequently Asked Questions (FAQs) about the organization, its products, or services (Sterne, 1995). FAQs became popular in newsgroups and File Transfer Protocol (FTP) sites. Extensive development of this page reduced a customer's need to search for the appropriate office, ask the same

question of several people, and then wait several hours or days for an answer. The district's 1997-98 staff phone directory provided over 540 listings for district offices and 110 campus listings, including the technical college sites. Staff and community members often found themselves being transferred to several offices on a quest to get information. During the practicum, the writer and team members refined the organization of topics on the web site to expedite information searches.

The General Electric (GE) site reflected an understanding of modern communication processes (Marlow, 1997). This site, which may be accessed at www.ge.com, involved years of research, development, and revision. General Electric's site is based on customer research that defined communication in terms of these factors:

1) Speed: Customers do not want to wait long. In today's environment, 2 days is a long time.
2) Accuracy: Customers want access to the most current information.
3) On Their Terms: Customers want to get information whenever and wherever they need it.

Marlow's (1997) analysis of General Electric is relevant to the school district. Large organizations may offer an array of customer services; however, they also often fail to communicate effectively with their various audiences. GE's site efforts resulted in principles that drive communication processes. The practicum writer used GE's paradigm to attract and keep customers by providing accurate and accessible information.

Teacher education students needed training in the use of the Internet and newsgroups (Hinchliffe, 1996). Students learned newsgroup etiquette and monitored discussions on several forums so they could be better participants. Internet usage is not

part of traditional teacher preparation. District staff members could benefit from training most when they practiced skills daily. In addition, E-mail correspondence and newsgroups often involve technical skills that new users must practice so their messages are posted properly. During the practicum, Internet training included an orientation to E-mail and forums.

Description of Selected Solutions

The selected solutions helped the district create a web site that staff and community members would use more frequently. The practicum writer generated these solutions after reviewing the solutions literature and gathering input from staff and community members. In addition, several ideas resulted from interviews with the web-site team.

Solution 1: One-on-one and small-group sessions increase awareness and improved site services. Interviews and surveys indicated that many staff and community members seemed to be unaware of the district web site and/or did not know how to use its services. One-on-one and small-group sessions enabled these persons to become familiar with the web site in a friendly atmosphere. District site developers developed positive relationships with users. The practicum writer facilitated sessions throughout the project.

In addition, staff, community members, and the web-site advisory committee provided continual input and feedback. The site development project emulated the 1993-94 strategic planning process, which sought input and feedback from all stakeholders in the community. Although it seemed inconvenient and time-consuming, the practicum writer and web-site team sought continual input and feedback. The site also provided a

"mail-to" link that enabled users to E-mail questions directly to the web-site team. These processes increased user support and improve site services (D'Aprix, 1996).

Solution 2: The writer and the web-site team managed, promoted, and demonstrated the revised web site. In 1997, the writer applied for an exclusive domain name from InterNIK, an international registration service. Thus, the district controlled its own domain name. In addition, the 1998 site contract stated that all site document files became the property of the district in the event of contract non-renewal. These steps provided the district with the option to change site hosts or become its own provider.

Prior to reorganization of the web site in February 1998, the writer's efforts focused on aligning processes. After the new site had been launched, the writer facilitated promotional activities within the district and community to create more awareness. In addition, the writer demonstrated the web site at staff and community meetings. In the spring of 1998, the writer facilitated the selection and purchase of a data projector that made group presentations more feasible.

Solution 3: Staff members and students had the opportunity and training necessary to create campus and office web pages. The district used a distributed network so staff members could manage school or district office web pages in their own Internet account directories.

Low staff enrollment in HTML courses indicated that most staff members lacked the time to master HTML code. The web-site team selected Microsoft Word 97 as the standard web-authoring tool. This software featured a "Save as HTML" feature that greatly simplified web development. The writer offered training throughout the implementation so district staff members could learn how to create web pages.

Report of Action Taken

Solution 1: One-on-one and small-group sessions will increase awareness and improve site services. The web-site advisory committee will provide continual input and feedback to the development of the web site.

The writer's extensive use of focus groups helped redefine the site's content. Dinucci (1997) recommended that web developers use a creative brief to articulate a site's goals, organization, and design. The writer carried organizational storyboards of the home page into each focus group meeting. Upon returning to the office, the writer documented all the comments from the focus group and revised the storyboards accordingly. In addition, the writer continued to revise an Excel chart containing all of the web pages in the site. Input from seven focus groups helped the web-site advisory committee make its recommendations for the new home-page design and organization.

After the launch of the reorganized web site in February 1998, the writer conducted 33 one-on-one and small-group sessions during implementation. Internal audience members who participated in focus groups included elementary, middle and high school staff members; school site councils; the district's technology steering team and communications advisory committee; the district's key communicators volunteer group; and the leadership team for the area technical college. External audience groups that participated in these sessions included the educational leadership committee for the chamber of commerce, representatives of the local news media, the educational relations staff of an airplane manufacturing company, the project director for a state-wide health foundation, and local realtors. Sessions focused on general features of the web site and

new services. In most cases, the audiences responded favorably to the web site and provided valuable input on new services.

Staff forums training became part of Internet in the Classroom courses for the district's staff development program. Staff members voiced appreciation for the sophisticated features in the forum software. At the same time, they described three factors that would prevent its widespread adoption in the district:

1. At the end of the 1997-98 school year, only 9.6% of the staff had registered district-paid or personal Internet accounts.
2. Most teachers at the training sessions said that they did not have easy access to computers with Internet accounts.
3. Most teachers at the training sessions said that they did not have the time to master the features of Allaire Forums and use it frequently.

The web-site team believed that resolution of these issues resided outside its domain. Team members could not justify the monthly server fee when less than 50 messages had been posted in 1 year. In July 1998, the team discontinued funding of staff forums.

Solution 2: The web-site team will manage, promote, and demonstrate the revised site.

In February 1998, the web-site team launched a new district site on the consultant's Windows NT server. From this point forward, the team had password-protected access to the site. The writer facilitated weekly updates of site content from February through September 1998. After facilitating the purchase of a digital camera, the writer took new photos for the home page each week. The writer collected news releases

from the team and linked them to the home page. In April 1998, the writer requested that principals and district office leaders send content revisions to profile web pages for the 1998-99 school year.

During the project, the writer compared costs of hosting the web site with the current consultant versus another company that offered hosting services. The analysis included a comparison of web design costs, hosting with FrontPage extensions, access to the server, and customer service. The web-site team concluded that the district seemed to be getting the best available value from the consultant. In addition, the team continued to contract site hosting rather than leasing or purchasing a server. The consultant's $50 per month fee included 15 megabytes of server space and a dial-up Internet account. As noted by Busch (1998), external web hosting provided improved reliability, faster customer access, and round-the-clock technical support.

Sachs and Stair (1997) developed seven characteristics of effective sites. First, a site must have visual appeal. The user enjoys seeing it. Second, a site must have value. The user needs to visit it. Third, the site must be current. The user wants to come back and see something new. Fourth, the site can be found. The user can locate it with search engines. Fifth, the site can be navigated easily. The user can read the links like good signs on an Internet highway. Sixth, the site must be interactive. The user needs to feel involved. Seventh, the site must be friendly. The user is able to use any browser, at any time, and give feedback to the sponsor knowing that a response is forthcoming.

In the summer of 1998, the writer coordinated updates of all web pages and revision of the site based on input during demonstrations to staff and community groups. The August 1998 edition of the site included these new features:

1. The home page featured simplified graphic buttons based on input from user groups. Reduced-size GIF and JPEG files improved download time. Users could see all information on the new home page without scrolling vertically or horizontally. Weekly photos, the school site of the week, and a date/time feature contributed to a newsmagazine effect. A special home-page link provided all "Back to School" information on a single web page. The home page included 10 MetaTags, or descriptors, for search engines. The writer facilitated the listing of the home page's URL with 250 search engines four times per year beginning in September 1998.
2. The home page provided direct access to library media services' new online library. The library media services supervisor who established the district site coordinated this comprehensive project. It included the entire holdings of the district, the technical college, and the state African-American museum. At the beginning of the school year, librarians in selected schools began using the circulation features of the online library.
3. School profile web pages had links to three customized city maps featuring the locations of elementary, middle, and high schools. The user could right-click on the Shockwave map to zoom-in or zoom-out on neighborhoods. In addition, by clicking on a school's name within the map, the user could connect to the school's profile page. The writer initiated the development of this feature, which the consultant rendered.
4. All web pages fit in the standard 640x480-resolution browser screen. Previously, the web site had been designed for 800x600 screens. Many users

commented that previously they had to scroll down to view all the home page and horizontally to view other web pages.

