Analysis of Elementary School Web Sites

Richard Hartshorne, Adam Friedman, Bob Algozzine and Daljit Kaur
Department of Educational Leadership, University of North Carolina at Charlotte, USA // rhartsho@uncc.edu // afriedma@uncc.edu // rfalgozz@uncc.edu // dkaur@uncc.edu

ABSTRACT
While researchers have studied the use and value of educational software for many years, study of school Web sites and/or their effectiveness is limited. In this investigation, we identified goals and functions of school Web sites and used the foundations of effective Web site design to develop an evaluation checklist. We then applied these criteria to a random sample of Web sites to identify the extent to which the key features were evident in them. The majority of the elementary school Web sites surveyed provided evidence of basic design principles; however, scores were not as good for structure, design, general components, and general ratings. Based on our findings, we derived and present a set of guidelines for developing and improving elementary school Web sites. We also suggest that future research efforts should examine contextual factors influencing the effectiveness of elementary school Web sites and how various stakeholders use elementary school Web sites.

Keywords
School web sites, Web presence, Elementary schools, Internet

Technology has become a critical component of everyday life. In recent years, one indicator of this has been a rise in the development and use of school web sites. This is primarily due to the steady increase in Internet connectivity of the many stakeholders in the educational process (Chen, 2002; National Center for Education Statistics, 2003; U.S. Department of Commerce, 2001). Because of this increase, concerns about the value of the content, form, and use of school Web sites have emerged, much like interest in the educational value of software appeared years ago (Higgins, Boone, & Williams, 2000; Larsen, 1995; Lee, 1987; Truett, 1984; Zane & Frazer, 1992).

In this regard, Goyne, McDonough, and Padgett (2000) discussed questions that professionals should ask when evaluating software (e.g., Is it consistent with the curriculum and learning outcomes? Does it offer the learner choices and control? Does it have high-quality technical components? Is it accessible to students?). Others have addressed the extent to which educational software was meeting the needs of teachers and students and provided guidance for structuring the evaluation process in general and special education (Forcier, 1999; Higgins, Boone, & Williams, 2000; Huff & Cooper, 1987; Spitzer, 1996). Justified largely by the pressure resulting from widespread development and use of commercially-developed products and the lack of summative or formative evaluation information, educators became increasingly more proficient critics and more determined advocates for better software for their students.

The growth of the Internet and its availability in schools around the world has been unparalleled in the history of technology and innovation (National Center for Education Statistics, 2003; Nielsen/Net Ratings, 2004; Owston, 1997; Revenaugh, 2000; U.S. Department of Commerce, 2001). This is particularly true with regard to school Web sites:

Nationwide, 86 percent of public schools with access to the Internet had a web site or web page in 2002…This is an increase from 2001, when 75 percent of public schools reported having a web site. There were differences by school characteristics in the likelihood of have a web site or web page. For example, the likelihood of having a web site or web page was lower in schools with the highest minority enrollment than in other schools (76 percent compared with 87 to 92 percent). (Kleiner & Lewis, 2003, p. 10)

While culture and geography direct specific aspects of some school Web sites, the importance of considering general functions and goals justified the need for the general evaluation completed in our study.
Goals and Functions of School Web Sites

Elementary, middle, and high school Web sites have two primary functions: serving as information systems for site visitors and acting as intermediaries between the numerous stakeholders in the educational process (McKenzie, 1997). A number of specific goals are particularly significant to elementary schools. These include: 1) introducing educational stakeholders to the school, 2) providing opportunities for local and global publication of student work, 3) acting as an intermediary to a larger body of information, and 4) providing a rich source of locally relevant data related to a variety of instructional topics (McKenzie, 1997). These features have relevance in evaluating the Web presence of schools and provide the basis for developing tools for studying this aspect of technology-based resources.