5. The staff E-mail by name and site web pages included bookmarks. Users could now click on the alphabetical bookmarks at the top of these pages and go directly to the desired area of the listing without extensive scrolling.
6. The staff section of the web site included WebTrends, site guidelines, a web developer's orientation, and a web-page tutorial.

The district's home page proved to be the most challenging element of the site. As noted by Lynch and Horton (1998), the graphic design and organization of a web page is critical to attracting users to a web site. Balance, proportion., contrast, and appropriateness are the key elements of a successful home page. The writer facilitated focus groups to determine the organization of the district's home page. During the summer 1998 revision of the site, the consultant refreshed the design. This included revising the home page and all other web pages for 640x480 resolution.

According to Kirsner (1998), many organizations move on to the second phase of a web project after the initial site is launched. As a result, the first phase is quickly outdated. A site's value is dependent upon its accuracy at the time a user accesses it. When the district reorganized its new site in August 1998, the writer established a weekly schedule for updating the home-page photo, school web page of the week, and news releases. Each week, the writer allocated time for updating profile web pages, links, and other items on the site.

The team shared the responsibilities for updating the school and district profile web pages using Microsoft FrontPage 98. The team selected FrontPage because it had

been rated #1 by Internet World magazine (Bremser, 1998) and other publications. FrontPage 98 offered page development without HTML coding, table and graphic insertion tools, and site management. In addition, the consultant included FrontPage Extensions as part of the hosting agreement. The writer provided FrontPage 98 training for members of the web-site team. The team began updating web pages directly on the consultant's server in September 1998.

Snyder (1998) encouraged web developers to promote domain names whenever possible. In April 1998, the writer approached the manager of two local Target Stores. The manager agreed to distribute a back-to-school brochure featuring information about the district, a locator map, phone listings, and site features. The web-site team completed design of the brochure in July, and Target distributed the brochures during the peak back-to-school promotion weeks in August. The writer also facilitated the integration of the site's URL into all communications team publications; district advertising in chamber of commerce books, brochures, and maps; and other external promotional materials. The writer and communications assistant prepared 13 articles about the district site and four articles about other educational sites in the newsletter for the district's 5,614 full-time staff members.

Although the writer demonstrated the web site for a number of internal and external groups, the web-site team decided that it also needed to provide hands-on opportunities for customers. In August 1998, the writer suggested that the team fund a permanent interactive display featuring the web site. The team offered to provide a computer for that purpose. The writer met with the director of the district's Instructional Support Center (ISC), who agreed to fund construction of a kiosk in the building's lobby.

This location provided several advantages. First, hundreds of staff and community members visited the ISC on a daily basis. Second, a lighted visibility chart already provided a focal point for district information. Third, a local cable provider had recently installed high-speed cable access at the ISC. The kiosk could be connected to the local cable network and deliver high-speed access to the Internet. The writer and a member of the carpentry crew consulted with a local shopping mall supervisor who had installed a similar computer kiosk. The carpenter then began design of the project, to be completed by December 1998.

Stevenson (1998) encouraged organizations to register domain names even if the names would not be used in the foreseeable future. During the project, the district renewed its "com" domain and secured "org" and "net" domains. Registration prevented unfriendly organizations from registering a domain similar to the district's site.

Solution 3: Staff members and students will have the opportunity and training necessary to create campus and office web pages that they can update.

Brigman (1996) urged web developers to create guidelines for future projects as soon as possible. This process enables the staff to set priorities and request budgets for the inevitable expansions that occur when a web site is successful. In February 1998, the web-site advisory committee completed the first draft of district site guidelines (Appendix B). The guidelines recommended the development of a user-friendly site that would attract more students, parents, community members, staff, and other users. The writer facilitated the development of the guidelines and organized meetings of the committee. The site guidelines addressed several areas of site use and development:

1. Use of "Plan, Do, Study, Act" process in web development. This process involved seeking information about student, parent, staff, and community customer needs and expectations, making a plan with the customer, asking for feedback from the customer as to whether the plan worked, and then revising the plan as needed.
2. Measurement of Success. The committee measured the site's success in three ways:
    a) Staff usage of district site features would increase based on a comparison of the results of annual surveys.
    b) The average number of weekly visits on the web site would increase annually.
    c) Site design would reflect the open communications system recommended by the strategic plan. Each year, an increasing number of schools and district offices would develop and manage their own web pages.
3. Role of the advisory committee. The web-site advisory committee would meet as needed to provide input/feedback and make recommendations regarding site organization, design, services, and other issues. The committee would include students, parents, community representatives, and district staff. Committee members would volunteer for alternating 2-year terms.
4. Reference to relevant policies. The site guidelines, rather than serving as policy, articulated existing policies. These policies addressed acceptable use of the Internet and electronic mail, student publications, and copyrights.

After the guidelines had been completed, the writer prepared the web-page developer's orientation (Appendix C) and web-page tutorial (Appendix D) for staff members who wanted to manage their own school or district office web pages. The orientation explained the hardware and software requirements for web-page development as well as providing information about publishing pages on the district's web site. The tutorial provided a step-by-step process for creating web pages in Microsoft Word 97 for PC or Microsoft Word 98 for Macintosh and publishing the pages on dial-up Internet account directories. After field testing the documents, the writer published the orientation and tutorial in the staff section of the web site. Near the conclusion of the implementation, the writer revised the site guidelines, web-page developer's orientation, and web-page tutorial. In September 1998, the web-site advisory committee approved these revisions, which are included in Appendices B, C, and D.

The school or classroom web page offers a way to communicate to parents and the community audience. Teachers and principals can use web pages as supplements to mailed newsletters (Charland, 1998). Goals and objectives can be posted for each course or classroom. A "mail-to" link encourages users to send feedback to the school. Teachers can use their web pages to provide course content, homework, and links to other educational sites. Use of a classroom web site as a curriculum tool fulfills a prediction by Microsoft CEO Bill Gates (1995) that information technology would bring mass customization to learning. According to Gates:

> Every member of society, including every child, will have more information easily at hand than anyone has today. I believe that just the availability of

information will spark the curiosity and imagination of many. Education will become a very individual matter (p. 185).

The writer provided a total of 33 training sessions for 11 elementary schools, five middle schools, four high schools, one special school, one technical college campus, and 11 district offices. This total surpassed the goal of 27 sessions. The writer conducted training sessions at the communications office and at school or district offices. Each session lasted about 90 minutes. The writer provided each staff member with a folder containing:

1. The site guidelines, developer's orientation, and tutorial.
2. Instructions for the use of File Transfer Protocol (FTP) for PC or Fetch for Macintosh computers.
3. A disk containing the FTP or Fetch program.
4. Information about free Microsoft Word web authoring tool updates.
5. Order information for a web developer's reference by Katsaropoulos (1998).

The training sessions began with a simulation of the district's Plan-Do-Study-Act process, which emphasized a team approach to project development. Staff members learned how to create a storyboard of a basic site that included three links from a home page. Then they used a Microsoft Word Web Authoring Tools template to create a home page with school/district office name, three topics, and a "mail-to" link. Staff members created three topic web pages using Microsoft Word's two-column, three-column, and calendar templates. After saving the files and testing them off-line in a browser, staff members used Microsoft Word's Insert Hyperlink function to link the documents and create links to the home page. Next, they learned how to configure the File Transfer

Protocol program and used it to transfer the new files to an Internet account directory. Finally, they connected to the Internet, entered the URL for the account directory, and tested the operation of all their web pages. The writer provided additional support to several staff members by phone, E-mail, and appointment.