Introducing the School

Providing an effective and thorough introduction to individual elementary schools is one primary purpose of school Web sites. An effective, thorough introduction may convey a variety of information about the school, such as the overall look, mission, environment, and character, as well as other school offerings. Additional information should be extensive and might include information such as a picture of the school, school accountability information, demographic information of the student body, faculty/staff information, and resource information. Information is the most useful when it is presented so that parents, current and potential students, and other stakeholders in the teaching and learning process can find it easily.

Publishing Student Work

Elementary school Web sites should also provide opportunities for students to publish their work both locally and globally. While this further introduces site visitors to the school, it also has a number of positive scholarly implications, as several studies have reported the value of student publication to the World Wide Web. For instance, Dixon & Black (1996) and Routman (1991) found that publication of student work can be motivational for many students. Riley and Roberts (2000), as well as Schofield and Davidson (2002) reported increased student achievement and increased positive attitudes toward the content as a result of the publication of student work to the World Wide Web. Additionally, other studies have demonstrated that student web publication promotes reflection regarding individual growth and development and provides opportunities for students to visualize the purpose of their work much more clearly (Snyder, Lippincott, & Bower, 1998; Spitz, 1996; Willet-Smith, 1993).

Introducing a Larger Body of Information

Elementary school Web sites can provide diverse resources for students, parents, and teachers, including guidance resources and other information. Examples of student resources include curricular tools for all subject areas, such as Internet search tools, tutorials, help/homework centers, remediation tools. Additional educational resources could also be included. For example, as a resource for teachers, the elementary school Web site could provide access to assorted (potentially searchable) lesson plans related to all aspects of the elementary school curriculum. Other resources providing methods of enhancing the teaching and learning environment could also be a powerful tool for teachers. As a parent resource, elementary school Web sites could provide easy access to materials related to a variety of topics. These might include child safety, parent-teacher organizations, or school accountability data. As an intermediary to a larger body of guidance resources, school Web sites could include policies and procedures related to various aspects of the guidance process. Providing references to these extraneous educational issues could have far-reaching benefits for all stakeholders in the educational process.

Providing a Rich Data Source

Elementary school Web sites can serve as rich sources of data in a number of ways. First, a variety of information for students to use in various learning situations can be stored using an elementary school Web site (McKenzie, 1997). For instance, locally relevant data collections, such as weather or economic issues, could be stored, queried, and
retrieved by students in a number of teaching and learning situations. This is particularly useful because Web sites allow for easy storage, access, and retrieval of large amounts of raw data by students. As storage media, also providing opportunities for student interaction, elementary school Web sites encourage and allow students to add to the existing collection of locally relevant data.

Elementary school Web sites can serve many functions, including acting as a source for publication of student work to the World Wide Web and acting as a continually developing database of information for current and future students. In addition, with the increased focus on school accountability, schools can provide past and recent data related to a variety of school accountability issues, allowing for comparisons with other district, state, and national elementary schools.

Rationale for the Study

It is clear that the presence of the Internet is becoming an essential addition to the educational landscape. Data from the National Center for Education Statistics (2003) reinforce this, indicating that, as of 2002, 99% of schools had a connection to the Internet. A variety of information is available on the Internet and schools are becoming important contributors to resources used on the World Wide Web. For example, a National Center for Education Statistics (2003) report indicates that 86% of public schools with Internet connections also have a school Web site. The creation of such a resource lends itself well to the overarching theme of an elementary school and its curriculum.

Unlike educational software products, school Web sites have not been extensively evaluated (cf. Rutkowski, 1997) and little research distinguishes effective from ineffective elementary school Web sites. In this study, we examined the ways in which elementary schools use Web sites as tools to both serve as a contact point with students, parents, and the community, as well as provide an individual identity.

Method

As part of a larger project focusing on the web presence of elementary, middle, and high schools, in this research we reviewed the content of selected elementary school Web sites. The researchers considered basic Web design rules in their evaluation but were more concerned with the functionality of each elementary school Web site as a basis for identifying implications for improving the Web presence of schools.

Development of the Checklist

We evaluated each Web site using a checklist, which included sections on design, structure, content, and general elements (see Appendix A). For each component, a school Web site either did or did not have a particular feature. If a feature was present, we added points to the Web site’s overall score.

Design elements. We derived the primary design elements of focus from the Web Style Guide, 2nd edition (Lynch & Horton, 2004) and included graphic design, page design, layout issues, interface and site design, and typography issues. These areas included related areas such as user-centered design, ease of navigation, consistency on and between pages, the presence of a clear visual hierarchy, page dimensions and layout, organization of information, text and graphic location, alignment and size, as well as typeface styles and consistency. Additionally, the four major web design principles, contrast, repetition, alignment, and proximity (Williams & Tollett, 2000), played a primary role in the checklist. With all design elements taken into account, a list of web design-related checklist items was generated. After scrutinizing items, we removed elements deemed unacceptable or repetitive. The final list included 34 design items.

Structural elements. The eight structural elements included in the checklist were also from the Web Style Guide, 2nd edition (Lynch & Horton, 2004). Major areas considered in the development of these criteria included interface and multimedia design. Navigation, organization of information, and the size of graphics were all important elements considered in the development of the structural checklist criteria. Again, the researchers scrutinized potential checklist items and removed items deemed unsuitable or repetitive in developing the final checklist.
Content elements. The 20 content elements criteria primarily erupted from a review of the literature related to both the goals of school Web sites and the goals of elementary schools. Criteria emerged through an examination of the parallels between these goals. From this examination, general content criteria, content for parent’s criteria, and content for student’s criteria were developed. Again, these criteria were scrutinized and inappropriate or repetitive elements were removed.

General elements. The five general elements on the checklist evolved from a cursory examination of number of university and K-12 school web sites and through discussions with K-12 teachers and parents. Criteria in the “general elements” section were items that various stakeholders cited as important, but did not align with any of the other checklist categories.

Sampling

In this study, 50 elementary school Web sites were sampled, and evaluated, as described above, based on a predetermined checklist. Although each Web site’s ranking was based on quantitative criteria, there were certain specific areas that were more subjective than others were, such as download time and ease of navigation. Therefore, it was possible that the researchers may have had divergent interpretations as to a particular Web site’s features. Further, each researcher’s immediate reaction might have biased him toward a favorable (or unfavorable) review of the entire site. This phenomenon is elucidated in Gladwell’s 2005 work Blink: The Power of Thinking Without Thinking, in which he posits that one’s “adaptive unconscious” (or first impression) makes “very quick judgments based on very little information” (pp. 11-12). For the purposes of this study, the arrangement of images or type of font may have exerted an influence over the researchers in their overall rating of the site. In order to guard against the potential pitfall of the researchers evaluating these subjective items differently, inter-rater reliability was tested, as both of the researchers evaluated five Web sites that the other had also reviewed. The outcomes of these reviews were each within 2 points (on a 100-point scale) and considered adequate for purposes of this research (cf. Krathwohl, 1998).

In order to determine which sites to examine, we performed a Google™ search on “elementary schools.” This exact phrase resulted in over 17 million “hits.” In order to narrow this list, we arbitrarily chose 50 school sites at random from the returned search results. The search results were displayed in groups of 10, and the researchers made sure to choose no more than one from each group. Additionally, because schools in different parts of the country may have different resources, the researchers endeavored to choose no more than three schools from any one geographic area. Finally, the researchers decided to study randomly selected elementary school Web sites because they represented the diversity of characteristics of interest.

Results

While being rated on individual characteristics, each elementary school Web site was given an overall score. The site as a whole could be rated from 90-100 (exemplary), 80-89 (good) 70-79 (average), 60-69 (below average), and below 60 (poor). Among the 50 sites that were scored, there was a wide distribution of scores (e.g., 0 (0%) were exemplary, 5 (10%) were good, 10 (20%) were average, 17 (34%) were below average, and 18 (36%) were poor). Similarly, our critical features analysis revealed considerable variability across schools (see Table 1. There was also an even demographic distribution as no state or region had consistently higher scoring school Web sites than other states/regions.