Beginning in the fall of 1998, business education departments at 12 high schools in the district offered a one-semester course about the Internet. In August 1998, the writer met with the Internet course instructors to learn about their plans for the first semester. The course included a service project in which students would work with schools and other non-profit organizations to create web sites. The writer described the Microsoft Word web-page training and acknowledged the slow pace involved in using the district's Plan-Do-Study-Act process. The teachers agreed to give students the names of staff members who had been trained in Microsoft Word 97 web-page development but had not yet published their school or district office web pages. The writer agreed to visit classes in the fall and explain the training process. The Internet course service projects provided another avenue for school and district office web-page support.

The web-site team also piloted interactive features on the web site, as suggested by Lewis & Lewis (1997). According to Hagel and Armstrong (1997), interactive features encourage users to visit the web site more often and create a climate of transaction. In 1997, the writer prepared a partnership agreement between a local Internet technology company and a technology magnet high school. The writer met with a representative of the company, who offered to let student interns develop a relational database of elected officials on the web site. Students from the high school magnet adapted a communications team database for the Internet and linked it to the district's

site. The database enabled users to enter the names of schools, their zip codes, and their school district boundary. After pressing the "Submit" key, the user would then see all elected representatives for that area-- neighborhood association officers; city and county commissioners; state senators and representatives; local and state school board members; and congressional representatives. The writer demonstrated the relational database at staff and community presentations, and audiences seemed impressed. This project enabled the communications team to present contact information about elected officials without violating state statutes that prevent district publications from taking positions on governmental issues.

In July 1998, the writer met with the clerk of the board of education to explain how to update the BOE web pages using Microsoft Word 97. During the meeting, the clerk noted that Microsoft Word 97 did not accurately convert the unique format of board policies when saving as HTML. The clerk contended that publishing the policies on the web site would be a valuable service and could eventually save the district a lot of money. When the board revised a current policy or passed a new one, the clerk had to print 300 copies for internal and external distribution. Then staff had to catalog the policy into a two-volume notebook.

By coincidence, the writer had arranged an Adobe Acrobat training session on the next day for several staff members. Adobe's Portable Document Format (PDF) provided an alternative to organizations wanting to reduce paper consumption. It involved saving a file in a graphic format so other users do not have to install the original application or its fonts to view the file (Felichi, 1998). A Microsoft Word file, for example, could be saved in PDF and viewed as a formatted document on any computer with a PDF reader.

The clerk of the board attended the training session and expressed enthusiasm for Adobe Acrobat. In August, the clerk and the writer decided to hold focus groups regarding the publication of the over 800 board policies on the web site.

For the focus groups, the writer wanted to create a simulation of how Adobe Acrobat could be used to display policies. The writer used the first section of the policy book, which contained only 22 policies, to make a start page in HTML. Then the writer converted three policies from Microsoft Word 97 documents to Adobe Acrobat PDFs. The district's site development consultant used these files to create a test site for the Board policy demonstration. The writer, the consultant, and the clerk of the board conducted three focus groups at the beginning of the 1998-99 school year. Participants included teachers, secretaries, principals, district administrators, and school board members. The writer also demonstrated the pilot to the web-site advisory committee. These meetings led to the organization of the policies on the site. In late September, the clerk of the board and the writer met with the consultant, who provided a cost estimate for the policy project. After the meeting, the clerk encumbered funds from the board of education's budget area.

# Chapter V: Results

The problem this project addressed was that staff and community members did not use the district's site as frequently as projected. In 1996, the web-site team predicted that an average of 400 users would visit the site each week. From June 1, 1997 through January 31, 1998, an average of only 213 users visited the site each week. The goal of the project was to create a site that staff and community members would use more frequently. The writer interviewed site team members. After reviewing the solutions literature and gathering input from staff and community members, the writer generated these three solutions:

Solution 1: One-on-one and small-group sessions will increase awareness and improve site services. The web-site advisory committee will provide continual input and feedback to the development of the site.

Solution 2: The web-site team will manage, promote, and demonstrate the revised web site.

Solution 3: Staff members and students will have the opportunity and training necessary to create campus and office web pages that they can update.

## Results

Outcome 1: The results of a pre-survey and post-survey will show an increase in staff usage of district site features.

This outcome was met.

In August and September 1998, the writer conducted a post-survey of all staff members with registered Internet accounts. The web-site team sent surveys to 538 staff

members and received responses from 336 staff members, a 62% return rate. A staff member at Quality Improvement Services again provided assistance with the printing, scanning, and output of results. The 1998 surveys contained the same items as the 1997 survey. Respondents indicated their use of various Internet and site services by marking one of the following choices for each item:

1. Very often: use one or more times daily.
2. Often: use three or more times per week.
3. Less often: use one time per week.
4. Seldom: use one time per month.
5. Never used.

Table 2.

Staff positions of respondents to September 1998 Internet survey.

| Employment Position | Respondents | Percentage of Total |
|---|---|---|
| Administrative: Building | 58 | 17.3 |
| Administrative: District | 36 | 10.7 |
| Certified: Pre-K-Grade 2 | 26 | 7.7 |
| Certified: Grades 3-5 | 31 | 9.2 |
| Certified: Grades 6-8 | 36 | 10.7 |
| Certified: Grades 9-12 | 71 | 21.1 |
| Certified: Technical College | 9 | 2.7 |
| Classified: Building | 24 | 7.1 |
| Classified: District | 22 | 6.5 |
| Supervisory: District | 22 | 6.5 |
| Missing Response | 1 | 0.3 |
| Total: | 336 | 100% |

Respondents indicated their employment position category as shown in Table 2. Of staff with registered personal or district-paid accounts in September 1998, 34.6% were administrators and supervisors, compared to 25.6% in September 1997; 51.6% were certified teachers and support staff, compared to 55.3%; and 13.8% were support staff, compared to 19.1%.

An analysis of a September 1998 Staff Internet Survey revealed that staff members used the Internet and the site more frequently than in 1997. The first set of

items on the 1998 staff survey measured usage of general Internet services. E-mail remained the most popular feature of Internet accounts. In 1998, 86.6% of respondents indicated that they used E-mail at least once each week compared with 82.2% in 1997. (Survey, item 1a). The percentage of staff respondents who reported that they used newsgroups at least once per week remained at about 43% (Survey, item 1b). In 1998, 33.9% of the respondents reported that they registered for some type of online service at least once per week, up from 23.8% in 1997. (Survey, item 1c). In 1998, 17.9% of respondents indicated that they ordered a product online at least one time per week, compared to only 10.6% in 1997 (Survey, item 1d). These responses reflected the Internet's increasing viability as a communications and marketing tool for staff members in the district.

As in the 1997 survey, the second set of survey items measured usage of district site services. In 1998, 51.6% of the respondents reported that they used the district web site at least once per week to access the E-mail addresses of other employees, up from 36.9% in 1997. About the same percentage of respondents indicated that they accessed schools that managed their own web pages at least once per week-- 34.8% in 1998 compared to 32.1% in 1997. In 1998, 25.3% of the respondents said that they accessed school profile documents at least once per week, up from 17.1% in 1997.

In the project proposal, the writer set standard of performance outcomes that predicted an increase in the number of respondents who used site services in 1998 compared to 1997. Thus, it should be noted that the number of staff members with registered Internet accounts increased 123%, from 241 users in 1997 to 538 users in 1998. In addition, only 143 staff members responded to the 1997 survey compared to 336

in 1998. The increase in the number of users demonstrates the dramatic diffusion of the Internet as an innovation during this 12-month period. At the same time, the web-site team's efforts to attract the staff audience seemed to have worked.

Table 3.

Staff use of district web site to access E-mail addresses of other employees (Survey, item 2a).

| Frequency | 1997 | 1998 |
|---|---|---|
| Very Often: use one or more times daily. | 7 | 17 |
| Often: use three or more times per week. | 13 | 59 |
| Less often: use one time per week. | 29 | 97 |
| Total staff respondents who used service at least once per week. | 49 | 173 |
| | | Increase: 353.6% |

As shown in Table 3, the number of respondents to the post-survey who indicated that they used the site at least once per week to access E-mail addresses of other employees increased from 49 to 173. This result exceeded the 20% increase proposed in the Outcome 1a standard of performance. As more staff members became Internet users, this service grew more valuable. During the June 1998 web-site advisory committee meeting, staff members requested that alphabetical bookmarks be added to the top of the staff E-mail lists to make searching for names more efficient.

Table 4.

Staff use of web site to access school web pages (Survey, item 2b).

| Frequency | 1997 | 1998 |
|---|---|---|
| Very Often: use one or more times daily. | 2 | 11 |
| Often: use three or more times per week. | 15 | 37 |
| Less often: use one time per week. | 26 | 69 |
| Total staff respondents who used service at least once per week. | 43 | 117 |
| | | Increase: 272.1% |

The number of respondents to the post-survey who indicated that they used the site at least once per week to access school web pages increased from 43 to 117. This result exceeded the 20% increase proposed in the Outcome 1b standard of performance (Table 4). School web pages became more sophisticated during the 1997-98 school year. One high school's web site, for example, included online library reference materials. Teachers could also use an online calendar to plan their classroom visits to the school's library. Members of the web-site advisory committee reported in September 1998 that some high schools set their home pages as the default location for browsers in computer labs.

Table 5.

Staff use of web site to access school profiles (Survey, item 2d).

| Frequency | 1997 | 1998 |
|---|---|---|
| Very Often: use one or more times daily. | 1 | 1 |
| Often: use three or more times per week. | 2 | 23 |
| Less often: use one time per week. | 20 | 61 |
| Total staff respondents who used service at least once per week. | 23 | 85 |
| | | Increase: 369.5% |

The number of respondents to the post-survey who indicated that they used the web site at least once per week to access school profile web pages increased from 23 to 85. This result exceeded the 20% increase proposed in the Outcome 1c standard of performance (Table 5). The web-site team increased usability of the profiles by adding navigational buttons to the top of each profile. Users could go from the profile to the school's web pages, its state report card, city maps with links to campuses, or the district's home page. These features helped establish the school profile as a navigational tool.

Staff visits to district office profiles also increased (Survey, item 2c). In 1997, 17.4% of respondents indicated that they used this service weekly compared to 21.7% in 1998. In addition, staff members visited the state report card information more often (Survey, item 2e). In 1997, only 12.1% of respondents indicated that they used the report card service weekly compared to 17.3% in 1998.

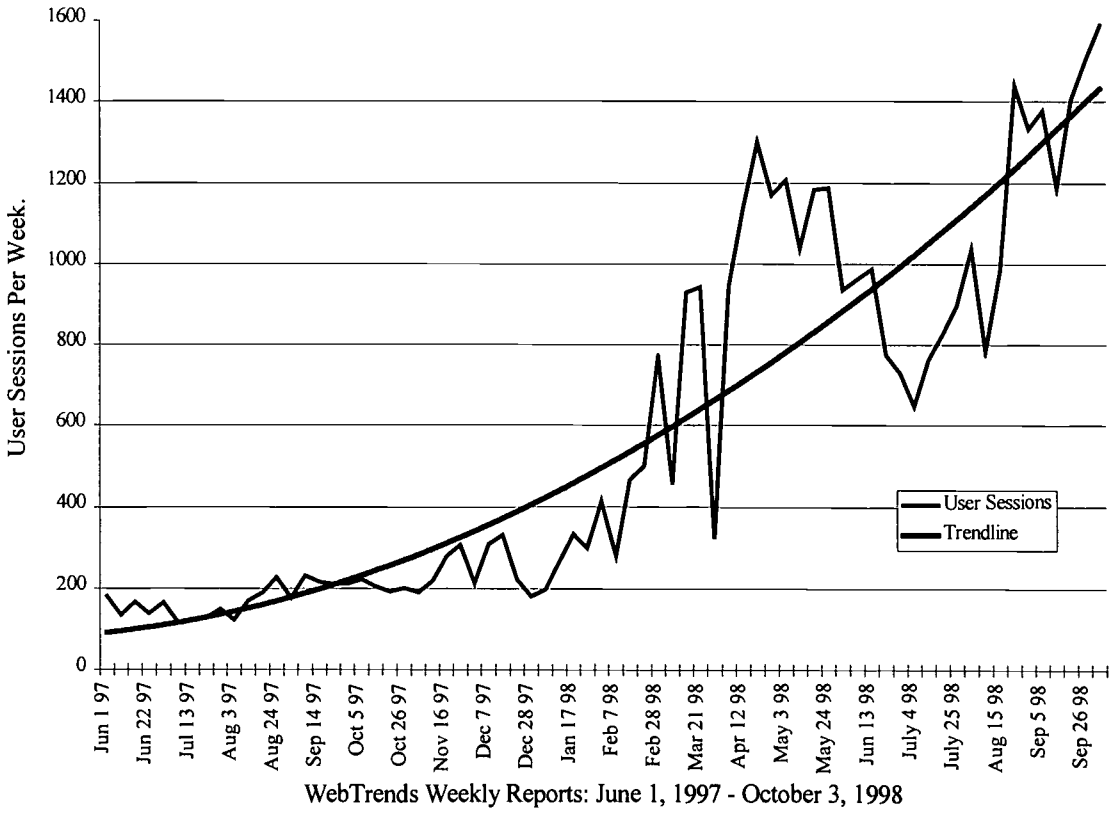
The results indicated that staff members adopted relevant and convenient services. While the web-site team discontinued staff forums because of lack of use, visits to the

site to access staff E-mail addresses, school and district profile information, and state report cards all increased from 1997 to 1998.

Outcome 2: The number of weekly general user sessions on the web site will increase by at least 100% by the completion of the practicum. It will increase from an average of 213 from June 1, 1997 through January 31, 1998, to an average of at least 426 during the implementation of the practicum.

This outcome was met.

Figure 1. WebTrends user sessions from June 1, 1997 through October 3, 1998, with trendline.




WebTrends reported an average of 941 user sessions per week during the project. This result exceeded the average of at least 426 users per week proposed in the Outcome

2 standard of performance. Throughout the project, the average user session lasted about 8 minutes. As shown in Figure 1, WebTrends documented a drop in usage during the summer recess in June and July, and an upward surge in usage beginning in August. This positive trend continued through the rest of the project. For example, WebTrends for the week ending October 3, 1998, chronicled a record 1,594 user sessions. These results validated the writer and team's attention to the web-site advisory committee, focus groups, and other types of customer feedback.

Outcome 3: Site design will reflect the open communications system recommended by the strategic plan. Campuses and district offices will manage at least 20 more web pages by the end of the project.

This outcome was met.

At the beginning of the project, the writer tabulated the number of web pages managed by the web-site team. In addition, the writer counted the number of start pages managed by other district offices and schools. The technical college managed its own 29-page site as a separate domain, and the district simply provided links to its home page. Thus, the writer excluded the technical college from the tabulation. During the project, the writer realized that a count of school and district office start pages did not reflect the depth of many of these independent efforts. For example, one elementary school had 57 web pages on its own site. During the project, a district office created 77 new web pages after receiving training from the writer. Therefore, the writer used the total number of web pages to make a comparison from the start to the end of the project.

Table 6.

Recap of district web-site development

| Web-page Manager: | Web Pages at Start of Project | | Web Pages at End of Project | | Difference: Start to End |
|---|---|---|---|---|---|
| Web-site Team | 234 | 48.0% | 312 | 45.2% | +78 |
| District Offices | 26 | 5.3% | 105 | 15.2% | +79 |
| Schools | 228 | 46.7% | 273 | 39.6% | +45 |
| Total | 488 | 100% | 690 | 100% | +202 |

As shown in Table 6, the district site grew from 488 to 690 web pages during the 32-week project, an increase of 202 web pages or 41.3%. At the end of the project district offices and schools managed 378 web pages, an increase of 124 web pages or 48.8%. This result exceeded the Outcome 3 standard of performance of 20 new school or district office web pages. The writer confirmed that 22 of 90 elementary, secondary, special program campuses managed their own web pages in October 1998, up from 16 schools in January 1998. In addition, seven district offices managed web pages, up from four offices at the beginning of implementation. At the same time, the web-site team's share of web pages decreased from 48.0 % to 45.2%.