Design Issues

The majority of the elementary school Web sites surveyed followed basic design principles. This is illustrated by the fact that the average score on this section was 27 (79%) out of a possible 34, with a standard deviation of 5.19. Of the 34 separate elements that were included in this section, 29 (or 85%) were on at least three-quarters of the Web sites that we studied. Three of the elements (the site has a name, Pages use an easy to read font, and all underlined text is hyperlinked) were present in 49 of the 50 sites (98%). An additional four elements (no horizontal scrolling, the
text is large enough for mature readers, text and link colors are distinct from each other, and graphics are optimized for minimum download time consistent with quality) were present in every site surveyed. It was evident that, while sites possessed very different designs, the majority addressed basic design principles; however, it was also clear that style does not necessarily lead to substance. While a majority of the elementary school Web sites that we reviewed contained a number of the positive elements that were important in terms of site design, a high score on items in this section was not necessarily indicative of a high overall score.

Table 1. Summary of Critical Features Analysis

<table>
<thead>
<tr>
<th>Feature</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>▪ Exemplary [90-100%]=0%</td>
</tr>
<tr>
<td></td>
<td>▪ Good [90-100%]=10%</td>
</tr>
<tr>
<td></td>
<td>▪ Average [90-100%]=20%</td>
</tr>
<tr>
<td></td>
<td>▪ Below Average [90-100%]=34%</td>
</tr>
<tr>
<td></td>
<td>▪ Poor [90-100%]=36%</td>
</tr>
<tr>
<td>Design</td>
<td>▪ Total Possible=34</td>
</tr>
<tr>
<td></td>
<td>▪ Average Score=27 (79%)</td>
</tr>
<tr>
<td></td>
<td>▪ Range=19 (15-34)</td>
</tr>
<tr>
<td></td>
<td>▪ Overall=85% or more on ¾ of all Web sites</td>
</tr>
<tr>
<td>Structure</td>
<td>▪ Total Possible=16</td>
</tr>
<tr>
<td></td>
<td>▪ Average Score=9 (56%)</td>
</tr>
<tr>
<td></td>
<td>▪ Range=12 (4-16)</td>
</tr>
<tr>
<td></td>
<td>▪ Overall=63% or more on ¾ of all Web sites</td>
</tr>
<tr>
<td>Content</td>
<td>▪ Total Possible=40</td>
</tr>
<tr>
<td></td>
<td>▪ Average Score=20 (50%)</td>
</tr>
<tr>
<td></td>
<td>▪ Range=28 (6-34)</td>
</tr>
<tr>
<td></td>
<td>▪ Overall=50% or less on ½ of all Web sites</td>
</tr>
<tr>
<td>General</td>
<td>▪ Total Possible=10</td>
</tr>
<tr>
<td></td>
<td>▪ Average Score=3 (30%)</td>
</tr>
<tr>
<td></td>
<td>▪ Range=6 (0-6)</td>
</tr>
<tr>
<td></td>
<td>▪ Overall=20% or less on ½ of all Web sites</td>
</tr>
</tbody>
</table>

Structure Issues

The majority of elementary school Web sites that we reviewed did not score well on structural components, as the mean score was 9 (56%) out of a possible 16, with a standard deviation of 3.19. Once again, the scores were in relative proximity, as the range was 12. The page is easy/quick to load, the homepage downloads efficiently, and information is easy to find, appeared on at least 47 (94%) out of the 50 sites. While each site scored well in terms of efficiency and ease of navigation, scores dropped significantly in terms of whether there were particular page(s) devoted to parents, faculty/staff, and students. While 44% of the sites had page(s) for faculty/staff, only 30% had page(s) for parents, and only 34% had pages specifically for students.