At the beginning of the project, only 16 web pages provided an opportunity for input or feedback. In the site guidelines, the web-site advisory committee recommended "mail-to" links for each profile page and school or district office start page. At the end of the project, web pages included "mail-to" links if a staff member at the school or district office had an E-mail account. In addition, the district logo on each web page included a

"mail-to" link to the web-site team's E-mail address. The team's secretary responded to E-mail messages from site users or forwarded the messages to appropriate staff members.

Discussion

According to Rosen (1998) the Internet is "a place where everything exists, if only one knows how and where to look" (p. 8). Rosen compared the Internet to the Talmud, which was written in 500 AD after being passed in the Jewish oral tradition from generation-to-generation for hundreds of years:

> I have often thought, contemplating a page of Talmud, that it bears a certain uncanny resemblance to a home page on the Internet, where nothing is whole in itself but where icons and text-boxes are doorways through which visitors pass into an infinity of cross-referenced texts and conversations (p. 10).

Over 1500 years later, web developers may have left their audiences wondering how and where to look. One solution may be to reduce the complexity of site transactions to a level that users can comprehend. The writer attempted to reduce the complexity of the district's site by organizing its content based on the recommendations of users, focus groups, and the web-site advisory committee.

According to Nielsen (1996), frames, animations, and non-standard link colors confused users. Instead, developers need to limit download times to 10-15 seconds and hire editors to update information and maintain sites. Nielsen (1998) concluded that "the Web constitutes a single interwoven user experience rather than a set of separate publications that are accessed one at a time the way traditional books and newspapers are" (p. 1). Usability tests revealed resistance to innovations and a preference for design conventions. It took almost a year after the release of a new browser version for most

users to upgrade their browsers. Throughout the implementation of the project, the writer shared comments from users with the team and consultant. This process kept the site services focused on the needs of average users rather than advanced users.

Some organizations use interactive services to determine what internal and external customers think of its products and services (Glossbrenner & Glossbrenner, 1995). Some sites encourage users to communicate on newsgroup threads or send E-mail messages directly to other persons. Interactive services need not lead to financial transactions. An educational site might include numerous links to campus and district office E-mail addresses that enable customers to ask questions or make suggestions to staff. During the project, the writer placed "mail-to" links on campus and district office web pages. This feature added value for many users who have corresponded regarding district services or new features they would like to see on the site.

Online discussion forums offered a convenient way to interact and learn (Gilbert, 1995). Organizations helped students and teachers communicate more effectively among themselves and interact more gracefully with ideas and information. In large, geographically dispersed organizations, employees may spend a substantial amount of time traveling to meetings. Forums offer a way to reduce meeting time while maintaining a record of online communications.

The web-site team began offering forums in July 1997, but the service did not fulfil expectations. District staff needed training, time, and access to the Internet to effectively use forums. The writer and library media supervisor integrated a forum orientation into staff Internet training. However, many district staff members commented that they did not have the necessary Internet access, support, or time to use forums. At the

end of July 1998, the team chose to discontinue forums due to lack of use. Like other urban school systems, the district lacked the resources to provide sufficient equipment, software, training, and support for widespread use of Internet services. In September 1998, only 538 (9.6%) of 5,614 district staff members had registered Internet accounts. Districts throughout the United States faced similar challenges in the 1990s. Thousands of teachers needed hands-on assistance to use new technology and software (Council of Chief State School Officers, 1994). Although national, state, and local leaders stated a need to extend the Internet into schools, funding efforts tended to focus on connectivity rather than training and support.

Employee apprehension may have also played a role in the failure of the web forums. According to Akers (1997), public display of Internet forum messages intimidated novice users. Some users would not move beyond observation in a forum. Research indicated that moderators often exercised their privileges to post, edit, or remove messages. Unlike private conversations or classroom discussions, forums provided long-running archival records of an exchange. Novices expressed reluctance to demonstrate their ignorance in front of experts and users. In the practicum writer's district, users may have stayed out of the forums after realizing they could neither edit nor delete their posted messages.

Online group decision-making challenged established paradigms. Poole, Holmes, Watson, and DeSantis (1993) observed staff members in a non-educational organization as they used a computerized group decision support system. Some research participants resented the software's features and circumvented the program. Prior methods of consensus making seemed less effective in an online environment. Participants became

impatient with the learning curve. Some participants lacked the reading and writing skills necessary to master the program.

In summary, the writer and web-site team learned that site development involved risk. The team invested a significant amount of time and budgetary resources in forums, and members felt somewhat responsible for the lack of use. Eliminating the forums, however, liberated the team to explore other opportunities with its time and resources. For example, the team used funds encumbered for forums to create test web pages for the BOE policy focus groups.

A new communications medium may threaten established processes. At first, team members viewed the web site as an additional project that had little connection to fulfilling Strategy 15 of the District's plan. Throughout this project, the writer attempted to reduce this strain by integrating site development into established team processes. For example, team members prepared and submitted news releases to the various media outlets. During the project, the team forwarded news releases to the writer or another team member as E-mail attachments. The writer compiled the releases and published them as a link from the home page. As a result, the team created an additional channel for its messages with minimal effort.

The team studied WebTrends reports each week, listened intently to the audience, and engaged in decision-making activities before experimenting with new ideas, services, and software. These day-to-day work processes yielded serendipitous results for the team and the district. At the conclusion of the project, the district's director of communications (memo, director of communications, October 8, 1998) noted that the district's site had become an effective communication channel for several district audiences.

At a time when the need for credibility in public education was critical, the site provided an inexpensive channel for publishing accurate information about schools and student performance. The distributed network also gave schools and district offices the opportunity to create and manage their own web pages. Early site-managed web pages focused on services and events. The web-site team hoped that schools and offices would eventually use these pages to share local educational planning, curriculum, and instruction. Through such activities, Strategy 15 for communications could be fulfilled.

Recommendations

The urban school district described in this project is not unique. Many school systems and other educational organizations have struggled to establish sites in the past few years. The development process described in this report is more about human relations than technology. Strategic goals, relationships, and communications processes take precedence over the requirements of a technology system. In this regard, the author makes the following recommendations for success in site development:

1. Strive to provide convenient Internet access for staff members and students. Staff use of a district web site will depend on easy access to the Internet and the time to use it.
2. Make the web site part of an overall communications plan rather than simply a technology project. The scope needs to be as wide as possible to attract audiences.
3. Remember all customer groups. A school district site is for students, parents, volunteers, businesses, organizations, community members, and prospective community members.

4. Establish a web-site advisory committee that includes diverse stakeholders. Give volunteers important work to do, and they will become enthusiastic partners.
5. Build a distributed network so that campuses and district office staff get the experience of creating and managing web pages. Encourage schools and district office staff to use mini-advisory committees to guide the development of their web pages. Avoid working in isolation.
6. Involve students in the process. Students should be invited to serve as members of advisory committees, interns in communications, and developers of web pages. They can teach staff members how to use the computers, the Internet, and the HTML software.
7. Forge partnerships with Internet developers, the chamber of commerce, businesses, schools, and district offices. Try to share the cost of developing new web services. This can prevent one department from shouldering all the responsibility, expense, or authority.
8. Move slowly on the purchase of an institutional web server. The Internet is a communications business, and customers go away when web sites go down. Server hosts generally offer several options and their technicians are on-call nights and weekends so web-site teams can have time off.

Dissemination

To fulfill a responsibility to the district's Research Council, the writer will submit a copy of the approved final report to the executive director of Quality Improvement Services, who is the chairperson of the research council. After the research council approves the report, the writer will share the results of the project with the web-site team, the web-site advisory committee, and the district technology steering team.

With the team's permission, the writer will publish the results in the staff section of the district's site, which includes the site guidelines and web-page development information. The writer will also share the results of the Internet surveys with district staff through an article in the staff newsletter. The writer will present the project results with Nova Instructional Technology and Distance Education clusters 2 and 3 at the 1999 Summer Institute.

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Appendix A

Staff Internet Usage

Pre- and Post-Survey

District Internet User's Survey

------- Public Schools

Fall 1997 & 1998

We want to know how you feel about District Internet Services. Please do not photocopy surveys. Call QIS at --- ---- for additional copies. Use a #2 pencil and do not staple or paper clip this survey. Please return the completed form to Mike Willome by September --, 199-.

To indicate your response for Questions 1-2 mark:

1 = Very Often (1 or more times daily)

2 = Often (3 or more times per week)

3 = Less Often (1 time per week)

4 = Seldom (1 time per month)

5 = Never Used

1. How often do you:
   a) Use E-mail?
   b) Use Internet newsgroups or bulletin boards?
   c) Request services that require a sign-up process on the Internet?
   d) Order products that require an online process?

2. How often do you use the ------- Public Schools' web site to access:

   a) E-mail addresses of staff members?

   b) Schools that have home pages?

   c) District Report documents about general services?

   d) District Report documents about schools?

   e) ------ School Report Card results?

3. I am: (mark only one response)

   Administrative - Building Level

   Administrative - District Level

   Certified - Pre-K - Grade 2

   Certified - Grades 3-5

   Certified - Grades 6-8

   Certified - Grades 9-12

   Certified - ------- Area Technical College

   Classified - Building Level

   Classified - District Level

   Supervisory - District Level

Comments may be written on the reverse side.

Please do not write below this line.

Appendix B

Web-site Guidelines

Approved by the district web-site advisory committee

----- Public Schools

Web-site Guidelines

1. Goal

We will create a user-friendly web site that attracts more students, parents, community members, staff, and other users. This goal is consistent with USD --- Strategy 15, which recommended that the district "design and implement a comprehensive internal and external communication system." It is also consistent with Strategy 15's Communication Principles, which are presented at the end of these Guidelines.

2. Objectives

a) Staff will maintain a web site that is consistent with the district's mission, goals, and Strategy 15 for Communications.

b) The web site will provide meaningful and accurate communication content, efficient and effective organization and design, and a clearly defined navigational system.

c) The web site will model the characteristics of an open, distributed communications system. It will:

   1) Provide all school principals the opportunity to develop content for school profile pages that are published by the Communications Team.

   2) Give schools the instructional support to manage school web pages that are linked to the school profiles.

   3) Present accurate, unbiased results of district standardized test scores prepared by the ------- Public Schools' Quality Improvement Services and ------ School Report Cards prepared by the ------ State Department of Education.

4) Provide district offices the opportunity to develop content for district profile web pages that are published by the Communications Team.

5) Give district offices the instructional support to manage their own district profile web pages.

6) Provide communication pathways among schools, parents, students, and the community at-large.

7) District staff will practice the "Plan, Do, Study, Act" process. This process involves seeking information about student, parent, staff, and community customer needs and expectations, making a plan with the customer, asking for feedback from the customer as to whether the plan is working, and then revising the plan as needed. It is part of the Staff Quality Improvement System that assesses growth of the system and encourages alignment of goals and objectives.

3. Measurement of Success

The following processes will measure the success of the web site:

a) Staff usage of district site features will increase based on a comparison of the results of annual surveys.

b) The number of weekly visits on the web site will increase annually.

c) Web-site design will reflect the open communications system recommended by the strategic plan. Each year, an increasing number of schools and district offices will develop and manage their own web pages.

4. Web-site Advisory Committee

The Web-site Advisory Committee is responsible for the development of Web-site Guidelines, which will be published on the web site. The Communications and Library Media Services web-site team, the Director of Communications, and the consultant will present recommendations to the Web-site Advisory Committee regarding district and home page guidelines prior to publication. The advisory committee will refer unresolved issues about the web site to the appropriate administrators.

The Web-site Advisory Committee will meet as needed to provide input/feedback and make recommendations regarding site organization, design, services, and other issues. The committee will include students, parents, school and district staff, and representatives from the community. Committee members who are not part of the district web-site team or its administrative staff will volunteer for alternating 2-year terms. Refreshments will be served at meetings.

5. Management of the District Web site

Staff members from Communications and Library Media Services will manage the web site as a team. The web-site team will meet as needed to discuss progress and issues. Any unresolved issues will be referred to the Web-site Advisory Committee and, if necessary, the appropriate administrators. The web-site consultant will be retained to provide advice, participate in standards development and software selection, and offer the web-site team opportunities for continuing education.

Project team credit

Development of the web site is a complex process that involves the talents and skills of many people. Project team members' names and "mail-to" links will be listed on

the district's "Contact" web page. The consultant will also have a "mail-to" link on that page. The "Contact" web page will be the only location in which credits are listed. All team participants will be also recognized in any competition or district, community, and conference presentations.

6. Disclaimer of Liability

The district makes no warranties of any kind, whether expressed or implied, for access to the web site, related services that it provides, or materials accessed directly or indirectly. It is not responsible for damages suffered by users, including loss of data or other services.

7. Domain Name and Copyright Protection of Web-site Contents

The domain name www.usd---.com has been registered with InterNic and is leased by the ------- Public Schools for the purpose of exclusive site identification. The domain name, district identification, district logo, all text, graphics, and photographic contents of the district web site are copyrighted by the ------- Public Schools. All rights reserved. Contact the Communications Team at --- ---- for permissions.

8. Reference to District Policies

a) These BOE policies have been used to develop the Web-site Guidelines:

BOE Policy P0910, Civil Rights Resolution

BOE Policy P1170, Rules of Ethical Conduct, Employees

BOE Policy P1231, Acceptable Use for Internet and Electronic Mail--Employees

BOE Policy P1232, Acceptable Use for Internet and Electronic Mail--Students

BOE Policy P1675, Ownership of Employee Products

BOE Policy P2219, Distribution of Political Materials

BOE Policy P6400, Copyrights

BOE Policy P6432, Videotape

BOE Policy P6715, Student Publications

b) Civil Rights resolution: Section 504/American Disabilities Act (ADA).

No person may be excluded from any participation in, denied the benefit of, or otherwise subjected to discrimination under any program, activity, or employment with USD ---. The district home page will include the following district Section 504/ADA statement: "The ------- Public Schools does not discriminate on the basis of race, color, national origin, sex, handicap/disability, age or religion. Persons having inquiries may contact the ADA and Section 504 coordinator at --- ----." For more information, refer to BOE Policy P0910, Civil Rights Resolution.

c) Appropriate use of the web site.

The district's web site is a network intended to provide information and communication tools for its users. Communication on the web site is not considered private.

It is not appropriate to use the web site to:

1) Violate any local, state, or federal statute (P1231, P1232);
2) Transmit pornographic, obscene, abusive, sexually explicit or threatening material (P1231, P1232);
3) Harass, insult, or attack others (P1231, P1232);
4) Transmit libelous material that may result in defamation of character or unnecessarily expose a person to hatred, ridicule, or contempt; which may

cause that person to be shunned or avoided; or which has a tendency to injure that person in office or profession (P6715);

5) Make malicious statements that are motivated by, and convey, feelings of hatred or contempt, whether based on false or misleading statements, half truths, or distortions of the truth (P6715);
6) Publish statements, graphics, or photographs that are inflammatory and which could disrupt or create a hazard to public safety (P6715);
7) Invade the privacy of others (P1231, P1232, P6715);
8) Access another individual's passwords, materials, information, or files without permission (P1231, P1232);
9) Vandalize computer hardware, software, or web site (P1231, P1232);
10) Use the web site for personal commercial purposes (P1231, P1232);
11) Use the web site bulletin boards or discussion groups for distribution of political materials (P2219).

d) Identification of students and staff members on the web site.

1) Use of Staff/Students Names

Information about staff and students that might reasonably be published by the local news media may include first and last names. This would include honors, awards, competition results, etc.

2) Identification of Staff/Students in Photographs

District staff and regular education students may be identified by first and/or last names in photographs only if the school or district has obtained a signed photography waiver. If persons are not identified by name,

waivers are not necessary. Students identifiable as receiving Special Education services must have waivers regardless of whether they are identified by name. Waivers are to be filed at the school office or district office.