Content Issues

While the average school received a score of 79% and 56% for the design and structure components respectively, there was a drop-off in percentage points for the content component, as the average school scored 20 (50%) out of 40. As reflected in the standard deviation of 7.49, there was a larger range of scores than on the previous sections.
The two characteristics found most frequently were an “index, table of contents, or some other clear indicator of the contents of the site” (94%) and school information (90%), followed closely by the presence of a “stated purpose/objective” of the school (86%) and the presence of school administration information (80%). The lowest scoring categories included the illustration of student work (20%), club/extracurricular activities information (20%), testing/accountability (No Child Left Behind) information (16%), and the inclusion of conference/advising/guidance information (14%). Additionally, only 46% of sites had student-centered Web resources present and only 26% of sites surveyed had teacher course/personal sites available.

General Site Elements

In terms of the general site elements, there was an even further drop, as the average school scored 3 (30%) out of 10 on this section and the standard deviation was 1.60. Although the standard deviation among total scores on this section was relatively small, there was a separation of 90 percentage points between the highest scoring characteristics (i.e., picture of school, on 45 of the 50 sites examined) and the lowest scoring characteristic (i.e., Bobby-approved, not found on any of the sites examined). At least 46% of the sites examined contained two of the characteristics (picture of school and updated in the last year). The rates of the other two characteristics were lower, with inclement weather information found on 24% of the sites and an FAQ page found on only 4% of the sites reviewed.

Conclusion

Elementary school Web sites serve a variety of purposes (i.e., introducing the school, publishing student work, introducing large bodies of information, providing rich data sources for information about faculty, staff, students, and other aspects of a school). While the results of our study provided evidence of a number of encouraging technical areas related to the extant elementary school Web sites, a number of aspects require attention. First, it was encouraging that the majority of elementary school Web sites examined appropriately addressed basic Web design principles. While sites did not follow the same color, font, or image pattern, the majority conformed to the basic Web design principles espoused by Williams and Tollet (2000) and Lynch and Horton (2004). Consequently, elementary schools were able to represent themselves to their audience in a logical and orderly fashion, rather than simply posting information online. For example, a majority (72%) of elementary school Web sites contained school calendars. By including school calendars, these Web sites acted an interface between the various stakeholders in the educational process, as well as served as information systems for site visitors (McKenzie, 1997).

Only one of every five of the elementary school Web sites that we examined used its Web presence to illustrate student work. One reason this was a concern is that research has supported the sharing of student work as a motivating tool for students (Dixon & Black, 1996; Flick & Bell, 2000; Garofalo, Drier, Harper, Timmerman, & Shockey, 2000; Routman, 1991) and as a factor for increasing student achievement (cf. Hesketh & Selwyn, 1999; Mason, Berson, Diem, Hicks, Lee, & Dralle, 2000; Riley & Roberts, 2000; Schofield & Davidson, 2002). Additionally, in their 1998 work, Snyder, Lippincott, and Bower offered high praise for the use of student Web publication in the classroom as it provides a forum for allowing students to illustrate their knowledge about a certain topic. As indicated in the study, only a minority of schools are utilizing the potential benefit of students posting their work online. Additional issues require consideration. For example, if a school Web site does not have this capacity, it is not possible for students to do this without access to their own server.

Additionally, none of the Web sites evaluated gave any indication that it had been Bobby-approved. Bobby is a free online service that examines whether individual Web pages meet “existing accessibility guidelines” set forth by the World Wide Web Consortium’s (W3C) Web Access Initiative (Watchfire Corporation, 2002a). Being Bobby-approved is an indicator of a Web site’s “commitment to inclusion” for those with disabilities and other accessibility issues (online). It was somewhat disheartening that no site had met (or indicated that they met) these guidelines, given that one overarching goal of public elementary schools is to provide and foster knowledge from diverse populations (Watchfire Corporation, 2002b).

Due to various accountability measures currently in place, state standards and their associated tests play a large role in public schools across the United States. This pressure comes not only from state legislatures, but the federal
government as well, as the 2002 No Child Left Behind (NCLB) act dictates that “those responsible [for education] are held accountable for producing results” (NCLB Executive Summary, 2002, online). In addition, some states require a certain percentage of students to achieve passing grades on standardized tests or they can face the loss of accreditation. Therefore, it came as a surprise that only 16% of elementary school Web sites surveyed contained information about accountability.