For more information, refer to BOE Policy P6432, Videotape.

e) Use of copyrighted materials on the web site.

U.S. copyright law and publisher license agreements are in effect on the district web site. Instructional computer software, musical scores, books, printed materials, photographs, graphics, audio/video recordings and other copyrighted materials are protected by copyright and may not be used without permission.

Principals are responsible for enforcing district policy and terms of licensing agreements at the site level. Teachers and library media specialists are responsible for educating students about the legal and ethical issues that arise when materials are used. Copyrighted materials may be used or distributed on networks or the web site only if appropriate permissions or licenses have been granted. Materials may be used on a limited basis according to Copyright and Fair Use Laws.

The district's legal and insurance protection will not extend to staff members who violate copyright laws. For more information, refer to BOE Policy P6400, Copyrights.

f) Ownership of employee products on the web site.

Rapid expansion of the Internet has produced great interest in its potential

to publish information, aid research, and distribute products or services. To encourage employee creativity and to protect the rights of both the creative employee and the public, BOE Policy P1675 includes procedures that clearly assign the rights of ownership of employee products. As noted in section 8.B.10 of these guidelines, the web site may not be used for personal commercial purposes (P1231, P1232). Highlights of the BOE Policy P1675:

1) Rights of ownership include the right to copyright or patent and the right to sell and/or distribute.
2) The district has all rights of ownership of products produced by an employee during hours that the employee was paid by the district.
3) The district has all rights of ownership of products produced by an employee in which the use of district supplies and/or equipment played a dominant role.
4) The employee has all rights of ownership of products produced by the employee other than during those hours paid by the district and in which the use of district supplies and equipment did not play a dominant role.
5) The district may enter into an agreement in advance with an employee to produce a product.
6) If doubt exists as to whom the rights of ownership belong, the employee and appropriate representatives of the district may execute a written agreement.

District employees who benefit from substantial interests, business, or contracts are required to complete a disclosure of interest statement with the district. For more information, refer to BOE Policy P1170, Rules for Ethical Conduct--Employees.

9. Content

   a) Statements of opinion.

      Statements of opinion expressed on the district web site represent the author's point of view and not that of the district, staff, or school.

   b) Content of Communications and Library Media Services web pages.

      Information on these pages will be updated as frequently as possible. Notify the Communications at info@usd---.com to report corrections or revisions of district/school profile web pages.

   c) Content of school and district office web pages.

      The web site provides another outlet for publication of school newsletters, current events, and student-produced media. However, schools and district office staff should be aware that the Internet provides a potentially larger and more diverse audience than print publications. The BOE Student Publications policy (P6715) is recommended as a model for all site web-page publications. Student publication advisors will solicit information and recommendations from the principal and other appropriate persons and are responsible for establishing guidelines for editorial and advertising content that are aligned with the Journalism Educational Association's statement on Freedom of the High School Press and the district's Web-site Guidelines. Advisors are encouraged to include web-page staff in the

Student Publications Editorial Board and to review comments or complaints submitted by patrons, staff, and students which relate to information published on school-managed web pages.

10. Links to Non-District Web Sites

Links to non-district educational sites need to be checked on a regular basis for continued existence and appropriate educational content. The district web-site team will not provide links to for-profit web sites. Providing links to non-profit or for-profit web sites is a site-based decision for schools and district offices that manage their own web pages. The district reserves the right to remove links to web pages or linked web sites with content that is inappropriate for the ------- Public Schools' web site.

11. Sponsorship of District Web-site Services

Due to limited resources, the district web-site team may ask sponsors to contribute some web-site services. Sponsors may be recognized through the display of educationally appropriate logos. Display of a sponsor logo does not represent an endorsement of the sponsor, its products, or services. The district web-site team will not provide links to for-profit sponsors' web sites.

12. Communications Principles from USD --- Strategy 15

a) The students, parents, community, and staff of USD --- have a right:

1) To be communicated with honestly about events in the district.

2) To be treated with dignity and with respect for diversity.

3) To request information and receive that which is legally accessible.

b) The USD --- communication system should be:

1) Honest, balanced and fair to all persons, with equitable methods of resolving problems.

2) Direct, with a two-way communication system between the students, parents, community, and staff.

3) Open, with dialogue among all persons.

c) The USD --- communication system will:

1) Inform the public of the district's mission statement and efforts to meet the statement.

2) Proactively involve the students, parents, community, and staff.

3) Provide a clearinghouse for the distribution of information.

4) Continually improve communication processes, products, and technologies through research and representative surveys of students, parents, community, and staff.

5) Offer students, parents, community, and staff training in communication processes, products, and technologies.

Appendix C

Web-page Developer's Orientation

Approved by the district web-site advisory committee

------- Public Schools

Web-page Developer's Orientation

Before developing your web pages, please review the Web-site Guidelines. Also see the Web-page Tutorial, which includes a step-by-step process for creating web pages and hyperlinks.

1. Plan, Do, Study, Act

Staff members are encouraged to use the Plan, Do, Study, Act process in developing school and district office web pages. Seek information about student, parent, staff, and community customer needs and expectations for the web page. Make a plan with the customers. Ask for feedback from the customer as to whether the plan is working. Then revise the plan as needed. The district web-site team uses this approach. It will save time to develop a plan showing the visual layout (storyboard) and organization of your web page(s) before its launch.

2. District Web-page Design Standards

To assure a high level of quality, standards have been adopted for web pages developed by the Communications and Library Media Services.

Web-page standards

a) Color: 256 or 8-bit. Resolution: 640 x 480.

b) Pixel width of page: 600. This width is compatible for VGA monitors.

c) Links: Should change colors after a hit. Colors appropriate for persons with vision disabilities.

d) District logo, district home button, and background: A standard logo will be provided to reduce load times. Image template: Available at www.usd---.com/web/template1.htm.

e) E-mail addresses: Contact person names should be viewable and linked to their E-mail addresses.

f) File names: Use lower case with no spaces. Use hyphens between words. Start page is index.htm or index.html.

g) Alt tags: Images should all have alt tags and pixel width.

h) Page title: The entire page title should be viewable in the browser Location menu and bookmarks.

The web site will be organized and designed so laypersons and persons with visual impairments may easily read and navigate web page elements. Note: Earlier browsers may not support frames, sounds, video, animated GIFs, or dynamic HTML. Mac and PC browsers display ASCII characters larger than 128 differently. Web pages should be designed to use browser defaults.

General mail contact: info@usd---.com

The district home page www.usd---.com and pages of managed by the Communications Team will contain a "mail-to" link to info@usd---.com on the district logo. Start pages that are managed by schools and district offices will also have a "mail-to" link.

Web-page load time

Load time for a web page should be as fast as possible by limiting the size of graphics and other design features. Developers are encouraged to test load times, links,

and other web-page features at http://www.websitegarage.com/bin/go or http://www.netmechanic.com/.

3. Profiles and Web pages: The Difference

The Communications Team publishes a profile on the web site for each school and district office, using information from principals and department leaders. Each school profile provides links to the ------ School Report Card and optional school-published web pages.

School and District Profiles: Managed by Communications Team

School or district profiles are developed with input and approval from principals or district office leaders, respectively. The Communications Team creates, manages, and revises these web pages to assure that all schools and district offices have information on the web site.

School and district office web pages give schools the opportunity to publish more timely information such as newsletters or student publications. The Communications Team will publish a profile even if the school publishes its own web page. Profile pages will appear before other pages. District offices may publish web pages instead of profiles. Web pages are the responsibility of the publishing school/office and are stored on Internet account directories.

Guidelines:

a) Each school or district profile is to be identified as part of the ------- Public Schools.

b) All profile start pages will include:

   1) School or district office name, address, phone, fax, principal or

departmental leader's name.

2) "Mail-to" link so users may ask questions or provide input/feedback.

3) Revision date.

4) District logo linked to info@usd---.com. District home button.

c) Non-factual or exaggerated claims and links to personal home pages or inappropriate material are not supported.

d) Principals or departmental leaders will approve hard copy versions of school or district profile pages prior to publication on the web site. Profile documents are not intended to provide current events or other time-sensitive information. (See next section.)

School and District Office Web Pages: Managed by Sites.

School and district office web pages are developed and managed by school or district office staff and/or students. Schools have the opportunity to provide current event or time-sensitive information as well as host various school publications on the Internet. A district office may publish its own web pages instead of the district profile. Schools or district offices are responsible for updating independently managed web pages.

Guidelines:

a) All start pages will include:

1) School or district office name. District pages will also include address, phone, fax, and contact information.

2) ------- Public Schools logo and home button (available at: www.usd---.com/web/template1.htm).

3) "Mail-to" link so users may ask questions or provide input/feedback.

4) Revision date.

b) Current event or time-sensitive information should be up-to-date.

c) Non-factual or exaggerated claims and links to personal home pages or inappropriate material are not supported.

d) Principals or departmental leaders will provide a web page address in writing to the Communications Team so the team may create a link. Refer to "District-Level Web-page Standards" for other guidelines.

4. Equipment and Software Recommendations

| Recommendations: | Macintosh | PC |
|---|---|---|
| Model | LCIII or higher | Pentium |
| RAM | 8 megabyte minimum | 8 megabyte minimum |
| Operating System | System 7.0 or higher | Windows 95 |
| Web-page software | Microsoft Word 98* | Microsoft Word 97* |
| Web browser | Netscape 2.02 or higher<br>Explorer 2.0 or higher | Netscape 2.02 or higher<br>Explorer 2.0 or higher |
| File Transfer Protocol (FTP) | Fetch (disk provided) | WS_FTP (disk provided) |

To activate Microsoft Word 97/98 HTML features, select custom installation and Web Page Authoring (HTML) during setup of program. The Microsoft web site includes free Web Authoring Tools Updates.

Appendix D

Web-page Tutorial

Approved by the district web-site advisory committee

------- Public Schools

Web-page Tutorial

1. Step-by-Step Web-page Tutorial

This practice exercise involves creating web pages and publishing them with File Transfer Protocol.

a) Go to http://www.usd---.com/web/template1.htm.

b) Save the template to a blank 3.5" floppy disk. It will save as template1 in HTML.

c) Open Word. In "File" select "Open" and open template1. This is an HTML document now.

d) In "File" select "New" and then select the "Web-pages" tab. If you are creating a school page, select "Web-pages Wizard." The Wizard will ask you to select the type of web pages you wish to create. For this example, select "Simple Layout." For this example, then select the style "Elegant." When you create several web pages, use the same style throughout for continuity. Save the page on the floppy disk as index. This will be the start page, or first page of your site. Note: If you are creating a district office web pages, select "Blank Web Pages." This will enable you to create a start page from the template1.

e) Alternating from template1 to the index file, copy the elements from the template that you need. Minimum elements: District home button, district logo, and copyright. To change or eliminate the background on the index file, select "Format" and "Background." Some browsers interpret "no fill" as a gray

background so select white if you want a clear background. Save the index file again.

f) Enter the title and other standard elements of the start page. See Web-site Guidelines.

g) Enter the major headings for links to other pages on your web site. Then save again.

h) Go to the browser. In the "File" menu, select "Open File" and open the index file from the floppy disk. You should see the start page that you created in Word. It is a good idea to save your work frequently and preview it in the browser.

i) Now go back to index in Word. Create new files for each of the linked pages that will connect to the index start page. You may use either the Web-page Wizard or the Blank Web page. Save each file with a simple name, all lower case. Ex: calendar

j) To create a link to another page, select appropriate word or words on the start page and click "Hyperlink" on the "Insert" menu. Browse the "A" drive and select the file you want to link to. Also create links on each subsequent web page that will take the user back to your start page. Call this link: "[Your web site name] home page." Save all files. Now check all of the links while Word is still open.

k) Go to the browser. In the "File" menu, select "Open File" and open the index file. Then check all of the links to subsequent pages. If necessary, go back into Word and adjust elements in affected files, save, and recheck in the browser.

l) Open WS_FTP and complete the information necessary to access the directory provided with your Internet account. This is a place on the server where you may

upload your files. Use the tutorial provided by [Host] Internet at http://support.[Host].com/support/homepage.htm#upload

m) Transfer all files into the public.html folder. Exit WS_FTP as soon as you are done.

n) Open the browser and enter your account ULR. Ex: http://www.[Internet host].com/~alincoln

o) Hopefully, you will see your start page. Test all links before exiting. Ask your campus/district office leader to review your web page and send a memo to the Communications Team, requesting a link to your ULR. Include the URL in the memo.

2. Options for Creating Web Pages in Microsoft Word 97 (PC) or Word 98 (Mac)

You may choose to develop your web page using other software. However, the Communications Team provides instructional support only for MS Word. To activate Microsoft Word 97/98 HTML features, select custom installation and Web-page Authoring (HTML) during setup of program. The Microsoft web site includes free Web Authoring Tools Updates.

There are three options for creating a MS Word web page:

a) Use the MS Word template provided by the Communications Team.

Advantage: If you have only one web page or want each page to look like the district standard, this simplifies your task.

b) Use the Web-page Wizard in MS Word.

Advantage: This option provides onscreen Wizards to guide you through the process.

c) Copy text directly into a MS Word or Web-page Wizard document.

Advantage: This option enables you to copy and paste directly from other files.

Descriptions of each option are provided in the next sections. For more information, we recommend MS Word's online Help or the following book:

Katsaropoulos, Chris. (1998). Learning to create a web page with Office 97. New York: DDC Publishing. Cat. No. Z23. 800-528-3897.

The MS Word web-page function provides different toolbars and menus. HTML does not support the following MS Word functions: columns, paragraph borders, text effects, and headers/footers. When you use MS Word's web-page function, you will have the opportunity to download Word Web Authoring Updates directly from the Microsoft web site.

3. Using the Microsoft Word Web-page Wizard

In MS Word, select New in the File menu. Select the Web-pages tab. Then double-click Web-page Wizard. Select a web-page format and style you want. When you select Finish, a template for your web page will appear. Simply insert your content. Then select Save in the File menu and you are ready to transfer the file to the server.

4. Copying and Pasting Text from Other Files into Microsoft Word

To use material from a non- MS Word file source, first open the original file and save it as a separate MS Word file, Rich Text Format file, or Text file. When you reopen the file in MS Word, see which of these works best. Now highlight the text you want and select Copy from the Edit menu to copy the part of the file that you want to paste into your web page.

In MS Word, select New in the File menu. Select the Web-pages tab. Then double-click Web-page Wizard. Select the template you want to use. Then select Paste from the Edit menu and place the text into your web page. Repeat this process until you have copied and pasted all of the material needed for the web page.

You may also paste text into the template available online at http://www.usd---.com/web/template1.htm.

Use the commands on the toolbars and menus to develop your web page. Then select Save in the File menu and you are ready to transfer the file to the server.

5. Transferring Web-page File to the Internet Server

There are three ways that you may transfer your files to the server:

a) FTP (for Windows users)

b) Fetch (for Mac users)

c) Microsoft Web Server.

[Host] Internet provides an online tutorial for each of these methods. We recommend that you download or print the tutorial, which is located at: http://support.[Host].com/support/homepage.htm#upload.

6. Getting Your Web Pages Linked to the District Web Site.

Ask your principal or departmental leader to request in writing for the Communications Team to create a link from the district home pages to your new web pages. The memo needs to include the web address (URL) of your web page. It may be faxed to --- ---- or mailed to Communications Team, EMRC-5.

7. Assistance

Contact Mike Willome at --- ---- to schedule instructional support, which includes basic web-page composition in MS Word and File Transfer Protocol to your account directory.

Schools and offices are responsible for any Internet accounts used in this process. Directory space for web pages is usually provided for those accounts. Campuses and district offices are also responsible for managing all files in their directories and maintaining backup copies. Your building's Internet Coordinator or your Internet Service Provider may be able to assist with connectivity or configuration issues.

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