A final area of concern was the overall scores for the elementary school Web sites surveyed. Only 5 of the 50 sites (10%) were scored as either Good (80-89 points) or Exemplary (90-100 points) and the 35 of the 50 sites (70%) were scored as either Below Average (60-69 points) or Poor (below 60 points). These results indicate that, in general, the Web sites used to represent the elementary schools that we sampled were not effectively reflecting issues of design, structure, and content in their efforts to provide a resource for a variety of stakeholders in the educational process.

Implications for Improvement of Practice

A strength of an elementary school Web site is that, while it can provide a comprehensive overview of a school, its development can be a collaborative effort, addressing the needs and goals of various members within the school. While an elementary school site can act as a communicative tool for all stakeholders in the educational landscape, it can also provide a snapshot of the unique features of individual schools. Elementary school Web sites can provide information related to a school’s organization and curriculum, as well as how it relates to the overall theme of the school. They can also provide a variety of information, such as that related to teachers and courses. Additionally, elementary school Web sites can provide individualized pages for different audiences, a variety of specific Web resources targeted at different audiences, an illustration of the school’s organizational structure, and additional data that might be associated with the specific goals of elementary schools.

While the majority of elementary schools appropriately addressed Web design issues, other features, such as the illustration of student work, accessibility, testing information, and parent-teacher communication needed to be improved. In order for elementary schools to use the benefits of their Web presence fully, they must go beyond merely providing general school information and become a resource for parents to find information about their child’s schooling. This could include information such as syllabi, schedules, and homework for the course(s) their children are taking, as well as their children’s performance in the course(s). One discouraging sign is that less than one-third (28%) of elementary school Web sites contained teacher course/personal pages. This parallels a 2005 study of K-12 teachers’ use of course Web sites, which demonstrated that course Web sites were used by less than half of the teachers surveyed, despite having had specific training and access to do so (Friedman, 2005). If this lack of a teacher Web presence diminishes and teachers are able and willing to use the Internet as a communication tool, it is possible that their students could post their work on the Internet as well. This would address two of the primary deficiencies limiting the overall effectiveness of elementary school Web sites.

From the results that emerged from this study, we have developed a series of practical suggestions for designing and developing an elementary school Web site. These include developing a shared agenda, thoroughly planning the site prior to development, designing the site cognizant of future change, following general Web design rules, focusing on the benefits of school Web sites, and considering the site as a potential gateway for teachers.

Develop a Shared Agenda

It is essential to consider the intended and potential audience throughout the design and development process of an elementary school Web site. For example, potential audience members for an elementary school site might include current students, prospective students, parents, local investors, government and community officials, and school faculty and staff. Consequently, providing information that is relevant and important to these various stakeholders is critical. This can be accomplished in a number of ways. First, throughout the design and development process, it is important to collaborate with the various stakeholders. This has two major benefits. First, it provides all stakeholders with a sense of “ownership” in the school Web site. Second, the voices of all sectors of the potential audience are heard in the various developmental stages of the elementary school Web site. This can be accomplished in a number of ways, such as providing individual pages for each of the specific audience groups within the scope of the entire school site. For example, on an elementary school Web site, links to individual sites for faculty members, students,
or other stakeholders in the educational process could be developed. If the needs of each stakeholder in the educational process (students, parents, teachers, and the community) are taken into account, it is likely that the final product will be one in which each group feels appropriately represented.

**Plan the Site prior to Design and Development**

Thoroughly planning an elementary school Web site prior to the design and development phase is also important. This can be done by designing draft Web sites or through the process of storyboarding. In either case, thorough planning allows for the examination of the site design, structure, and content, by all stakeholders. After collecting and addressing feedback and the approval from multiple potential users, the construction of the site can begin.

**Design the Site Cognizant of Future Change/Editing**

School dynamics are continually changing. This is illustrated by issues such as faculty and staff modifications, changes in the student body, test dates and scores, and courses taught. Thus, information conveyed in an elementary school Web site will also change. Hence, it is necessary to plan, design, and develop an elementary school site mindful of the idea of constant change.

**Follow General Web Design Rules**

As previously indicated, the majority of elementary school Web sites observed appropriately addressed general principles of Web design. While many of the sites did not contain many new, advanced design elements, they were sufficient for serving the needs of the schools. Following these general design features are important for a number of reasons. These include attracting visitors to the site, keeping visitors at the site, making the process of finding site information seamless, and addressing various accessibility issues. There are two primary approaches to support this: C-R-A-P and “keep it simple.”

*C-R-A-P*. The four major Web design principles include **Contrast**, **Repetition**, **Alignment**, and **Proximity** (*C-R-A-P*) (Williams & Tollett, 2000). **Contrast** refers to the difference in the appearance between a Web site’s foreground and background colors and elements. During the Web design process, it is important that there is a significant contrast between the foreground and background colors and Web page elements. For example, it would be poor Web design to use a black font color on a dark blue background. **Repetition** refers to the recurrence of elements throughout a Web site. It is important to use any elements that can be used multiple times in a site whenever possible. For example, the background color or design of the individual pages that compose an entire site should not change. Additionally, issues such as navigation, structure, overall layout, font style, and font colors should be repeated, whenever appropriate, throughout a Web site. **Alignment** refers to the placement of text and additional Web elements on a Web page. It is most appropriate to use a single alignment structure throughout a Web site. In most cases, a centered alignment is effective and provides a sense of balance to the Web page. **Proximity** refers to how far various web elements are located from each other. This is important for indicating the relationship of elements to each other. For example, the closer items on a webpage are, the more connected they seem. Contrary to this, placing items further away from each other creates a greater sense of disconnectivity between the elements.

**Keep it simple.** With recent advances in Web editing applications, it is easier for the novice Web developer to integrate a number of various elements into a Web site. These include scrolling text, animated GIFs, and Flash media. While these elements add a “flashiness” to a Web site, they are often unrelated to the information, goals, or objectives of elementary school sites. Consequently, it is unnecessary to include them on the site. These elements can have other detrimental effects to an elementary school Web site, such as increasing download times and contradicting accessibility guidelines. Additionally, the process of transitioning from one Web master to another is complicated if the individual maintaining a school site is utilizing some more advanced functions. While sometimes more advanced Web elements are necessary and align with the objectives of an elementary school, a general rule of thumb for any Web site is to “keep it simple.”
Focus on Benefits of School Web Sites

Benefits of school Web sites include communication to a wide audience, extended and independent learning resources for students, flexible evaluation tools for teachers, promoting increased involvement of parents, supporting student learning, showcasing student work and the school environment, and enhancing relationships between schools and other stakeholders in the educational process. It is critical to always be aware of these benefits and to appropriately address them during the design and development of elementary school Web sites.

Consider the Site as a Potential Gateway for Teachers

In addition to providing information to a variety of stakeholders in the educational process, elementary school Web sites can also serve as a source of additional resource for teachers. For example, teachers can post important course information such as the syllabus, course content, and assignments to an audience via an elementary school Web site. This acts as a catalyst for communication between teachers, parents, and students as well as gets teachers involved in the process of developing and maintaining an elementary school Web site. Consequently, not only is it more likely that stakeholders’ needs will be met, but also, they may be more inclined to use the elementary school Web site, which could potentially lead to greater participation by both parents and students.

Suggestions for Future Study

While the majority of elementary school Web sites examined followed basic Web design principles, it was evident that a good design did not necessarily lead to a high overall score. The primary reason for this was the fact that the scores on the content and general site characteristics portions of the elementary school Web sites were low, resulting in a diminished overall score. As opposed to creating a site that promotes the involvement of stakeholder interaction, the majority of schools used their Web site as a vehicle to post general information about their school.

This study is well-suited to further scholarship, as more in depth follow up studies of high-scoring (or low scoring) schools and the contextual factors that cause certain schools to score at higher (or lower) rates could be undertaken. For instance, the factors that encourage (or discourage) elementary school Web site development and maintenance could be studied from a sample of five to ten schools that scored particularly high or low. This could then be supplemented with interviews with the Web master, administrators, and teachers to provide a more in depth investigation of factors that facilitate and constrain the development of successful school Web sites.

Other future research addressing how students, parents, teachers, administrators, other professionals, and community members use school Web sites and what they use and value from them is warranted. Results of such studies will provide information to benefit educators and developers working with them to create and maintain resources that serve as information systems and act as intermediaries between stakeholders in the education process.

References


Appendix A

Elementary School Web Site Checklist

School Name: _______________________ Level: ________________
URL: ____________________________________________________

Design Issues

☐ The Web site has a name
☐ The text fits on the screen (very little vertical scrolling).
☐ No horizontal scrolling.
☐ The homepage is attractive, has strong eye appeal.
☐ All pages use adequate margins and white space.
☐ A title appears on all pages.
☐ The site appearance is consistent throughout.
☐ The site is not cluttered
☐ There is navigation back to the site home page on all pages.
☐ Each page provides some context for a visitor arriving from outside the site.
☐ Each page has one focal point
☐ Pages use an easy to read font, preferably a sans serif font (e.g., Verdana, Arial, Helvetica).
☐ There are no more than two fonts in the site.
☐ The text is large enough for mature readers
☐ All underlined text is hot-linked. (Book titles may be all capitals or italicized.)
☐ Large blocks of text are not center-justified.
☐ There is a reasonable balance between head and navigation elements and page content.
☐ Any buttons clearly indicate "This is a link."
☐ There is consistency with the overall color
☐ There is consistency with the button color
☐ There is consistency with the position of navigation bar
☐ There is consistency with the font on buttons
☐ There is consistency with the text on buttons
☐ There is consistency with the contrast
☐ Buttons and/or bread crumbs lead the user back to the home page.
☐ Internal and external links are working properly (e.g., no dead ends, no incorrect links)
☐ Background color and design are not intrusive.
☐ Use subtle textures for background.
☐ Text and link colors are distinct from one another.
☐ The pages use color consistently.
☐ Graphics relate to the site theme.
☐ ALT labels are included with all graphics, including any navigational buttons.
☐ Graphics links have a matching text link unless the graphic link is obvious.
☐ Graphics are optimized for minimum download time consistent with quality.

Structure Issues

☐ The page is easy/quick to load (no heavy graphics).
☐ The homepage downloads efficiently.
☐ User is able to move around within the site with ease.
☐ Information is easy to find (no more than three clicks, for example).
☐ Lists of links are well organized and easy to use.
☐ There is a site specifically for parents.
☐ There is a general site for faculty/staff and visitors.
☐ There is a site specifically for students.
Content Elements

- The name of the Web site designer (author) or other contact person is included.
- There is a stated purpose/objective of the Web site/School. (This purpose could be inferred from the title and navigation; it could be a link to "about this site.")
- There is an index, table of contents, or some clear indicator of the contents of the site.
- Site sponsor/provider is clearly identified.
- A working link is provided to a contact person or address for further information.
- There is a footer with last update and an email link on every page.
- A copyright notice is posted where applicable.
- Links to other useful Web sites are provided (developmental web sites, teacher, parent resources).
- School calendar is present.
- Club/Extracurricular Activity information is present.
- Student work is illustrated.

Content Elements: Parents Site.

- School Administration information is present.
- Teacher contact information is present.
- Teacher course/personal sites are available.
- Conference/Advising/Guidance information is present.
- Testing/Accountability (NCLB) information is available.
- School district information is present (this could be a link to main school district site).
- School information (map, address, etc.) is present.

Content Elements: Student Site.

- Student/Child-centered link/resources are available.
- Teacher course sites are present.

General Site

- Picture of School
- Inclement weather
- Bobby-approved?
- FAQ page?
- Site is updated.